

39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society



July 11-15 2017

JeJu International Convention Center
JeJu Island, South Korea

Conference Chairs

Kwang Suk Park
Yongmin Kim
James Weiland

Program Chairs

Eung Je Woo
Yuan-ting Zhang
Thomas Penzel



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대한의용생체공학회
The Korean Society of
Medical & Biological Engineering

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Partnership Acknowledgements

Silver Level Partners



Bronze Level Partner



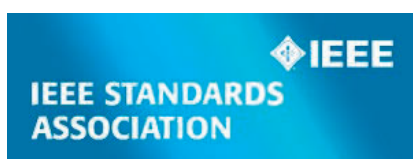
Exhibitors



Korea National Instruments



Yonsei Biomedical Engineering





President's Welcome Message



Nigel Lovell

Scientia Professor and Head, Graduate School of Biomedical Engineering
UNSW Sydney, NSW Australia

Engineering in Biology and Medicine Society

2017-2018 EMBS President

president@embs.org

It is my great pleasure and honor to welcome you to the 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS) and the 4th KOSOMBE International BioMedical Engineering Conference. Our Flagship Annual Conference (known as EMBC) is a premier international event in biomedical engineering, and has been strategically held in different locations around the world, including Orlando, Milan, Chicago, Osaka, San Diego, Boston, Buenos Aires, Minneapolis, Vancouver, Lyon over the last 10 years. Looking forward, our next events will be held in places such as Hawaii (July 17-21, 2018), Berlin, Montreal, Glasgow and Sydney.

This year's meeting is being held in Jeju Island, Korea with the theme 'Smarter Technology for a Healthier World'. Under the strong and dedicated leadership of Conference Chairs (Drs Kwang Suk Park, Yongmin Kim, Jim Weiland) and Program Chairs (Drs Eung Je Woo, Yuan-ting Zhang, Thomas Penzel) and with a special thanks to the Clinical Relations Chair (Dr Jongmo Seo), the organizing committee has developed an exciting interdisciplinary program. Multiple preconference workshops, special sessions and minisymposia discussing important biomedical engineering issues with academic researchers, clinicians, and research and development engineers are combined with traditional oral sessions and *ignite* poster sessions as platforms for presentation of over 2500 papers. In addition, there are lunchtime sessions to further promote, educate and expose students to the diverse field of biomedical engineering. The organizers have also successfully recruited an all-star roster of ten keynote speakers and fifteen theme keynote speakers, who are leaders and pioneers within their respective fields from around the world.

All the submitted contributed papers were subject to peer review by the EMBS Conference Editorial Board (CEB), consisting of an international panel of experts, covering all areas of biomedical engineering. This resulted in a 25% rejection rate. Special thanks go to, Dr Jim Patton, Editor-in-Chief of the CEB, the associate editors and reviewers of the CEB, and all the staff of the EMBS Executive Office (Laura Wolf and Janice Sandler) for their outstanding service and contributions toward making this meeting possible.

EMBS continues to strive to provide a unique, effective platform for biomedical engineers to publish, present their research, network with industry, and to advance their professional careers. A major focus of EMBC'17 will be the engagement with the dozen eleven technical committees (TCs) that are the specialist expertise groups with which individual members can interact with aspects of the Society. We would welcome anyone who is interested to make themselves known to the TC Chairs that will be attending the conference and will present TC activities during the TC workshops. TCs have leading roles within EMBS, being strategically involved in EMBC and Special Topics Conferences, award nominations, editorial boards of EMBS journals and launching of new initiatives. Again, welcome to EMBC'17. On behalf of EMBS we appreciate your participation and trust you find this meeting intellectually stimulating, socially rewarding and culturally revealing. As always if you have comments or would like to be more involved in our society, please contact myself or the Executive Office.

Nigel Lovell

Nigel Lovell, Ph.D., President EMBS, 2017 – 2018



Welcome Message from Organizing Committee



Dear Colleagues,

On behalf of the EMBC'17 Organizing Committee, it is our great pleasure to welcome you to the 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS) and the 4th KOSOMBE International BioMedical Engineering Conference.

EMBC'17 continues the IEEE EMBS' Annual Conferences, which have become a key meeting ground for the international biomedical engineering community, bringing together academic experts, clinicians, industry representatives, and students from the broad spectrum of areas that constitute biomedical engineering.

This year's theme, "Smarter Technology for a Healthier World," reflects an accelerating trend for the use of information and intelligence technology toward breakthroughs that were considered impossible a decade ago and continually improving the healthcare in the future. EMBC'17 covers a wide range of thematic areas in biomedical engineering with two specially-added themes, "Translational Engineering for Healthcare Innovation & Commercialization" and "Pharmaceutical Engineering and Drug Delivery Systems."

The Conference starts on July 11th with workshops and tutorials, while its scientific program will follow from July 12th to 15th. The program this year includes a diverse array of approximately 2,500 papers and talks. These papers will be presented in the form of platform talks and posters, and in various kinds of sessions that include workshops, tutorials, mini-symposia, invited sessions, special sessions, regular oral sessions, ignite sessions for posters, and poster displays. For each poster, we have extended a poster's display to a full day and provides 2 minutes in an oral ignite session to present their poster highlight. We have also organized various social sessions supporting the young generation of EMBS biomedical engineers and women such as "Lunch with the Leaders," "Meet the Editors," "Women in Engineering Luncheon," "Student Paper Competition," and so on. To make the site as the place for the cutting edge of the technology, we invited the world-renowned experts and leaders as the keynote speakers in 10 plenary and 15 theme keynote sessions.

While the scientific program promises to be an outstanding experience, we hope that you will also have some time to enjoy all that the Natural World Heritage Island of Jeju offers. Jeju Island is the largest island and the smallest province of Korea. It is famous for its beauty and as a place to experience the mystery, unique culture, tradition and leisure activities. Jeju Island is covered with lush subtropical forests, lava caves of all shapes, sandy beaches, spectacular craters, while Halla Mountain poises silently in the middle of the Island.

We would like to take this opportunity to thank all the members of the Organizing Committee, all the authors, all the reviewers, and all the volunteers for their efforts and valuable support to make EMBC'17 a reality.

Conference
Chair



Kwang Suk Park
SNU, Korea

Conference
Co-Chair



Yongmin Kim
POSTECH, Korea

Conference
Co-Chair



James Weiland
UMich, USA

Program
Chair



Eung Je Woo
KHU, Korea

Program
Co-Chair



Yuan-ting Zhang
CAS Key Lab, China

Program
Co-Chair



Thomas Penzel
CUB, Germany

Conference
Editor-in-Chief



James Patton
UIC, USA

IBEC
Conference Chair



Hun-Kuk Park
KHU, Korea

General Conference Information

Registration

Registration is located in the Lobby on the 3rd Floor of the Jeju International Convention Center and will be open Tuesday, July 11th through Saturday, July 15th. Staff will be able to assist you during the following time schedule.

Tuesday	07:30 – 17:30
Wednesday	07:00 – 20:00
Thursday	07:00 – 18:00
Friday	07:30 – 18:00
Saturday	07:30 – 13:00

Attendees must wear their badges at all times to gain access to the conference.

Tickets for companions can be purchased at the registration desk. Tickets must be purchased for companions to enter any social event.

Exhibits

Exhibits will be located in the Galvani Event Hall 1st Floor at the Jeju ICC

Exhibition Hours Wednesday, July 12th– Friday, July 14th 08:00 – 18:50

Exhibitor Set-Up

Tuesday, July 11th 09:00 – 18:00

Exhibitor Tear-Down

Friday, July 14th 19:00 – 20:00

WiFi

Free WiFi will be available through-out the ICC Meeting & Exhibit Space.

Instructions for Authors

Poster Presentations

Velcro or Push Pins will be provided to attach your posters to your assigned poster-board.

Your poster must be up before the time of your presentation on the day that your Ignite Session is scheduled, and removed after your scheduled poster presentation of that day. If your poster is left behind, it will be discarded.

Ignite Sessions: Wednesday, Thursday, and Friday July 12-14 16:10 – 17:10

Poster Sessions: Wednesday, Thursday, and Friday July 12-14 17:20 – 18:50

Please be sure to verify your scheduled presentation time.

Author No Show Policy

EMBS enforces a “no show” policy. Any accepted paper included in the final program is expected to have at least one author attend and present the paper at the conference. Authors of the accepted papers included in the final program who do not attend the Conference will be subscribed to a “No Show List”, compiled by the Society. The “no-show” papers will be removed from the Master DVD and noted as “Author unavailable for presentation” prior to submitting to IEEE for inclusion in Xplore. The “No Show List” will be available to all EMBS conference organizers, who can reject submissions from these authors in the following two years, based on their past negative impact on an EMBS conference.

Student, WIE and EMB Society Activities

Time	July 12, 2017 (Wednesday)	Room
8:00-9:30	Student Paper Competition I	Lee Room
12:20-13:20	Lunch with Leaders I	Ocean View
13:20-14:10	Student Paper Competition II	Lee Room
14:20-15:50	Student Paper Competition III	Lee Room
17:20-18:50	Student Paper Competition Decision Making	Dunn Room

Time	July 13, 2017 (Thursday)	Room
12:20-13:20	Lunch with Leaders II	Ocean View
13:20-14:10	Meet the Editors of EMBS Publications	Lee Room
14:20-15:50	Technical Writing Workshop Getting Published in Biomedical Engineering	Rushmer Room
17:20-17:35	Student Paper Competition Presentation	E vent Hall
19:00-20:00	Associate Editors Reception	Ocean View

Time	July 14, 2017 (Friday)	Room
12:20-13:20	Lunch with Leaders III	Room 201
12:20-14:10	WIE Luncheon & Mini-Symposium	Ocean View
14:20-15:50	Tips for Effective Presentation / Poster Design and Delivery	Herrick Room
19:00-21:00	Student and Young Professionals Reception	Eindhoven Hall

Publication

Time	July 12, 2017 (Wednesday)	Room
17:20-18:50	TBME Editorial Board Meeting	Min Room

Technical Committee

Time	July 11, 2017 (Tuesday)	Room
12:00-17:00	EMBS Technical Activities Chair Meeting	Webster Room

Time	July 12, 2017 (Wednesday)	Room
12:20-13:20	TC Robotics (Alicia Casals)	Zworykin Room
12:20-13:20	TC Biomedical Image & Imaging Processing (Marius Linguraru)	Herrick Room
12:20-13:20	TC Biomedical Signal Processing (Laura Astolfi)	Schwan Room
12:20-13:20	TC Therapeutic Systems & Technologies (Punit Prakash)	Plonsey Room
12:20-13:20	TC Cardiopulmonary Systems (Thomas Heldt)	Schmitt Room
12:20-13:20	TC Wearable Biomedical Sensors & Systems (Carmen Poon)	Greatbach Room
12:20-13:20	TC EMBS Standards (Carole Carey)	Geddes Room
12:20-13:20	TC NanoBioTechnology and BioMEMS (Esmail Jabbari)	Dunn Room
12:20-13:20	TC Biomedical and Health Informatics (Andrew Laine)	Schaldach Room
12:20-13:20	TC Translational Engineering for Healthcare Innovations (Thomas Penzel)	Rushmer Room
17:20-18:50	Workshop on EMBS Technical Activities I	Lee Room

Time	July 13, 2017 (Thursday)	Room
12:20-13:20	Workshop on EMBS Technical Activities II	Lee Room
17:30-19:30	IEEE Standards Working Group Meeting (Carole Carey)	Dunn View

Time	July 14, 2017 (Friday)	Room
8:00-12:00	IEEE Neuro Technologies Industry Connection Group (Carole Carey)	Room 201
12:20-13:20	EMBC 2017-18 Meeting	Room 202



The IEEE Engineering in Medicine and Biology Society advances the application of engineering sciences and technology to medicine and biology, promotes the profession, and provides global leadership for the benefit of its members and humanity by disseminating knowledge, setting standards, fostering professional development, and recognizing excellence.

The field of interest of the IEEE Engineering in Medicine and Biology Society is the application of the concepts and methods of the physical and engineering sciences in biology and medicine. This covers a very broad spectrum ranging from formalized mathematical theory through experimental science and technological development to practical clinical applications. It includes support of scientific, technological and educational activities.

Publications

IEEE PULSE: A Magazine of the IEEE Engineering in Medicine and Biology Society
Transactions on Biomedical Engineering
Journal of Biomedical and Health Informatics
Transactions on Neural Systems and Rehabilitation Engineering
Journal on Translational Engineering in Health & Medicine
Reviews on Biomedical Engineering
Transactions on NanoBioscience
Transactions on Medical Imaging
Transactions on Computational Imaging
Transactions on Biomedical Circuits and Systems
IEEE Transactions on Radiation and Plasma Medical Sciences
Journal on Electromagnetics, RF & Microwaves in Medicine

Electronic Products

EMBS Electronic Resource
EMBS on YouTube

Conferences

Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)
IEEE EMBS Special Topic Conference on Neural Engineering (NER)
International Symposium on Biomedical Imaging (ISBI)
International Conference on Biomedical Robotics and Biomechanics (BIOROB)
International Conference on Rehabilitation Robotics (ICORR)
Healthcare Innovation and Point-Of-Care Healthcare Technologies Conference (HICPT)
EMBS Micro and Nanotechnology in Medicine (MNM)
IEEE EMBS International Conference on Body Sensor Networks (BSN)
IEEE EMBS International Conference on Biomedical and Health Informatics (BHI)
IEEE EMBS Student Conferences: For Students, By Students (ISC)
Grand Challenges Conference Series (GCBE)

Summer Schools

International Summer School on Biomedical Imaging
International Summer School on Biomedical Signal Processing
International Summer School on Biocomplexity, Biodesign and Bioinnova
International Summer School on Information Technology in Biomedicine
International Summer School on Emerging Technologies and Applications in Telemedicine
International Summer School on Neural Engineering
International Summer School on Computer Modeling in Medicine

IT'S #EMBC17 - SEE YOU ON SOCIAL MEDIA!

Don't be shy, join in the conversation - be sure to use #EMBC17 in your Facebook and Twitter posts from the conference.

Stay connected with the IEEE Engineering in Medicine & Biology Society throughout the year.

Join us on Facebook, Twitter, Instagram and our LinkedIn Group and Company profiles for all the latest EMB Society news, events, networking opportunities, and more!



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#EMBC17

Organizing Committee

Conference Chair: Kwang Suk Park

Conference Co-Chair: Yongmin Kim

Conference Co-Chair: James Weiland

Program Committee Chair: Eung Je Woo

Program Committee Co-Chair: Yuan-ting Zhang

Program Committee Co-Chair: Thomas Penzel

Finance Chair: Jae Sung Lee

Workshop/Tutorial/Mini-symposium/Invited Session/Special Session Co-Chairs: Atam Dhawan and Yoonkey Nam

Conference Editorial Board Chair: Jim Patton

Student/Young Professional/Membership Activity Chair: Steve Wright

Student Paper Competition Co-Chairs: Yingchun Zhang and Kyung Min Byun

Young Professional Activities Co-Chairs: Lei Ding and Myunghwan Choi

Industrial Relations Co-Chairs: Bruce Hecht and Byungjo Jung

Clinical Relations Chair: Jongmo Seo

Student Volunteers Co-Chairs: Hans van Oostrom and Min Joo Choi

Women In Engineering Co-Chairs: Jennifer H. Shin, Lisa Lazareck-Asunta, and Hyunjoo J. Lee

Exhibit and Sponsor Chair: Young Bin Choy

Publication Chair: Hyunjoo J. Lee

Webmaster: Hans van Oostrom

EMBS Executive Office Team:

Laura Wolf, Adrian Plummer, Janice Sandler, Michael Markowycz, and Scott Woodhouse

Program Themes and Chairs

Theme 1. Biomedical Signal Processing

Chair

Laura Astolfi, *Sapienza University, Italy*

Co-Chairs

Chang-Hwan Im, *Hanyang University, Korea*

Jie Tian, *Beijing CAS, China*

Yoshiharu Yamamoto, *University of Tokyo, Japan*

Theme 2. Biomedical Imaging and Image Processing

Chair

Marius Linguraru, *George Washington University, USA*

Co-Chairs

Jong Chul Ye, *KAIST, Korea*

Chulhong Kim, *POSTECH, Korea*

Qingming Luo, *Huazhong University of Science and Technology, China*

Theme 3. Micro- and Nano-Bioengineering; Cellular and Tissue Engineering

Chair

Esmail Jabbari, *University of South Carolina, USA*

Co-Chairs

Sung Yang, *GIST, Korea*

Zhong-Ze Gu, *Southeast University, China*

Soo-Hong Lee, *CHA University, Korea*

Theme 4. Computational Systems and Synthetic Biology; Multiscale Modeling

Chair

Socrates Dokos, *University of New South Wales, Australia*

Co-Chairs

Eun Bo Shim, *Kangwon National University, Korea*

Zuhong Lu, *Peking University, China*

Jie Liang, *Simon Fraser University, Canada*

Theme 5. Cardiovascular and Respiratory Systems Engineering

Chair

Thomas Heldt, *MIT, USA*

Co-Chairs

Youngjoon Chee, *University of Ulsan, Korea*

Yubo Fan, *Beihang University, China*

Masaru Sugimachi, *National Cerebral and Cardiovascular Center Research Institute (NCVC), Japan*

Theme 6. Neural Engineering, Neuromuscular Systems and Rehabilitation Engineering

Chair

Silvestro Micera, *Ecole Polytechnique Federale de Lausanne, France*

Co-Chairs

Inchan Youn, *KIST, Korea*

Guanglin Li, *Shenzhen CAS, China*

David Guiraud, *LIRMM, France*

Theme 7. Wearable Biomedical Sensors and Systems

Chair

Steffen Leonhardt, *RWTH Aachen University, Germany*

Co-Chairs

Ki Chon, *University of Connecticut, USA*

Li-Rong Zheng, *Fudan University, China*

Toshiyo Tamura, *Waseda University, Japan*

Theme 8. Bio-Robotics, Surgical Planning and Biomechanics

Chair

Alicia Casals, *Technical University of Catalonia, Spain*

Co-Chairs

Jung-Woog Shin, *Inje University, Korea*

Jaesoon Choi, *Asan Medical Center, Korea*

Max Meng, *CUHK, Hong Kong*

Theme 9. Therapeutic and Diagnostic Systems, Devices and Technologies, Clinical Engineering

Chair

Punit Prakash, *Kansas State University, USA*

Co-Chairs

Jong Bum Seo, *Yonsei University, Korea*

Lisa Xu, *Shanghai Jiao Tong University, China*

Dieter Haemmerich, *Medical University of South Carolina, USA*

Theme 10. Biomedical and Health Informatics

Chair

May Wang, *GeorgiaTech, USA*

Co-Chairs

Wan-Young Chung, *Pukyong National University, Korea*

Tomohiro Kuroda, *Kyoto University, Japan*

Mark van Gils, *VTT Technical Research Centre, Finland*

Theme 11. Biomedical Engineering Education and Society

Chair

Metin Akay, *University of Houston, USA*

Co-Chairs

Beop-Min Kim, *Korea University, Korea*

Hui Ma Shenzhen, *Tsinghua University, China*

Christopher James, *University of Warwick, UK*

Theme 12. Translational Engineering for Healthcare Innovation and Commercialization

Chair

Atam Dhawan, *NJIT, USA*

Co-Chairs

Young Huh, *KEIT, Korea*

Min-Xi Wan, *Xian Jiao Tong University, China*

Dorin Panescu, *Intuitive Surgical, Inc, USA*

Theme 13. Pharmaceutical Engineering and Drug Delivery Systems

Chair

Kyungsoo Park, *Yonsei University, Korea*

Co-Chairs

Lintao Cai, *Shenzhen Institute of Advanced Technology, China*

Russell Wada, *Certara, USA*

Program at a Glance

Tuesday, July 11, 2017

- 08:30-12:30 Workshop & Tutorials
- 12:30-13:30 Break
- 13:30-17:30 Workshop & Tutorials

Wednesday, July 12, 2017

- 08:00-09:30 Oral, Mini, Special, and Invited Sessions
- 09:30-09:40 Break
- 09:40-10:30 Theme Keynote
- 10:30-10:50 Coffee Break
- 10:50-12:20 Opening Ceremony & Plenary Talk
- 12:20-13:20 Lunch
- 13:20-14:10 Plenary Keynote
- 14:10-14:20 Break
- 14:20-15:50 Oral, Mini, and Invited Sessions
- 15:50-16:10 Coffee Break
- 16:10-17:10 Ignite Sessions
- 17:10-17:20 Break
- 17:20-18:50 Poster Sessions
- 19:00-20:30 Welcome Reception

Thursday, July 13, 2017

- 08:00-09:30 Oral, Mini, Special and Invited Sessions
- 09:30-09:40 Break
- 09:40-10:30 Plenary Keynote
- 10:30-10:50 Coffee Break
- 10:50-12:20 Oral, Mini, and Invited Sessions
- 12:20-13:20 Lunch
- 13:20-14:10 Plenary Keynote
- 14:10-14:20 Break
- 14:20-15:50 Theme Keynote, Oral, Mini, Special and Invited Sessions
- 15:50-16:10 Coffee Break
- 16:10-17:10 Ignite Sessions
- 17:10-17:20 Break
- 17:20-18:50 Poster Sessions

Friday, July 14, 2017

08:00-09:30	Oral, Mini, Special and Invited Sessions
09:30-09:40	Break
09:40-10:30	Plenary Keynote
10:30-10:50	Coffee Break
10:50-12:20	Oral, Mini, Special and Invited Sessions
12:20-13:20	Lunch
13:20-14:10	Plenary Keynote
14:10-14:20	Break
14:20-15:50	Oral, Mini, Special and Invited Sessions
15:50-16:10	Coffee Break
16:10-17:10	Ignite Sessions
17:10-17:20	Break
17:20-18:50	Poster Sessions

Saturday, July 15, 2017

08:00-09:30	Oral, Mini, Special and Invited Sessions
09:30-09:40	Break
09:40-10:30	Theme Keynote
10:30-10:50	Coffee Break
10:50-12:20	Oral and Mini Sessions
12:20-13:20	Lunch
13:20-14:10	Theme Keynote
14:10-14:20	Break
14:20 - 15:50	Oral and Mini Sessions

Workshops and Tutorials

Full-day

Design Challenge Workshop

08:30-12:30 / 13:30-17:30

Location: Cho Room

Registration Required

Organizers

- Bruce Hecht, MAsc, CSSBB – IEEE Senior Member, EMBS Industry/Practitioner Liaison
- Ayesha Khalid, MD, MBA – IEEE Member
- Alan Zack, BSJ, MBA and Yaniv Snir, BA, MS

Abstract

Emerging challenges and opportunities are enabled through new technologies and design in the field of biomedical engineering.

Participants will be challenged to employ and develop some of the most important skills required by leaders: creativity, business acumen, social responsibility, communication, and teamwork.

Join us this at the IEEE EMBC Conference 2017, for the Design Challenge Workshop.

Goals: The Workshop is designed to deliver a program that:

- Inspires young visionaries from around the world by firing up their competitive spirit;
- Catalyzes innovation
- Cultivates impact through creative solutions to some of the world's biggest health-related challenges
- Teach young innovators about the power of competitions to solve some of the world's biggest problems
- Supports the theme of the 39th Annual International Conference of the EMBC to develop Smarter Technologies for a Healthier World.

Objective: Develop a Workshop that can lay the groundwork for an annual competition that is awarded during the annual EMBS International Conferences. The program will activate EMBS's younger network to direct their passion, leadership, and entrepreneurial spirit toward solving challenges in biomedical engineering. Participants will be challenged to employ and develop some of the most important skills required by leaders: creativity, business acumen, social responsibility, communication, and teamwork.

Specific Approach

During the Conference

- Facilitate a full-day Workshop during the 39th Annual International Conference for students interested in learning about competitions, and designing a competition on a topic about which they are passionate
- The Workshop will begin with a short talk from three experts already in attendance at the conference. The experts will speak for 20-30 minutes, to highlight examples of the biggest challenges and opportunities in the field of biomedical engineering
- Following the talks, a short brainstorming exercise will identify specific challenges in the biomedical engineering space
- Challenges will be designed during the Workshop for development at regional and international events following the conference
- Over the course of the following 3-5 months, students will refine the Challenge (for example, augmenting it based on further primary and secondary research)
- Students will create a 3-minute video that translates their competition into video format most effectively is of high quality content; and communicates scientific research in the most compelling, entertaining, and creative manner
- The videos will be judged by an expert panel, who will be tasked with identifying the competition that demonstrates the greatest feasibility, creativity, need, and that is likely to produce the intended competition's results.
- The winning competition will be further refined, and then launched during the 40th International Conference in Hawaii, 2018.

Half-day

Magnetic Resonance Electrical Impedance Tomography and Electric Properties Tomography: New Insights and Frontiers in Measurement of Tissue Electromagnetic Properties

08:30-12:30

Location: Park Room

Registration Required

Organizers

- Rosalind Sadleir -IEEE Member, EMBS Member
- Atul Singh Minhas –IEEE Member, EMBS Member

Speakers

- Hyung Joong Kim, Kyung Hee University
- Munish Chauhan, Arizona State University
- Aditya K. Kasinadhuni
- Atul S Minhas, University of Liverpool
- Rosalind Sadleir, Arizona State University

Abstract

Tissue electrical conductivity imaging is emerging as a popular and challenging application of MRI techniques. One MR based conductivity imaging technique, Magnetic Resonance Electrical Impedance Tomography (MREIT) has been extensively tested in phantoms and animals. However, the need for external imaging currents has hindered its acceptance in clinical diagnosis applications. Researchers working in this field are now proposing several new approaches with direct clinical significance. Neuromodulation techniques such as transcranial DC or AC stimulation (tDCS/tACS) are naturally suited to MREIT imaging, and its use to image these current flows in the brain has led to new approaches to mechanisms and practice. Conductivity can also be imaged without using current via Electric Properties Tomography (EPT) and Conductivity Tensor Imaging (CTI). Functional neuroimaging may also be possible using MREIT approaches. Development and validation of these techniques in high field scanners requires specialized phantoms suitable for ultra-high magnetic fields. The aim of this workshop is to address the challenges involved in tissue electrical conductivity imaging on these multiple exciting frontiers. The technical focus of the workshop includes numerical methods for MREIT, MRI phase imaging, image data analysis and processing techniques, multi-physics modelling and simulation in MRI, and pulse sequence design for MREIT. The audience will learn how to setup an electrical conductivity imaging experiment, pulse sequences required and data processing methods.

Half-day

Healthcare Revolution through Wearable Electronics

13:30-17:30

Location: Park Room

Registration Required

Organizers

- Hammad M. Cheema -IEEE Member

Speakers

- Hammad M. Cheema, National University of Sciences and Technology, Islamabad, Pakistan
- Hassan Aqeel Khan, National University of Sciences and Technology, Islamabad, Pakistan

Abstract

The first part of the tutorial will introduce wearable electronics domain and the impact it has had in the healthcare realm. Starting from fitness trackers, to smart watches to diagnostic devices, healthcare has witnessed a drastic change in the western countries where ambulatory monitoring is being preferred over in-hospital checkups thus reducing the healthcare costs. In addition, continuous gathering of data is helping physicians and medical scientists to get insight into information which was never available before. The tutorial will also present the basic building blocks which are typically used to develop health centric wearable electronics. The second part of this tutorial will cover Machine Learning and Data analytics techniques for handling wearable sensors. Participants will be provided an overview of how to analyze high-dimensional time-series data using Machine Learning and Pattern Recognition techniques. Special emphasis will be given to feature extraction frontend and participants will learn how to construct and design novel features from data. Different classifiers such as Support Vector Machines and Deep

Neural Networks will also be covered. Participants will also be provided hands-on experience on at least one dataset. Aims and learning objectives: The aims and learning objectives of the tutorial are as follows:

- To share the history of wearable electronics
- To discuss the impact of wearable electronics in healthcare
- To share few case-studies of products/projects in this domain
- To share technological enablers for wearable electronics
- To highlight the future trends in healthcare wearables
- To provide an introduction the basic concepts of machine learning
- To discuss the various parameters and tradeoffs that need to be considered during wearable data analytics
- To provide hands-on exposure to Machine Learning and Data analytic tools for processing wearable sensor data

Half-day

Assessment of Consciousness and will Powered Motor Rehabilitation

08:30-12:30

Location: Min Room

Registration Required

Organizers

- Günter Edlinger IEEE, EMBS Member
- Christoph Guger

Speakers

- Guenter Edlinger, Guger Technologies OG & g.tec medical engineering GmbH
- Christoph Guger, Guger Technologies OG & g.tec medical engineering GmbH

Abstract

The Brain-Machine/Computer Interface (BCI) research area is a vital and fast expanding field. BCIs have been developed during the last years for people with severe disabilities to improve their quality of life. including tools to help patients with disorders of consciousness (DOC) as well as to improve stroke recovery. Imagine being able to think, hear, and feel - but not to move or communicate. More than 40% of patients diagnosed as vegetative are reclassified as (at least) minimally conscious when assessed by expert teams. A further subset of potentially communicative non-responsive patients might be undetectable through standard clinical testing. One part of the workshop will give an overview over groups that aim to use BCI technology to identify non-responsive patients that might be able to communicate and will introduce state-of-the-art technology for advanced consciousness assessment. Recently BCI applications have been also used for rehabilitation after stroke based on motor imagery. Several articles have shown that MI-based BCIs can induce neural plasticity and thus serve as an important tool to enhance motor rehabilitation for stroke patients. This part of the workshop is discussing the application of BCI technology for improved stroke recovery by activating the sensorimotor cortex. This activation is translated into control signals for rehabilitation devices like Virtual Reality environments showing moving limbs of avatars, robotic devices attached to the patient's paralyzed limbs such as exoskeletons, or functional electrical stimulation. The workshop will discuss necessary prerequisites to successfully perform BCI experiments in non-invasive and invasive ways as well as pros and cons of the various methods. Demonstrations of BCI control will allow to understand the progress of the technology. We will invite audience members to participate in live demonstrations, providing real-world examples of modern BCI performance in field settings.

Remarks

The tutorial will include next to theoretical background and recent results practical demonstrations of applications

- insights into the BCI technology for stroke rehabilitation and assessment of consciousness enabling participants to
- participate in practical experiments
- giving participants the chance to analyze their BCI performance

Half-day

IEEE Standardization Development for Cuffless and Continuous Blood Pressure Monitoring

13:30-17:30

Location: Min Room

Registration Required

Organizers

- Proposer - Carole C. Carey, IEEE Senior Member, EMBS Member
- Proposer - Xiao-Rong Ding, IEEE Member, EMBS Member

Speakers

- Carole C. Carey, IEEE Standard Association
- Yuan-Ting Zhang, Editor-in-Chief for IEEE Reviews in Biomedical Engineering
- Kwang Suk Park, Seoul National University
- Jens Muehlsteff, Philips Research Europe
- Toshiyo Tamura, Osaka Electro-Communication University
- Alberto Avolio, Macquarie University, Sydney, AUSTRALIA

Abstract

Accurate measurement of blood pressure (BP) is necessary for proper diagnosis and precise cardiovascular risk assessment, as well as to gauge the necessity for intervention and to monitor treatment effect. Current standards to evaluate the clinical performance of BP monitors target mostly cuff-based devices that provide a snapshot of BP. These standards include those established by the Association for the Advancement of Medical Instrumentation (AAMI), the British Hypertension Society (BHS), and the European Society of Hypertension (ESH). A recent standard, IEEE Std 1708TM-2014, was published for wearable, cuffless BP measuring devices that have different modes of operation (e.g. to measure short-term, long-term, snapshot, continuous, beat-to-beat). It should be noted that the standard is limited to evaluation of devices that do not use a cuff during measurement. However, issues such as the induction of dynamic change remains to be clarified. On the other hand, the performance assessment of systems that provide continuous measurement tends to be inconclusive, and a comparison of the outcome of different studies is difficult. It is therefore desirable to develop standard for continuous BP monitoring system.

In the year immediately after the 200th birth anniversary of Carl Ludwig, we propose this workshop to honor Ludwig as the pioneer of continuous blood pressure recording. The primary goal of this workshop is to provide biomedical engineers with an overview of the recent published IEEE 1708 standard with the discussion on further extension and refinement. This workshop will also attempt to introduce standard to evaluate the performance of continuous BP monitoring systems.

Full-day

Deep Audio, Speech and Biosignal Sensing for mHealth and Biomonitoring in Two Nutshells

08:30-12:30 / 13:30-17:30

Location: Lee Room

Registration Required

Organizers

- Björn W. Schuller – Senior Member IEEE
- Nicholas Cummins – Member IEEE

Speakers

- A. Björn W. Schuller
- B. Nicholas Cummins

Abstract

With an aging population and ever-increasing health costs, technologies such as smart phones and wearable devices and advances in AI are currently transforming health care. The combination of passive, non-invasive and non-intrusive smart monitoring technologies together with the robust analysis attainable by deep learning means that remote, cost efficient, automated, and objective diagnosis and monitoring of manifold health states is now accessible to the broad public – everywhere and anytime. Speech analysis, for example, has matured to a new form of active and passive remote sensing technology for a broad range of health conditions and wellbeing. Conditions such as depressive disorders, post-traumatic stress, Alzheimer's and Parkinson's disease and

dementia are detectable, at accuracies approaching clinical utility, via speech analysis. Beyond, earlier pre-diagnosis of epilepsy seizures, or even Rett-Syndrome, Fragile X, and other neurodevelopmental conditions have become feasible. Sleep Apnea, Eating and Alcohol Consumption Behaviour, or Voice Disorder can be continuously monitored, and correctional feedback and aid can now be given to individuals, e.g., on the Autism spectrum “on the go”. This tutorial is an introduction to audio and biosignal sensing “in the wild” for mHealth and will comprise of two main sections: first, an overview of the topic covering, data collection, feature extraction and relevant recent machine learning principles as well as a discussion on the key research problems and challenges including data protection and ethics; second, a hands-on session: attendees will receive training on running open-source established feature extraction and machine learning toolkits, including the state-of-the-art openSMILE and novel openXBOW multisensorial feature extraction software. The tutorial will cater for both established and new researchers to this field. By attending, participants will gain key insights and understandings and be able produce publishable systems and results in this fascinating, practical, and rapidly growing field of intelligent signal processing in health and biology.

Half-day

Structural and Functional Imaging with Optical Coherence Tomography and Optical Coherence Elastography

08:30-12:30

Location: Zworykin Room

Registration Required

Organizers

- Kirill V. Larin-IEEE, EMBS Member

Speakers

- Kirill V. Larin, University of Houston

Abstract

This tutorial will overview recent advances in development and application of optical imaging techniques for structural and functional imaging and sensing of various transport, developmental, and disease progression in tissues and cells. Special emphasis will be devoted to theory and applications of novel imaging/sensing modality – Optical coherence Tomography (OCT) and Optical Coherence Elastography (OCE). This tutorial will start with basic description of light-tissue interaction including structural and optical models of tissues with single and multiple scattering. It will be shown that light reflection, transmission, scattering, and state of polarization can be effectively controlled by changes of tissue structure and the refractive index of tissue components. Many examples of OCT noninvasive sensing will be provided such as cardiovascular imaging, ophthalmic applications, monitoring of drug diffusion and optical clearing, sensing and quantifying of microbubbles and nanoparticles in tissues and blood, imaging of early embryonic cardiovascular system development, and, the newest hot topic -- assessing mechanical properties of tissues and cells. Intended Audience: Engineers, scientists and physicians who are interested in learning optical imaging and spectroscopy, laser methods, instruments design, and application for medical science and clinics will find this course useful.

Half-day

Neurophotronics: Imaging and Manipulating the Brain

13:30-17:30

Location: Zworykin Room

Registration Required

Organizers

- Euiheon Chung, PhD, Dept. Biomedical Sci. & Eng., Gwangju Institute of Science and Technology
- Jung-Hoon Park, PhD, Dept. of Biomedical Eng., Ulsan National Institute of Science and Technology

Speakers

- Euiheon Chung, PhD, Dept. Biomedical Sci. & Eng., Gwangju Institute of Science and Technology
- Anna W. Roe, PhD, Interdisciplinary Institute of Neuroscience and Technology, Zhejiang University, Hangzhou, P.R. China
- Shih-Chi Chen, PhD, Dept. Mechanical and Automation Eng., The Chinese University of Hong Kong
- Jung-Hoon Park, PhD, Dept. of Biomedical Eng., Ulsan National Institute of Science and Technology
- YongKeun Park, PhD, Dept. of Physics, Korea Advanced Institute of Science and Technology
- Kai Wang, PhD, Institute of Neuroscience, Chinese Academy of Science, Shanghai

Abstract

Recent advances in optical imaging have proven to be a powerful workhorse for new discoveries in neuroscience. Various contrast mechanisms based on light-matter interaction have enabled structural and functional neuroimaging with diverse animal models. However, compelling study of the brain awaits breakthroughs in many different aspects. For functional imaging at the level of neural circuits, high resolution large field of view imaging at high sampling rates is required. For deep brain imaging, multiple scattering of light becomes the biggest obstacle. For structural imaging of whole brains, aka the connectome, automation of a high-resolution, robust sequential imaging system is required. The large data sets that are obtained in these newly developed high throughput systems also require new data storage and processing schemes that were not previously anticipated. This workshop brings together the latest advances in various areas of neurophotonics with a common goal: imaging and manipulating the brain. This workshop will provide a platform to foster sharing and collaboration in this vibrant research arena.

Full-day

Smarter Photoacoustic Imaging: Systems, Applications, and Agents

08:30-12:30 / 13:30-17:30

Location: Herrick Room

Registration Required

Organizers

- Chulhong Kim, Ph.D., IEEE Senior Member, EMBS Member
- Liang Song, Ph.D., The Institute of Biomedical and Health Engineering, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
- Yoshifumi Saijo, M.D. and Ph.D., Graduate School of Biomedical Engineering, Tohoku University
- Junjie Yao, Ph.D., Biomedical Engineering, Duke University

Speakers

- Chulhong Kim, Ph.D., Creative IT Engineering, Pohang University of Science and Technology
- Liang Song, Ph.D., The Institute of Biomedical and Health Engineering, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
- Yoshifumi Saijo, M.D, Ph.D., Graduate School of Biomedical Engineering, Tohoku University
- Junjie Yao, Ph.D., Biomedical Engineering, Duke University
- Miya Ishihara, Ph.D.
- Tsuyoshi Shiina, Ph.D.
- Pai-Chi Li, Ph.D., Electrical Engineering and Computer Science, National Taiwan University
- Kang Kim, Ph.D.
- Pramanik Manojit, Ph.D.
- Jonathan Lovell, Ph.D., Biomedical Engineering, University at Buffalo
- Jun Xia, Ph.D.
- Wiendelt Steenbergen, Ph.D.

Abstract

High-resolution volumetric optical imaging modalities, such as confocal microscopy, two-photon microscopy, and optical coherence tomography, are growing in their importance for biological and medical imaging. However, due to strong light scattering, the penetration depth of optical imaging is limited to the transport mean free path of photons in biological tissues (~1 mm). Photoacoustic imaging, an emerging hybrid modality that can provide strong endogenous and exogenous optical absorption contrasts, has overcome the fundamental depth limitation of optical imaging by maintaining excellent spatio-temporal resolution representative of ultrasound imaging. The image resolution, as well as the maximum imaging depth, is scalable with ultrasonic frequency within the reach of diffuse photons. In biological tissues the imaging depth can be up to a few centimeters. Furthermore, photoacoustic imaging can noninvasively deliver anatomical (i.e., vascular structures, solid tumors and angiogenesis, and internal organs), functional (i.e., total hemoglobin concentration, hemoglobin oxygen saturation, blood flow, pH, and metabolic rate of oxygen consumption), and molecular information from living tissues. For highly sensitive molecular photoacoustic imaging, a valuable tool for personalized medicine, exogenous contrast agents (e.g., organic dyes, metallic and nonmetallic nanoparticles, reporter genes, or fluorescence proteins) with biomarkers are commonly utilized.

In this one-day Workshop, the following topics will be discussed: (1) multi-scale photoacoustic imaging systems, (2) re-clinical imaging of morphology, function, and reporter molecules, (3) clinical applications, and (4) commercial opportunities.

Half-day
Models and Algorithms for Analysis of Large-Scale Biological Networks
08:30-12:30
Location: Schwan Room
Registration Required

Organizers

- Prof. Byung-Jun Yoon (Texas A&M University, IEEE Senior Member)
- Prof. Xiaoning Qian (Texas A&M University, IEEE Member)

Speakers

- Prof. Byung-Jun Yoon, Texas A&M University, Department of Electrical & Computer Engineering TEES-AgriLife Joint Center for Bioinformatics and Genomic Systems Engineering (CBGSE)
- Prof. Xiaoning Qian, Texas A&M University, Department of Electrical & Computer Engineering TEES-AgriLife Joint Center for Bioinformatics and Genomic Systems Engineering (CBGSE)

Abstract

Recent advances in high-throughput techniques for measuring molecular interactions and the development of text-mining techniques for crawling the vast biomedical literature to collect known molecular interactions have led to the emergence of large-scale biological networks. These networks provide valuable resources that enable systematic genome-scale studies of biological interactions, which may unveil important insights on the structure and functional organization of biological networks and lead to the detection of novel network modules. The proposed tutorial consists of two parts. In the first part of the tutorial, we will present probabilistic models for comparative analysis of large-scale biological networks and introduce efficient algorithms for network alignment and network querying. In the second part of the tutorial, we will go over the concept of network clustering and network community detection and present effective computational methods for accurate identification of functional network modules in biological networks.

Half-day
The Fast-Changing Landscape of Electroencephalography
13:30-17:30
Location: Schwan Room
Registration Required

Organizers

- Walter G. Besio - IEEE Member

Speakers

- Günter Edlinger; MSc. PhD, CEO, g.tec medical engineering GmbH and Guger technologies OG
- Nicola Soldati Ph.D., Brain Products GmbH
- Walter Besio, Ph.D., CEO, CREmedical Corp. and University of Rhode Island
- Brett Denaro, Ph.D, BioPac Systems

Abstract

This workshop is designed to give both novice and experienced electroencephalography (EEG) users a synopsis of the latest innovations in EEG and related areas. EEG is the recording of brain electrical activity from the scalp. The EEG measures the difference in potentials between electrodes generated by ionic currents flowing within neurons of the brain. For many years EEG has had limited use due to poor signal quality, low spatial resolution, and non-portability. Even with these limitations EEG is still a standard practice in clinical settings such as diagnosis of epilepsy and for research such as brain computer interfacing. In recent years electrodes, signal acquisition hardware, and signal processing software have undergone major improvements allowing new and improved applications of EEG. We will have talks and demos from four groups on their latest technologies for acquiring and processing the EEG which are making the use of EEG more practical. The target audience of the workshop is the whole community of the IEEE EMBS Society interested in brain research.

Full-day

A Hands-on Approach to Neural Connectivity Inference Methods

08:30-12:30 / 13:30-17:30

Location: Plonsey Room

Registration Required

Organizers

- Luiz A. Baccalá -IEEE Member - EMBS TC BSP Member
- Koichi Sameshima - IEEE Member - EMBS TC BSP Member
- Laura Astolfi - IEEE EMBS Member- EMBS TC BSP Chair

Speakers

- Mingzhou Ding, University of Florida, United States
- Koichi Sameshima, University of Sao Paulo, Brazil
- Luiz A. Baccalá, University of São Paulo, Brazil
- Laura Astolfi, University of Rome Sapienza, Italy

Abstract

The workshop intends to provide a hands-on learning opportunity. In addition to examining in detail conceptual aspects associated to connectivity estimation from neuroelectrical and hemodynamic data we intend to shorten the learning curve of potential users of connectivity analysis software in regard to inferential aspects and the possible caveats and pitfalls the user may encounter. The full day of activity will consist of short morning overview talks, addressing the basic principles, methodological issues, caveat and pitfalls, and examples of application of the software to real data followed by an afternoon devoted to software use and one-to-one discussion with attendees who will have the opportunity to process workshop examples and their own data by bringing their own laptops. This will enable them to benefit from discussing their results and modelling diagnostics with the workshop experts. Attendees must bring Matlab/Octave if they wish to take part in the practical activities. Information about previous workshop editions together with software and further workshop details will be made available at <http://www.lcs.poli.usp.br/~baccala/pdc/handson/>.

Full-day

Current and Future Challenges in Robotics Research for Biomedical Applications

08:30-12:30 / 13:30-17:30

Location: Schmitt Room

Registration Required

Organizers

- Prof. Sohee Kim (IEEE-EMBC Member)
- Prof. Cheol Song

Speakers

- Cheol Song, DGIST
- Jaesoon Choi, Asan Medical Center / University of Ulsan College of Medicine
- Iulian Iordachita, Johns Hopkins University
- Jonghyun Kim, DGIST
- Sang Wook Lee, Catholic University of America
- Sehoon Oh, DGIST
- Hieyong Jeong, Osaka University
- Sukho Park, DGIST
- Wei Wang, Institute of Microelectronics, Peking University
- Kyung-In Jang, DGIST
- Jae-Woong Jeong, University of Colorado at Boulder
- Sohee Kim, DGIST
- Florian Solzbacher, University of Utah

Abstract

In this workshop, diverse cutting-edge research topics in robotics for medical and biomedical applications will be discussed. Medical robotics is one of the fascinating multidisciplinary fields that combine mechanical, electrical and electronics engineering, computer science, and mechatronics. The goal of this workshop is to bring together the researchers from robotics engineering community and from medical community who are interested in the state-of-the-art research trends and advances in robotics technologies for medical uses. Current research efforts toward next-generation medical robotics technologies will be overviewed by international researchers, in two sessions of macro-scale robotics and micro-scale robotics. In macro-scale, surgical robotics such as ultra-high precision surgical systems and robot-assisted surgery, rehabilitation robots and sport training robotic systems will be presented. In micro-scale, bio-integrated and bio-hybrid robotics such as microrobots, wearable and implantable sensors and systems driven by advances in nano- and micro-electro-mechanical system (MEMS) technologies will be presented, which will be directed toward the integration of biological systems and robotic systems. It will be a unique platform to overview diverse robotics research for medical applications in macro-scale as well as in micro-scale.

Minisymposia

Title	Organizers	Where & When
Recent Progress in Biosignal-Based Human-Computer Interaction	Chang-Hwan Im* Han-Jeong Hwang	Wednesday July 12, 2017 08:00-09:30 Roentgen Hall
Emerging Methods in Medical Image Analysis	Hiroshi Fujita Gobert Lee* (Australia)	Wednesday July 12, 2017 08:00-09:30 Schaldach Room
Bioimpedance in Biomedical Applications and Research: Concepts	Pedro Bertemes-filho	Wednesday July 12, 2017 08:00-09:30 Rushmer Room
Recent Advances on Image-Guided Devices and Therapies	Lisa Xuemin Xu* Brian Fowlkes	Wednesday July 12, 2017 08:00-09:30 Cho Room
Next Generation Intravascular Imaging I	Hongki Yoo, Hanyang University, Seoul, South Korea	Wednesday July 12, 2017 08:00-09:30 Park Room
Recent Advances in Neural Stimulation for Cortical Neural Interfaces	Shelley Fried* (USA)	Wednesday July 12, 2017 08:00-09:30 Plonsey Room
Brain Signal Processing for Brain-Computer Interfaces (BCIs)	Sung-Phil Kim* (Korea, South)	Wednesday July 12, 2017 14:20-15:50 Roentgen Hall
Next Generation Intravascular Imaging II	Hongki Yoo, Hanyang University, Seoul, South Korea	Wednesday July 12, 2017 14:20-15:50 Park Room
Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea I	Michael Khoo* Thomas Penzel (USA)	Thursday July 13, 2017 08:00-09:30 Webster Room
Current Advances in Seismocardiography and Ballistocardiography	Kouhyar Tavakolian* Marco Di Rienzo (USA)	Thursday July 13, 2017 08:00-09:30 Lee Room
Challenges in the Restoration of Vision through Retinal Neurostimulation	Yasin Dhaher Keith Gordon (USA)	Thursday July 13, 2017 08:00-09:30 Plonsey Room
Neural Hyperscanning: Toward Multiple-Brain Models of Cognitive Functions	Laura Astolfi Mingzhou Ding (Italy)	Thursday July 13, 2017 10:50-12:20 Roentgen Hall

Minisymposia

Title	Organizers	Where & When
Authentication using Biological Signals	Kwang S. Park Jason Kim* (Korea, South)	Thursday July 13, 2017 10:50-12:20 Schmitt Room
Recent Advances on Cuffless Blood Pressure Measurement Technology I	Jin-Oh Hahn Omer Inan (USA)	Thursday July 13, 2017 10:50-12:20 Greatbatch Room
Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea II	Michael Khoo* Thomas Penzel (USA)	Thursday July 13, 2017 10:50-12:20 Webster Room
Radiation Induced Acoustic Imaging	Jung-Joon Min* Changho Lee Chulhong Kim (Korea, South)	Thursday July 13, 2017 10:50-12:20 Cho Room
Emerging Technologies for Cuffless Unobtrusive Blood Pressure Monitoring: Celebration of 200th Birth Anniversary of Carl Ludwig	Carole C. Carey* Xiao-Rong Ding	Thursday July 13, 2017 10:50-12:20 Lee Room
Recent Advances on Cuffless Blood Pressure Measurement Technology II	Ramakrishna Mukkamala Lalit K. Mestha (USA)	Thursday July 13, 2017 14:20-15:50 Greatbatch Room
Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea III (Issues in Therapeutic Modalities for Sleep-Disordered Breathing)	Michael Khoo* Thomas Penzel (USA)	Thursday July 13, 2017 14:20-15:50 Webster Room
Tissue Electromagnetic Property Mapping using Magnetic Resonance Imaging (MRI)	Joonsung Lee* Seung-Kyun Lee Yi Wang Jongho Lee (Korea, South)	Thursday July 13, 2017 14:20-15:50 Park Room
Opportunities and Challenges for Wearable Medical Devices	Sung-Min Park* Kak Namkoong (Korea, South)	Friday July 14, 2017 08:00-09:30 Lee Room
Neural Prosthetic Devices Usable for Animal and Clinical Studies, in Asian Countries	Yuki Hayashida* Kyung Hwan Kim (Japan)	Friday July 14, 2017 08:00-09:30 Plonsey Room
Implementation of Information Technologies for Biomedical Engineering	Chulhong Kim Keiichi Horio (Korea, South)	Friday July 14, 2017 10:50-12:20 Rushmer Room
Rehabilitation Technologies for Neurological Disorders using Neuromodulations	Ning Lan* C. Minos Niu (China)	Friday July 14, 2017 10:50-12:20 Herrick Room

Minisymposia

Title	Organizers	Where & When
Contemporary Diagnostic Devices in Traditional Eastern Medicine: Overview of the Research Activities at KIOM	Jaek U Kim* (Korea, South)	Friday July 14, 2017 14:20-15:50 Dunn Room
Advanced Robotic Surgery based on Deep Tissue Imaging and Haptic Feedback Technology	Chulhong Kim* Wankyun Chung (Korea, South)	Friday July 14, 2017 14:20-15:50 Rushmer Room
Frontiers in Wavefront Shaping Techniques	Puxiang Lai* Yongkeun Park (China)	Saturday July 15, 2017 08:00-09:30 Cho Room
Destabilizing Locomotor Paradigms: Understanding Motor Adaptations Post Stroke	Yasin Dhaher Keith Gordon (USA)	Saturday July 15, 2017 08:00-09:30 Plonsey Room
Bioprinting for Regenerative Medicine Applications	Sungjune Jung Jinah Jang (Korea, South)	Saturday July 15, 2017 10:50-12:20 Aworykin Room
TRPM Channels by Multi-hierarchical Analysis: Measurement and Modeling	Xin Zhu (Japan)	Saturday July 15, 2017 14:20-15:50 Greatbatch Room

Special Sessions

Multiscale Biomedical Engineering Systems in Health & Disease

Wednesday, July 12, 2017, 08:00-09:30

Location: Zworykin Room

Organizers

- Jungkyu (Jay) Kim, Texas Tech University
- Jennifer H. Shin, KAIST

Speakers

- **Introduction of Multiscale Biomedical Engineering Systems**
Hanjoong Jo, Emory
- **Biomimetic Nanomaterials for Targeting Antibiotic Resistant Pathogens**
Min-Ho Kim, Kent State University
- **Pathomimetic Human Gut Inflammation-on-a-Chip**
Hyun Jung Kim, The University of Texas at Austin
- **Biomaterials-Based 3D Cell Printing for Next-Generation Therapeutics and Diagnostics**
Jinah Jang, Postech,
- **Brain/Bio Medical Microsystems**
Hyunjoo Jenny Lee, KAIST
- **Actin Cytoskeleton Organization in Vitro under Mechanical Stimulation**
Hyungsuk Lee, Yonsei University,
- **Microfluidic Techniques for Studying Mechanobiology of Valvular Cells**
Jungkyu (Jay) Kim, Texas Tech University

Abstract

Biomedical engineering systems are highly multiscale and multidimensional, which are broad and parallel the most advanced developments of disease modeling, diagnosis, and treatment. By discussing the interconnection from cellular to organ levels, we will be able to improve the understanding of both biophysical and biochemical parameters to obtain a big picture of our body system with the considerations of inherent engineering limitations. This session offers several presentations ranging from disease modeling, diagnosis, and treatment based on micro/nanotechnologies enabled platforms for multiscale biomedical engineering approach.

Recent Progresses in Computed Tomography: From Data Acquisition to Quality Evaluation

Thursday, July 13, 2017, 08:00-09:30

Location: Park Room

Organizers

- Seungryoung Cho, Associate Professor, Korea Advanced Institute of Science and Technology, Korea

Speakers

- **Various Scanning Approaches in CT Imaging with Advanced Technologies**
Seungryoung Cho, Assoc. Professor (KAIST, Korea)
- **Algorithm-Enabled Low-Cost C-arm CBCT of High Utility in Image-Guided Interventional Procedures**
Xiaochuan Pan, Professor (University of Chicago, USA)

- **Deep Learning in CT from Acquisition to Processing**
Namkug Kim, Asst. Professor (Asan Medical Center, Korea)
- **Task-Based Image Quality Assessment in CT**
Lifeng Yu, Assoc. Professor (Mayo Clinics, USA)

Abstract

As technologies advance in both hardware components and software parts in computed tomography, unseen performances at much less radiation dose and applications with richer information are under active exploitation. Innovative sampling techniques, high performance iterative image reconstruction, deep learning based image analysis, and clinical assessment of image quality would be some examples of recent progress in CT. Inviting the leading experts of this field to form a special session would provide a focused opportunity to the speakers to provide an insightful review of the recent advances in the field and to disseminate their seminal findings. The audience would be able to have a time to look back at and forward to the cutting edge technologies in a well-rounded manner and to participate vigorously in the discussion.

EMBC/KOptS/KOSOMBE Joint Program - Lutronic Symposium: Issues in Ophthalmology and Vision Sciences
Thursday, July 13, 2017, 10:50-12:20
Location: Rushmer Room

Organizers

- Jongmo Seo, IEEE Member

Speakers

- **Optical Treatment: Cross-linking in Corneal Ectasis**
Jinkwon Jeong, Department of Ophthalmology, Soonchunhyang University Hospital
- **Laser Treatments in Glaucoma**
Haksu Kyung, Department of Ophthalmology, National Medical Center (NMC)
- **Beyond Image Quality for Recent Displays**
Youngkyung Park, Ewha Womans University
- **What can We Measure in the Eye in the Mobile Healthcare Era?**
Jongmo Seo, Department of Electrical and Computer Engineering, Seoul National University (SNU)

Abstract

Since the Galileo's finding of the optical properties of human eye and up to the Helmholtz's investigation of optics, ophthalmology and vision sciences have kept on simultaneous progress by exchanging their knowledge intimately. Recent advances of biomedical engineering also accelerates this process, and everybody is accustomed to the up-to-date treatment modalities such as LASIK/EXCIMER laser surgery. Display technologies are also based on the knowledge of the vision science, and the futuristic mobile healthcare would like to adopt many information from the eye. Even though a single session cannot cover all the topics of biomedical engineering side of the ophthalmology and vision sciences, some of the interesting topics will be introduced in this session.

This symposium is provided by the Korean Optometry Society (KOptS) and Korean Society of Medical and Biological Engineering (KOSOMBE)

NI LabVIEW Hands on Seminar
Thursday, July 13, 2017, 14:20-15:50
Location: Min Room

Organizers

- Hangil Cho, National Instruments Korea Technical Marketing

Speakers

- NI LabVIEW Hands on Seminar
Hangil Cho, National Instruments Korea Technical Marketing

Abstract

LabVIEW is an integrated development environment designed specifically for engineers and scientists building measurement and control systems. LabVIEW hands on seminar gives you the chance to explore the LabVIEW environment, dataflow programming, and common LabVIEW development techniques in a hands-on format.

Hospital - Industry Collaborative R & D Program in South Korea
Friday, July 14, 2017, 08:00-09:30
Location: Dunn Room

Organizers

- Young Huh, KIET, Korea

Speakers

- **Biomedical Technology Commercialization: a Value Chain Perspective**
Shin Cheul Kim, Director of Technology Transfer Office and Managing Director of Versitech Limited, University of Hong Kong
- **R&BD Platform Specialized in Medical Imaging Equipment: SNUBH Experience**
Hak-Jong Lee, Dept. of Radiology, and Medical Device R&D Center, Seoul National University Bundang Hospital
- **Overcoming the Valley of Death through Medical Device Platforms**
Kun-Woo Park, Professor of Neurology Korea University Medical Center Director of Korea University Hospital, Medical Device Innovation Center
- **Hospital Based Platform for Development and Marketing of in Vitro Diagnostic Devices**
Kyung-Ja Han, Dept. of Laboratory Medicine, Seoul St. Mary's Hospital, The Catholic University of Korea

Abstract

Hospital enterprise linkage has several advantages such as R & D reflecting the hospital needs and participating in product development by the clinician. In addition, it is possible to successfully promote the development of new technology products related to demand for hospitals that can enter the global market and the domestic luxury medical device technology through cooperation research and development. Clinical trial / clinical evaluation through hospital business link is easy for product problem and cause discovery, and product quality competitiveness can be improved through solution support technology. In this session, we will discuss and discuss the hospital based research platform in Korea.

Standard in Radiological Medicine

Friday, July 14, 2017, 08:00-09:30

Location: Geddes Room

Organizers

- Young Huh, KEIT, Korea

Speakers

- **Standard and Radiation therapy**
Il sung Cho (Staff Researcher), Korea Institution of Radiological & Medcial Sciences
- **Status and Performance Requirements of Boron-Neutron Capture Therapy (BNCT)**
Young Kyung Lim, Ph.D. (Medical Physicist), National Cancer Center
- **Performance Requirements of Medical Carbon-Ion Accelerator**
Prof. Dong Wook Kim (Medical Physicist), Kyung Hee University Hospital at GandDong
- **Industry Trends in Nuclear Medicine Scanners**
Prof. Jung Yeol Yeom, Korea Univ.

Abstract

Radiation therapy and nuclear medicine combine physics, biology, accelerator engineering and medicine. From early radiation therapy using radioactive isotopes to modern radiology using large accelerators, radiation medicine continues to evolve, absorbing computer control technology and robotic technology based on state-of-the-art technology. In this session, we will discuss the latest trends in radiological equipment and the requirements for safe use of these technologies and discuss how they apply to standard development.

Current Trends in Standardization of Medical Devices in Traditional Medicine

Friday, July 14, 2017, 10:50-12:20

Location: Dunn Room

Organizers

- Young Huh, KEIT, Korea

Speakers

- **Current Trends of Standardization on Medical Devices in Traditional Medicine**
Sunmi CHOI, Director of KM Standards Center, Korea Institute of Oriental Medicine
- **Standardization on Computerized Tongue Image Analysis System**
Jihye Kim (Researcher), Keun Ho Kim*, KM Fundamental Research Division, Korea Institute of Oriental Medicine
- **Current Trends and Technologies of Tonometry Radial Pulse Device Standardization**
HeeJung KANG (CEO), DAEYOMEDI Co., Ltd.

Abstract

ISO established Technical Committee 249 to develop the international standards in traditional medicine in 2009. The scope of the technical committee is to develop the standards on medicinal herbs and products, medical devices, and terminology and informatics in traditional medicine. Some international standards related to medical devices including acupuncture needles, herbal decoction apparatus, moxibustion devices and intradermal acupuncture needles have been published recently.

Standard of Dental Devices

Friday, July 14, 2017, 10:50-12:20

Location: Geddes Room

Organizers

- Young Huh, KEIT, Korea

Speakers

- **Standards of Biocompatibility Test for Medical & Dental Devices**
Kwang-Mahn Kim (Professor), Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei University College of Dentistry
- **New Standards in Dental CAD/CAM**
Min-Ho Chang (Professor), Korea University, School of Mechanical Engineering
- **Development of International Standards for New Technology in Dentistry**
Jae-Sung Kwon (Ph.D.) Department and Research Institute of Dental Biomaterials and Bioengineering, Yonsei University College of Dentistry

Abstract

As the population ages around the world, interest in oral health is increasing, and the market for various dental medical devices such as implants is growing very rapidly. With the development of oral scanners, 3D printers, materials, software, and IT technology, the paradigm of dental care is changing, and dental instruments with different types of dental instruments or digital technologies are being developed. This session will review the standardized safety assessment methods for safe use of dental materials and medical devices.

Current Standard Trends for Electromedical Equipments

Friday, July 14, 2017, 14:20-15:50

Location: Geddes Room

Organizers

- Young Huh, KEIT, Korea

Speakers

- **Current Standard Trends for Electromedical Equipments**
Chan Yo Won (CEO), Dt&S Co., Ltd.,
- **Current Trends of Technical Issues and Standards of High Frequency Surgical Equipments and Surgical Laser Equipments**
Young-Seok SEO (Director of R&D Center), WONTECH Cp., Ltd.,
- **Emerging Trends and Technologies of International Standards on Medical Robots**
JEON IL Moon (Professor), Daegu Gyeongbuk Institute of Science and Technology(DGIST)

Abstract

In the IEC standard, electrical medical devices cover the safety and effectiveness of medical devices that use electricity in the 62nd Technical Committee. This session discusses common risk management practices for standardized medical devices. We will also look at trends in the latest laser surgical instruments and medical robotics technologies and to look at the latest trends in these standards.

Healthcare Innovation: Inspiring Global Open Consensus Standards

Saturday, July 15, 2017, 08:00-09:30

Location: Webster Room

Organizers

- Carole C. Carey, IEEE Senior Member, EMBS Member
- Young Lae Moon, IEEE Member
- William Ash, IEEE-SA

Speakers

- **Developing IEEE Interoperability Standards for Personal Health Devices Communications**
Daidi Zhong, Chongqing University
- **Moving Forward the IEEE Standardization Projects in 3D-Based Medical Device Application – Medical Visualization, Medical Data Management, 3D Simulation, Bio-CAD Format for Medical 3D Printing**
Young Lae Moon, Chosun University
- **Shaping the Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) Technology Roadmap: Challenges and Standardization Needs**
Yu Yuan, Senses Global Corporation
- **Need of Standards for Brain-Machine Interface Systems and Report on the Industry Connection (IC) Program in Neurotechnologies**
Ricardo Chavarriaga, Ecole Polytechnique Fédérale de Lausanne

Panel Discussion

- Nigel Lovell, University of New South Wales (UNSW)
- Yuan-Ting Zhang, Chinese University of Hong Kong
- Banu Onaral, Drexel University Philadelphia, PA, USA

Abstract

Novel technologies, in both medical and consumer devices, generally evolve faster than the development of standards. Rapidly expanding knowledge in science and biomedical engineering has in part led the speed in innovation of new personal and medical health devices. Next generation image-guided systems; advanced non-invasive brain-computer interfaces; wearable health devices for monitoring; and, display visualization techniques are some examples to name a few. IEEE and its standards development arm, the IEEE-SA, draw on the expertise of its technical societies to bring people and technology together. Industry consensus standards are developed in an open process based on input from interested parties worldwide. This session will highlight and provide current standardization information on specific technology areas, such as standards for 3D-based medical device applications, health informatics medical device communication, AR/VR (Augmented Reality, Virtual Reality), and the field of neurotechnologies. The dialogue will provide an opportunity to share best practices, identify additional gaps for future standards development as well as stimulate active involvement to help reduce the lag between technology and availability of standards.

Big Data to Improve Outcomes, Process, and Services in Health

Saturday, July 15, 2017, 08:00-09:30

Location: Schmitt Room

Organizers

- Metin Akay –IEEE-EMBS Member
- Giuseppe Fico – IEEE-EMBS Member

Speakers

- **Big Data for Active and Assisted Living**
Sergio Guillén
- **Knowledge Discovery about Mental Disorders from Multiparametric Data**
Enzo Pasquale Scilingo.
- **Big Data to Support Active and Healthy Ageing Solutions**
Maria Teresa Arredondo
- **Cohort Harmonization and Big Data Analytics for Satisfying the Unmet Needs in Sjögren's Syndrome**
Antonis Sakellarios
- **Big Data to Improve Decision Support in Head and Neck Cancer**
G. Fico

Abstract

It is often said about the Big data paradigm that everyone talks about it, nobody really knows how to do it, everyone thinks everyone else is doing it, so everyone claims. Nevertheless, the term is currently used in common language. What can be agreed is that when we talk about Big data we are referring to extracting information and knowledge from wide and heterogeneous data sources. In this special session we will share experiences on how knowledge is managed, controlled and generated in different healthcare sectors, like Personalized Medicine (Head&Neck Cancer, Sjögren's disorder), Active and Assisted Living, Public Health Policies and Mental Disorders.

Measurement in Biomedical Research

Saturday, July 15, 2017, 08:00-09:30

Location: Geddes Room

Organizers

- Chang Geun Kim, Ph.D.
- Wonsik Ahn, M.D.

Speakers

- **Respiratory Changes in Pulse Oximeter Plethysmography Amplitude in Children**
Ji-Hyun Lee M.D., Dept. of Anesthesiology and Pain Medicine Seoul National University Children's Hospital
- **Uncertainty Measurement of Optic Nerve Sheath Diameter using Ultrasound**
Hyo-Jin Byon, M.D., Department of Anesthesiology and Pain Medicine, Severance Hospital, Yonsei University College of Medicine
- **Thermography with Infrared Thermal Camera**
Jinyoung Oh, M.D., Department of Anesthesiology and Pain Medicine in Daejeon St. Mary's Hospital

Abstract

Measurement is the basic procedure in most biomedical engineering studies. Therefore, we think we are familiar with measurements and KNOW 'measurements' well. However, the actual situation is the opposite. Most biomedical engineering studies consist of measurements using objective devices. While we use objective devices, the appropriate method of applying the appropriate measuring device can adequately define "measurand" to compare different results. The measurand, traceability, and uncertainty are so important that "Bureau International des Poids et Mesures" (BIPM) has issued several guidelines under the name of "The Joint Committee for Guides in Metrology" (JCGM). These should also be applied to biomedical engineering research. We will present three themes under this principle. They improve the quality of biomedical engineering research.

Luncheon Symposium 1: EMBC/KOptS/KOSOMBE joint program - Heidelberg/Kisantech Symposium: Advances in Optical Coherence Tomography (OCT) in the field of Ophthalmology and the Clinical Applications

Thursday, July 13, 2017, 12:20-13:20

Location: Greatbatch Room

Organizers

- Jongmo Seo, IEEE Member

Speakers

- **Advances in Optical Coherence Tomography and the Clinical Applications in retinal diseases**
Eun Kyoung Lee, Department of Ophthalmology, Jeju National University (JNU)
- **Clinical Applications of Optical Coherence Tomography in Glaucoma**
Sang-Yoon Lee, Department of Ophthalmology, Jeju National University (JNU)

Abstract

Optical coherence tomography (OCT) is a noninvasive noncontact imaging technology that provides a high-resolution, cross-sectional image of the cornea, retina, retinal nerve fiber layer, choroid, and optic nerve head. Advances in OCT technology have revolutionized the clinical practice of ophthalmology in recent years. It allows detailed visualization of the eye structure on the level of individual cellular layers and provides substantial information about the pathologic changes in microstructures.

This symposium is provided by the Korean Optometry Society (KOptS) and Korean Society of Medical and Biological Engineering (KOSOMBE)

Luncheon Symposium 2: EMBC/KOptS/KOSOMBE joint program - Carl Zeiss Symposium: Recent Advances in Ophthalmic Laser Surgery

Thursday, July 13, 2017, 12:20-13:20

Location: Webster Room

Organizers

- Jongmo Seo, IEEE Member

Speakers

- **Principles of various ophthalmic laser**
Jongmo Seo, Department of Ophthalmology, Seoul National University Hospital (SNUH)
- **Updates of Laser Refractive Surgery**
Jinho Jeong, Department of Ophthalmology, Jeju National University (JNU)

Abstract

Laser is a crucial technology in the field of ophthalmology, from the diagnosis to the treatment. Optical Coherence Tomography changed the practice of the retina clinic and even change the paradigm of the diagnostic procedure. Laser photocoagulation of the ischemic retina saved the vision of the diabetic patients and the laser ablation of the cornea liberate the myopic patients from the eyeglasses or daily contact lens use. In this symposium, basics of the ophthalmic lasers and the advanced treatment modalities in the ophthalmology will be presented.

This symposium is provided by the Korean Optometry Society (KOptS) and Korean Society of Medical and Biological Engineering (KOSOMBE)

Invited Sessions

Title	Organizers	Where & When
Pharmaceutical Engineering for Smart Drug Delivery Systems	Cai, Lintao-Shenzhen, Institutes of Advanced Technology, Chinese Academy of Sciences	Wednesday July 12, 2017 08:00-09:30 Track T13 Dunn Room
Modeling and Estimation of the Respiratory System for Clinical Applications	Chbat, Nicolas W., Center of Excellence in Critical Care Innovation	Wednesday July 12, 2017 08:00-09:30 Track T15 Webster Room
Frontiers in Perinatal and Pediatric Imaging	Grisan, Enrico, University of Padova Linguraru, Marius George, Children's National Health System Lepore, Natasha, University of Southern California / Children's Hospital Los Angeles Wang, Yalin, Arizona State University	Wednesday July 12, 2017 14:20-15:50 Track T2 Cho Room
Voice Frequency Analysis: Expectation for the Convenient but Powerful Diagnostic Tool for Neuropsychiatric Disorders	Morimoto, Yuji, National Defense Medical College Tokuno, Shinichi Mitsuyoshi, Shunji Shinohara, Shuji Nakamura, Mitsuteru Higuchi, Masakazu, The Univ of Tokyo Omiya, Yasuhiro Hagiwara, Naoki, PST Inc.	Wednesday July 12, 2017 14:20-15:50 Track T10 Schmitt Room
Biomedical Applications of Terahertz Imaging and Spectroscopy	MacPherson, Emma, Chinese University of Hong Kong	Thursday July 13, 2017 08:00-09:30 Track T2 Cho Room
Modeling of Modern Devices and Technologies with Computational Human Phantoms I	Makarov, Sergey, Electrical and Computer Engineering, Worcester Polytechnic Institute Horner, Marc, ANSYS, Inc. Noetscher, Gregory, Worcester Polytechnic Institute	Thursday July 13, 2017 08:00-09:30 Track T12 Geddes Room
Body Sensor Networks Molecules, Radio, and Machine Learning III	Balasingham, Ilangko, Oslo Univ. Hospital and Norwegian Univ. of Science and Tech. Anzai, Daisuke, Nagoya Inst. of Tech. Sugimachi, Masaru, Natl Cardio Center Res. Inst.	Thursday July 13, 2017 08:00-09:30 Track T1 Roentgen Hall
Brain and Physiological Networks: Methods and Applications	Faes, Luca, University of Trento Ding, Lei, University of Oklahoma Astolfi, Laura, University of Rome Sapienza	Thursday July 13, 2017 08:00-09:30 Track T1 Roentgen Hall

Invited Sessions

Title	Organizers	Where & When
Modeling of Modern Devices and Technologies with Computational Human Phantoms II	Makarov, Sergey, Electrical and Computer Engineering, Worcester Polytechnic Institute Horner, Marc, ANSYS, Inc. Noetscher, Gregory, Worcester Polytechnic Institute	Thursday July 13, 2017 10:50-12:20 Track T12 Geddes Room
Modeling of Modern Devices and Technologies with Computational Human Phantoms III	Makarov, Sergey, Electrical and Computer Engineering, Worcester Polytechnic Institute Horner, Marc, ANSYS, Inc. Noetscher, Gregory, Worcester Polytechnic Institute	Thursday July 13, 2017 14:20-15:50 Track T12 Geddes Room
Signal Processing and Modelling Techniques for Fetal Monitoring	Khandoker, Ahsan Habib, Khalifa University of Science, Technology and Research	Thursday July 13, 2017 14:20-15:50 Track T17 Einthoven Hall
Wearable Devices for Cardiovascular Monitoring	Chon, Ki, Univ. of Connecticut Kim, Insoo, Univ. of Connecticut Health Center	Thursday July 13, 2017 14:20-15:50 Track T5 Lee Room
Deep Learning in Biomedical Image Analysis	Jeong, Won-Ki, Ulsan National Institute of Science and Technology (UNIST) Ye, Jong Chul, Korea Advanced Inst of Science & Tech	Thursday July 13, 2017 14:20-15:50 Track T14 Schaldach Room
Single Protein Sensors and Actuators	LU, Zuhong, Southeast University Chen, Antony, Peking University, College of Engineering	Friday July 14, 2017 08:00-09:30 Track T6 Zworykin Room
Body Sensor Networks Molecules, Radio, and Machine Learning I	Balasingham, Ilangko, Oslo Univ. Hospital and Norwegian Univ. of Science and Tech. Anzai, Daisuke, Nagoya Inst. of Tech. Sugimachi, Masaru, Natl Cardio Center Res. Inst.	Friday July 14, 2017 08:00-09:30 Track T4 Min Room
Microfluidic Systems for Cell Manipulation and Analysis	Chen, Weiqiang, New York University Lam, Raymond H. W., City University of Hong Kong	Friday July 14, 2017 10:50-12:20 Track T6 Zworykin Room
Body sensor Networks Molecules, Radio, and Machine Learning II	Balasingham, Ilangko, Oslo Univ. Hospital and Norwegian Univ. of Science and Tech. Anzai, Daisuke, Nagoya Inst. of Tech. Sugimachi, Masaru, Natl Cardio Center Res. Inst.	Friday July 14, 2017 10:50-12:20 Track T4 Min Room

Invited Sessions

Title	Organizers	Where & When
Body Sensor Networks Molecules, Radio, and Machine Learning III	Balasingham, Ilangko, Oslo Univ. Hospital and Norwegian Univ. of Science and Tech. Anzai, Daisuke, Nagoya Inst. of Tech. Sugimachi, Masaru, Natl Cardio Center Res. Inst.	Friday July 14, 2017 14:20-15:50 Track T4 Min Room
Biomedical Data Beyond Linear Correlation: Higher Order Statistics and Non-Gaussianity, Non-Linearity and Multifractality	Yamamoto, Yoshiharu, The University of Tokyo Abry, Patrice, ENS Lyon, CNRS	Friday July 14, 2017 14:20-15:50 Track T18 Montgomery Hall
Recent Advances in Ultrasound Medical Imaging	Yoo, Yangmo, Sogang University Kim, Hyung Ham, Pohang University of Science and Technology Managuli, Ravi, Hitachi Aloka Medical America, Inc.	Friday July 14, 2017 14:20-15:50 Track T2 Cho Room
Computational Models of Cardiac Electrophysiology and Mechanics	Shim, Eun Bo, Kangwon National University Leem, Chae Hun, University of Ulsan College of Medicine	Saturday July 15, 2017 08:00-09:30 Track T11 Greatbatch Room

Conference Editorial Board for EMBC 2017, Jeju Island, Korea

I would like to sincerely thank the following members of the Conference Editorial Board. There were 2962 submissions overall. 1451 of these were full-contributed manuscripts that were part of our rigorous peer-review process. These papers were reviewed with on average three reviewers per paper, but a minimum of two. Theme editors also made initial “accept/reject” decisions and created a draft scientific program for each theme.

There were also 124 Invited Sessions and 141 Minisymposia 1 page papers. These were also carefully reviewed by a separate review panel selected by the program committee.

Finally, there were also an exciting 901 Research Poster 1 page papers this year. These were reviewed by a special team of associate editors, handpicked by the local organizers and the EMB Technical Committees. I thank all of these individuals for their time as we rapidly reviewed them.

Each year we maintain the highest quality of papers being submitted, each with ratings and feedback given to authors from reviewers. The continued dedication and commitment of Editors, Associate Editors and Reviewers, makes this Annual Conference an active and vibrant community of science. I also want to warmly thank the members of the Editorial Board, listed below, who made my work a real pleasure. It has been an honour and privilege to be part of such a fine community.

James Patton, Editor in Chief for Conference Editorial Board

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Theme 02. Biomedical Imaging and Image Processing

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Theme 03. Micro/Nano- Bioengineering; Cellular/Tissue Engineering and Biomaterials

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Peixoto, Nathalia
Lord, Megan

Theme 04. Computational Systems and Synthetic Biology; Multiscale Modeling

Dash, Ranjan
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Theme 05. Cardiovascular and Respiratory Systems Engineering

Armoundas, Antonis
Chbat, Nicolas W.
Di Rienzo, Marco
Heldt, Thomas
Li, John K-J.
Sugimachi, Masaru
Tawhai, Merryn
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Theme 06. Neural and Rehabilitation Engineering

Abbas, James
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Lee, Hyunjoo Jenny
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Theme 07. Biomedical Sensors and Wearable Systems

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Lee, Hyunjoo Jenny
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Theme 08. Biorobotics and Biomechanics

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Theme 09. Therapeutic and Diagnostic Systems and Technologies

Chbat, Nicolas W.
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**Theme 10. Biomedical
and Health Informatics**

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**Theme 11. Biomedical Engineering
Education and Society**

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**Theme 12. Empowering Individual
Healthcare Decisions
through Technology**

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Chen, JIe

**Theme 13. Pharmaceutical
Engineering and Drug
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 Besio, W. G.
 Bezerra Soares, Heliana
 Bhatti, Pamela
 Bhuvanendran, Shivaprasad
 Bian, Junguo
 Bianchi, Anna Maria
 Bianchi, Elena
 Biffi Gentili, Guido
 Biffi, Emilia
 Bigan, Cristin
 Billbault, Jean-Marie
 Blanco-Velasco, Manuel
 Blankertz, Benjamin
 Blefari, Maria-Laura
 Bocchi, Leonardo
 Bojorges-Valdez, Erik Rene
 Bolea, Juan
 Bonacina, Stefano
 Bonato, Paolo
 Bones, P. J.
 Bonizzi, Pietro
 Bonnet, Stéphane
 Bonnetblanc, François
 Boric-Lubecke, Olga
 Bossa, Matias
 Boudaoud, Sofiane
 Bourdon, Allen
 Bourke, Alan
 Bradley, Andrew Peter
 Breen, Paul P
 Bridal, Lori
 Brieve, Jorge
 Bruns, Tim M.
 Buchner, Teodor
 Bulea, Thomas C.
 Bunyak, Filiz
 Burrowes, Kelly Suzanne
 Bursa, Miroslav
 Busha, Brett
 Butera, Robert
 Butlin, Mark
 Buxi, Dilpreet
 Buzurovic, Ivan
 Byrd, Israel
 Byun, Kyung Min
 Cai, Lintao
 Cai, Weidong
 Calcagnini, Giovanni
 Caliano, Giosue
 Campolo, Domenico
 Cao, Youfang
 Capadona, Jeffrey
 Carbonaro, Nicola
 Carey, Carole C.
 Cariñena Amigo, Purificación
 Carlson, Brian
 Carpaneto, Jacopo
 Carriou, Vincent
 Carrozza, Maria Chiara
 Carson, James
 Carson, Paul L.
 Carter, Paul Michael
 Casadio, Maura
 Casals, Alicia
 Casas, Oscar
 Casaseca-De-La-Higuera, P.
 Casson, Alexander James
 Castañeda, Benjamín
 Castaneda-Villa, Norma
 Castellanos-Dominguez, G.
 Castiglioni, Paolo
 Cathebras, Guy
 Cattelani, Luca
 Caulfield, Brian
 Cecchi, Francesca
 Cecotti, Hubert
 Celler, Branko George
 Cenciarini, Massimo
 Cerrolaza, Juan J.
 Cerutti, Sergio
 Cha, Jung Won
 Chah, Ehsan
 Chai, Rifai
 Chaimanonart, Nattapon
 Chan, Chung
 Chan, Kevin C.
 Chan, Rosa H. M.
 Chan, Russell W.
 Chang, Sarah R.
 Charkhkar, Hamid
 Charleston-Villalobos, Sonia

Chbat, Nicolas W.	Dagnino, Giulio	Fenster, Aaron	Gorgutsa, Stephan
Chee, Youngjoon	Dai, Yang	Fernández-Breis, J.T.	Gough, David
Cheikh Latyr, Fall	Dali, Melissa	Fernandez-Leal, Angel	Goujon, Jean-Marc
Chemori, Ahmed	Dao, Tien-Tuan	Fernandez-Llatas, Carlos	Gouveia, Sonia
Chen, Fei	Das, Anup	Ferrandez, Jose M.	Grebe, Reinhard
Chen, Gin-Shin	Dash, Ranjan	Ferrari, Vincenzo	Greco, Alberto
Chen, Jie	Dasika, Santosh	Figueiras, Edite	Greene, Barry R.
Chen, Longyan	Dauwels, Justin	Filipovic, Nenad	Gu, Zhen
Chen, Mei-Jung	D'avenio, Giuseppe	Filos, Dimitrios	Guan, Cuntai
Chen, Weiqiang	De Carvalho, Paulo	Finkelstein, Stanley	Gubbi, Jayavardhana
Chen, Wenxi	De Chazal, Philip	Finley, James	Guidi, Andrea
Chen, Xiang	De Jonckheere, Julien	Fletcher, Richard Ribon	Guijarro, Enrique
Chen, Xing	De Jongh Curry, Amy	Fleury, Anthony	Guillen, Sergio
Chen, Yafen	De Maria, Beatrice	Flores, Francisco Javier	Guiraud, David
Chen, Yan	De Santis, Silvia	Fontana, Juan M.	Guo, Hua
Chen, Yao	De Toledo, Paula	Fontecave-Jallon, Julie	Guo, Lei
Chen, Ying	De Vos, Maarten	Fortune, Emma	Gupta, Disha
Chen, Yuxuan	Dehkhoda, Fahimeh	Fotiadis, Dimitrios I.	Gutierrez, Gonzalo Cesar
Chen, Zhi	Del Gaudio, Costantino	Fragomeni, Gionata	Gutierrez, Mario Ibrahim
Chendeb El Rai, Marwa	Dhawan, Atam	Frangou, Polytimi	Gwirc, Sergio N.
Cheng, Leo K	Di Rienzo, Marco	Franklin, David W.	Hadjileontiadis, Leontios
Cheng, Teddy Man Lai	Diab, Ahmad	Frenea-Robin, Marie	Haemmerich, Dieter
Chestek, Cynthia	Diciotti, Stefano	Friboulet, Denis	Haider, Mohammad
Chiofolo, Caitlyn	Dickhaus, Hartmut	Friedrich, Christoph M.	Hajdu, Andras
Chiu, Hung-Wen	Digiovanna, Jack	Frigo, Carlo	Halamek, Josef
Cho, Jongman	Dillenseger, Jean-Louis	Fripp, Jurgen	Haldar, Justin
Cho, Seungryong	Ding, Lei	Fujiwara, Koichi	Hallberg, Josef
Choi, Changmok	Dinh, Anh	Fukayama, Osamu	Hallez, Hans
Choi, Jin-Woo	Do, An H.	Fukuoka, Yutaka	Hamadicharef, Brahim
Choi, Samjin	Doheny, Emer	Fumene Feruglio, Paolo	Han, Chengzong
Chon, Ki	Doherty, Kyle	Gabran, Salam	Hasanuzzaman, Md.
Chou, Cheng-Ying	Dojat, Michel	Gagnon-Turcotte, Gabriel	Hassan, Mahmoud
Chou, Nee-Yin	Dokos, Socrates	Galiana, Henrietta L.	Haueisen, Jens
Chouvarda, Ioanna	Dommel, Norbert Brian	Gallardo-Hernández, A.G.	Hayashibe, Mitsuhiko
Chowdhury, Sagar	Dong-Pyo, Jang	Gallego, Juan Alvaro	Hayn, Dieter
Chrysostomou, C.	Donnelly, Mark	Ganesan, Karthikeyan	He, Renjie
Chudacek, Vaclav	Dourado, António	Gao, Fan	He, Tiancheng
Cibis, Tobias	Dragomir, Andrei	Gao, Mingwu	Hedin, Daniel
Cieslak-Blinowska, K.	Drzewiecki, Gary	Gao, Shangkai	Hegde, Nagaraj
Cikajlo, Imre	Duan, Qi	Garcia, Maria	Held, Claudio M.
Cimetta, Elisa	Duggento, Andrea	Garcia-Casado, Javier	Heldt, Thomas
Ciofani, Gianni	Duplaga, Mariusz	García-Gordillo, Carlos	Hemm-Ode, Simone
Citi, Luca	Durfee, William	Garcia-Molina, G.N.	Henriques, Jorge
Clark, John Tobey	Dutta, Anirban	Gard, Steven	Herman, Pawel
Clarke, Malcolm	Earley, Eric	Garde, Ainara	Hernandez, Antonio
Cleland, Ian	Eberl, Stefan	Gardiner, Bruce	Hernandez-Matos, Enrique
Clerc, Maureen	Elfaramawy, Tamer	Garvin, Mona	Hernando, David
Cloherly, Shaun L.	Elmahdy, Mohamed S.	Gelpi, Ricardo	Hevia-Montiel, Nidiyare
Cohen, Maurice	Epps, Julien	Gentili, Rodolphe	Hiremath, Shivayogi V
Coimbra, Miguel	Epstein, David	Germany, Enrique I.	Hiroi, Noriko
Collins, Scott D.	Escalona, Omar Jacinto	Ghafar-Zadeh, Ebrahim	Hoffmann, Kenneth
Colominas, Marcelo	Escudero, Javier	Ghareh Gozlou, Morteza	Hoffmann, Klaus-Peter
Comtois, Philippe	Eskofier, Bjoern M	Ghoraani, Behnaz	Hofmann, Ulrich G.
Cook, Mark	Estépp, Justin Ronald	Giannakeas, Nikolaos	Holobar, Ales
Corino, Valentina	Evans, Daniel	Gil, Eduardo	Honeine, Paul
Cornforth, David John	Faes, Luca	Giraldo, Beatriz	Hong, Xiangfei
Costa, Silvana C.	Falk, Tiago	Girgis, Hani Z.	Hori, Junichi
Croonenborghs, Tom	Fanelli, Andrea	Golemati, Spyretta	Hornero, Roberto
Cuenod, Charles A	Farag, Aly A.	Gomez, Carlos	Horowitz, Justin
Cui, Hongzhu	Farella, Elisabetta	Gomez-Pilar, Javier	Hou, Zeng-Guang
Cui, Hui	Farina, Dario	Gomis, Pedro	Hradetzky, David
Cunha, Joao Paulo Silva	Farooq, Muhammad	Gong, Shaoqin	Hu, Sijung
Cvetkovic, Dean	Farooq, Omar	Gonzalez Ballester, M.A.	Hu, Yong
Cysarz, Dirk	Farrugia, Brooke	Gonzalez Suarez, Ana	Huang, Felix
Czerwin, Benjamin	Fazel-Rezai, Reza	González, Francisco Javier	Huang, He
D. Vilar Wanderley, C.	Feng, Tao	Gonzalez-Camarena, Ramon	Huang, Lei

Huang, Ming	Jurak, Pavel	Koswara, Andy	Liao, Hongen
Huang, Weimin	Kabir, Muammar M.	Kota, Srinivas	Lima, Carlos Manuel G.S.
Huang, Yanping	Kaczmarek, Mariusz	Kotecha, Mrignayani	Lin, Chii-Wann
Hudgins, Bernard	Kadem, Lyes	Koutkias, Vassilis	Lin, Chin-Teng
Hudson, Donna L	Kaji, Hirokazu	Kovács, Sándor J	Lin, Kang Ping
Hughes, Glen	Kamaruddin, Norhaslinda	Koyanagi, Ken'ichi	Lin, Meishan
Humeau-Heurtier, Anne	Kamath, Vidya	Kozachkov, Leo	Lindecrantz, Kaj
Hunyadi, Borbala	Kamel, Nidal	Krausz, Nili Eliana	Lindqvist, Blerta
Husar, Peter	Kameneva, Tatiana	Kretowski, Marek	Linte, Cristian A.
Hussain, Hanaa	Kamiya, Atsunori	Krishnamurthi, Narayanan	Lipps, David
Hyttinen, Jari	Kamper, Derek	Krishnan, Sridhar	Liu, Chenguang
Iaizzo, Paul	Kant Kumar, Dinesh	Kroll, Mark William	Liu, Jianbo
Iasemidis, Leonidas	Kao, Chien-Min	Krueger, Thilo B	Liu, Jianfei
Ifechor, Emmanuel	Kaplan, Alan D.	Krugger, Frithjof	Liu, Yinan
Igual Garcia, Jorge	Kar, Saptarshi	Kugiumtzis, Dimitris	Liu, Yipeng
Ihtatho, Dani	Karakostas, Tasos	Kumamoto, Etsuko	Lleida, Eduardo
Ilbay, Gul	Karamolegkos, Nikolaos	Kumar, Neelesh	Loncar-Turukalo, Tatjana
Im, Chang-Hwan	Karampinos, Dimitrios	Kumar, Nitish	Lopez-Meyer, Paulo
Inan, Omer	Karanasiou, Irene	Kuroda, Tomohiro	Lord, Megan
Indovina, Iole	Karimi, Yasha	Kuroda, Yoshihiro	Lou, Bin
Ingraham, Kimberly	Kark, Lauren	Kurugollu, Fatih	Louis-Dorr, Valerie
Ino, Shuichi	Karlen, Walter	Kuzmanic Skelin, Ana	Lowery, Madeleine
Inoue, Yoshihiro	Karmakar, Chandan	Kyoso, Masaki	Ludvig, Daniel
Iordachita, Iulian	Karsmakers, Peter	Kyriacou, Efthymoulos	Luo, Jianwen
Iozzia, Luca	Karunanithi, Mohanraj	Lace, Rebecca	Lymberis, Andreas
Iqbal, Kamran	Karvelis, Petros	Lackovic, Igor	Lymberopoulos, Dimitrios
Iramina, Keiji	Katayama, Yoshinori	Laforet, Jeremy	Lyu, Jingyuan
Islam, Kamrul	Kato, Kazuo	Lahuec, Cyril	Ma, Da
Istrate, Dan	Kawada, Toru	Laiwalla, Farah	Ma, Jingfei
Itai, Akitoshi	Kawaguchi, Minato	Lampros, Christos	Ma, Yifan
Iwahashi, Masakuni	Kazanizides, Peter	Lanata', Antonio	Macgillivray, Thomas
Iwasaki, Kiyotaka	Kearney, Robert Edward	Lang, Elmar W.	Macpherson, Emma
Izumi, Shintaro	Keller, Thierry	Larsen, Mark Erik	Madhushri, Priyanka
Jabbari, Esmail	Kerkhof, Peter Lm	Larson-Prior, Linda	Maeda, Yuka
Jacquemet, Vincent	Kerns, Douglas	Laschi, Cecilia	Maestri, Roberto
Jaffrezic-Renault, Nicole	Khan, Ali R.	Lazareck, Lisa Joanna	Magenes, Giovanni
Jammeh, Emmanuel	Khan, Masood Mehmood	Lázaro, Jesús	Maghsoudloo, Esmaeel
Jämsä, Timo	Khandoker, Ahsan Habib	Lecornu, Laurent	Magjarevic, Ratko
Jané, Raimon	Kharche, Sanjay	Lederman, Dror	Maglavera, Stavroula
Javaid, Abdul Qadir	Khoo, Michael	Lee, Chang Won	Maglaveras, Nikolaos
Javorka, Michal	Khraiche, Massoud	Lee, Chang-Joon	Maglogiannis, Ilias
Jennane, Rachid	Khushaba, Rami N.	Lee, Gyudo	Mahadevappa, Manjunatha
Ji, Jim Xiuquan	Kiani, Mehdi	Lee, Hyowon	Maharathi, Biswajit
Jia, Wenyan	Kidmose, Preben	Lee, Hyunjoo Jenny	Mahmoudi, Said
Jiang, Ning	Kiguchi, Kazuo	Lee, Jiann-Der	Mainardi, Luca
Jimbo, Yasuhiko	Kikuchi, Takehito	Lee, Jong-Shill	Makarov, Sergey
Jimenez-Alaniz, Juan R.	Kilintzis, Vassilis	Lee, Khuan Y.	Makowiec, Danuta
Jimenez-Gonzalez, Aida	Kim, Desok	Lee, Mei-Hua	Malandain, Gregoire
Jin, Dakai	Kim, Jinman	Lee, Sabrina	Malek , Adouni, Malek
Jin, Tao	Kim, Keun Ho	Lee, Sang Woo	Mañanas, Miquel Angel
Jin, Yan	Kim, Sung June	Lee, Sang Wook	Mancuso, Matteo
Jin, Zhanpeng	Kim, Tae-Seong	Lee, Seulki	Manhas, Neeraj
Jo, Cheolwoo	Kim, Yongmin	Lee, Shuenn-Yuh	Mansoor, Awais
Jo, Javier Antonio	Kimura, Yuichi	Leistritz, Lutz	Mansor, Wahidah
Johansen, Peter	King, Kevin	Lemoyne, Robert	Marin, Thibault
Johari, Juliana	Kinney, Allison	Lempka, Scott	Marinazzo, Daniele
Johnson, Curtis	Kiyono, Ken	Lepore, Natasha	Mark, Roger
Jones, Edward	Knaflitz, Marco	Lerner, Zachary	Marozas, Vaidotas
Jones, Richard D.	Kobashi, Syoji	Levy, Pierre	Marque, Catherine
Joseph, Wout	Kocyigit, Yucel	Lhotska, Lenka	Marquez, Jorge Alberto
Joshi, Vinayak	Komandur, Sashidharan	Li, Jintao	Martel, Sylvain
Jovanov, Emil	Kong, Jun	Li, John K-J.	Martínez, Juan Pablo
Juan Manuel, Artacho	Kong, Wanzeng	Li, Le	Martinez-Licon, Fabiola
Juhola, Martti	Korhonen, Ilkka	Li, Rui	Martinsen, Ørjan G
Jung, Tzyy-Ping	Kortelainen, Jukka	Li, Shuo	Martis, Roshan Joy
Jung, Yongwoon	Kostoglou, Kyriaki	Liang, Jie	Maruvada, Subha

Masè, Michela	Murphy, Matthew	Park, Kidong	Rafferty, Joseph
Masè, Michela	Mussa-Ivaldi, Ferdinando	Parmar, Pritesh	Rajpoot, Nasir
Massé, Fabien	Mynard, Jonathan	Parry, R. Mitchell	Ramaswamy, Palaniappan
Masuda, Kohji	Naemura, Kiyoshi	Passamonti, Luca	Ramos-Garcia, Raul Ignacio
Mathiak, Klaus	Nagano, Hanatsu	Passariello, Gianfranco	Ranganathan, Rajiv
Matrone, Giulia	Nagaoka, Takashi	Patrick, Erin	Ranta, Radu
Matsopoulos, George K	Naik, Ganesh R	Patti, Chanakya Reddy	Ranuzzi, Giovanni
Matsuda, Tetsuya	Nakajima, Kazuki	Pattichis, Constantinos	Ravazzani, Paolo
Matsumoto, Monica	Nakamura, Toru	Pattichis, Marios	Razansky, Daniel
Mavoungou, Philippe	Namani, Ravi	Patton, James	Redmond, Stephen James
May, Elebeoba	Nanayakkara, Nuwan D.	Patwari, Neal	Reed, Kyle
Mazzoleni, Stefano	Narasimhan, Seetharam	Paul Chaudhuri, B.	Reissman, Timothy
Mccullagh, Paul	Nardelli, Mimma	Paul, Brince	Renì, Gianluigi
Mcgrath, Michael James	Nasserolelami, Bahman	Pavel, Misha	Reuss, James
Mcgregor, Carolyn	Navarro, Xavier	Payne, Stephen John	Reynolds, Hayley Maria
Medvedev, Alexander	Naveed, Hammad	Pécreaux, Jacques	Reznik, Leon
Meglan, Dwight	Nelson, John	Peixoto, Nathalia	Rezzoug, Nasser
Meigal, Alexander	Newell, Jonathan	Peng, Yun	Riccelli, Roberta
Meigas, Kalju	Nezami Ranjbar, M.	Penzel, Thomas	Rieta, J. J.
Melia, Umberto Sergio Pio	Nguyen, Hung T.	Perfetto, Juan Carlos	Rigosa, Jacopo
Mello, Carlos	Nguyen, Thanh	Perperidis, Antonios	Rnjak-Kovacina, Jelena
Mellone, Sabato	Nguyen, Thin	Perreault, Eric	Roa, Laura M.
Melo, Marco	Nguyen, Thuy Anh Khoa	Peruzzi, Agnese	Rocha, Ana Paula
Menciassi, Arianna	Nickerson, David Phillip	Petroff, Neil	Rocon, Eduardo
Mendez, Martin Oswaldo	Nicolaou, Nicoletta	Petti, Manuela	Rodriguez, Jose Felix
Meo, Marianna	Nie, Kaibao	Pham, Minh Tu	Rose, William C.
Meriaudeau, Fabrice	Nikita, Konstantina	Pham, Tuan D.	Rosenstein, Jacob
Merletti, Roberto	Nitta, Naotaka	Phlypo, Ronald	Rousseau, François
Merrill, Daniel	Noghanian, Sima	Pichler, Elgar	Roychowdhury, Sohini
Mesbah, Mostefa	Nomura, Taishin	Pickle, Nathaniel	Ruan, Su
Meste, Olivier	Noohi, Ehsan	Pierella, Camilla	Ruddy, Bryan
Micera, Silvestro	Nordon, Robert E	Pinna, Gian Domenico	Rufer, Libor
Mihajlovic, Vojkan	Nugent, Chris	Pirogova, Elena	Ruggeri, Alfredo
Mihaylova, Lyudmila	Nunokawa, Kiyohiko	Pisarello, Maria Ines	Ruiz-Correa, Salvador
Miki, Norihisa	Nygren, Anders	Pistorius, Stephen	Ruther, Patrick
Minnikanti, Saugandhika	Obinata, Goro	Podder, Tarun	Ryan, Thomas
Mino, Hiroyuki	Oddo, Calogero Maria	Podichetty Thribhuvan, J.	Sacchi, Lucia
Mirfakhrai, Tissaphern	Ogawa, Mitsuhiro	Pohl, Mauricio	Sadleir, Rosalind
Mitsis, Georgios D.	Oh, Hyuk	Pohlmeyer, Eric A.	Saijo, Yoshifumi
Miyamoto, Tadayoshi	Ohnishi, Kengo	Poland, Michael	Sakai, Koji
Mizeva, Irina	Ohta, Aaron	Poli, Riccardo	Sakamoto, Ryota
Mo, Lingfei	Ohta, Jun	Pollonini, Luca	Sakamoto, Takuya
Mogul, David	Okada, Kazunori	Polykretis, Giannis	Sakata, Muneyuki
Molinari, Filippo	Okada, Minoru	Pons, Jose Luis	Salama, Guy
Molteni, Erika	Oldfield, Matthew	Poon, Carmen C. Y.	Salari Shahrbabaki, Sobhan
Momose, Keiko	Oloumi, Faraz	Poosapadi Arjunan, Sridhar	Salazar Afanador, Addisson
Monzon, Jorge E.	Omurtag, Ahmet	Pop, Petre Gavril	Salgado, Afonso Shiguemi I.
Monzon-Wyngaard, A.	Ordonez, Juan Sebastian	Popovic Maneski, Lana	Salinari, Serenella
Morbiducci, Umberto	Ostadabbas, Sarah	Popovic, Mirjana	Salvado, Olivier
Moreno Lorente, Luis	Otero, Abraham	Porras, Antonio R.	Salvador, Ricardo
Moreno, Juan C.	Otto, Kevin	Porta, Alberto	Sameshima, Koichi
Morin, Evelyn	Oyarzun Laura, Cristina	Portnova, Alexandra Sasha	Sandberg, Frida
Morozoff, Edmund	Padasdao, Bryson	Positano, Vincenzo	Sanders, Teresa
Moslehpour, Mohsen	Padilha Lanari Bó, Antônio	Postolache, Octavian	Sander-Thömmes, Tilmann H.
Motie Nasrabadi, Ali	Paffi, Alessandra	Potkay, Joseph	Sanei, Saeid
Moufawad El Achkar, C.	Paglialonga, Alessia	Poza, Jesus	Santos, Andres
Mougiakakou, Stavroula	Palanisamy, K.	Pradhan, Ranjan	Sarrut, David
Muceli, Silvia	Palladino, Joseph	Prakash, Punit	Sassi, Roberto
Mudie, Kurt Laurence	Panagiotakopoulos, T.	Prasad, Girijesh	Sasso, Magali
Muehlsteff, Jens	Panescu, Dorin	Puentes, John	Sauter-Starace, Fabien
Muheidat, Fadi	Pani, Danilo	Pun, Sio Hang	Sawan, Mohamad
Mukkamala, Ramakrishna	Pannala, Venkat	Qi, Jinyi	Sazonov, Edward
Munoz-Barrutia, Arrate	Pantelopoulos, Alexandros	Qi, Wenyuan	Scaglione, Alessandro
Muñoz-Diosdado, A.	Paralikal, Kunal	Qiu, Yihong	Scheerer, Eric
Muragaki, Yoshihiro	Parhi, Keshab	Quellec, Gwenole	Schena, Emiliano
Muravchik, Carlos	Park, Jungyul	Quitadamo, Lucia Rita	Schiecke, Karin

Schlotthauer, Gaston	Suaning, Gregg	Uchiyama, Takanori	Wei, Qi
Schmid, Maurizio	Suarez-Antola, Roberto	Uemura, Kazunori	Weiland, James
Schreier, Guenter	Subramaniam, Karthik	Ulbricht, Leandra	Weizman, Lior
Schroeder, Rico	Sugimachi, Masaru	Ulukaya, Sezer	Wen, Di
Scilingo, Enzo Pasquale	Sugimoto, Chika	Ün, Mustafa Kerem	Wen, Lingfeng
Seker, Huseyin	Sugita, Norihiro	Unguez, Graciela	Westwick, David
Seo, Jong Mo	Sui, Xiaohong	Ungureanu, G. Mihaela	Wheeler, Bruce
Sershen, Cheryl	Sultanov, Renat	Uzelac, Ilija	Wiest, Joachim
Sethu, Vidhyasaharan	Sulzer, James	Valdes-Cristerna, Raquel	Wissenwasser, Jürgen
Seydnejad, Saeid	Sun, Changming	Valdez-Jasso, Daniela	Witte, Herbert
Shah, Amit	Sun, Mingui	Valencia Murillo, J.F.	Wolf, Didier
Shahidi Zandi, Ali	Sun, Tao	Valenza, Gaetano	Wolf, Werner
Shamir, Reuben	Sunagawa, Kenji	Van Der Merwe, Yolandi	Wolpert, Seth
Shamsollahi, Mohammad B.	Sund, Torbjørn	Van Gils, Mark	Woo, Eung Je
Sharp, Ian	Suresh, Vinod	Van Huffel, Sabine	Woo, Jonghye
Shastri, Dvijesh	Sutton, Bradley P.	Vander Poorten, Emmanuel	Woodfield, Tim
Shayegh Boroujeny, F.	Swartz, Ashley	Vanello, Nicola	Wright, Steven M.
She, Qingshan	Synnott, Jonathan	Varghese, Lenny	Wright, Zachary
She, Xiwei	Taberner, Andrew	Varghese, Tomy	Wu, Ming
Sheu, Yaelin	Tafreshi, Reza	Varnfield, Marlien	Wu, Yin
Shim, Eun Bo	Taibi, Angelo	Varon, Carolina	Wu, Yunfeng
Shimayoshi, Takao	Takada, Hiroki	Vaz, Pedro G.	Wu, Ziyue
Shimizu, Shuji	Takahashi, Kazutaka	Vegas-Sanchez-Ferrero, G.	Wurdemann, Helge Arne
Shin, Jungwook	Takavoli, Mahdi	Velazquez, Ramiro	Xiang, Liangzhong
Shinohara, Toshihiro	Takeda, Sunao	Veltink, Peter	Xie, Yang
Shirota, Camila	Taki, Hirofumi	Ventouras, Errikos	Xu, Jia
Shou, Guofa	Tamura, Toshiyo	Verdu, Gumersindo	Xu, Lisheng
Shvartsman, Misha	Tanaka, Toshihisa	Verdú, Gumersindo	Xu, Tingting
Sidky, Emil	Tanaka, Yoshiyuki	Verghese, George	Xu, Ziyue
Signorini, Maria G.	Tang, Wenlong	Vicario, Francesco	Yadav, Rajeev
Sikdar, Siddhartha	Tanskanen, Jarno M. A.	Vigario, Ricardo	Yamaguchi, Ikuhiro
Silveira, Margarida	Tanzi, Maria Cristina	Vila, Xose A.	Yamaguchi, Masaki
Silverman, Anne	Tavakolian, Kouhyar	Vilcahuaman, Luis	Yamamoto, Kimiko
Singh, V.R.	Tavanapong, Wallapak	Villalba, Elena	Yamamoto, Yoshiharu
Skm, Varadhan	Taya, Fumihiko	Villani, Valeria	Yambe, Tomoyuki
Skounakis, Emmanouil	Teichmann, Daniel	Vinet, Alain	Yang, Jian
Skubic, Marjorie	Teixeira, Ana Rita	Vinjamuri, Ramana	Yang, Liangjing
Sluiter, Victor Ijzebrand	Teixeira, César	Vinnakota, Kalyan	Yang, Sungwook
Snider, Joseph	Terrill, Philip Ian	Viscor, Ivo	Yang, Xiaofeng
Soda, Paolo	Tewari, Shivendra	Vliegen, Jo	Yang, Zhi
Soh, Cheong Boon	Thongvigittmanee, S.	Vo, Kiet Tuan	Yao, Jianchu
Sohn, Kwanghyun	Tian, Wei	Vollero, Luca	Yavari, Ehsan
Sola, Josep	Tognetti, Alessandro	Voss, Andreas	Ye, Hongwei
Solà-Soler, Jordi	Tognola, Gabriella	Vozzi, Giovanni	Ye, Jong Chul
Solorio, Luis	Tokuda, Takashi	Vuegen, Lode	Yim, Sehyuk
Somers, Ben	Tolonen, Antti	Vuong, Catherine	Yokosawa, Koichi
Son, Jaebum	Tong, Shanbao	Wac, Katarzyna	Yokoyama, Kiyoko
Soncini, Monica	Toppi, Jlenia	Wada, Shigeo	Yoo, Paul
Song, Dong	Töreyn, Hakan	Wadehn, Federico	Yoshida, Hisashi
Song, Edward	Torfs, Tom	Wahle, Andreas	Yoshimura, Takumi
Song, Jiahui	Torres, Abel	Walsh, Lorcan	Yoshizawa, Makoto
Song, Yoon-Kyu	Toschi, Nicola	Waluyo, Agustinus Borgy	You, Fusheng
Soulier, Fabien	Tran, Yvonne	Wan Harun, W.A.R.	Youn, Inchan
Souris, Jeffrey	Traver, Vicente	Wan, Justin	Young, Aaron
Sowmya, Arcot	Trenado, Carlos	Wang, Dafang	Ysehak Abay, Tomas
Spanias, John	Triantafyllidis, Andreas	Wang, Haifeng	Yu, Gene
Spincemaille, Pascal	Tridandapani, Srini	Wang, Jia-Jung	Yu, Pen-Ning
Spyridonis, Fotios	Tripoliti, Evanthia	Wang, Jui-Kai	Yu, Ruoxi
Spyropoulos, Basile	Tropea, Peppino	Wang, Michael Cai	Yu, Wenwei
Spyros, Kontaxis	Troyk, Philip	Wang, Yijun	Yu, Yih-Choung
Staude, Gerhard	Tsiknakis, Manolis	Warren, Steve	Yuan, Han
Stieglitz, Thomas	Tsipouras, Markos G.	Warrick, Philip A.	Yuan, Jiayao
Stoyanov, Danail	Tsukamoto, Sosuke	Washizawa, Yoshikazu	Yuan, Yading
Stramaglia, Sebastiano	Turaga, Pavan	Watabe, Hiroshi	Yuce, Mehmet
Su, Hao	Turcza, Pawel	Weber, Ewald	Yukse, Nuh
Su, Steven Weidong	Tyrer, Harry	Weddell, Stephen J.	Zacur, Ernesto

Zanetti, John M.
Zanos, Theodoros
Zariffa, Jose
Zarshenas, Amin
Zarzoso, Vicente
Zayed, Nourhan
Zebrowski, Jan
Zemiti, Nabil
Zeng, Fan -Gang
Zeng, Hong
Zequera Diaz, Martha L.
Zerubia, Josiane

Zhang, Cheng
Zhang, Dingguo
Zhang, Qin
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Zhang, Songmao
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Zhao, Bo
Zhao, Jianhua
Zhao, Jichao
Zhao, Jieling

Zhao, Jingbo
Zhen, Xin
Zheng, Yali
Zhou, David
Zhou, Fengfeng
Zhou, Huiyu
Zhou, Iris Yuwen
Zhou, Jian
Zhou, Jinghao
Zhou, Yihang
Zhou, Zhihao
Zhu, Fansan

Zhu, Shao Ying
Zhu, Xin
Zhu, Yuemin
Zoltowski, Mariusz, L.
Zong, Chengzhi
Zong, Wei
Zouridakis, George
Zwiggelaar, Reyer
Żyliński, Marek

Editor's Notes

The 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society hosted an electronic paper submission process for the conference. It was the responsibility of the submitting Author to ensure the document was viewable and without errors that would prevent the Conference from including the paper in Digital Proceedings. In the event a paper was submitted that could not be viewed or printed properly, the Conference elected to only publish the abstract of the paper in the Proceedings.

All conference papers were peer-reviewed by experts chosen by the Conference Editorial Board for all Contributed and Special Session 4 page papers.

Keynote & Plenary Speakers



Zhi-Pei Liang, Ph.D.

**Breaking the Spatiotemporal Barriers of MR Spectroscopic Imaging:
A Marriage of Spin Physics and Machine Learning for
Label-Free Molecular Imaging**

Wednesday, July 12, 2017, 09:40-10:30, Roentgen Hall

Abstract

Molecular imaging has been a dream of biomedical imaging scientists for decades, and governments and industries around the world have invested billions into this area. However, most existing molecular imaging techniques (e.g., PET and SPECT) require exogenous molecular probes or reporters to be introduced into a subject in order to obtain molecule-specific information, thereby limiting their practical utility. Magnetic resonance spectroscopic imaging (MRSI) has long been recognized as a powerful tool for non-invasive, label-free molecular imaging and a lot of outstanding work has been done over the past three decades, resulting in significant advances in MRSI data acquisition, pulse sequences, data processing, and image reconstruction. However, in spite of these enormous progresses, current MRSI technology still falls short of providing adequate spatial resolution, speed, and signal-to-noise ratio (SNR) for routine clinical and research applications.

The talk will discuss our recent advances in overcoming the long-standing technical barriers for label-free molecular imaging using intrinsic MR signals. This ultrafast MRSI technology, resulting from many years of research efforts, is based on a new approach to spatio-spectral imaging, which includes rapid data acquisition, sparse sampling of (k, t) -space, constrained image reconstruction, and learning-based spectral quantification using spectral basis from quantum simulation. This technology has demonstrated an unprecedented combination of resolution, speed and SNR for MRSI. In this talk, I will discuss this new ultrafast MRSI technology and show some exciting experimental results we have obtained.

Biography

Zhi-Pei Liang received his Ph.D. degree in Biomedical Engineering from Case Western Reserve University in 1989. He subsequently joined the University of Illinois at Urbana-Champaign (UIUC) first as a postdoctoral fellow (working with the late Nobel Laureate Paul Lauterbur) and then as a faculty member in the Department of Electrical and Computer Engineering. Dr. Liang is currently the Franklin W. Woeltge Professor of Electrical and Computer Engineering; he also co-chairs the Integrative Imaging Theme in the Beckman Institute for Advanced Science and Technology. Dr. Liang's research is in the general area of magnetic resonance imaging and spectroscopy, ranging from spin physics, signal processing, and machine learning, to biomedical applications. Research from his group has received a number of recognitions, including the Sylvia Sorkin Greenfield Award (Medical Physics, 1990), Whitaker Biomedical Engineering Research Award (1991), NSF CAREER Award (1995), Henry Magnuski Scholar Award (UIUC, 1999), University Scholar Award (UIUC, 2001), Isidor I. Rabi Award (International Society of Magnetic Resonance in Medicine, 2009), IEEE-EMBC Best Paper Awards (2010, 2011), IEEE-ISBI Best Paper Award (2010, 2015), Otto Schmitt Award (International Federation for Medical and Biological Engineering, 2012), and Technical Achievement Award (IEEE Engineering in Medicine and Biology Society, 2014). Dr. Liang is a Fellow of the IEEE, the International Society for Magnetic Resonance in Medicine, and the American Institute for Medical and Biological Engineering. He was elected to the International Academy of Medical and Biological Engineering in 2012. Dr. Liang served as President of the IEEE Engineering in Medicine and Biology Society from 2011-2012 and received its Distinguished Service Award in 2015.



Ick Chan Kwon, Ph.D.

Nanotheragnosis as a New Paradigm of Personalized Medicine

Wednesday, July 12, 2017, 09:40-10:30, Cho Room

Abstract

Companion Diagnosis, based on pharmacogenomics, has been recognized as one of most important key representatives of personalized medicine. However, Companion Diagnosis does not provide any clues in developing new ways of therapeutics but it only provides a best choice of drugs based on given genetic information. Therefore, to step further for the future advancement of personalized medicine, we need to introduce a concept of therapeutics in Companion Diagnosis. Here, we introduce Theragnosis as a new paradigm of personalized medicine, which includes both a real-time visualization of disease phenotypes and a novel adaptive design of therapeutics all together at the same time.

Approaches in combining these two important functionalities all together in a polymer nanoparticle are proposed in this presentation. Self-assembled and auto-quenched fluorescent nanoparticulate probes have been designed to visualize target molecules, such as proteases and protein kinases. These nanoparticles can also serve as useful therapeutic tools with using novel drug delivery technologies. Moreover, it might be possible to evaluate therapeutic efficacies in real-time manner when therapeutic design shares principles of diagnostic imaging. Examples of theragnostic design of 'dose-amplification' will be introduced in this presentation.

Biography

Ick Chan Kwon is a Tenured Principal Research Scientist and Director-General of Biomedical Research Institute in Korea Institute of Science and Technology (KIST). He is also a Professor of KU-KIST Graduate School in Korea University. He received his B.S. and M.S. degrees in Textile Engineering at Seoul National University in 1982 and 1984, respectively. He received his Ph. D. in Pharmaceutics and Pharmaceutical Chemistry from University of Utah in 1993. After a post-doctoral training at Center for Controlled Chemical Delivery in University of Utah, he joined KIST in 1994. He served as a vice president (2005-2008) and president (2008-2010) of the Korean Society of Molecular Imaging and currently serves as an Editor for Asia of the Journal of Controlled Release (Elsevier). He is a fellow of The Korean Academy of Science & Technology and a member of The National Academy of Engineering of Korea. His main research interest is development of smart nano-probes for theragnosis and molecular imaging with polymeric nanoparticles. He received Samsung Polymer Science Award from The Polymer Society of Korea (2013) and Academy Award from The Korean Academy of Science and Technology (2014). He recently awarded Order of Science and Technology Merit (Ungbi Medal) from the Republic of Korea (2016). He has published over 360 peer-reviewed articles (total citation 16,400, h-index 73 by Web of Science) and delivered 70 invited lectures at International Conferences.



Hanjoong Jo, Ph.D.

Flow Sensitive Genes in Endothelial Inflammation and Atherosclerosis

Wednesday, July 12, 2017, 09:40-10:30, Park Room

Abstract

Atherosclerosis is the major underlying cause of myocardial infarction and stroke and preferentially occurs in arterial regions exposed to disturbed flow (*d-flow*) by mechanisms involving broad changes in gene expression.

We have shown that *D-flow* rapidly induces atherosclerosis *in vivo* using a mouse partial carotid ligation model. In addition, we developed a novel intimal RNA/DNA preparation method using this animal model and identified numerous mechanosensitive endothelial genes and epigenetic DNA methylome that change in response to *d-flow*. We showed that flow robustly regulate expression of microRNAs, including miR-712/205 family and miR-663, and their roles in endothelial inflammation and atherosclerosis. Our results showed that targeting mechanosensitive “athero-miRs” with anti-miR-based approaches might provide a new treatment paradigm in atherosclerosis. We also showed recently that these anti-miRs could be delivered to inflamed endothelium *in vivo* by using the VCAMI-targeting nanoparticle to treat atherosclerosis in mouse. These flow-sensitive novel anti-atherogenic therapeutics and their targeted delivery using nanoparticles are exciting future directions in prevention and treatment of atherosclerotic diseases.

Biography

Dr. Hanjoong Jo is John and Jan Portman Professor and Associate Chair for Emory BME in the Coulter Department of Biomedical Engineering (BME) at Georgia Tech and Emory University, and Professor of Medicine at Emory University. Dr. Jo received BS at Korea University and PhD at Pennsylvania State University. Following postdoctoral training in Jay McDonald Lab at Washington University in St. Louis and University of Alabama at Birmingham, he became Assistant Professor in Pathology and Biomedical Engineering. Dr. Jo joined the BME Department at Georgia Tech and Emory University in 2000. He directs the Cardiovascular Mechanobiology and Nanomedicine lab. His lab studies how blood flow regulates genes in endothelial cells, and how they induce or prevent atherosclerosis and aortic valve disease. To this end, his lab uses OMICs approaches to discover novel flow-sensitive coding and non-coding genes, develops novel therapeutics by targeting the flow-sensitive genes, and develops novel nanodelivery methods for targeted therapies to treat the cardiovascular disease. He has published more than 165 peer-reviewed papers and two books as editor. He is an elected fellow of American Institute of Medical and Biological Engineering, Biomedical Engineering Society, American Heart Association and American Physiological Society. He served as associate editors and editorial board members of several journals including Scientific Reports, Atherosclerosis Thrombosis Vascular Biology, Am J Physiology and Cardiovascular Engineering and Technology. He also has been serving as reviewers and chairs of study sections of the NIH, NSF, Veterans Administration and Am Heart Association. He served as the Chair of several international conferences including the Annual BME Society Meeting in 2012 and 11th International Symposium in Biomechanics and CVD. He is also the founding President of Korean-American BME Society and Chairs of US-Korea Annual BMES Workshops since 2013 as well as the Program Co-Chair of 2016 US-Korea Conference. He has been a Distinguished Visiting Professor at Ewha Womans University and Chonbuk National University.



Chang-Jin Kim, Ph.D.

**EWOD Digital Microfluidics and Its Biomedical Applications
Including the Synthesis of PET Radiotracers**

Wednesday, July 12, 2017, 09:40-10:30, Min Room

Abstract

The reconfigurable microfluidics mechanism of electrowetting-on-dielectric (EWOD) has led to various optical and biological applications. In a typical EWOD device, including commercial ones, aqueous droplets in oil are manipulated by electric signals. If operational in air environment as well (i.e., no oil surrounding the droplets), EWOD would open the door for many additional applications. One example is MALDI-MS, where the aqueous liquid needs to be evaporated prior to sample analysis – this is not possible if in oil. We have demonstrated an integrated EWOD-MALDI-MS chip designed for parallel processing of multiple sample droplets without oil. Leveraging on this success, our team between engineering and medicine at UCLA has been working to synthesize PET tracers on an EWOD digital microfluidic platform. All the key steps have been demonstrated on a single EWOD chip to synthesize a variety of ¹⁸F-labeled tracers in the nanomole quantities necessary for PET imaging. The obtained fluorination efficiencies (90-95%) and synthesis times (30-60 min) were comparable to conventional approaches, and overall yields were sufficient for eventual clinical use. Additional techniques, including dose scale-up and product purification, have been developed on chip to move towards the ultimate goal of producing tracers

for clinical imaging. The resulting integrated system, being commercialized by Sofie Biosciences, is expected to dramatically reduce radiation shielding and the associated cost, empowering final users to produce radiotracers of their choice locally and eventually making PET imaging as readily available as CT and MRI.

Biography

Professor CJ Kim received his B.S. from Seoul National University, M.S. from Iowa State University, and Ph.D. from the University of California at Berkeley, all in mechanical engineering, and joined the faculty at UCLA in 1993. Directing the Micro and Nano Manufacturing Laboratory, his research is in MEMS and Nanotechnology, including design and fabrication of micro/nano structures, actuators and systems, with a focus on the use of surface tension. The recipient of the Research Excellence Award (Iowa State Univ.), TRW Outstanding Young Teacher Award (UCLA), NSF CAREER Award, ALA Achievement Award, Samueli Outstanding Teacher Award (UCLA), and Ho-Am Prize in Engineering, Prof. Kim has served on numerous professional and governmental committees and panels in MEMS and nanotechnology, including General Chair of the 2014 IEEE International Conference on MEMS. An ASME Fellow, he is currently serving as Senior Editor of the IEEE Journal of MEMS; on the Editorial Advisory Board for IEEJ Transactions on Electrical and Electronic Engineering; and on the International Steering Committee of IEEE MEMS. He has also been active in the commercial sector as a scientific advisor, consultant, and founder of start-up companies.



Kyongtae Ty Bae, Ph.D., M.D., M.B.A.

The Only Constant is Change: A Professional Journey and Personal Perspective from an Engineer, Radiologist, Administrator and Entrepreneur

Wednesday, July 12, 2017, 10:50-12:20, Opening and Plenary, Roentgen Hall

Abstract

We all have finite years in our professional career life—however long that may be—and a desire to accomplish as much as we can during that period. As our initial career choice changes and advances, we need to adopt and adapt to these changes and advances as efficiently and effectively as possible to best fulfill our evolving career goals. There are a number of approaches and choices to be made in designing a career and practicing a profession. I, as an engineer, radiologist, administrator, and entrepreneur, would like to share my personal professional journey and perspective by highlighting some of my work in imaging science and radiology along with a brief history of the evolving changes and opportunities in radiology and related healthcare.

Biography

Kyongtae Ty Bae, PhD, MD, MBA, is Associate Dean Clinical Imaging Research, former Chairman and Professor of the Department of Radiology at the University of Pittsburgh, the largest academic radiology department in USA. He is also a Professor of Bioengineering and the Director of the Imaging Biomarker Lab in the Department of Radiology. He graduated from Seoul National University with a BS in Chemical Engineering. He received a MS in Chemical Engineering from the University of Iowa, MS and PhD in Bioengineering from the University of Pennsylvania, and a MD from the University of Chicago. Dr. Bae did his Radiology residency and fellowship training at the Mallinckrodt Institute of Radiology, Washington University in St Louis and rose through the academic ranks before moving to University of Pittsburgh. Recently, he graduated from the Executive MBA Program at Wharton School of Business at the University of Pennsylvania.

In addition to clinical radiology practice, Dr. Bae has research interests in applying quantitative and physiologic imaging and computer applications in diagnostic imaging including contrast medium pharmacokinetics, functional and physiologic CT and MRI imaging, and computer-aided diagnosis to advance clinical translational and imaging biomarker research in a wide range of diseases. Dr. Bae's Imaging Biomarker Lab specializes in developing and analyzing morphological and functional imaging biomarkers from CT, clinical and high-field MR images.

Dr. Bae has published over 560 papers, proceedings, and abstracts including over 225 peer reviewed journal publications (H-index 60). He is responsible for securing over \$22 million in NIH and DOD grants to pursue research over the past 17 years. He has also supervised clinical and research training of numerous students,

residents, postdoctoral fellows and visiting scholars during his academic career. At the national level of radiology organizations, Dr. Bae served as Chair of the Academic Radiology Research Council and Chair of the Radiological Society of North America Research Grant Review Study Sections.

Dr. Bae holds eleven patents and founded companies in the field of medical device and informatics. Seven of his patents were licensed for commercial implementations.



Mark Prausnitz, Ph.D.

**Vaccination using Microneedle Patches:
Design, Development and Clinical Translation**

Wednesday, July 12, 2017, 13:20-14:10, Cho Room

Abstract

While vaccines have dramatically reduced morbidity and mortality due to infectious diseases, there remain significant opportunities to improve vaccine immunogenicity and delivery. To address this need, we have developed microneedle patches, each containing an array of micron-sized needles on an adhesive backing, to be used for vaccine delivery to the skin. Our studies show that skin vaccination using microneedle patches is significantly more immunogenic than conventional intramuscular injection, as measured by improved humoral and cellular immune responses, protection against disease, longevity of immune responses, breadth of immunity and other measures. Microneedle patches can also improve vaccine delivery because they are easily and painlessly applied by pressing against the skin and, when using water-soluble microneedles, do not leave behind sharps waste. The patches are single-dose, do not require reconstitution, are easy to administer, have reduced size to simplify storage, transportation and waste disposal, and often have increased thermostability. Our studies have emphasized influenza vaccination, including many small-animal studies that have enabled a Phase I clinical trial currently under way. Additional studies have examined inactivated polio, measles and rubella vaccines in monkeys and a number of other vaccines in small animals. Translation of this technology into commercial development is occurring at a number of companies, including one that was founded by our team at Georgia Tech.

Biography

Mark Prausnitz is Regents' Professor and J. Erskine Love Professor of Chemical and Biomolecular Engineering at the Georgia Institute of Technology. He earned a BS degree from Stanford University and a PhD degree from MIT, both in chemical engineering. Dr. Prausnitz and his colleagues carry out research on biophysical methods of drug delivery, which employ microneedles, ultrasound, lasers and other physical means to control the transport of drugs and vaccines into and within the body.

A major area of focus involves the use of microneedle patches to apply vaccines to the skin in a painless, minimally invasive manner. In collaboration with Emory University, CDC and other organizations, Dr. Prausnitz's group is advancing microneedles from device design and fabrication through pharmaceutical formulation and pre-clinical animal studies and into studies in human subjects. The Prausnitz group has also developed hollow microneedles for targeted drug delivery in the eye in collaboration with Emory University. Other projects including the use of laser-activated nanoparticles to facilitate intracellular delivery of molecules, design of ionic liquids as pharmaceuticals and adaptation of microneedle technology to extract fluid from the skin for diagnostic and monitoring purposes.

In addition to research activities, Dr. Prausnitz teaches an introductory course on engineering calculations, as well as two advanced courses on pharmaceuticals. He also serves the broader scientific and business communities as a frequent consultant, advisory board member and expert witness, and has co-founded four start-up companies.



Bin He

Inverse Imaging: What, How, and the Impact to Health

Wednesday, July 12, 2017, 13:20-14:10, Roentgen Hall – Plenary Talk

Wednesday, July 12, 2017, 10:50-12:20, Roentgen Hall – Award Presentation

2017 IEEE BIOMEDICAL ENGINEERING AWARD

Sponsored by the IEEE Circuits and Systems Society and IEEE Engineering in Medicine and Biology Society

The IEEE Biomedical Award is presented to an individual or a team with outstanding contributions to the field of biomedical engineering. The 2017 IEEE Biomedical Engineering Award will be presented to Prof. Bin He at the EMBC17 for his contributions to neuroengineering and neuroimaging.

Abstract

Biomedical imaging plays a significant role in health management, providing the ability to noninvasively assess the structure and function of biological systems. Many imaging methods essentially solve an inverse problem in which physical properties within the body are estimated from limited measurements acquired from outside the body or on the body surface. In this presentation, we will focus on an array of inverse problems used to reconstruct distributions of electrical sources and electrical properties from noninvasive measurements. Excitable cells generate electrical activity as part of their fundamental function within the body, most notably in the brain and the heart. Electrical properties reflect the characteristics of biological tissues, which connect bioelectrical activities with noninvasive measurements, determine the passive response of tissue to externally applied fields, and also contain information about tissue pathology. We will discuss how dynamic electrical activity over the three-dimensional volume can be estimated by solving linear or nonlinear inverse problems from noninvasive electrical or magnetic measurements. Such electrical source imaging techniques provide important physiological and pathophysiological information in humans, including mapping brain cognition, mental disorders, epileptic networks, and cardiac arrhythmic activity. We will also discuss how tissue electrical properties can be imaged using electromagnetic, acoustic, and magnetic resonance based measurements. Such electrical property imaging provides important information for early cancer detection and diagnosis, as well as for monitoring tissue responses to external interventions.

Biography

Bin He is Director of the Institute for Engineering in Medicine, Distinguished McKnight University Professor of Biomedical Engineering, and Medtronic-Bakken Endowed Chair for Engineering in Medicine at the University of Minnesota, Minneapolis. Dr. He has made significant contributions to biomedical inverse imaging, including electrophysiological source imaging and tissue electrical property imaging, as well as to brain-computer interface technology. His pioneering work has transformed electroencephalography into an important dynamic, three-dimensional neuroimaging modality for noninvasive brain research and management of brain disorders. He has changed the understanding of what noninvasive brain-computer interfaces can do. Dr. He has received a number of recognitions, including the IEEE Technical Field Award in Biomedical Engineering, the Academic Career Achievement Award from the IEEE Engineering in Medicine and Biology Society, and the Established Investigator Award from the American Heart Association. He was President of the IEEE Engineering in Medicine and Biology Society, and is the Editor-in-Chief of IEEE Transactions on Biomedical Engineering and a Member of the NIH BRAIN Multi-Council Working Group. Dr. He is a Fellow of the IEEE and the American Institute for Medical and Biological Engineering. He was elected to the International Academy of Medical and Biological Engineering in 2012 and is currently Chair-Elect of the Academy.



Vasilis Ntziachristos, Ph.D.

A New Look into Tissue with Multispectral Optoacoustic Tomography: Progress and Entrepreneurship

Thursday, July 13, 2017, 09:40-10:30, Roentgen Hall

Abstract

Optical imaging is unequivocally the most versatile and widely used visualization modality in the life sciences. Yet it has been significantly limited by photon scattering, which complicates imaging beyond a few hundred microns. For the past few years, there has been an emergence of powerful new optical and optoacoustic imaging methods that can offer high resolution imaging beyond the penetration limits of microscopic methods. The talk discusses progress in multi-spectral opto-acoustic tomography (MSOT) that brings unprecedented optical imaging performance in visualizing anatomical, physiological and molecular imaging biomarkers. Some of the attractive features of the method is the ability to offer 10-100 microns resolution through several millimeters to centimeters of tissue and real-time imaging. We demonstrate implementations in the time and frequency domain, showcase how it is possible to accurately solve fluence and spectral coloring issues for yielding quantitative measurements of tissue oxygenation and hypoxia and demonstrate applications in resolving inflammation, metabolism, and angiogenesis in label free mode. In parallel, we summarize progress with clinical systems that offer to change readings of disease *in-vivo* and discuss complementarity with ultrasound imaging, fluorescence imaging and other modalities. Finally, the talk offers insights into new miniaturized detection methods based on ultrasound detection using optical fibers, which could be used for minimally invasive applications.

Biography

Vasilis Ntziachristos Ph.D. is a Professor of Medicine and Electrical Engineering, the Director of the Chair for Biological Imaging (CBI) and of the Munich School of Bioengineering (MSB) at the Technical University of Munich and the director of the Institute for Biological and Medical Imaging (IBMI) at the Helmholtz Zentrum Munchen. He has received the Diploma in Electrical Engineering and Computer Science from the Aristotle University of Thessaloniki, Greece, M.Sc and Ph.D. degrees in Bioengineering from the University of Pennsylvania in Philadelphia PA and has served as faculty at Harvard University and the Director of the Laboratory for Bio-optics and Molecular imaging at the Massachusetts General Hospital. He has received his masters and doctorate degrees from the Bioengineering Department of the University of Pennsylvania and the Diploma on Electrical Engineering from the. Professor Ntziachristos regularly serves as chair in international meetings and councils and in the editorial boards of several scientific journals and has received numerous awards and distinctions, including the Gold Medal from the Society for Molecular Imaging (2015), the Gottfried Leibnitz prize (2013), the Erwin Schrödinger Award (2012) and was named one of the world's top innovators by the Massachusetts Institute of Technology (MIT) Technology Review in 2004.



Michael Unser, Ph.D.

Computational Bioimaging: How to Further Reduce Exposure and/or Increase Image Quality

Thursday, July 13, 2017, 09:40-10:30, Park Room

Abstract

We start our account of inverse problems in imaging with a brief review of first-generation reconstruction algorithms, which are linear and typically non-iterative (e.g., back projection). We then highlight the emergence

of the concept of sparsity, which opened the door to the resolution of more difficult image reconstruction problems, including compressed sensing. In particular, we demonstrate the global optimality of splines for solving problems with total-variation (TV) regularization constraints. Next, we introduce an alternative statistical formulation where signals are modeled as sparse stochastic processes. This allows us to establish a formal equivalence between non-Gaussian MAP estimation and sparsity-promoting techniques that are based on the minimization of a non-quadratic cost functional. We also show how to compute the solution efficiently via an alternating sequence of linear steps and pointwise nonlinearities (ADMM algorithm). This concludes our discussion of the second-generation methods that constitute the state-of-the-art in a variety of modalities.

In the final part of the presentation, we shall argue that learning techniques will play a central role in the future development of the field with the emergence of third-generation methods. A natural solution for improving image quality is to retain the linear part of the ADMM algorithm while optimizing its non-linear step (proximal operator) to minimize the reconstruction error. Another more extreme scenario is to replace the iterative part of the reconstruction by a deep convolutional network. The various approaches will be illustrated with the reconstruction of images in a variety of modalities including MRI, X-ray and cryo-electron tomography, and deconvolution microscopy.

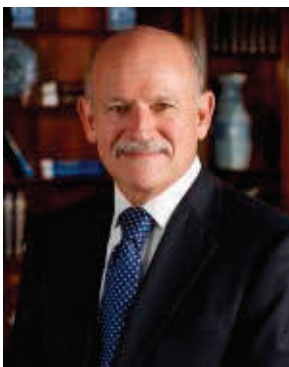
Biography

Michael Unser is professor and director of EPFL's Biomedical Imaging Group, Lausanne, Switzerland. His primary area of investigation is biomedical image processing. He is internationally recognized for his research contributions to sampling theory, wavelets, the use of splines for image processing, stochastic processes, and computational bio imaging. He has published over 250 journal papers on those topics. He is the author with P. Tafti of the book "An introduction to sparse stochastic processes", Cambridge University Press 2014.

From 1985 to 1997, he was with the Biomedical Engineering and Instrumentation Program, National Institutes of Health, Bethesda USA, conducting research on bio imaging.

Dr. Unser has held the position of associate Editor-in-Chief (2003-2005) for the IEEE Transactions on Medical Imaging. He is currently member of the editorial boards of SIAM J. Imaging Sciences, IEEE J. Selected Topics in Signal Processing, and Foundations and Trends in Signal Processing. He co-organized the first IEEE International Symposium on Biomedical Imaging (ISBI'2002) and was the founding chair of the technical committee of the IEEE-SP Society on Bio Imaging and Signal Processing (BISP).

Prof. Unser is a fellow of the IEEE (1999), a EURASIP fellow (2009), and a member of the Swiss Academy of Engineering Sciences. He is the recipient of several international prizes including three IEEE-SPS Best Paper Awards and two Technical Achievement Awards from the IEEE (2008 SPS and EMBS 2010).



Steven B. Heymsfield, M.D.

New Technologies: Role in Diagnosing and Managing Obesity

Thursday, July 13, 2017, 13:20-14:10, Roentgen Hall

Abstract

Overweight and obesity rates continue to increase at a global level and some international agencies now consider the presence of severe obesity a diagnosable chronic disease. Screening populations for excess adiposity typically involves use of body weight and height indices such as body mass index. Identified individuals are now treated using a series of measures including lifestyle management advancing to pharmacotherapy and bariatric surgery. All of these areas are benefitting from the introduction of new digital technologies including advanced screening methods for quantifying adiposity, approaches for estimating energy and food intake along with physical activity levels, and telecommunication lifestyle programs for managing body weight. While many of these approaches are now part of the accepted evaluation and weight control management paradigm, others are still being critically evaluated for their practical and cost-effective application. This is an area of intense technology development and one that has important gaps that need to be filled. The presentation will cover these rapidly advancing areas of biomedical engineering.

Biography

Steven B. Heymsfield, M.D. is Professor and Director of the Body Composition-Metabolism Laboratory at the Pennington Biomedical Research Center of the Louisiana State University System in Baton Rouge. Dr. Heymsfield stepped down as Executive Director of Pennington Biomedical in 2013 to assume his current position.

Dr. Heymsfield received a degree in medicine from Mount Sinai School of Medicine, and he completed his internship, residency, and fellowship in pharmacology at Emory University. He then joined the Emory University School of Medicine faculty, holding positions there including Associate Professor of Medicine and Assistant Director of the NIH-funded Clinical Research Unit. Expanding on his interests in obesity and metabolism, Dr. Heymsfield next moved to Columbia University, College of Physicians and Surgeons and there he held positions as Professor of Medicine and Deputy Director, New York Obesity Research Center at St. Luke's-Roosevelt Hospital. He and his Columbia colleagues conducted wide ranging clinical studies on obesity with a focus on energy metabolism, body composition, and pharmacologic weight control management. Prior to his Pennington Biomedical position, Dr. Heymsfield was the Global Director of Scientific Affairs for the obesity group at Merck & Co.

Dr. Heymsfield has published more than 600 peer-reviewed papers covering topics such as obesity, malnutrition, cachexia, body composition, and caloric expenditure. His contributions to the study of human nutrition led to the TOPS Award from The Obesity Society, the Rhoads Award from the American Society of Parenteral and Enteral Nutrition (ASPEN), the Robert H. Herman Memorial Award, American Society of Nutrition (ASN), the George Bray Founders Award from The Obesity Society, and he was honored for his role in the FDA ban on ephedra, receiving the 2004 NYC Mayor's Award for Science and Technology. Dr. Heymsfield was elected Fellow of The Obesity Society in 2014, and he is an honorary member of the American Dietetic and Chilean Clinical Nutrition Associations. Dr. Heymsfield is past-president of ASPEN and ASN and he is vice-president of The Obesity Society.



Bruce Wheeler, Ph.D.

Brain on a Chip: From Patterns to Circuits that Transfer Information

Thursday, July 13, 2017, 13:20-14:10, Cho Room

Abstract

Building a Brain on a Chip, while certainly a wild idea, is closer to reality than is reasonable to expect, thanks to applications of both engineering and applied biology. Applications of traditional engineering technologies – signal processing, electronics, microlithography, materials science – make possible the controlled growth, recording, and stimulation of nerve cells, making addressable the goal of engineering working biological models of circuits within the brain that have importance for both fundamental and disease understanding.

This presentation begins with an overview of the effort, including developments in electrode array technology, lithographic and microtunnel techniques that can control the patterns of growth of neurons in culture, and the creation of microcircuits of discrete brain structures. These techniques are beginning to make possible neural circuits about which we can ask the natural question: “What information are they processing?”

Included are recent results from investigations in which microdissected regions of the brain are separately cultured so as to partially reconstruct a major brain circuit in the hippocampus, which is involved in learning and memory. Interestingly, biomarkers indicate that the identities of the different brain regions are preserved after culture and that at least some of their computational properties appear consistent with those inferred from in vivo animal recordings.

Biography

Bruce Wheeler was President of the IEEE Engineering in Medicine and Biology Society, the world's largest biomedical engineering society. He was the Editor in Chief of the IEEE Transactions on Biomedical Engineering, the largest and most cited general biomedical engineering journal.

Dr. Wheeler is now an Adjunct Professor in the Bioengineering at the University of California San Diego. He is Emeritus Professor at both the University of Florida, where he was the Acting Chair of the Biomedical Engineering Department, and of the University of Illinois, where he was the Founding Head of the Bioengineering Department, Professor and Associate Head of Electrical and Computer Engineering, and Chair of the Neuroscience Faculty. He received a double B.S. degree from MIT in History and Science and the M.S. and Ph.D. in Electrical Engineering from Cornell University. He has taught high school in Niskayuna, New York and elementary school in Blacksburg Virginia.

He is a Fellow of the AAAS, IEEE, BMES, AIMBE, and IAMBE.

Prof. Wheeler's research interests lie in the application of electrical engineering methodologies, signal processing and microfabrication, to the study of the nervous system, including the microlithographic control of the patterns of growth of neurons in vitro to permit stimulation and recording with microelectrode arrays. Hopefully this work will lead to better understanding of the behavior of small populations of neurons and lead to better insights into the functioning of the brain. He also has been involved in algorithm development for directional hearing aids.

Dr. Wheeler has a long time interest in education. At Illinois he was Associate Head for Undergraduate Affairs and responsible for the advising of 1600 students. He is likely the only person to create two undergraduate bioengineering degree programs (Illinois and Florida). His current position is in support of a new undergraduate program in Systems Bioengineering, which he and UCSD hope will help shape the future of biomedical engineering education.



Damijan Miklavčič, Ph.D.

Electroporation for Improving the Quality of Life

Thursday, July 13, 2017, 13:20-14:10, Park Room

Abstract

When a cell is exposed to an electric field of sufficient amplitude its membrane becomes permeable for molecules that otherwise are deprived of transmembrane transport mechanisms. Some chemotherapeutic drugs which have intracellular target but lack efficient transport across the membrane (e.g. bleomycin, cisplatin) can greatly benefit from membrane permeabilization (electroporation). Bleomycin cytotoxicity has been demonstrated to be increased 1.000-10.000 times, whereas for cisplatin this potentiation in vitro was 10-100 times. This potentiation of drug cytotoxicity was effectively translated from in vitro to in vivo preclinical trials and finally introduced into clinical practice as electrochemotherapy. The metastases of different origin have responded locally to electrochemotherapy with overall complete response rate of 59.4% and objective response rate of 84.1%. Since 2006, electrochemotherapy has been introduced into more than 150 clinical centers around Europe and is paving its way into standard clinical use. The procedure is efficient, safe, well tolerated by patients and can be performed on an outpatient basis.

As electroporation of membranes of cells in tissue depends predominantly on local electric field, it is possible to treat with electrochemotherapy also internal tumors. Local electric field can be established by inserting electrodes into the tissue. The “shaping” of the field by using multiple electrodes in combination with treatment planning procedures and image-guided insertion of electrodes allows treating of solid tumors irrespective of their location. Recent clinical trials in treating colorectal liver metastasis, metastasis in bone, and soft tissue sarcoma by means of needle electrodes proved feasibility of electrochemotherapy for deep-seated tumors making this new treatment modality a promising new tool in armamentarium of oncologists.

In a similar fashion, electroporation can be used to introduce large molecules like pDNA both in vitro as well as in vivo, which is used for gene therapy and DNA vaccination. Electroporation of cells can however also lead to cell death, which has been recognized as non-thermal ablation method of soft tissue and has already be demonstrated for its use in clinical setting for tumor ablation and myocardial ablation in animal model.

Biography

Damijan Miklavčič received a Ph.D. in Electrical Engineering from the University of Ljubljana in 1993. He is Full Professor and Head of the Laboratory of Biocybernetics at the Faculty of Electrical Engineering, University of Ljubljana, where he previously served also as vice-dean for research and Chair of the Department of Biomedical Engineering.

Throughout his academic career, he has been active in rehabilitation engineering, experimental oncology, and cell biology. In the last two decades, he specifically focused on electroporation-based gene transfer and drug delivery coupled with theoretical modeling of biophysical and biological processes, as well as development of hardware allowing for efficient electroporation both in vitro and in vivo. His current interests lie in further advancing electrochemotherapy as local treatment of internal malignant tumors, transferring the knowledge on tissue electroporation to other fields like food science, and development of innovative environmentally friendly applications of electroporation.

Damijan Miklavčič has lead a number of national and international research projects including a global network funded by COST (www.electroporation.net), and organized various international scientific meetings with one of most recent being the 1st World Congress on Electroporation. He has served as editor and guest editor in various scientific journals, and collaborated with more than 60 SCI journals as reviewer.



Thomas Penzel, Ph.D.

Signal Recording and Non-Linear Processing in Sleep Research

Thursday, July 13, 2017, 13:20-14:10, Min Room

Abstract

Sleep disorders are found to be more prevalent than previously realized. This may be a consequence of a modern society, which optimizes work and social activities up to the edge.

In order to investigate normal and disturbed sleep, we record biosignals both in the sleep laboratory and at home. Signals may be recorded directly, such as EEG, EOG, and EMG from the head of the sleeping person, or indirectly, such as ECG, heart rate, respiration, pulse wave. Signals may be recorded with little contact or no contact systems such as actigraphy, body movement, bed sensors or bedside radiofrequency sensors. Some signals are new in sleep research and require new technology and analysis concepts.

Always biosignals were recorded with an appropriate time and amplitude resolution, and then we derive physiological functions. We can identify wakefulness and sleep, we can derive details about sleep, such as light sleep, deep sleep, and REM sleep, arousals and sleep fragmentation. Not only classical methods in the time and frequency domain are used, but also more recent methods using statistical approaches are applied.

This allows recognizing normal and restorative sleep and identifying sleep disorders as well. Some sleep disorders imply cardiovascular consequences and require treatment. Sleep disordered breathing is the disorder with most cardiovascular consequences. Many diagnostic tools focus on this group of disorders [1]. Diagnostic methods and perspectives are presented in this communication.

[1] IEEE Engineering in Biology and Medicine Society: "The Science of Sleep". Pulse Magazine. Sept. / Oct. issue 2014.

Biography

Dr. Thomas Penzel graduated from physics (1986), human biology (1991), and physiology (1995) at the University Marburg, Germany. In 1997, he received a certificate for sleep medicine and for medical informatics. In 2001 became extra-ordinate Professor at the University of Marburg. At the University hospital Marburg, he started in 1982 and installed the first sleep lab in a Department for Internal Medicine in Germany. This lab initiated many

activities in the field of sleep medicine like home sleep apnea testing, deriving sleep apnea and sleep stages from ECG and heart rate, sleep center accreditation, cardio respiratory coupling analysis, sleep physician training and certification, and conferences with engineers and physicians on sleep medicine. In 2006, he moved to Berlin to join the interdisciplinary sleep medicine center at the Charité University hospital. He received the Bial award for clinical medicine in Portugal 2001, the Bill Gruen Award for Innovations in Sleep Research by the Sleep Research Society in 2008, the Somnus Award by Sleep apnea patient groups in Germany 2012, and the distinguished development award by the Chinese sleep research society in 2014. He is treasurer of the World Sleep Society (WSS), secretary of the German Sleep Society (DGSM), and board member of other societies. He authored more than 250 papers, book chapters and books. He is an editorial board member on journals in sleep research and biomedical engineering. His research focus is on new methods in sleep recording and cardiovascular consequences of sleep disorders. He is chair of the German IEEE EMB chapter and past chair of EMB TC cardiopulmonary systems.



Chunlei Liu, Ph.D.

MRI of Bio-Magnetism

Thursday, July 13, 2017, 14:20-15:50, Roentgen

Abstract

Human body can be weakly (about 0.01ppm) magnetized by the strong magnetic field inside MRI scanners. This magnetization originates from the magnetic susceptibility of biomolecules and certain trace metals; it is further influenced by the cellular architecture of tissue. Until very recently, the spatial distribution of the magnetization and the corresponding magnetic susceptibility inside our body could not be measured, as traditional magnetometers only measure the magnetic field outside the body. Recent developments in MRI have overcome this limitation and begun to allow the mapping of magnetic susceptibility in 3D space. Magnetic susceptibility mapping not only provides a means to produce high-resolution MR images, but also offers quantitative information of the molecular contents and cellular architectures of both healthy and diseased tissues. For example, it allows the quantification of tissue iron stores, calcification in tumors, myelination in white matter, aggregation of b-amyloid in Alzheimer's disease and the dynamic conversion between oxy- and deoxyhemoglobin. Magnetic susceptibility is also orientation dependent and is a tensor quantity. Quantifying magnetic susceptibility anisotropy allows the mapping of the orientations of axonal fibers, myofibers and collagens. In NMR spectroscopy, studying magnetic susceptibility anisotropy of biomolecules have greatly enhanced the ability to determine protein structures. Similarly, studying magnetic susceptibility of biological tissue will help us assess its molecular and cellular architecture on a larger scale. These techniques have now found applications in many tissues and organs including the brain, heart, liver, kidney and knee joints.

Biography

Chunlei Liu is an Associate Professor at the University of California, Berkeley, with the Department of Electrical Engineering and Computer Sciences, and the Helen Wills Neuroscience Institute. He received a B.S. in Physics from Peking University, an M.S. in Physics from the University of North Carolina, Chapel Hill, and a Ph.D. in Electrical Engineering from Stanford University. He was previously Associate Professor of Radiology and Biomedical Engineering at Duke University. Dr. Liu's research is in the area of magnetic resonance imaging and remote cell modulation. Dr. Liu pioneered higher-order tensor diffusion MRI that utilizes higher-order tensor statistics (variance, skewness, kurtosis etc.) to measure the diffusion processes in biological tissues. Dr. Liu is also credited for developing susceptibility tensor imaging for mapping bio-magnetism. He received NIH Pathway to Independence Award (K99) in 2006, ISMRM Young Investigator Award finalist in 2007 and RSNA Margulis Award in 2015.



Won-Jin Moon, MD, PhD

Clinical Application of Quantitative Susceptibility Mapping (QSM)

Thursday, July 13, 2017, 14:20-15:50, Roentgen

Abstract

Quantitative susceptibility mapping (QSM) is a quantification map for local susceptibility based on multi-echo 3-dimensional GRE images. QSM can be used to evaluate metals in biological tissues such as iron and calcium.

Iron load in brain is potentially associated with neurodegenerative disease. Iron is a known component of A β plaques and neurofibrillary tangles, and moreover may provide an ideal environment for A β aggregation and neurotoxicity. Therefore, the use of QSM to measure iron levels *in vivo* may offer important information to assist our understanding of the neurodegenerative process.

QSM can be also useful to detect alterations in metal contents in various pathologic conditions including inflammation, hemorrhage, pathologic calcifications or *in vivo* quantification of gadolinium concentrations.

In this lecture, we discuss the current and emerging QSM applications in the diagnosis and management of various neurologic diseases.

Biography

Dr. Won-Jin Moon is working as a section chief of Neuroradiology at the Department of Radiology, Konkuk University Medical Center and a professor at the Department of Radiology, Konkuk University School of Medicine. She completed her radiology residency from Hanyang University Medical Center and subsequently trained in Neuroradiology at Samsung Medical Center. She had studied as a visiting scholar at the Institut für Neuroradiologie, Johann W. Goethe Universität Klinikum, Germany from 1999 to 2000 and at the Department of Radiology, Duke University Medical Center from 2009 to 2010.

Her clinical activity has focused on imaging diagnosis of neurodegenerative diseases, neurovascular diseases, neuro-oncology and demyelinating diseases.

Her research interest focuses on the application and development of advanced neuroimaging techniques for neurodegenerative diseases, including functional MR imaging (task-related and task-free), diffusion-tensor imaging, perfusion-weighted imaging (dynamic susceptibility contrast, dynamic contrast enhanced, and arterial spin labeling), susceptibility weighted imaging as well as quantitative structural imaging analysis.



Yi Wang, Ph.D.

Clinical Quantitative Susceptibility Mapping (QSM): Biometal MRI

Thursday, July 13, 2017, 14:20-15:50, Roentgen Hall

Abstract

QSM should be generated as a post processing whenever a gradient echo sequence is used in MRI. The gradient echo sequence should be included in an MRI protocol when a patient is suspected of neurodegeneration, inflammation, ischemia, hemorrhage, cancer, osteoporosis, and atherosclerosis, and whenever a contrast agent is injected.

Both phase and T2* weighted hypointensity in gradient echo MRI depend on surrounding susceptibility sources in a convoluted way, or they reflect only the “shadow” of magnetic tissue [1, 2]. Tissue susceptibility can be determined by deconvolving the MRI signal phase. The field-to-source ill-posed inverse problem can be solved using anatomic information readily available in MRI, which can guide the selection of a desired solution with zero streaking and shadow artifacts. This Bayesian approach has been developed by us to enable quantitative susceptibility mapping (QSM) [3, 4]. Current QSM technology is robust enough for routine study [5-8] of very strong isotropic magnetic susceptibility sources in tissue, which are biometals. The most abundant magnetic biometals in the body are iron, calcium, and contrast agent. We outline the following opportunities to develop these biometal QSM applications.

Iron in neurons. Iron (typically Fe²⁺) as a catalyst is required to participate in most cellular biochemistries in the body. Iron overload is invariably associated with neurodegenerative diseases, such as Parkinson’s disease, causing tissue damage through pathways involving oxidative stress. The vast majority of iron is stored (~99%) as Fe³⁺ mostly in ferritin, and only a very small fraction (~1%) is labile. The tight balance between stored iron concentration and bioactive labile iron concentration in each cell, as dictated by brain homeostasis, makes QSM iron storage measurement meaningful for studying neurodegenerative and other diseases. In particular, QSM is ideal for defining the deep brain stimulation target, subthalamic nucleus [9], which has rich iron due to its active generation of neurotransmitter glutamate. QSM may be critically useful in monitoring iron chelating therapy that is been developed for treating Parkinson’s disease.

Iron in hepatocytes. A major consequence for liver iron overload is fibrosis and eventual cirrhosis that inherently confound R2* and R2 measurements of liver iron. As fibrosis contributes little and linearly to magnetic susceptibility, QSM would play a critical role for accurate liver iron measurement in managing iron chelating dosage in transfusional iron overload patients.

Iron in immune cell macrophages. Iron is taken up by proinflammatory M1 macrophages as the immune system responds to pathogen invasion. In multiple sclerosis (MS) where the immune system attacks the central nerve system, M1 microglia in the MS lesion neighborhood cause chronic inflammation that can for the first time be detected on QSM as a hyperintense rim [10, 11].

Iron in red blood cells. QSM can be used to quantify deoxyheme, enabling practical mapping of cerebral metabolic rate of oxygen consumption (CMRO₂). QSM provides quantitative study of hemorrhages, including microbleeds that are involved in various pathological processes without blooming artifacts.

High concentration in calcification (hydroxyapatite) makes a robust QSM of diamagnetism. QSM promises to eliminate x-ray radiation for assessing bone strength, as well as bone marrow quality.

QSM solve contrast agent quantification problems in relaxation, enabling MRI quantification in drug delivery.

Biography

Professor Yi Wang (PhD 1994, University of Wisconsin-Madison) is the Faculty Distinguished Professor of Radiology of Professor of Biomedical Engineering at Cornell University. He is a Fellow of IEEE (Institute of Electrical and Electronics Engineers), ISMRM (International Society of Magnetic Resonance in Medicine), and AIMBE (American Institute for Medical and Biological Engineering). He has been elected to the Council of Distinguished Investigators of the Academy of Radiology Research. He has served as a scientific reviewer of grant applications for many agencies, including the National Institutes of Health (NIH), European Research Council, Research Grants Council of Hong Kong, Swiss National Science Foundation, and the Wellcome Trust of the United Kingdom. As a Principal Investigator, he has led many NIH projects on research and education, including researches on brain function, cancer, heart disease, multiple sclerosis, Parkinson’s disease, stroke, and vascular diseases. He has published 195 peer-reviewed journal papers, authored a textbook “Principles of Magnetic Resonance Imaging” and a monograph book “Quantitative susceptibility mapping: magnetic resonance imaging of tissue magnetism”, edited a book “Introductory medicine for engineers”, and co-authored a book “Electro-Magnetic Tissue Properties MRI”.

Professor Wang’s research interest has been in developing MRI technology for clinical applications. He has developed navigator motion compensation for cardiac MRI, which has become widely adopted in scientific research and clinical practice for cardiac and other MRI. He has pioneered time resolved contrast enhanced MRA, which has become a major tool for scientific and clinical investigations of cardiovascular diseases. He has pioneered multiple station stepping table platform for large field-of-view imaging as exemplified by bolus chase acquisition; the multi-coil array for multi-station as depicted in his patent has become Siemens’ flagship “Tim –

Total image matrix” product. Recently, his group has introduced the quantitative susceptibility mapping (QSM) technique that has solved for the first time the field-to-susceptibility inverse problem using the Bayesian approach. QSM has broken ground for a new field in MRI for studying tissue magnetism, including iron, calcification, myelin, and contrast agents. QSM has potential applications for a wide range of inflammatory, ischemic and neurodegenerative diseases.



Kenji Sunagawa, MD, PhD

Smart Closed-loop Neuromodulation Revolutionizes Cardiology in the 21st Century

Friday, July 14, 2017, 09:40-10:30, Park Room

Abstract

In the last few decades, tremendous progress has been made in cardiology. Although molecular biology is a major driving force of this progress, technology plays a crucial role. We witness in daily patient care that sophisticated devices such as cardiac defibrillators, pacemakers, circulatory assist devices, percutaneous coronary intervention and ablation save many lives. However there is no doubt that only a little of the potential of technology has been explored. The key element that prevents full exploration would be the lack of unification of high-tech based therapeutic systems into natural human physiology. In the human body, all cells, tissues, organs, and systems operate coherently. The presence of well-developed neuro-humoral communications among these components of the body is the essential infrastructure that makes coherent functioning possible. If we could incorporate such communication mechanisms into artificial systems, they would function as if they are an integral part of the native physiological systems. We call such well-integrated smart artificial systems *bionic systems*. Cardiology utilizing smart bionic systems is *bionic cardiology*.

The bread-and-butter technology that is common to all bionic systems is the technique to unify the artificial devices with the native systems, in particular, the human body's regulatory systems. In 1996, we developed one such system, a neurally regulated cardiac pacemaker. The success of the neurally regulated pacemaker has convinced us that the autonomic system can be effectively monitored and thereby electrically manipulated. The clinical impact of direct manipulative neuromodulation of autonomic functions in cardiovascular diseases is profound. Virtually every cardiovascular disease has a major problem in its autonomic regulation. The case of central baroreflex failure is an archetypal example. The bionic baroreflex system operates as an intelligent negative feedback regulator. We demonstrated in animals and in patients that the bionic baroreflex system restores normal baroreflex function. The bionic baroreflex system opens up an entirely new therapeutic modality for patients with baroreflex failure. In our latest investigation, we demonstrated that bionic manipulative closed-loop neuromodulation of autonomic functions is extremely powerful in the management of refractory hypertension, acute myocardial infarction and heart failure.

Bionic medicine aims at improving clinical outcomes and enhancing quality of life by restoring the lost functions of failing physiological systems or organs. The combination of latest technology, biology and quantitative systems physiology, all of which are progressing very rapidly, will inspire even more intricate disruptive innovations of bionic medicine in the 21st century.

Biography

Kenji Sunagawa, MD, PhD is the founder and Professor of the Center for Disruptive Cardiovascular Medicine (CDiC) at Kyushu University, Fukuoka, Japan. CDiC is the institution to develop future medicine via disruptive innovations to save patients with treatment refractory cardiovascular disease.

Dr. Sunagawa received his M.D. in 1974 and Ph.D. in 1986 from Kyushu University, Fukuoka, Japan. He joined the cardiovascular group at the Department of Biomedical Engineering, Johns Hopkins in 1978 and contributed to establish the concept of the pressure-volume relationship of the heart, one of the most fundamental concepts of cardiac mechanics. In 1990, he was appointed chairman of the Department of Cardiovascular Dynamics as well as

the Division of Cardiology at the National Cardiovascular Center in Osaka. In 2004, he was appointed Professor and Chief of Cardiology Division and Chairman of Cardiovascular Medicine at Kyushu University. He has been extensively applying the concept of engineering to study cardiac mechanics and cardiovascular neural regulation. Those studies have led him to develop intelligent neuromodulators (i.e., bionic systems) that are interfaced and functionally unified with the native autonomic nervous system. Since the late 90s, he developed a neurally regulated cardiac pacemaker, bionic baroreflex system and bionic cardiac neuromodulator, all of which had striking impacts on the management of refractory cardiovascular disease. Because of these contributions, he received the Paul Dudley Lectureship Award from American Heart Association in 2000 and EMBS Technical Award in 2010. He served as AdCom member and chair of Technical Committee on cardiopulmonary systems of EMBS. He hosted the EMBC2013 in Osaka as the conference chair. He was a board member of the Japanese Society for Medical and Biological Engineering and the Japanese Society of Internal Medicine. He is a Fellow of American Heart Association, American College of Cardiology and European Society of Cardiology.

Prof. Sunagawa received his M.D. in 1974 and Ph.D. in 1986 from the Kyushu University, Fukuoka, Japan. From 1978 to 1983, he was a postdoctoral fellow and then appointed the faculty at the Department of Biomedical Engineering and Division of Cardiology, Johns Hopkins Medical Institutions. From 1990 to 2004, he chaired the Department of Cardiovascular Dynamics at the National Cardiovascular Center in Osaka. Since 2004, he has been the Chief and Professor of Cardiovascular Medicine at the Kyushu University. He has extensively applied engineering concepts to study cardiovascular regulation. Those studies led him to develop bionic cardiology. Bionic systems function just like native physiological systems. Since late 90s, he developed a neurally regulated pacemaker, bionic baroreflex system and bionic neurostimulator for heart failure, all of which had striking impacts in treating refractory cardiovascular diseases. Because of this contribution, he received the Paul Dudley White Award from the American Heart Association (AHA) in 2000. He has been a fellow of AHA, American College of Cardiology and European Society of Cardiology. He is a board member of Japanese Society for Medical and Biological Engineering, a senior member of IEEE, and a member of AdCom of EMBS since 2005.



Allison Okamura, Ph.D.

Let's be Flexible: Soft Haptics and Soft Robotics

Friday, July 14, 2017, 09:40-10:30, Roentgen Hall

Abstract

While traditional robotic manipulators are constructed from rigid links and localized joints, a new generation of robotic devices are soft, using flexible, deformable materials. In this talk, I will describe several new systems that leverage softness to achieve novel shape control, provide a compliant interface to the human body, and access hard-to-reach locations. First, soft haptic devices change their shape and mechanical properties to allow medical simulation and new paradigms for human-computer interface. They can be made wearable by people or by objects in the environment, as needed to assist human users. Second, superelastic materials and 3D-printed soft plastics enable surgical robots that can steer within the human body in order to reach targets inaccessible via the straight-line paths of traditional instruments. These surgical robots are designed on a patient- and procedure-specific basis, to minimize invasiveness and facilitate low-cost interventions in special patient populations. Third, everting pneumatic tubes are used to create robots that can grow hundreds of times in length, steer around obstacles, and squeeze through tight spaces. These plant-inspired growing robots can achieve simple remote manipulation tasks, deliver payloads such as water or sensors in search and rescue scenarios, and shape themselves into useful structures.

Biography

Allison M. Okamura received the BS degree from the University of California at Berkeley in 1994, and the MS and PhD degrees from Stanford University in 1996 and 2000, respectively, all in mechanical engineering. She is currently a Professor in the Mechanical Engineering department and has a courtesy appointment in the Computer Science department at Stanford University. She was previously Professor and Vice Chair of Mechanical Engineering at Johns Hopkins University. She has been an Associate Editor of the IEEE Transactions on Haptics

and Co-Chair of the IEEE Haptics Symposium. She is currently Editor-in-Chief of the IEEE International Conference on Robotics and Automation Conference Editorial Board, Deputy Editor-in-Chief of the IEEE Robotics and Automation Letters, and an Editor of the International Journal of Robotics Research. Her awards include the 2016 Duca Family University Fellow in Undergraduate Education at Stanford University, the 2009 IEEE Technical Committee on Haptics Early Career Award, the 2005 IEEE Robotics and Automation Society Early Academic Career Award, and the 2004 NSF CAREER Award. She became an IEEE Fellow in 2011. Her academic interests include haptics, teleoperation, virtual environments and simulators, medical robotics, neuromechanics and rehabilitation, prosthetics, and engineering education. She directs the Collaborative Haptics and Robotics in Medicine (CHARM) Laboratory (<http://charm.stanford.edu>). Outside academia, she enjoys spending time with her husband and two children, running, and playing ice hockey.



Zang-Hee Cho, Ph.D.

Super-Resolution Tractography with 7.0T MRI-Applications to Language and Cognition

Friday, July 14, 2017, 09:40-10:30, Cho Room

Abstract

Increasing interest of connectomic areas of research encouraged development of high-resolution tractography among others the Super-Resolution Tractography (SRT) of In-vivo Human with UHF 7.0T MRI. SRT now boasts submillimeter resolution human brain fiber connectivity with resolution down to 200 μm allowing us to look at the fine structures of the language circuitry such as Geschwind's territory and its connections to the cognitive centers, the prefrontal cortex. This talk will discuss technical aspects of the SRT and its applications to human language and cognition.

Biography

Dr. Zang Hee Cho graduated Seoul National University and did Ph.D. in Applied physics at Uppsala University, Sweden.

Professor Cho has been faculty of University of California, Los Angeles, Columbia University, and University of California, Irvine. Professor Cho is currently Distinguished Research Fellow at the AICT, Seoul National University.

Professor Cho in the pioneer of CT, PET, and MRI and developed world's first PET scanner in 1975 while he was at UCLA. Among many awards and honors, Professor Cho elected as a member of US National Academy of Medicine in 1977.



Shuming Nie, Ph.D.

Pharmaceutical Engineering: Smart Drug Delivery Systems for Targeting the Tumor Microenvironments

Friday, July 14, 2017, 13:20-14:10, Park Room

Abstract

The design and development of sophisticated nanoparticles for the targeted delivery of therapeutic drugs to solid tumors holds great promise not only for improving treatment efficacy but also for reducing systemic toxicity.

However, the currently low delivery efficiency (about 1-5 % of the injected dose) and the limited tumor penetration of nanoparticles remain two major challenges. Here we report a class of nanoscale superstructures with unusual pH-responsive and size-switching properties for targeting the acidic tumor microenvironment as well as for improved drug tumor penetration. Specifically, the suprananostructures are constructed by using pegylated polymethacrylate copolymers containing tertiary amine groups (sensitive to pH), and the protonation or deprotonation of these tertiary amines induces a dramatic hydrophobic-hydrophilic transition which drives rapid assembly or disassembly on the nanoscale. For drug loading, this pH-sensitive copolymer is first linked to a polyaminoamine dendrimer (4th generation, MW 14K, with 64 terminal amine groups) via a stable amide bond, which is then conjugated to a platinum prodrug molecules via a succinyl anhydride linker (cleavable). Once internalized into tumor cells, the platinum prodrug is converted to the active drug cisplatin by redox chemical reductions involving ascorbic acid (vitamin C) and other reducing agents. These superstructures have a relatively large size of about 80 nm at neutral pH (blood circulation), but once deposited in the acidic tumor microenvironment (pH ~6.5-7.0), they undergo a dramatic and sharp size transition within a very narrow range of acidity (less than 0.1-0.2 pH units), and dissociate rapidly into the dendrimer building blocks (less than 10 nm in diameter). This rapid size-switching feature cannot only facilitate nanoparticle extravasation and accumulation via the enhanced permeability and retention (EPR) effect, but also allows faster nanoparticle diffusion and improved tumor penetration. Using both multicellular spheroids and poorly permeable BxPC-3 pancreatic tumor models, we have systematically studied the pharmacokinetics, organ distribution, tumor penetration, and treatment efficacy for this class of pH-sensitive nanoparticle prodrugs. We have also carried out comparative studies of pH sensitive and insensitive nanostructures with similar size, surface charge, and chemical composition. The results demonstrate that the high pH sensitivity and particle size switching are indeed viable strategies for improving drug penetration and therapeutic efficacy. This work was supported by grants from the US National Institutes of Health (U54 CA119338, RC2 CA148265, and R01CA163256).

Biography

Dr. Shuming Nie is the Wallace H. Coulter Distinguished Chair Professor in Biomedical Engineering at Emory University and the Georgia Institute of Technology, Director of the Emory-Georgia Tech Cancer Nanotechnology Program, and Founding Dean of the College of Engineering and Applied Sciences of Nanjing University (China). His academic research is in the areas of molecular engineering and nanotechnology, with a focus on bioconjugated nanoparticles for cancer molecular imaging, molecular profiling, and targeted therapy. His major academic achievements include the discovery of colloidal metal nanoparticles that are able to amplify the efficiencies of surface-enhanced Raman scattering (SERS) by 14-15 orders of magnitude, his pioneering work on water-soluble semiconductor quantum dots for biomedical applications, and his breakthrough work in developing multifunctional smart nanoparticles for integrated biomedical imaging and therapy, including image-guided cancer surgery. Professor Nie has published over 300 papers, patents, and book chapters, have delivered more than 500 invited lectures around the world, and have trained over 30 doctoral students and postdoctoral fellows who are now making an impact at top academic institutions and biotech companies. His scholarly work has been cited over 54,000 times with an h-index of 84 (Google Scholar). Professor Nie received his BS degree from Nankai University (Tianjin, China) in 1983, earned his MS and PhD degrees from Northwestern University (Evanston, Illinois, 1984-1990), and did postdoctoral research at the Georgia Institute of Technology and Stanford University (1990-1994).



Yo Kobayashi, Ph.D.

Mechanical Model of Soft Biological Tissues for Computer Aided Surgery

Friday, July 14, 2017, 13:20-14:10, Min Room

Abstract

Understanding the physical phenomena underlying the mechanical properties of human tissue has a great impact on bioscience and engineering. This knowledge will lead to further development of machines and systems in the health care field. For example, a mechanical model of target objects (organ, tissue, etc.) is required for mechanical design, motion planning, information processing, and control of the systems.

I would like to share some of our work in mechanical model of soft biological tissues for computer-aided surgery, medical robotics, and biomedical engineering. We found from the experiments that soft biological tissues have specific and complex properties and propose a simple model to identify the viscoelastic and nonlinear properties. My talk mainly will focus on research and development of needle insertion system and palpation system based on mechanical model of soft biological tissues.

Biography

Yo Kobayashi is now Associate Professor, Graduate School of Engineering Science, Osaka University, Osaka, Japan.

He received the BS and MS degrees from the Graduate School of Science and Engineering, Waseda University, Tokyo, Japan, in 2004 and 2005, and the PhD degree in engineering from Waseda University in 2008. He was a Visiting Research Associate in the Graduate School of Science and Engineering, Waseda University, from 2005 to 2006. He was a recipient of a Japan Society for the Promotion of Science (JSPS) Research Fellowship for Young Scientists during 2007. During 2008, he was a Research Associate in the Institute for Biomedical Engineering, Waseda University. He has been a Research Associate during 2009 and Lecturer (junior researcher) with the Faculty of Science and Engineering since 2010, Associate Professor (Senior researcher), Faculty of Science and Engineering / Future Robotics Organization, Waseda University since 2012. He is also PRESTO (Precursory Research for Embryonic Science and Technology) Researcher, Strategic Basic Research Programs, and JST.

His current research interests include soft biological tissue modeling, computer aided surgery, medical robotics and rehabilitation robotics.



Zuhong Lu, Ph.D.

Challenges and Opportunities in Investigation of Human Gut Metagenomics

Friday, July 14, 2017, 13:20-14:10, Cho Room

Abstract

Human gut microbiota is an important factor, which can reflect or affect the state of human health. Many studies already show that the biodiversity is closely related to many chronic non-communicable diseases, such as obesity, diabetes, cancer etc. However, human gut microbiome is one of the most complicated microbial communities, which contains over 1000 known species and nine million of functional genes. It is estimated that there are still a large number of gut microbes remaining unrevealed due to the difficulty of culture, especially for those species with rare or low abundance. The properties and functions of this low abundance microbial in human guts are still a black box. The present metagenomic sequencing technologies have some limitations in detection of the microbial with the abundance less than 0.1%. The technological difficulties exist in both library fabrication and bioinformatic process.

Several efforts have been published to target the problems, including eigengenome partitioning, mini-metagenome, synthetic long-read sequencing, etc... Here we will introduce a new strategy to solve the problem. Firstly, we found the differences of the sequence similarity between the genes of different species (gene uniqueness) by analyzing the genomes of the known microbiota in the human guts. Furthermore, we divided the microbiota into more than 100 sub-microbiota with limited cell numbers in order to reduce the complexity. We can obtain the more readers from low abundance microbial and cluster the different short de novo assembled contigs into high quality long contigs based on gene uniqueness. It is indicated that a number of low abundance species have been detected and many novel genes have been found with this method. The method would help us to discover more unknown species and understand influences of the low abundance microbial in human guts.

Biography

Zuhong Lu received the BS and MS degrees in electronics engineering and Ph.D. degree in bioelectronics from the Southeast University at Nanjing, China in 1982, 1984 and 1988, respectively. He currently is the Cheung Kong Professor at School of Biological Science and Medical Engineering of Southeast University, Director of State Key

Laboratory for Bioelectronics. He was previously Chair Professor of Department of Biomedical engineering College of Engineering, Peking University. He is currently Chair of the Society of Biomedical Electronics, Chinese Electronics Institute and Chair of Branch of Health Engineering, Chinese Society of Biomedical Engineering. His research field covers molecular devices, biosensors, microarray technology, microfluidics, high throughput DNA sequencing, bioinformatics, health engineering, etc. He has published more than 400 peer-reviewed papers, and obtained more than 30 national patents.



Xiaochuan Pan, Ph.D.

X-ray Tomographic Imaging and Applications
Enabled by Advanced Algorithms

Friday, July 14, 2017, 13:20-14:10, Roentgen Hall

Abstract

The presentation will first highlight some of the recent advances in optimization-based algorithms for image reconstruction in tomographic imaging, especially in X-ray tomographic imaging, and will then focus on discussing the challenges in adequately applying the algorithmic advances to possibly benefiting real applications of clinical or practical significance. A series of real-data examples in X-ray tomography relevant to imaging tasks in radiation therapy will be used for illustrating how optimization-based algorithms may be exploited for enabling the development of imaging systems and workflows tailored to specific applications of practical merit in medicine and other areas. The presentation will also clarify some seemingly confusing issues concerning, e.g., compressive sensing (CS) in image reconstruction and image/signal processing. If time allows, the presentation may touch upon implications of optimization-based reconstruction for PET and MRI imaging.

Biography

Xiaochuan Pan is a Professor in the Department of Radiology, Department of Radiation & Cellular Oncology, the Committee on Medical Physics, the Comprehensive Cancer Center, and the College at The University of Chicago. His research interest centers on physics, algorithms, and applications of tomographic imaging, and has published more than 450 papers on his research. He is the recipient of numerous awards, including IEEE NPSS Early Achievement Award, IEEE EMBS Technical Award, and Distinguished Investigator Award of ARR, and is a Fellow of AAPM, AIMBE, IAMBE, IEEE, OSA, and SPIE. Dr. Pan has served as a chair and/or a reviewer of study sections/review panels for funding agencies, including NIH, NSF, DOE, AIBS, NSERC, ASF, NSFC, FNRA, SRNSF, IMSTS, and RGCHK, as a board member and associate editor for journals in the field such as *IEEE Trans. Med. Imaging*, *IEEE Trans. Biomed Eng.*, *IEEE J. Transl. Eng. Health and Med.*, *Phys. Biol. Med.*, *Med. Phys.*, and *J. Med. Imaging*, as a chair/member of technical committees of professional organizations such as IEEE, RSNA, and AAPM, and as a general chair, chair/member of programs, themes, and technical/scientific committees for conferences such as IEEE EMBC, IEEE MIC, RSNA, AAPM, and MICCIA.



Yong Jin Lee, Ph.D.

Wearables and Nearables for Health

Saturday, July 15, 2017, 09:40-10:30, Roentgen Hall

Abstract

During the past decade, we have seen the smartphone become mankind's primary connected device. It has become the one device that we always carry with us, being the device we rely on most for our computing and communication needs. We have seen it absorb entire categories of personal devices – portable music player, point-and-shoot camera, portable alarm clock, GPS navigator, portable DVD player, to name a few.

Relatively recently, however, we are starting to see the rise of new classes of personal connected devices. These devices leverage the miniaturized, high-performance, low-cost, low-power component solutions created by the smartphone industry. Wearables, devices that are attached to our bodies, as well as nearables, devices that are near our bodies, are becoming more ubiquitous.

Health applications are among the key drivers for the rise of the wearables and nearables. Health devices include activity and wellness trackers, personal medical monitors, and environmental monitors. While these devices may not provide the detail and accuracy provided by medical devices at the hospital, they provide frequent, often continuous monitoring of multiple physiological and environmental parameters that can be used to monitor and manage our health.

A number of industries, including, news and entertainment, banking, retail, and transportation have been significantly and permanently transformed by the smartphone. The health industry is poised for a significant transformation as well. Wearables and nearables, in addition to the smartphone, will play a key role in the transformation of the health industry.

Biography

Yong Jin Lee is currently Senior Vice President responsible for developing new devices at Samsung's Mobile Communications Business, including the development of wearables and nearables for health and wellness. Previously, he was responsible for Samsung's digital health program. He oversaw the development of the Samsung Health platform and the advanced health-related sensors on smartphones and wearables.

Prior to Samsung, Dr. Lee was the CTO and SVP of Engineering at Salutron. Dr. Lee was the principal investigator for over a dozen research programs on physiological monitoring and wearable devices for NASA, DARPA, Office of Secretary of Defense, US Army Medical Research, Office of Naval Research, and Department of Homeland Security. Dr. Lee was also at Veeco and Texas Instruments.

Dr. Lee holds BS, MS and PhD degrees in Electrical Engineering, AB in Economics, and MS in Engineering management, all from Stanford University. Dr. Lee is a recipient of F.E. Terman Award, and member of Tau Beta Pi, and Phi Beta Kappa honor societies.



Daniel Rueckert, Ph.D.

Imaging the Developing Brain – An overview of the Developing Human Connectome Project (DHCP)

Saturday, July 15, 2017, 13:20-14:10, Roentgen Hall

Abstract

Few advances in neuroscience could have as much impact as a precise global description of human brain connectivity (connectome) and its variability. Understanding this connectome in detail will provide insights into fundamental neural processes and intractable neuropsychiatric diseases. Currently, the connectome of the mature adult brain is in progress. The Developing Human Connectome Project (dHCP) aims to make major scientific progress by creating the first 4-dimensional connectome of early life. Our goal is to create a dynamic map of human brain connectivity from 20 to 44 weeks post-conceptual age, which will link together imaging, clinical, behavioral, and genetic information. This unique setting, with imaging and collateral data in an expandable open-source informatics structure, will permit wide use by the scientific community, and to undertake pioneer studies into normal and abnormal development by studying well-phenotyped and genotyped group of infants with specific genetic and environmental risks that could lead to Autistic Spectrum Disorder or Cerebral Palsy.

Biography

Professor Daniel Rueckert is Head of the Department of Computing at Imperial College London. He joined the Department of Computing as a lecturer in 1999 and became senior lecturer in 2003. Since 2005 he is Professor of Visual Information Processing and leads the Biomedical Image Analysis group. He received a Diploma in Computer Science (equiv to M.Sc.) from the Technical University Berlin and a Ph.D. in Computer Science from Imperial College London. Before moving to Imperial College, he has worked as a post-doctoral research fellow in the Division of Radiological Sciences and Medical Engineering, King's College London where he has worked on the development of non-rigid registration algorithms for the compensation of tissue motion and deformation. The developed registration techniques have been successfully used for the non-rigid registration of various anatomical structures, including in the breast, liver, heart and brain and are currently commercialized by IXICO, an Imperial College spin-out company. During his doctoral and post-doctoral research, he has published more than 400 journal and conference articles. Professor Rueckert is an associate editor of IEEE Transactions on Medical Imaging, a member of the editorial board of Medical Image Analysis, Image & Vision Computing and a referee for a number of international medical imaging journals and conferences. He has served as a member of the organizing and program committees at numerous conferences, e.g. he has been General Co-chair of MMBIA 2006 and FIMH 2013 as well as Program Co-Chair of MICCAI 2009, ISBI 2012 and WBIR 2012. In 2014, he has been elected as a Fellow of the MICCAI society and in 2015 he was elected as a Fellow of the Royal Academy of Engineering and as fellow of the IEEE.



Esmail Jabbari, Ph.D.

NanoBioTechnology Commercialization

Saturday, July 15, 2017, 13:20-14:10, Cho Room

Abstract

Nanobiotechnology is poised to shape the sustainability of industries and wealth of nations, and transform economies and societies on a global scale. The global market for nanomedicine was \$250 billion in 2014 and it is expected to reach \$550 billion by 2020. Nanotechnology is the solution to detection, diagnosis, and treatment of many diseases as biological processes and cellular mechanisms work at the nanoscale. Translation of nanoscale discoveries from the laboratory to the market promises new diagnostic tools and robotic devices, drug targeting systems, gene therapy platforms, biomaterials, regenerative tissue constructs, and personalized medicine. Although most scientists recognize the molecular scale complexity of their discoveries and innovations, they have less appreciation for the expertise required to develop their biotechnologies into a marketable product. This presentation highlights recent advances and challenges in commercialization of nanotechnologies in the healthcare market from innovation to the protection of intellectual property, financing of research and development, standardization for quality control, regulatory process for clinical evaluation, product safety and environmental issues, challenges in evaluation of toxicity and regulation of nanomaterials, and business models for commercialization of nanotechnologies in the healthcare market. This presentation will cover fundamental concepts and risks involved in commercialization of diagnostic devices, drug and gene delivery systems, and constructs for tissue regeneration.

Biography

Dr. Jabbari is a Tenured Full Professor of Chemical and Biomedical Engineering and the Director of Biomaterials, Tissue Engineering and Drug Delivery at the University of South Carolina. He earned his Ph.D. from Purdue University in Chemical Engineering. He began his independent career as an Assistant Professor in the Departments of Biomedical Engineering and Orthopedic Research at Mayo Clinic upon completion of his post-doctoral training at Monsanto and Rice University. Jabbari's research is focused on engineering 3D multi-cellular co-culture systems and the effect of spatiotemporal delivery of growth factors and physico-mechanical factors in the microenvironment on function and fate of stem cells for applications in skeletal tissue regeneration and cancer stem cell therapy. He received the Berton Rahn Award from the AO Foundation in 2012 and the Stephen Milam Award from the Oral and Maxillofacial Surgery Foundation in 2008. He was elected to the College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE) in 2013. He has published >250 books, book chapters, refereed journal articles (107 peer-reviewed), and conference proceedings, and presented >260 seminars at national and international conferences (67 plenary, keynote, and invited seminars). He currently serves as the Technical Chair as well as the Programming Chair for Bionanotechnology theme of the annual conference of Engineering in Medicine & Biology Society (IEE-EMBS). He serves as the Academic Editor for PLOS ONE, Editor of International Journal of Biomaterials, and North America Editor of Journal of Biomaterials and Tissue Engineering. Dr. Jabbari has mentored >130 visiting scholars, medical residents, post-doctoral scientists, and engineering students. He is a member of numerous scientific organizations including AIChE, BMES, ACS, EMBS, SFB, TERMIS, MRS, ACS, and AACR.



Early Career Achievement Award



Chulhong Kim

Pohang University of Science and Technology

"For contributions to multi-scale photoacoustic imaging from super-resolution atomic force photoactivated microscopy for research to systems for clinical applications."

Nominated by: Yongmin Kim
Pohang University of Science and Technology



Academic Career Achievement Award



Nitish Thakor

John Hopkins University

"For life long achievements in the fields of biomedical instrumentation and signal processing, neuroprosthesis and neuroengineering, demonstrated through awards, publication, translational activities, and leadership in the society's conferences and editorial activities."

Nominated by: John Webster

University of Wisconsin



William J. Morlock Award



Ali Khademhosseini

Brigham and Women's Hospital

"For innovative contributions in engineering micro and nanoscale sensors, organ on a chip systems and advanced materials for tissue engineering and regenerative medicine applications."

Nominated by: Mehmet Remzi Dokmeci
Massachusetts Institute of Technology



Professional Career Achievement Award



Karl E. Friedl

U.S. Army Research Institute of Environmental Medicine

"In recognition of his technical contributions in metabolic monitoring, physiological status monitoring, and neuropsychological assessments as a biomedical researcher and technical leader in the military, government, academia, and professional societies."

Nominated by: Jeffrey Palmer
Massachusetts Institute of Technology



Technical Achievement Award



Anant Madabhushi

Case Western Reserve University

"For contributions in computer aided diagnosis, pattern recognition, machine learning and image analysis tools for diagnosis, prognosis, and treatment response prediction of disease from digital pathology and radiographic images."

Nominated by: Atam P. Dhawan
New Jersey Institute of Technology



Technical Achievement Award



Guang-Zhong Yang
Imperial College London

"For outstanding contributions to medical imaging and robotics technology that have transformed minimally invasive surgery."

Nominated by: Zhi-Pei Liang
University of Illinois



2017 Student Chapter Awards

Best New Student Branch Chapter Award **KSRCT IEEE - EMBS Student Branch Chapter, India**

This Branch Chapter was established on 29th April 2015, our branch chapter strive to serve the student community in terms of providing technical knowledge, leadership skills and professional practices by offering technical workshop in the field of biomedical, knowledge sharing sessions, one credit courses in collaboration with renowned Biotech companies. To enhance leadership qualities, the branch chapter offers the student members to organize frequent forums such as idea sharing programmes, members meeting and membership campaigns.

The branch chapter contributes in a distinctive way to offer Professional development practices to the members through Distinguished lecture Programme. Dr. Bernard Allan Cohen, Ethics & Professional Responsibility Committee of IEEE-EMBS empowered the members with his valuable lecture on Enhanced Professional Stature through Ethical Mindset for Biotechnologist.

The service of the branch chapter do not ends with the technical contribution. The branch chapter has functioning with Public Awareness Club (PMC), Press and Media Club (PAC) and Health club. The members are actively involved with great dedication and determination in creating awareness on most important developmental issues including awareness on cancer and diabetes in collaboration with the regional health concerns for the benefit of public and the rural school children. The branch chapter releases Newsletter biannually. It emphasizes the branch chapter activities, EMBS news, general articles and forth coming events.

*Branch Chapter Advisor: **Dr. P. Ponmurugan***
*Chair: **Dr. B. Shanthanaraj***
*Vice-Chair: **Dr. K.B. Jayanthi***
*Branch Chapter Councilor: **Ms. S. Poornima***

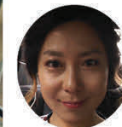




2017 Student Chapter Awards

Outstanding Performance by a Student Chapter Club Award Carleton University EMB Student Club

The Carleton University Engineering in Medicine and Biology Society Student Club (CU@EMBS) was created in 2010 to bridge EMBS to Carleton University new biomedical engineering programs. Since its inception, CU@EMBS has promoted biomedical engineering and knowledge dissemination, most notably through a seminar series with professors and students alike to ensure that the biomedical engineering community at Carleton is well connected and to provide a framework within, which latest advancements are shared and celebrated. The club's efforts were recognized in 2011 by EMBS with the Outstanding Performance Award (OPA). The club has since maintained its excellence and in 2016 held an International Student Conference (ISC) which is part of EMBS initiative to engage students and young professionals with the society. ISC 2016 was a tremendous success and the first student conference to have its proceedings published in IEEE Xplore. It attracted over 150 attendees and held various workshops and keynote sessions. The club has again been recognized for its excellence by winning the 2017 OPA. The award will serve as a platform to propel the club into further excellence.





IEEE Biomedical Engineering Award



Bin He

The pioneering work of Bin He has transformed electroencephalography (EEG) from a one-dimensional detection modality to an important noninvasive three-dimensional neuroimaging tool for brain research and management of brain disorders. He developed anatomically constrained brain source localization by introducing the boundary element method, which has significantly advanced the field of multimodal neuroimaging. He has changed the understanding of what noninvasive brain-computer interfaces (BCIs) can do. Using an array of electrode sensors placed over the scalp, He developed novel BCI techniques to demonstrate that a human can control the flight of a drone with their mind through reading the EEG signals. His neuroimaging innovations are playing an important role in the diagnosis and management of disorders including epilepsy, stroke, and Alzheimer's disease.

An IEEE Fellow, he is the Distinguished McKnight University Professor of Biomedical Engineering and Director of the Institute for Engineering in Medicine at the University of Minnesota, Minneapolis, MN, USA.



IEEE Medal for Innovations in Healthcare Technology



Yulun Wang

The innovations of Yulun Wang concerning remotely operated surgical robots and his development and application of telemedicine systems have improved the quality of healthcare around the world, providing care to patients who otherwise would not have access and lowering the costs of treatment. Pursuing his vision that surgical robotic tools could enable surgeons to perform procedures with increased dexterity and control compared to conventional hand-held instruments, Wang brought medical robots to mainstream research and development and established the role of the surgical robot for minimally invasive surgery. Surgical robots provide the advantages of precision, smaller incisions, decreased blood loss, less pain, and quicker healing time for patients undergoing robotic-assisted surgeries. Wang invented the Automated Endoscopic System for Optical Positioning (AESOP). AESOP is a voice-controlled robotic arm that can hold and move a laparoscope for a surgeon, and it was the first FDA-cleared surgical robot. He also developed the ZEUS robotic surgical system, which performed the world's first trans-Atlantic surgery. Many of the technical innovations developed for ZEUS were incorporated into the very popular da Vinci surgical robot. To improve patient access to quality treatment and to fight the rising costs of healthcare, Wang created the first remote-presence robotic system to enable a clinician to be in two places at one time to perform medical triaging, diagnosis, and consultations from a distance. He applied this system to a tele-stroke treatment network in which a hub hospital places remote presence robots in smaller spoke hospitals to provide these hospitals and their patients with access to stroke specialists who can remotely examine and care for stroke victims. Wang's telemedicine system has also been used for intensive care and psychiatric clinical consults. The surgical robotics and telemedicine innovations that Wang helped to develop have now benefited several million patients—and are continuing to help over a million patients every year.

A member of the U.S. National Academy of Engineering and recipient of the 2005 Innovation Award from the American Telemedicine Association, Wang is chairman and founder of InTouch Health, Goleta, CA, USA.



2017 IEEE Newly Elected Fellows

Jose Carmena

University of California, Berkeley

"for contributions to the neural basis of motor skill learning and neuroprosthetic systems"

Pablo Estevez

University of Chile

"for contributions to feature selection and visualization of large data sets"

Saman Halgamuge

Australian National University

"for contributions to computational intelligence in bioinformatics and mechatronics"

Akimasa Hirata

Nagoya Institute of Technology

"for contributions to safety assessment and standardization of human exposure to electromagnetic fields"

Jiang Hsieh

University of Wisconsin Madison

"for contributions to X-ray computed tomography for clinical applications"

Xin Li

Carnegie Mellon University

"for contributions to image coding, restoration, and interpolation"

Donald Lie

Texas Tech University

"for contributions to high linearity and high efficiency silicon RF power amplifiers for broadband wireless applications"

Wentai Liu

UCLA

"for contributions to electronically-aided neural prosthetic devices"

Jose Del R. Millan

École polytechnique fédérale de Lausanne

"for contributions to brain-controlled robots"

Srikantan Nagarajan

University of California, San Francisco

"for contributions to neural engineering and biomagnetic brain imaging"

Aydogan Ozcan

UCLA

"for contributions to iophotonics, computational imaging, and sensing for telemedicine and global health"

Leif Sornmo

Lund University

"for contributions to biomedical signal processing in cardiac applications"

James Weiland

University of Southern California

"for contributions to the design, development, and realization of retinal prostheses"



EMBS Past Award Recipients

Professional Career Achievement Awards

- 2017: Karl E. Friedl
- 2015: Matthew O'Donnell
- 2011: Yongmin Kim
- 2009: Luke Lee
- 1979: Robert Plonsey
- 1974: Dean L. Franklin
- 1973: Donald F. Childers
- 1968: Wilson Greatbatch
- 1967: Herman Schwan
- 1963: Otto Schmitt
- 1961: Britton Chance
- 1956: Edward F. MacNichol

Academic Career Achievement Awards

- 2017: Nitish Thakor
- 2016: Maryellen Giger
- 2015: Bin He
- 2014: Max A. Viergever
- 2013: Theodore W. Berger
- 2012: Peter Hunter
- 2011: K. Kirk Shung
- 2010: Robert S. Langer
- 2009: Sergio Cerutti
- 2008: Roger Barr
- 2007: Jose Principe
- 2006: Jean-Louis Coatrieux
- 2005: Ewart Carson
- 2004: Michael R. Neuman
- 2003: Ante Santic
- 2002: Willis J. Tompkins
- 2001: John G. Webster
- 2000: Max Schaldach
- 1999: Fernand A. Roberge
- 1997: J. Lawrence Katz
- 1996: Max E. Valentinuzzi
- 1995: Floyd Dunn
- 1994: Wilson Greatbatch
- 1993: John M. Reid
- 1992: Edwin L. Carstensen

Early Career Achievement Award

- 2017: Chulhong Kim
- 2016: Lei Ding
- 2015: Danielle S. Bassett
- 2014: Qi Wang
- 2013: Muhammad H. Zaman
- 2012: Utkan Demirci
- 2011: Jose M. Carmena
- 2010: Dario Farina
- 2009: Silvestro Micera
- 2008: Ali Khademhosseini
- 2007: Tejal Desai
- 2006: Alejandro Frangi
- 2005: Stephen Boppart
- 2004: Susan Hagness
- 2003: Paolo Vicini
- 2002: Dorin Panescu
- 2001: David Beebe
- 2000: James Collins
- 1999: Zhi-Pei Liang
- 1997: Metin Akay
- 1996: Joan E. Sanders
- 1995: Atam P. Dhawan
- 1993: Rory A. Cooper
- 1992: Yitzhak Mendelson
- 1991: Blake Hannaford
- 1990: Janie M. Foue
- 1988: Yongmin Kim
- 1986: George V. Kondraske



EMBS Past Award Recipients

William J. Morlock Award

- 2017: Ali Khademosseini
- 2012: Reese S. Terry, Jr.
- 2011: Rahul Mehra
- 2010: Mark Kroll
- 2009: Dorin Panescu

Distinguished Service Award

- 2016: Bruce Wheeler
- 2015: Zhi-Pei Liang
- 2014: Bin He
- 2013: Donna Hudson
- 2011: Maximus A. Viergever
- 2010: Yongmin Kim
- 2009: John W. Clark Jr.
- 2008: Henrietta Galiana
- 2007: Nathalie Gosset
- 2006: Yuan-Ting Zhang
- 2005: Jose Principe
- 2004: John Enderle
- 2003: Christian Roux
- 2002: Swamy Laxminarayan
- 2001: Metin Akay
- 2000: Jack Iverson
- 1999: Jean-Louis Coatrieux
- 1998: Susan M. Blanchard
- 1996: Michael R. Neuman
- 1995: Charles Robinson
- 1994: Barry Feinberg
- 1993: Eli Fromme
- 1992: Swamy Laxminarayan
- 1990: Alvin Wald
- 1983: Eli Fromme

Technical Field Awards

- 2017: Guang-Zhong Yang
- 2017: Anant Madabhushi
- 2016: Stephen Boppart
- 2016: Jeffrey Fessler
- 2015: Nigell Lovell
- 2015: Russell H. Taylor
- 2014: Brian T. Cunningham
- 2014: Zhi-Pei Liang
- 2013: Nicolas Chbat
- 2013: Ali Khademosseini
- 2012: Rashid Bashir
- 2011: Michael Unser
- 2011: Lihong Wang
- 2010: Xiaochuan Pan
- 2010: Kenji Sunagawa
- 2010: Nitish Thakor



2017 EMBC Student Paper Competition

Geographic Finalists

North America

Soojin Lee

The University of British Columbia

Galvanic Vestibular Stimulation (GVS) Effects on Impaired Interhemispheric Connectivity in Parkinson's Disease

Europe

Jonathan Castelli

University of Bordeaux

An IC-Based Controllable Stimulator for Respiratory Muscle Stimulation Investigations

Asia –Pacific

Mi Kyung Kim

Korea Advanced Institute of Science and Technology (KAIST)

Implantable Bladder Volume Sensor Based on Resistor Ladder Network Composed of Conductive Hydrogel Composite

Middle East- Africa

Meena M. Makary

Cairo University

Self-Regulation of Primary Motor Cortex Activity with Motor Imagery Induces Functional Connectivity Modulation: A Real-Time fMRI Neurofeedback Study



2017 EMBC Student Paper Competition

Open Finalists

Yafen Chen

University of Oklahoma
Assessing Rtms Effects in MdDS: Cross-Modal Comparison between Resting State EEG and Fmri Connectivity

Andreas Ejupi

Simon Fraser University
Accuracy of a Wavelet-Based Fall Detection Approach Using an Accelerometer and a Barometric Pressure Sensor

Nikolaos Karamolegkos

Columbia University
Effects of Septum and Pericardium on Heart-Lung Interactions in a Cardiopulmonary Simulation Model

Eli Kinney-Lang

University of Edinburgh
Elucidating Age-Specific Patterns from Background Electroencephalogram Pediatric Data Sets Via PARAFAC

Julia Koch

University of Freiburg
Design of Contact Zone Topography for Implantable High-Channel Electrical Connectors

Yeganeh M. Marghi

Northeastern University
EEG-Guided Robotic Mirror Therapy System for Lower Limb Rehabilitation

Nicholas Marjanovic

University of Illinois at Chicago
Wireless Wearable User Interface Cursor-Controller (UIC-C)

Christine F Martindale

Friedrich-Alexander-Universität Erlangen-Nürnberg
Segmentation of Gait Sequences Using Inertial Sensor Data in Hereditary Spastic Paraplegia

Takayuki Mukaeda

Yokohama National University
A Novel Hidden Markov Model-Based Pattern Discrimination Method with the Anomaly Detection for EMG Signals

Soichiro Fujimura

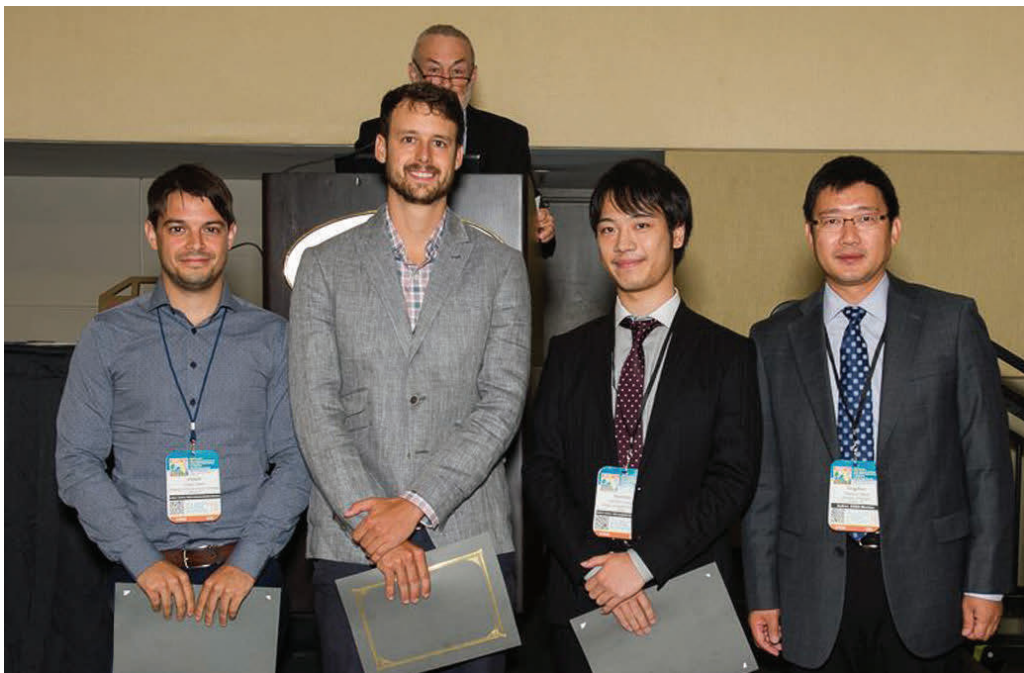
Tokyo University of Science
Effect of Catheter Positions on Hemodynamics and Coil Formation after Coil Embolization

Gabriela Torres

University of North Carolina, Chapel Hill & North Carolina State University
ARFI Variance of Acceleration (VoA) for Noninvasive Characterization of Human Carotid Plaques in Vivo



*2016 EMBC Student Paper Competition
Award Recipients (Recognition Orlando, Florida)*



EMBS Student Paper Competition Award Recipient:

Soichiro Fujimura

Tokyo University of Science

Second Place Award Recipient:

Max Sheppard

Northwestern University

Third Place Award Recipient:

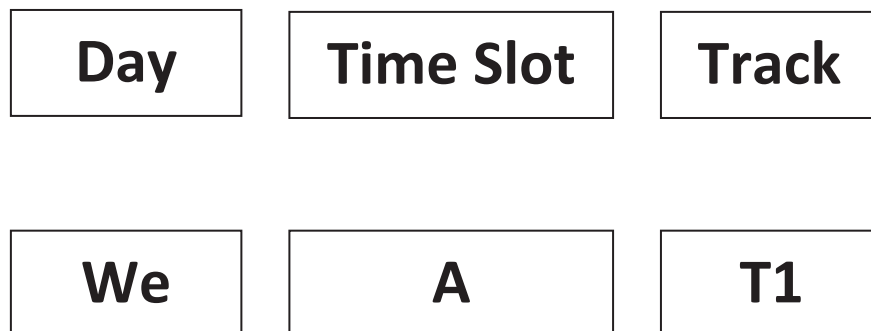
Joseph DeGol

University of Illinois

Session Code Explanation

The main conference program is run over four days and divided into a number of time slots and tracks. Note that there are approximately 18 parallel tracks running at EMBC 2017 spanning all 13 scientific themes.

A session code will therefore have the following format:



- **WeAT1** This is an oral session designating the 'A' time slot on Wednesday (8:00-9:30) for track '1'.

All posters have been scheduled for an Ignite session on the day that your poster has been assigned. (Please verify your date and time)

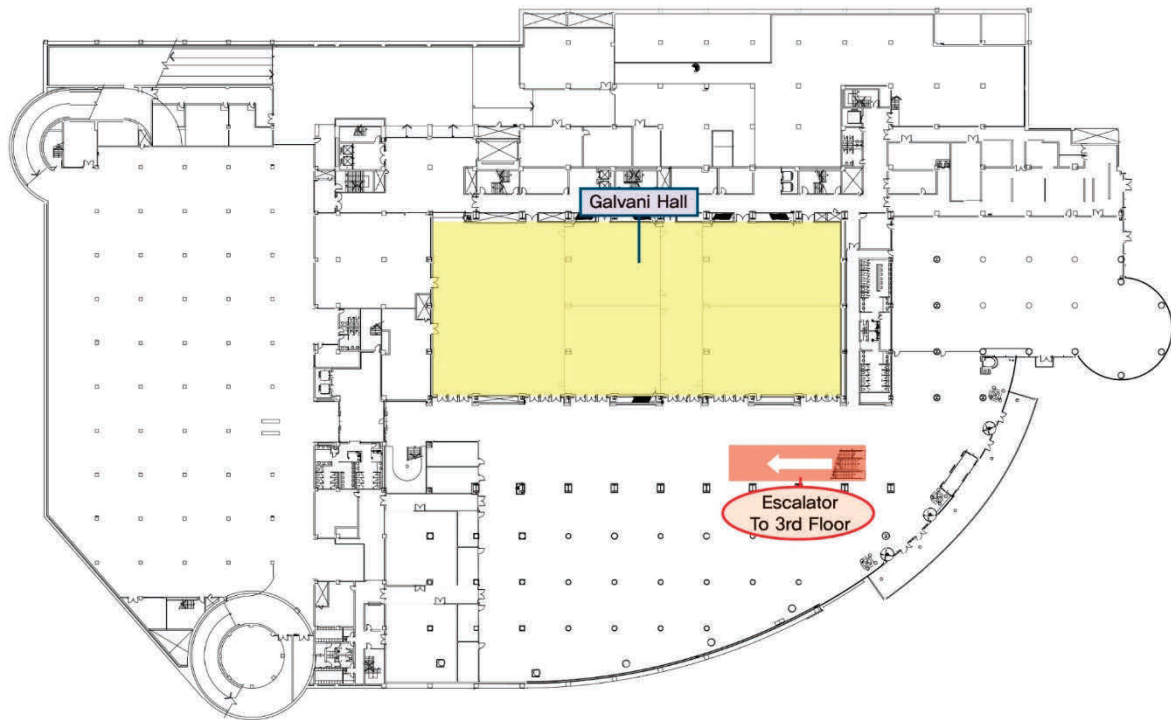
Ignite Sessions Day & Time: Wednesday, Thursday and Friday 16:10 – 17:10.

Poster Sessions Day & Time: Wednesday, Thursday and Friday 17:20 – 18:50.

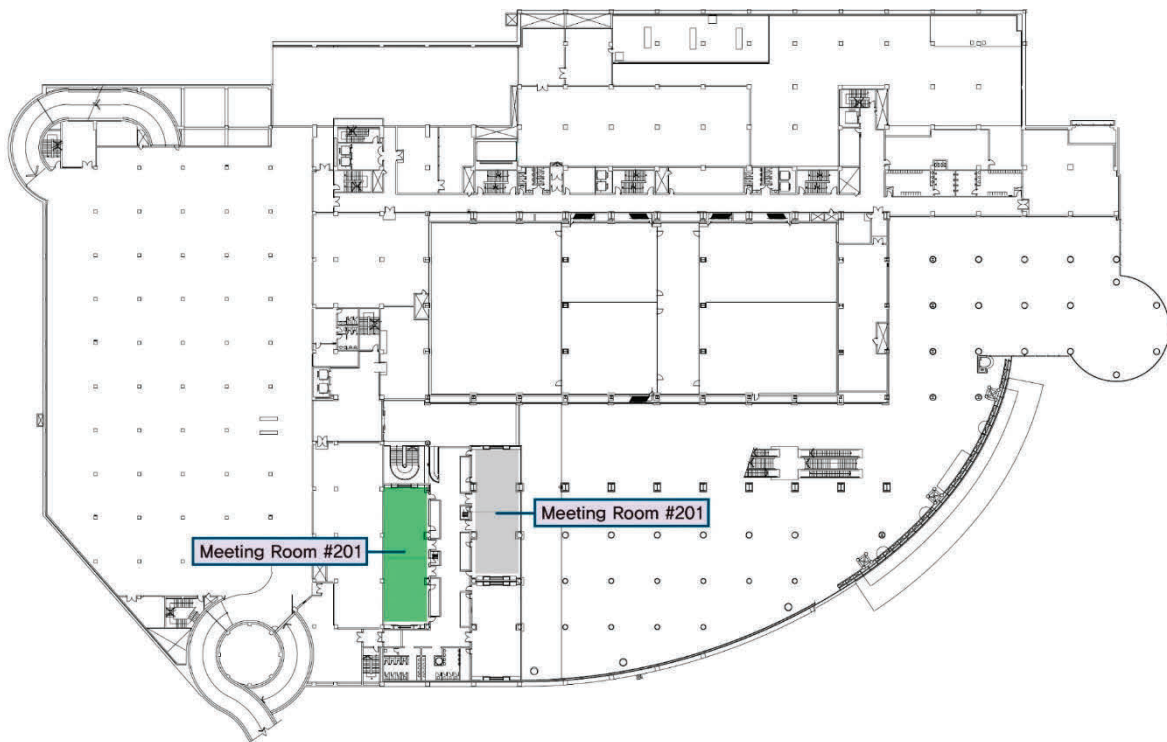
EMBC '17 Floor Plan



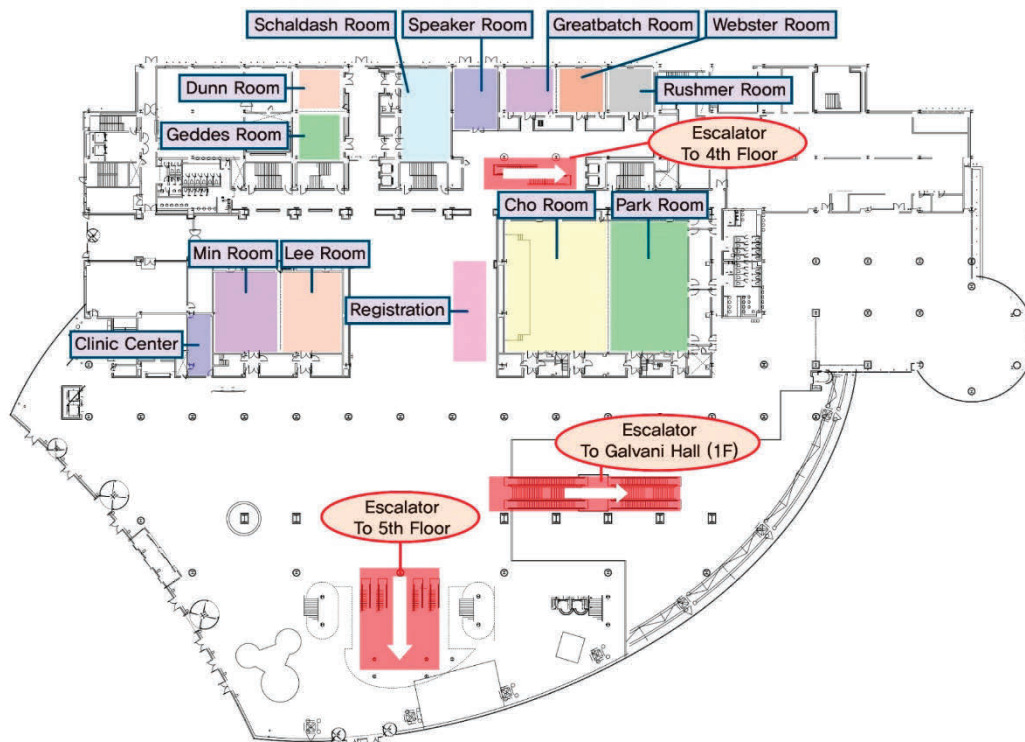
1F – Floor Layout



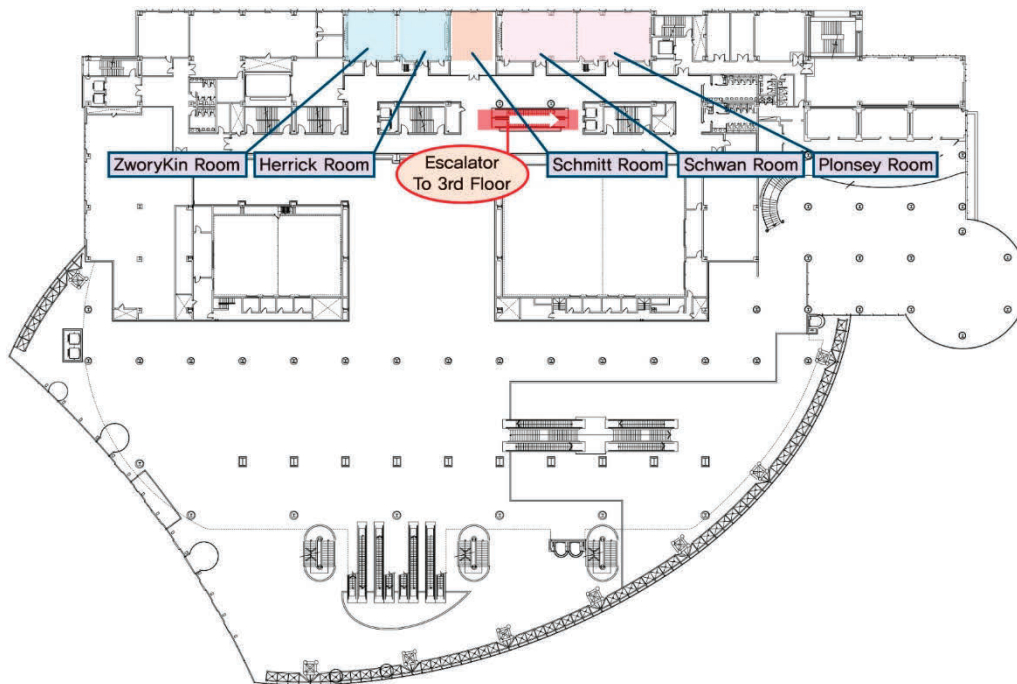
2F – Floor Layout



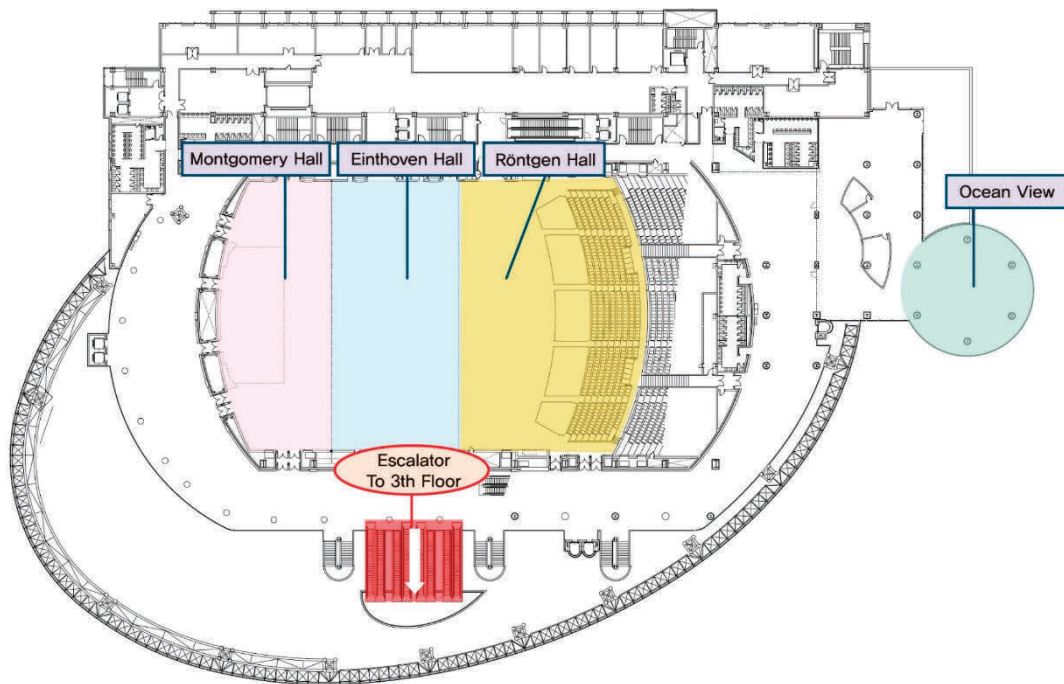
3F – Floor Layout



4F – Floor Layout



5F – Floor Layout



EMBS/KOSOMBE Pioneers

EMBC2017 has named the conference rooms after EMBS/KOSOMBE pioneers to commemorate their contributions to society and the biomedical engineering profession

Cho, Zang Hee



- 1936 -
- Korean Biomedical Engineer and Neuroscientist
- Korea Advanced Institute of Science & Technology
- **Medical Imaging**
- **1st Ring-PET Scanner**

He devoted his whole career for the progress of neuroscience by the development of tomographic medical imaging technologies. He developed the first Ring-PET scanner, by which most of current PET systems reconstruct PET images. And he developed the first scintillation detector BGO and the first 2.0 Tesla MRI. More recently, he developed the first PET-MRI fusion molecular imaging device for neuro-molecular imaging.

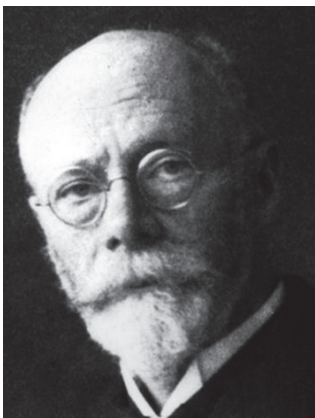
Dunn, Floyd



- 1924 - 2015
- American Biomedical Engineer
- University of Illinois, Urbana Champaign
- **Ultrasound and Bioacoustics**
- **Career Achievement Award 1995**

He was a groundbreaking pioneer in ultrasound and bioacoustics. He was **the first** to show the diagnostic ultrasonic images of tissue structures and their pathologies, quantify in vivo temperature-dependent ultrasonic absorption coefficients, and recognize the need for quantitative measurements of the nonlinearity parameter in biological materials. The widespread & beneficial use of diagnostic ultrasound could not have occurred without his work on safety assurance.

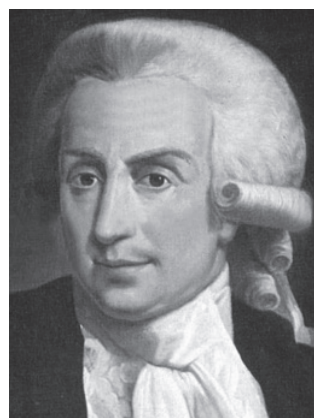
Einthoven, Willem



- 1860 - 1927
- Dutch Physician and Physiologist
- University of Leiden
- **Invented ECG**
- **Nobel Prize in Physiology or Medicine 1924**

He is best known for designing the string galvanometer. This instrument detected and recorded visual traces of the heart's electrical activities. During the 20th century, this technique, known as ECG, diagnosed numerous heart conditions and diseases. Much of the terminology used in describing an ECG originated with Einthoven. His letter assignments, P, Q, R, S and T, to the various deflections are still used. The term Einthoven's triangle is named for him.

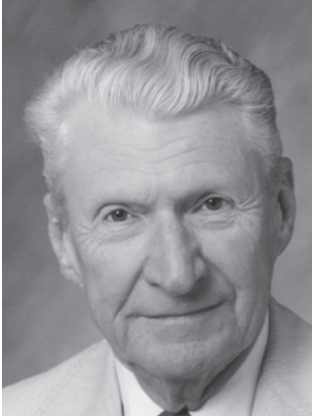
Galvani, Luigi A.



- 1737 - 1798
- Italian Physician, Physicist, Biologist and Philosopher
- University of Bologna
- **Discovered Bioelectricity**

He discovered animal electricity and recognized as the pioneer of bioelectromagnetics. In 1780, he discovered that the muscles of dead frogs' legs twitched when struck by an electrical spark. This was one of the first forays into the study of bioelectricity, a field that still studies the electrical patterns and signals from tissues such as the nerves and muscles.

Geddes, Leslie A.



- 1921 - 2009
- British/ American Biomedical Engineer and Physiologist
- Purdue University
- **Biomedical Instrumentation**
- **Career Achievement Award 1986**

He combined electrical and physiological principles in biomedical research, including electromyography, cardiac output, cardiac pacing, ventricular defibrillation, and blood pressure. He identified & demonstrated the optimal sites on the chest for defibrillation or pacing. His extensive contributions to the direct and indirect measurements of blood pressure laid the foundation for the worldwide acceptance of the oscillometric method of blood pressure measurements.

Greatbatch, Wilson



- 1919 - 2011
- American Biomedical Engineer
- Taber Instrument Co.
- **1st Implantable Pacemaker**
- **Career Achievement Award 1968,1994**

He is best remembered for the invention and development of the first implantable pacemaker. In an attempt to record the sound of a heartbeat, he inadvertently created something far more crucial, a device that emitted electrical pulses to the heart. He patented and licensed his invention to Medtronic, and the first pacemaker was implanted in a human in 1960. He upgraded his device with a lithium iodine battery for durability in 1970, and his invention has been saving numerous lives ever since.

Herrick, Julia F.



- 1893-1979
- American Biophysicist
- Mayo Clinic, Section of Biophysics and Biophysical Research
- **Medical Ultrasonics**
- **EMBS President 1954**
- **1st Editor of EMBS Journal**

Her main research field was medical ultrasonics and microwave diathermy. Dr. Herrick very kindly accepted the position of Editor for the IRE Transactions on Medical Electronics, the first EMBS journal, and made it the leading publication in the medical electronics field in 1953. She also served as the EMBS President in 1954.

Lee, Sang Hoon



- 1960 - 2016
- Korean Biomedical Engineer
- Korea University
- **Bionanotechnology**
- **1st Editor, BME Letters 2011-16**

He was a pioneering biomedical engineer in Korea. His research focused on nano-bio and sensor technologies and published in top journals including 'Nature'. He also possessed the great passion in biomedical engineering education and developed the BME programs in Korea University and Dankook University. He served as the 1st Editor-in-Chief of 'Biomedical Engineering Letters', the official English Journal of KOSOMBE.

Min, Byoung Goo



- 1942 -
- Korean Biomedical Engineer
- Seoul National University
- Artificial Organs
- KOSOMBE President 1996/97

He was a pioneer and leader in artificial organs. Since the success of the 1st animal experiment of a moving-actuator type electromechanical total artificial heart in 1988, his whole career was devoted to the development of artificial pumping devices, including ventricular assisted devices and extracorporeal membrane oxygenators. He also built the 1st biomedical engineering graduate program at Seoul National University.

Montgomery, L. H. Jr.

VANDERBILT UNIVERSITY
NASHVILLE 3, TENNESSEE
April 4, 1951

Dear Sirs:

For sometime I have felt the need for an organization to bring together those of us who are working in the field of medical electronics. This was further confirmed by the type questions asked and discussed in the Instrumentation Symposium at the recent IRE Convention. It appears that there is quite a number of IRE members who are working in the field of medical electronics, and whose interests do not exactly fit one of the present professional group classifications.

It is my belief that with your assistance and the help of others who are interested in clinical or research work we can form a professional group on Medical Electronics which would be very useful to those interested in instrumentation and research associated with the medical profession.

Of course some one must take the initiative to form such a group. In this I must ask for your assistance. If you will send me the names of IRE members of your acquaintance whom you believe will be interested in signing the petition for the formation of this group and perhaps serving on its initial administrative committee, I shall be glad to contact them as soon as possible.

Thanking you in advance for your cooperation in this matter, I remain

Sincerely yours,

L. H. Montgomery
L. H. Montgomery

- American Biomedical Engineer
- Vanderbilt University School of Medicine
- Artificial Respirator
- 1st EMBS President 1952/53

In 1952, he led a group of electronics engineers, members of the Institute of Radio Engineers and established an **IRE Professional Group on Medical Electronics**. It grew steadily and expanded its area of interest. It eventually merged with the AIEE Committee on Electrical Techniques in Medicine and Biology to IEEE Professional Group on Medical Electronics in 1963. It was renamed to the IEEE EMBS in 1968. He also served as the first EMBS President in 1952/53.

Park, Sang Hee



- 1939 -
- Korean Biomedical Engineer
- Yonsei University
- Biosignal Processing
- 1st Editor, KOSOMBE Journal 1979
- KOSOMBE President 1992/93

He organized the 1st meeting on Biomedical Engineering in Korea in 1974. Since then, he continued the efforts to encourage and promote this rapidly emerging field. He is the founding father of Korean Society of Medical and Biological Engineering. His research was focused on bioelectrical signal processing and analysis. He served as the 1st Editor-in-Chief of the official journal of KOSOMBE, which is now renamed as 'Journal of Biomedical Engineering Research'.

Plonsey, Robert



- 1924 - 2015
- American Biomedical Engineering
- Duke University
- Bioelectric Modeling
- EMBS President 1973,74
- 1st IEEE BME Award 2013

His research centered on bioelectric phenomena, including the electrical activity of nerves and muscle. He derived mathematical relationships between the transmembrane potential and the extracellular potential and the electrical properties of the heart. He developed the bidomain model and a hypothesis on the mechanism for defibrillation.

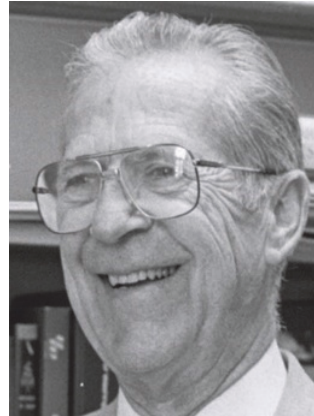
Roentgen, Wilhelm C.



- 1845 - 1923
- German/Dutch Physicist
- University of Würzburg
- University of Munich
- **Discovered X-ray**
- **1st Nobel Prize in Physics 1901**

His most significant work was, undoubtedly, the discovery of X-rays, a form of electromagnetic radiations, and he observed an illumination of barium platinocyanide covered screen. He also discovered the rays were capable of exposing a photographic plate. Through his discovery, he revolutionized the entire medical profession and set the foundation for diagnostic radiology and medical imaging. Today, he is considered the father of radiology, the medical field which uses imaging to screen, diagnose and monitor diseases.

Rushmer, Robert F.



- 1914 - 2001
- American Biomedical Engineer
- University of Washington
- **Cardiovascular Dynamics**
- **1st Portable Doppler Ultrasound**

He was a pioneer in applying engineering advances to medical research. His most notable achievements was the development of ultrasound for medical imaging and better tools for cardiovascular monitoring. He applied Doppler ultrasound to imaging the pumping heart and measuring blood flow. These devices were credited with reducing premature deaths from circulatory diseases and also modified to detect fetal heartbeats. His research led to the development of vibrant diagnostic and therapeutic ultrasound industry in Seattle over the last 40 years.

Schaldach, Max



- 1936 - 2001
- German Biomedical Engineer.
- Friedrich-Alexander University, Biotronik
- **Biomedical Technology**
- **Career Achievement Award 2000**

He was a leading researcher in the field of biomedical technology and a pioneer in pacemaker technology with the first German pacemaker and later fixing electrodes in the atrium. He discovered how implants support thrombus formation. Later, this finding led to the development of coronary stents with biocompatibility for long-term stability. He also developed a mobile remote monitoring system for the home monitoring of pacemakers or defibrillators.

Schmitt, Otto Herbert



- 1913-1998
- American Biomedical Engineer
- Univ. of Minnesota
- **Biomimetics**
- **EMBS President 1962**
- **Career Achievement Award 1963, 87**

He was known for his scientific and technical contributions to biophysics and for establishing the field of biomedical engineering. His research into squid nerves led to his early invention of the patented "**Schmitt Trigger**," used in billions of electronic systems. He invented the cathode follower, the differential amplifier, and the chopper-stabilized amplifier. He also coined the term "**Biomimetics**."

Webster, John G.



- 1932 -
- American Biomedical Engineer
- University of Wisconsin-Madison
- **Medical Instrumentation**
- **Career Achievement Award 2001**

He is a pioneer in the field of medical instrumentation. His research included electrodes for ablating liver to cure cancer, safety devices of electromuscular incapacitating and a miniature hot flash recorder. He first proposed the idea of electrical impedance tomography as a medical imaging technique. He has been the author and editor of many textbooks including the most-used textbook in biomedical engineering: "Medical Instrumentation: Application and Design", since its 1st edition in 1977.

Schwan, Herman Paul



- 1915 - 2005
- German/ American Biomedical Engineer
- Univ. of Pennsylvania
- **EMBS President 1960**
- **Career Achievement Award 1967**

He did much to enhance the emerging field of biomedical engineering and developed its first Ph.D. program. He is best known for many studies related to electrical properties of cells and tissues, and on nonthermal mechanisms of interaction of fields with biological systems. He was a pioneer in recognizing the possible health hazards of nonionizing electromagnetic fields. He proposed a safe limit for human exposure to microwave energy of 100 W/m².

Zworykin, Vladimir K.



- 1888 - 1982
- Russian/ American Biomedical Engineer
- Westinghouse/RCA
- **Electron Microscopy**
- **EMBS President 1955/6**
- **1st IFMBE President 1959**

He is known as "**the father of television**" since his fundamental inventions were the basic technologies of modern, electronic television. He experimented with infrared rays in order to develop devices that could "see" in darkness. He was a pioneer in electron microscopy and in medical applications of electronics. He was aware of the potential and importance of Biomedical Engineering and therefore worked out platforms for joint operations and collaboration of scientists and professionals.

The IEEE Engineering in Medicine and Biology Society Mentor Program



Open to all EMBS members, our mentor program provides students and young professionals interested in the biomedical engineering profession with direct access to experienced mentors who can share valuable career guidance and advice, and contribute to professional and personal development. The program also provides experienced professionals with the opportunity to share their knowledge and inspire, encourage, and support future biomedical engineers.

Mentors

(Professors, Industry Professionals)

Want to give back to your community? Serve as a role model, and provide guidance to the next generation of biomedical engineers.

Expand your own network, and connect with others in the field.

Mentees

(Students/Young Professionals)

Have a question about one of the areas of Biomedical Engineering? Find a mentor who can explain and help you.

Network! Develop business contacts, access important industry information and activities, and gain valuable insights from experienced and successful professionals.

Connect with us!

IEEE Engineering in Medicine and Biology Society
445 Hoes Lane
Piscataway, New Jersey, USA 08854
e-mail: emb-exec@ieee.org

Curious? Don't take our word for it! Here's what some of our program participants are saying...

"The EMBS mentoring program is fantastic. It allowed me to reconnect with the profession I love, and I so enjoy offering encouragement and sharing the lessons I've learned along the way with a very bright, up and coming biomedical engineer."

"My EMBS mentor is amazing! She helped me so much without being 'overly intrusive' and introduced me to some incredibly helpful industry resources and contacts, that will come in really handy during my job search."

Learn more and sign up now!

The mentor program is a valuable part of your membership in EMBS.

Visit www.embs.chronus.com to get started.

There, you will find all the information you'll need, along with frequently asked questions for both mentees and mentors.



Find us on:



Connecting top talent to the best biomedical engineering jobs around the world.

No matter where you are in your career journey, whether you're trying to land your very first job, or if you've got years of experience under your belt, be sure to include EMBS' extensive network in your search.

The EMBS Career Center is the place to start!

We designed our Career Center with you in mind.
We connect our members with top employers around the world.



Jobseekers

View Jobs: Access the newest and freshest jobs available to professionals seeking employment.

Post an anonymous resume: Post your resume online today! Whether you're actively or passively seeking work, your online resume is your ticket to great job offers.

Personal Job Alerts: Create Job Alerts and never let a matching job opportunity pass you by! New jobs that match your search criteria will be emailed directly to you.

Create Job Seeker Account: Log into your account to begin managing your job search. Create and manage job alerts and view job offers from employers.

Employers

Post a Job: Reach the most qualified candidates by posting your job opening on our online Career Center.

View the Resumes: Check out resumes today! We connect you directly with the most talented professionals in biomedical engineering.

Products and Pricing: Regardless of your staffing needs or budget, we have a recruitment product that will fit your business.

Access Your Account: Log in to begin managing your online recruiting account. Post jobs to our site and browse candidates interested in your positions.

Connecting Academia with Industry

Be sure to check out EMBS' regional career development opportunities, online resources, and special events. We're working hard to connect our members in academia with employers in biotech, medical device and pharmaceutical companies around the world.

Questions? Let us hear from you! Send an email to emb-exec@ieee.org.

Visit <http://embs-jobs.careerwebsite.com/> to get started!

Find us on:





NIH-IEEE 2017 Special Topics Conference on Healthcare Innovations and Point of Care Technologies: Technology in Translation

November 6-8, 2017

NIH Natcher Conference Center (Building 45), NIH Bethesda Campus, MD

Keynote and Panel Sessions

Breakout Sessions

FDA and Resources Session

Translation Demo Showcase

Student Paper & Design Competition

Organized and Co-Hosted By
National Heart, Lung, and Blood Institute (NHLBI), National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Cancer Institute (NCI), National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH) Engineering in Medicine and Biology Society (EMBS), IEEE

Conference Chairs

- Atam Dhawan, PhD, NJIT
- George Mensah, MD, NHLBI, NIH

Program Chairs

- Tiffani Lash, PhD, NIBIB, NIH
- Steve Schachter, MD, CIMIT and Harvard Medical School
- Jue Chen, PhD, NHLBI, NIH

International Program Chairs:

- Paul Pearlman, PhD, NCI, NIH
- Thomas Penzel, PhD, Charite Universitätsmedizin Berlin, Germany
- Arturo Forner-Cordero, PhD, University of São Paulo, Brazil
- Brad Newsome, PhD, NHLBI, NIH
- Laura Povlich, PhD, FIC, NIH

Student Paper/Design Competition Chairs:

- Srinu Tridanadpani, MD, PhD, Emory University
- Pamela Bhatti, PhD, Georgia Institute of Technology

Organizing Committee

- Jim Gallarda, PhD, Bill & Melinda Gates Foundation
- Erin Iturriaga, BS, MSN, NHLBI, NIH
- Amy Kraftt, PhD, NIAID, NIH
- Christine Kelley, PhD, NIBIB, NIH
- Mary Rodgers, PhD, NIBIB, NIH
- LeShawndra Price, PhD, NHLBI, NIH
- Ki Chon, PhD, University of Connecticut
- Dorin Panescu, PhD, Intuitive Surgical
- Julian Goldman, MD, Partners HealthCare and Massachusetts General Hospital

Call For Papers

The NIH-IEEE Strategic Conference will focus on healthcare innovations and point-of-care technologies for precision Health, and their clinical translation to address challenges in global healthcare. The proposed conference will provide a strategic forum with clinicians, healthcare providers, industry experts, innovators, researchers and students to define clinical needs and technology solutions towards commercialization and translation to precision medicine. Panel discussions and open forum sessions along with research presentations will focus on the development, clinical translational, commercialization, implementation and user-compliance of innovative healthcare and point-of-care technologies (POCT) in clinical (hospital, emergency, acute, chronic and primary care), non-traditional (consumer) and under-resourced settings. The overall goal of the strategic conference is to provide opportunities for stakeholders to explore collaborations and synergies to accelerate healthcare system development, validation, deployment and adoption of POCT for improving global healthcare at affordable cost.

Along with keynote speeches, panel discussions, and breakout sessions with leaders and stakeholders addressing clinical needs, enabling technologies, regulatory protocols, funding opportunities and business models, a limited number of oral and poster presentations will be included in the final program. We invite you to submit a one-page paper for oral presentation in the technical sessions or poster exhibit sessions in the following thematic areas. All submissions will be reviewed and selected one-page papers will be included in the Program Booklet. All papers presented at the Conference in their expanded required format will be considered for publication in the open-source IEEE Journal of Translational Engineering in Health and Medicine (<http://health.embs.org/>). There will be a comprehensive White Paper generated and published from the conference presentations and panel discussions. Conference themes to which papers can be submitted:

- Point-Of-Care (POC) Technologies
- Clinical Translational of Healthcare Innovations
- POC Technologies for Under Resourced Environment
- Lab on a Chip
- Devices for Molecular Epidemiology
- POC Technologies for Intensive-Care Applications
- Personalized, Preventive and Precision Medicine
- Global Healthcare Challenges

Conference website for Paper Submission Instructions and deadlines

<http://hipt.embs.org/2017/>

Submission of 2-page Translation Showcase Proposal: August 15, 2017

Submission of 4-page Papers for Technical Sessions: September 1, 2017

Submission of 4-page papers for Student Paper Competition: September 1, 2017

Submission of 1-Page Technical Papers: September 15, 2017

Submission of Student Design Competition: August 15, 2017

IEEE Life Sciences Conference



“Personalized Healthcare & Wearables”



Sydney, Australia 13-15 December, 2017

The first IEEE Life Sciences Conference (LSC) will be held in Sydney, Australia, 13-15 December 2017. The overall theme of the conference is “Personalized Healthcare & Wearables”. The IEEE Life Sciences Technical Community (LSTC), which is supported by multiple IEEE member societies, is the sponsor of the conference. As such, the conference will cover diverse topics within the theme.

LSC 2017 will include tutorials and a scientific program composed of plenary talks, invited sessions, and poster presentations of peer-reviewed papers. In addition, there will be a host of special events, including a Standards Track, an IEEE Women in Engineering event, a High School Competition, an e-textile style fashion show, and an IBM Big Data/Watson event in partnership with the IEEE Big Data Initiative. All are encouraged to submit papers containing original contributions to be considered for presentation at LSC 2017. Accepted 4-page regular papers will be published in the conference proceedings and included in IEEE Xplore. To communicate late scientific findings and to encourage attendance by a broader audience, LSC 2017 will provide additional presentation opportunities via a second track featuring posters. Topics include, but are not limited to:

- Smart devices and technologies
- Smart garments/textiles
- Wearable sensors
- Biosensor technologies
- Imaging technologies and processing
- Data preprocessing, cleansing, management, mining, and integration
- Biosignal processing
- Design methodologies and app development
- Biosensor-based mobile health apps
- Virtual reality (VR) in healthcare and medicine
- Brain-computer interfaces
- Point of Care devices and technologies
- Security and privacy
- Synthetic biology
- Medical control systems
- Big Data for healthcare
- Deep learning and pattern recognition
- Bioinformatics
- Rehabilitation and assistive technologies
- Biometrics
- IoT for healthcare
- Electronic medical records
- Energy harvesting/scavenging technology
- Wireless communication and networking
- Social implications of technology

Schedule for 4-page Paper Submissions

Submission Due Date: **September 12, 2017**

Decision Notification Date: **October 5, 2017**

Final Paper Submission Date: **October 30, 2017**

Schedule for 2-page Paper Submissions

Submission Due Date: **September 12, 2017**

Decision Notification Date: **October 5, 2017**

Final Paper Submission Date: **October 30, 2017**

Visit the conference website at lsc.ieee.org/2017

BSN & BHI 2018



Body Sensor Networks (BSN) and the Biomedical and Health Informatics (BHI) Conferences

SAVE THE DATE

A New exciting congress has been created by co-locating the Body Sensor Networks (BSN) and the Biomedical and Health Informatics (BHI) Conferences into one location and date during the HIMSS Conference and Exhibition in Las Vegas this year.

Come and take advantage of attending these three powerhouse conferences all during your one stay in Las Vegas.

4-7, March 2018

Treasure Island Hotel and Casino

Las Vegas, Nevada – USA

Call for Papers

Papers can be submitted to the conference website based on the following schedule:

September 12, 2017 – Submission Deadline for Full Papers

October 16, 2017 – Notification of Acceptance of Full Papers

October 30, 2017 – Submission Deadline for Final Paper Upload

Please go to our website:



<http://bsn-bhi.embs.org/2018>

for updated information as we have it.



Follow us on Twitter: [@IEEEembs](https://twitter.com/IEEEembs)



and Facebook: facebook.com/IEEEembs

IEEE International Symposium on Biomedical Imaging

April 4-7, 2018, Omni Shoreham Hotel, Washington, D.C.



The **IEEE International Symposium on Biomedical Imaging (ISBI)** is a scientific conference dedicated to mathematical, algorithmic, and computational aspects of biological and biomedical imaging, across all scales of observation. It fosters knowledge transfer among different imaging communities and contributes to an integrative approach to biomedical imaging. ISBI is a joint initiative from the IEEE Signal Processing Society (SPS) and the IEEE Engineering in Medicine and Biology Society (EMBS). The 2018 meeting will include tutorials, and a scientific program composed of plenary talks, invited special sessions, challenges, as well as oral and poster presentations of peer-reviewed papers. High-quality papers are requested containing original contributions to the topics of interest including image formation and reconstruction, computational and statistical image processing and analysis, dynamic imaging, visualization, image quality assessment, and physical, biological, and statistical modeling. Accepted 4-page regular papers will be published in the symposium proceedings published by IEEE and included in IEEE Xplore. To encourage attendance by a broader audience of imaging scientists and offer additional presentation opportunities, ISBI 2018 will continue to have a second track featuring posters selected from 1-page abstract submissions without subsequent archival publication.

Keynote Speakers

Sam Achilefu, Washington University in St. Louis, Optical Molecular Imaging
Kim Butts Pauly, Stanford University, MR guided Focused Ultrasound
Peter Basser, National Institutes of Health, MR Diffusion Tensor Imaging
Anne Carpenter, Broad Institute, Harvard/MIT, Cellular Image Analysis
Laura Waller, UC Berkeley, Microscopy and Computational Imaging

Important Dates

Proposal Submission

Tutorials, Special Sessions,
& Challenges **May 29, 2017-
September 25, 2017**

4 page papers

Submission Opens **July 31, 2017**
Submission Deadline **October 16, 2017**
Accept/Reject Notification **December 18, 2017**
Final Submission **January 8, 2018**

1 page papers

Submission Opens **November 20, 2017**
Submission Deadline **January 8, 2018**
Accept/Reject Notification **January 22, 2018**
Final Submission Opens **January 22, 2018**
Final Submission Deadline **February 5, 2018**

Organizing Committee:

Conference Chairs

Amir Amini (amir.amini@louisville.edu)
Scott Acton (acton@virginia.edu)

Program Chairs

Erik Meijering (meijering@imagescience.org)
Ron Summers (rms@nih.gov)

Plenary Chairs

Julia Schnabel (julia.schnabel@kcl.ac.uk)
Michael Unser (michael.unser@epfl.ch)

Tutorial Chairs

Jerry Prince (prince@jhu.edu)
Tanveer Syeda-Mahmood (stf@us.ibm.com)

Special Sessions

Arrate Muñoz-Barrutia (mamunozb@ing.uc3m.es)
Erin Girard (erin.girard@siemens.com)

Challenges

Bram van Ginneken (bram.vanginneken@radboudumc.nl)
Adrienne Mendrik (a3nnem@gmail.com)
Dan Weller (dsw8c@virginia.edu)

Exhibits and Industry Liasons

Marie-Pierre Jolly (marie-pierre.jolly@siemens.com)
Erhan Bas (base@janelia.hhmi.org)
Eliot Siegel (esiegel@umaryland.edu)

Student Awards

Yuping Wang (wyp@tulane.edu)
Lei Ying (leiying@buffalo.edu)

Local Arrangements

Siddhartha Sikdar (ssikdar@gmu.edu)
Juan Cebra (jcebra@gmu.edu)
Murray Loew (loew@gwu.edu)

<http://biomedicalimaging.org/2018/>



40th International Conference
of the IEEE
Engineering in Medicine
and Biology Society



July 17-21
2018



Hawaii Convention Center
Hilton Hawaiian Village Waikiki Beach Resort
Honolulu, Hawaii, USA
July 17-21, 2018



CALL FOR PAPERS

Learning from the Past, Looking to the Future

The IEEE Engineering in Medicine and Biology Society is pleased to announce the **40th International Engineering in Medicine and Biology Conference, to be held in Honolulu, Hawaii from July 17-21, 2018**. The theme of the meeting is "Learning from the Past, Looking to the Future", inspired by the 40th anniversary of the world's largest international biomedical engineering meeting. Consistent with our theme, we have arranged plenary keynotes from leading industrial and academic scientists, who will give forward looking visions as well as historical perspectives on our field. A broad array of scientific tracks will cover diverse topics of cutting-edge research and innovation in biomedical engineering, healthcare technology R&D, translational clinical research, technology transfer and entrepreneurship, and biomedical engineering education. In addition to the high-profile keynotes, the conference program will feature mini symposia, workshops, invited sessions, oral and poster sessions, sessions for students and young professions, sessions for clinicians and entrepreneurs, and exhibits from vendors and universities.

Paper Submission Opens: 1 August 2017

Contributed Paper Submission Deadline: 10 January 2018

Final Paper Submission Deadline: 7 April 2018

<http://embc.embs.org/2018/>



Aloha! Save the Date!

IEEE EMBS Micro & Nanotechnology
Conference in Medicine



10-14 December 2018
Grand Hyatt Kauai Resort & Spa



Translating Technology from the Bench to the Bedside

Biomedical grand challenges facing our society can be addressed at the scale of biology with Micro and Nanoscale technologies. These technologies hold great potential for diagnostics, therapeutics, enhancement of physiological function, disease management, or early monitoring and prevention. IEEE EMBS is sponsoring the fourth biennial Conference on Micro and Nanotechnology in Medicine to foster interaction between scientists, engineers, entrepreneurs and medical researchers in the context of real-world medical needs and issues. The Conference will promote vigorous and open dialogue towards groundbreaking solutions to previously unaddressed problems and innovative technologies for faster, more quantitative and less expensive biomedical solutions by using advances in Micro and Nanotechnology.

Join us in an intensive week of technology! Hear from key leaders and entrepreneurs in academia and industry and meet the researchers of tomorrow! Daily lectures and posters with networking activities!



www.mnm.embs.org



Future EMBC Locations

2018	17-21 July	Honolulu, Hawaii
2019	23-27 July	Berlin, Germany
2020	20-25 July	Montreal, Canada
2021	July	TBD
2022	11-15 July	Glasgow, Scotland
2023	25-29 July	Sydney, Australia



Healthcare Technology Letters from IET Journals

IET booth | Exhibition area

- Now a fully Open Access express journal for the rapid publication of the latest biomedical engineering and technology developments.
- FREE Open Access Publishing for articles submitted in 2017.
- Included in PubMed, PubMed Central, Europe PMC, Inspec, Ei Compindex and Embase.
- Visit the IET booth for our latest news and a chance to talk to our Editor-in-Chief, Prof. Christopher James.

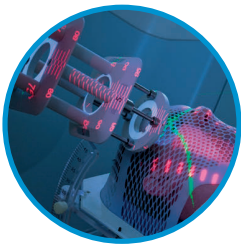
www.theiet.org/HTL

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The go-to place for the healthcare technologies community to keep up to date with the latest developments and insights as well as connecting with other professionals.

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- **Attend technical seminars** and briefings to understand industry trends and hot topics
- **Receive email updates** on upcoming events, content and other activities

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Program in Chronological Order

* – Corresponding Author

Note: Minisymposia (MS) session talk times are only indicative and talks will be scheduled in such a way as to occupy the 90 minute time slot at the discretion of the MS organizer

July 12 Wednesday

Wednesday, 12 July 2017

WeAT1: 08:00-09:30 Roentgen Hall
Recent Progress in Biosignal-Based Human-Computer Interaction (Minisymposium)
Chair: Im, Chang-Hwan (*Hanyang University*)
Co-Chair: Hwang, Han-Jeong (*Kumoh National Institute of Tech3*)

08:00-08:15 WeAT1.1
Face-Machine Interface (FMI) for Communication of Patients with Amyotrophic Lateral Sclerosis (ALS)
 Im, Chang-Hwan* (*Hanyang University*)

08:15-08:30 WeAT1.2
Recognition of Human Emotional Experiences using Inter-Subject Neural Correlations
 Hu, Xin (*Dept. of Psychology, Tsinghua University*); Zhang, Dan* (*Tsinghua University*)

08:30-08:45 WeAT1.3
EMG-Based Prosthesis Control for Upper Limb Amputation
 Hwang, Han-Jeong* (*Kumoh National Institute of Technology*)

08:45-09:00 WeAT1.4
Towards Brain-Computer Interfaces Outside the Lab: New Measuring Devices and Machine Learning Challenges
 Brandl, Stephanie* (*Berlin Institute of Tech.*); von Lüthmann, Alexander (*Machine Learning Dept. and Neurotechnology, Technische Univ*); Müller, Klaus-Robert (*Berlin Institute of Tech.*)

WeAT2: 08:00-09:30 Cho Room
Recent Advances on Image-Guided Devices and Therapies (Minisymposium)
Chair: Xu, Lisa Xuemin (*Shanghai Jiaotong University*)
Co-Chair: Fowlkes, Brian (*University of Michigan*)

08:00-08:15 WeAT2.1
Minimal Invasive Multi-Mode Therapy of Metastatic Cancer
 Xu, Lisa Xuemin* (*Shanghai Jiaotong University*)

08:15-08:30 WeAT2.2
Efficient Energy Delivery for Image-Guided HIFU with Phased Arrays
 Li, Ke (*Shanghai Jiao Tong University*); Ji, Xiang (*Shanghai Jiao Tong University*); Bai, Jingfeng* (*Shanghai Jiao Tong University*); Chen, Yazhu (*Shanghai Jiaotong University*)

08:30-08:45 WeAT2.3
“Seeing” HIFU Lesions with Ultrasound
 Cleveland, Robin* (*University of Oxford*); Adams, Matthew T (*Bose Consumer Electronics*); Raymond, Jason L (*University of Oxford*); Roy, Ronald A (*University of Oxford*)

WeAT3: 08:00-09:30 Park Room
Next Generation Intravascular Imaging – I (Minisymposium)
Chair: Yoo, Hongki (*Hanyang University*)

08:00-08:15 WeAT3.1
Intravascular Photoacoustic/Ultrasound Catheter
 Kim, Chulhong* (*Pohang University of Science and Technology*)

08:30-08:45 WeAT3.3
Recent Advances in Intravascular OCT Technology
 Lim, Jaeyeong (*Sejong University*); Song, Choong Seok (*Sejong University*); Lee, Seungwan (*Sejong University*); Ha, Jinyong* (*Sejong University*)

09:00-09:15 WeAT3.5
Quantitative Intravascular Fluorescence-Ultrasound Imaging in Vivo
 Ntziachristos, Vasilis* (*Technische Universität München & Helmholtz Zentrum München*)

WeAT4: 08:00-09:30 Min Room
Novel Sensing Methods I (Oral Session)
Chair: Chon, Ki (*University of Connecticut*)
Co-Chair: Posada-Quintero, Hugo Fernando (*Univ. of Connecticut*)

08:00-08:15 WeAT4.1
Wearable Health Monitoring using Capacitive Voltage-Mode Human Body Communication
 Maity, Shovan* (*Purdue University*); Das, Debayan (*Purdue University*); Sen, Shreyas (*Purdue University*)

08:15-08:30 WeAT4.2
A Self-Powered Glucose Biosensor based on Pyrroloquinoline Quinone Glucose Dehydrogenase and Bilirubin Oxidase Operating under Physiological Conditions
 Kulkarni, Tanmay (*University of Maryland Baltimore County*); Slaughter, Gymama* (*University of Maryland Baltimore County*)

08:30-08:45 WeAT4.3
Detection of Needle to Nerve Contact based on Electric Bioimpedance and Machine Learning Methods
 Kalvøy, Håvard* (*Rikshospitalet, Oslo University Hospital, Oslo, Norway*); Tronstad, Christian (*Oslo University Hospital*); Ullensvang, Kyrre (*Division of Emergencies and Critical Care, Dept. of Anaesth*); Steinfeldt, Torsten (*Philipps University of Marburg, Marburg an der Lahn, Hesse, Germ*); Sauter, Axel R. (*Dept. of Research and Development, Division of Emergencies*)

08:45-09:00 WeAT4.4
Testing the Need for Carbon in Salt/Adhesive Electrodes for Surface Electromyography Measurements: Preliminary Results
 Posada-Quintero, Hugo Fernando* (*University of Connecticut*); Rood, Ryan (*University of Connecticut*); Ye, Xiang (*University of Connecticut*); Pias, Matthew (*University of Connecticut*); Burnham, Ken (*FLEXcon Company, Inc.*); Pennace, John (*FLEXcon Company, Inc.*); Chon, Ki (*University of Connecticut*)

09:00-09:15 WeAT4.5
A Rapid Quantitative Determination Method of Luteinizing Hormone with Gold Immunochromatographic Strip
 Liu, Juntao (*Institute of Electronics, Chinese Academy of Sciences*); Kong, Zhuang (*tate Key Laboratory of Transducer Technology, Institute of Elect*); Wang, Yang (*Fan Yan The State Key Laboratory of Transducer Technology, Institute of*); lu, Jinping (*Institute of Electronics, Chinese Academy of Sciences*); Xu, Shengwei (*Institute of Electronics, Chinese Academy of Science*); Jin, Hongyan (*Obstetrics and Gynecology Dept., First Hospital Peking Univ*); Cai, Xinxia* (*Institute of Electronics, Chinese Academy of Sciences*)

09:15-09:30 WeAT4.6
Integration of Piezo-Capacitive and Piezo-Electric Nanoweb based Pressure Sensors for Imaging of Static and Dynamic Pressure Distribution
 Jeong, You Jeong (*Kyung Hee University*); Oh, Tong In* (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*); Kim, Kap Jin (*Kyung Hee University*)

WeAT7: 08:00-09:30	Herrick Room	08:30-08:45	WeAT8.3
Novel Approaches to BME Education (Oral Session)		Muscle Contractions in Cyclic Movements: Optimization of CIMAP Algorithm	
Chair: Kant Kumar, Dinesh (<i>RMIT University</i>)		Rosati, Samanta (<i>Politecnico di Torino</i>); Castagneri, Cristina (<i>Politecnico di Torino</i>); Agostini, Valentina* (<i>Politecnico di Torino</i>); Knaflitz, Marco (<i>Politecnico di Torino</i>); Balestra, Gabriella (<i>Politecnico di Torino</i>)	
Co-Chair: Esterer, Benjamin (<i>Univ. of Applied Sciences Upper Austria</i>)			
08:00-08:15	WeAT7.1	08:45-09:00	WeAT8.4
Problem based Learning for Engineering		Simple Space-Domain Features for Low-Resolution EMG Pattern Recognition	
Radcliffe, Pj* (<i>RMIT Univ.</i>); Kant Kumar, Dinesh (<i>RMIT Univ.</i>)		Donovan, Ian (<i>San Francisco State Univ.</i>); Puchin, Juris (<i>San Francisco State Univ.</i>); Okada, Kazunori (<i>San Francisco State Univ.</i>); Zhang, Xiaorong* (<i>San Francisco State Univ.</i>)	
08:15-08:30	WeAT7.2	09:00-09:15	WeAT8.5
A Course in Prosthetics for the Developing World: Merging Education, Research, and Industry to Teach Biomedical Design for Social Impact		Movement Augmentation to Evaluate Human Control of Locomotor Stability	
Ranger, Bryan* (<i>Massachusetts Institute of Technology</i>); Mantzavinou, Aikaterini (<i>Massachusetts Institute of Technology</i>)		Brown, Geoffrey (<i>Northwestern University</i>); Wu, Mengnan/Mary (<i>Northwestern University</i>); Huang, Felix (<i>Rehabilitation Institute of Chicago</i>); Gordon, Keith* (<i>Feinberg School of Medicine, Northwestern University</i>)	
08:30-08:45	WeAT7.3	09:15-09:30	WeAT8.6
The Role of a Creative Joint Assignment” Project in Biomedical Engineering Bachelor Degree Education		Ankle Intrinsic Stiffness is Modulated by Postural Sway	
Jiang, Jiehui* (<i>Shanghai University</i>); Zhang, Yuting (<i>Shanghai University</i>); Zhou, Mi (<i>Shanghai University</i>); Zheng, Xiaosong (<i>Shanghai University</i>); Yan, Zhuangzhi (<i>Shanghai University</i>)		Amiri, Pouya* (<i>PhD Candidate, The Dept. of Biomedical Engineering, McGill</i>); Kearney, Robert Edward (<i>McGill Univ.</i>)	
08:45-09:00	WeAT7.4	WeAT9: 08:00-09:30 Plonsey Room	
Design and Development of an Intelligent Nursing Bed a Pilot Project of “Joint Assignment”			
Jiang, Jiehui* (<i>Shanghai University</i>); Liu, TingWei (<i>Shanghai University</i>); Zhang, Yuting (<i>Shanghai University</i>); Song, Wolf (<i>Delft University of Technology</i>); Zhou, Mi (<i>Shanghai University</i>); Zheng, Xiaosong (<i>Shanghai University</i>); Yan, Zhuangzhi (<i>Shanghai University</i>)		Recent Advances in Neural Stimulation for Cortical Neural Interfaces (Minisymposium)	
09:00-09:15	WeAT7.5	Chair: Fried, Shelley (<i>Massachusetts General Hospital / Harvard Medical School</i>)	
A Hybrid, Low-Cost Tissue-Like Epidural Needle Insertion Simulator		08:00-08:15	WeAT9.1
Esterer, Benjamin* (<i>Univ. of Applied Sciences Upper Austria</i>); Gabauer, Stefan (<i>Research Group for Surgical Simulators Linz, Upper Austria Univ.</i>); Pichler, Robert (<i>Johannes Kepler Univ. Linz</i>); Wirthl, Daniela (<i>Johannes Kepler Univ. Linz</i>); Drack, Michael (<i>Johannes Kepler Univ. Linz</i>); Hollensteiner, Marianne (<i>Upper Austria Univ. of Applied Sciences</i>); Kettlgruber, Gerald (<i>Johannes Kepler Univ. Linz</i>); Kaltenbrunner, Martin (<i>Johannes Kepler Univ. Linz</i>); Bauer, Siegfried (<i>Johannes Kepler Univ.</i>); Fuerst, David (<i>Upper Austria Univ. of Applied Sciences</i>); Merwa, Robert (<i>Univ. of Applied Sciences Upper Austria</i>); Meier, Jens (<i>Kepler Univ. Linz</i>); Augat, Peter (<i>Institute for Biomechanics, BGU Murnau</i>); Schrempf, Andreas (<i>Upper Austria Univ. of Applied Sciences</i>)		Development of Implantable Microcoils for Precise Activation of Cortex	
09:15-09:30	WeAT7.6	Lee, Seung Woo* (<i>Massachusetts General Hospital and Harvard Medical School</i>); Fried, Shelley (<i>Massachusetts General Hospital / Harvard Medical School</i>)	
Novel Synthetic Vertebrae Provide Realistic Haptics for Pedicle Screw Placement		08:15-08:30	WeAT9.2
Hollensteiner, Marianne* (<i>Upper Austria Univ. of Applied Sciences</i>); Augat, Peter (<i>Institute for Biomechanics, BGU Murnau</i>); Fuerst, David (<i>Upper Austria Univ. of Applied Sciences</i>); Esterer, Benjamin (<i>Univ. of Applied Sciences Upper Austria</i>); Gabauer, Stefan (<i>Research Group for Surgical Simulators Linz, Upper Austria Univ.</i>); Püschel, Klaus (<i>Univ. of Hamburg</i>); Schroedl, Falk (<i>Paracelsus Medical Univ.</i>); Schrempf, Andreas (<i>Upper Austria Univ. of Applied Sciences</i>)		The Gennaris Cortical Bionic Vision Implant: Progress towards a First-in-Human Trial	
		Rosenfeld, Jeffrey V.* (<i>Monash University</i>); Lowery, Arthur James (<i>Monash University</i>); Mohan, Anand (<i>Monash University</i>); Li, Wai-ho (<i>Apple</i>); Brunton, Emma Kate (<i>Newcastle University</i>); Yan, Edwin (<i>Monash University</i>); Serracino-Ingloft, Ferdinand (<i>Manchester Royal Infirmary</i>); Rosa, Marcello (<i>Monash University</i>); Pritchard, Jeanette (<i>Monash Vision Group</i>)	
		08:30-08:45	WeAT9.3
		Long Term Stimulation of Human Somatosensory Cortex	
		Gaunt, Robert* (<i>University of Pittsburgh</i>); Flesher, Sharlene N (<i>University of Pittsburgh</i>); Weiss, Jeffrey (<i>University of Pittsburgh</i>); Collinger, Jennifer (<i>University of Pittsburgh</i>); Boninger, Michael (<i>University of Pittsburgh</i>)	
WeAT8: 08:00-09:30	Schwan Room	WeAT10: 08:00-09:30 Schmitt Room	
Neuromuscular Systems I (Oral Session)			
08:00-08:15	WeAT8.1	Models for Clinical Decision Support (Oral Session)	
Characterizing Dynamic Balance during Adaptive Locomotor Learning		Chair: Dokos, Socrates (<i>University of New South Wales</i>)	
Park, Sungwoo* (<i>University of Southern California</i>); Finley, James (<i>University of Southern California</i>)		08:00-08:15	WeAT10.1
08:15-08:30	WeAT8.2	Predicting the Outcome for Patients in a Heart Transplantation Queue using Deep Learning	
Early Prediction of Future Hand Movements using sEMG Data		Medved, Dennis* (<i>Lund University</i>); Nilsson, Johan (<i>Dept. Clinical Sciences Lund, CardioThoracic Surgery, Lund Univ.</i>); Nugues, Pierre (<i>Lund University</i>)	
Koch, Philipp* (<i>Univ. of Luebeck</i>); Phan, Huy (<i>Univ. of Lübeck</i>); Maaß, Marco (<i>Univ. of Lübeck</i>); Katzberg, Fabrice (<i>Univ. of Luebeck</i>); Mertins, Alfred (<i>Univ. of Lübeck</i>)		08:15-08:30	WeAT10.2
		Staged Inference using Conditional Deep Learning for Energy Efficient Real-Time Smart Diagnosis	
		Parsa, Maryam (<i>Purdue University</i>); Panda, Priyadarshini (<i>Purdue University</i>); Sen, Shreyas (<i>Purdue University</i>); Roy, Kaushik* (<i>Purdue University</i>)	

- 08:30-08:45 WeAT10.3
Classifying Osteosarcoma Patients using Machine Learning Approaches
 Li, Zhi* (*University of Michigan*); Soroushmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Hua, Yingqi (*Shanghai Bone Tumor Institute, Shanghai General Hospital, Shanghai*); Mao, Min (*Shanghai Bone Tumor Institute, Shanghai General Hospital, Shanghai*); Qiu, Yunping (*Albert Einstein College of Medicine*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)
- 08:45-09:00 WeAT10.4
Development of a Three Dimensional, Multiscale Agent-Based Model of Ductal Carcinoma in Situ
 Butner, Joseph (*University of New Mexico*); Cristini, Vittorio (*University of New Mexico*); Wang, Zhihui* (*University of Texas Health Science Center at Houston McGovern Me*)
- 09:00-09:15 WeAT10.5
Elucidating the Biophysical Processes Responsible for the Chromatic Attributes of Peripheral Cyanosis
 Baranoski, Gladimir Valerio Guimaraes* (*University of Waterloo*); Van Leeuwen, Spencer Richard (*University of Waterloo*); Chen, Tenn Francis (*University of Waterloo*)
- 09:15-09:30 WeAT10.6
SMARTool: A Tool for Clinical Decision Support for the Management of Patients with Coronary Artery Disease based on Modeling of Atherosclerotic Plaque Process
 Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Mate*); Rigas, Georgios (*Univ. of Ioannina*); Kigka, Vassiliki (*Univ. of Ioannina*); Siogkas, Panagiotis (*FORTH-IMBB*); Tsompou, Panagiota (*Unit of Medical Technology and Intelligent Information Systems.*); Karanasiou, Georgia (*Univ. of Ioannina, Dept. of Materials Science, Unit of*); Exarchos, Themis P. (*Unit of Medical Tech & Intelligent Info*); Andrikos, Ioannis (*Univ. of Ioannina*); Tachos, Nikolaos (*Unit of Medical Technology and Intelligent Information Systems.*); Pelosi, Gualtiero (*Institute of Clinical Physiology, National Research Council, 561*); Parodi, Oberdan (*CNR Clinical Physiology Institute - Milan*); Fotiadis, Dimitrios I.* (*Univ. of Ioannina*)
- WeAT11: 08:00-09:30 Greatbatch Room
PPG Signal Analysis (Oral Session)
Chair: de Chazal, Philip (*University of Sydney*)
- 08:00-08:15 WeAT11.1
Coronary Artery Disease Detection using Photoplethysmography
 Paradkar, Neeraj* (*International Institute of Information Technology*); Roy Chowdhury, Shubhajit (*Indian Institute of Technology Mandi*)
- 08:15-08:30 WeAT11.2
Computationally Efficient Algorithm for Photoplethysmography-Based Atrial Fibrillation Detection using Smartphones
 Schäck, Tim* (*Technische Universität Darmstadt*); Safi Harb, Yosef (*Happitech*); Muma, Michael (*Technische Universität Darmstadt*); de Jong, Jonas S. S. G. (*OLVG Hospital*); Zoubir, Abdelhak M. (*Signal Processing Group, Institute of Telecommunications, Techni*)
- 08:30-08:45 WeAT11.3
A Novel Method for Accurate Estimation of HRV from Smartwatch PPG Signals
 Bhowmik, Tanmoy* (*Samsung Research Institute*); Dey, Jishnu (*Samsung R&D Institute India, Bangalore*); Tiwari, Vijay Narayan (*Samsung Research India, Bangalore*)
- 08:45-09:00 WeAT11.4
Cardiac Arrhythmia Detection using Photoplethysmography
 Paradkar, Neeraj* (*International Institute of Information Technology*); Roy Chowdhury, Shubhajit (*Indian Institute of Technology Mandi*)
- 09:00-09:15 WeAT11.5
Photoplethysmography Beat Detection and Pulse Morphology Quality Assessment for Signal Reliability Estimation
 Papini, Gabriele* (*Eindhoven University of Technology*); Fonseca, Pedro (*Philips Research and Eindhoven University of Technology*); Aubert, Xavier (*Philips Research Laboratories Europe*); Overeem, Sebastiaan (*Kempenhaghe Foundation, Sleep Medicine Centre*); Bergmans, Johannes Wilhelmus Maria (*Eindhoven University of Technology*); Vullings, Rik (*Eindhoven University of Technology*)
- 09:15-09:30 WeAT11.6
Enhanced Detection of Sleep Apnoea using Heart-Rate, Respiration Effort and Oxygen Saturation Derived from a Photoplethysmography Sensor
 Jayawardhana, Madhuka* (*University of Sydney*); de Chazal, Philip (*University of Sydney*)
- WeAT12: 08:00-09:30 Geddes Room
Clinical Applications of Mobility Assessment (Oral Session)
Chair: Tamura, Toshiyo (*Waseda University*)
- 08:00-08:15 WeAT12.1
An Elderly Fall Detection using a Wrist-Worn Accelerometer and Barometer
 Jatesiktat, Prayook* (*NTU*); Ang, Wei Tech (*Nanyang Technological University*)
- 08:15-08:30 WeAT12.2
Using Measurements from Wearable Sensors for Automatic Scoring of Parkinson's Disease Motor States: Results from 7 Patients
 Thomas, Ilias (*Dalarna University*); Bergquist, Filip (*Gothenburg University*); Constantinescu, Radu (*Gothenburg University*); Nyholm, Dag (*Uppsala University*); Senek, Marina (*Uppsala University*); Memedi, Mevludin* (*Dalarna University*)
- 08:30-08:45 WeAT12.3
Artifact Detection in Accelerometer Signals Acquired from the Carotid
 Muehlsteff, Jens (*Philips*); Santos de Oliveira e Silva, Bernardo Jose' (*University of Coimbra*); Couceiro, Ricardo* (*University of Coimbra*); Henriques, Jorge (*University of Coimbra*); de Carvalho, Paulo (*University of Coimbra*)
- 08:45-09:00 WeAT12.4
Development of a Wearable Plantar Force Measurement Device for Gait Analysis in Remote Conditions
 Hamid, Rawnak (*Biomedical Integrated Circuits and Sensors Laboratory, Electric*); Yuce, Mehmet* (*Monash University*); Redouté, Jean-Michel (*Monash University*); McMillan, Lachlan (*Dept. of Medicine, School of Clinical Sciences at Monash He*); Scott, David (*Dept. of Medicine, School of Clinical Sciences at Monash He*); Wijesundara, Suharshani (*Dept. of Electrical and Computer Systems Engineering, Monash*); Ebeling, Peter R (*Dept. of Medicine, School of Clinical Sciences at Monash He*)
- 09:00-09:15 WeAT12.5
Weakly-Supervised Learning for Parkinson's Disease Tremor Detection
 Zhang, Ada* (*Carnegie Mellon University*); Cebulla, Alexander (*ETH Zurich*); Panev, Stanislav (*Carnegie Mellon University*); Hodgins, Jessica (*Carnegie Mellon University*); Torre, Fernando de la (*Carnegie Mellon University*)
- 09:15-09:30 WeAT12.6
Real-Time Gait Analysis with Accelerometer-Based Smart Shoes
 Delgado-Gonzalo, Ricard* (*CSEM*); Hubbard, Jeremy (*ICON Health & Fitness*); Renevey, Philippe (*CSEM*); Lemkaddem, Alia (*CSEM*); Vellinga, Quinn (*iFit*); Ashby, Darren (*ICON Health & Fitness Inc.*); Jared, Willardson (*ICON Health & Fitness Inc.*); Bertschi, Mattia (*CSEM*)

WeAT13: 08:00-09:30 Dunn Room
Pharmaceutical Engineering for Smart Drug Delivery Systems (Invited Session)
Chair: Cai, Lintao (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*)
Co-Chair: Gong, Shaoqin (*University of Wisconsin-Madison*)

08:00-08:15 WeAT13.1
Liquid-Metal Nanomedicine for Combination Anticancer Therapy
Lu, Yue (*UNC at Chapel Hill / NC State*); Quanyin, Hu (*UNC at Chapel Hill / NC State*); Gu, Zhen* (*UNC at Chapel Hill / NC State*)

08:15-08:30 WeAT13.2
Cancer Cell Membrane-Functionalized Oxygen-Nanocarrier for Breaking Hypoxia-Induced Chemoresistance
Cai, Lintao* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Zheng, Mingbin (*Shenzhen Institutes of Advanced Technology*); Tian, Hao (*Shenzhen Institutes of Advanced Technology*)

08:30-08:45 WeAT13.3
Multifunctional Unimolecular Micelles for Targeted Triple Negative Breast Cancer Therapy
Gong, Shaoqin* (*University of Wisconsin-Madison*); Wang, Yuyuan (*University of Wisconsin-Madison*); Chen, Guojun (*University of Wisconsin-Madison*); Zhou, Zhiyang (*Emory University*); Yang, Lily (*Emory University*)

WeAT14: 08:00-09:30 Schaldach Room
Emerging Methods in Medical Image Analysis (Minisymposium)
Chair: Fujita, Hiroshi (*Gifu University*)
Co-Chair: Lee, Gobert (*Flinders University*)

08:00-08:15 WeAT14.1
Computer-Aided Analysis of Diffuse Lung Diseases on Chest Radiographs: Feature Extraction based Method versus Non-Feature Extraction based Method
Kido, Shoji* (*Graduate School of Science and Technology for Innovation, Yamagu*); Hashimoto, Noriaki (*Yamaguchi University*); Hirano, Yasushi (*Yamaguchi University*)

08:15-08:30 WeAT14.2
Deep Convolutional Neural Network for Forensic Odontology
Muramatsu, Chisako* (*Gifu University*); Miki, Yuma (*Gifu University*); Yanashita, Yudai (*Gifu University*); Hayashi, Tatsuro (*Media*); Hara, Takeshi (*Gifu Univ Graduate Sch of Medicine*); Katsumata, Akitoshi (*Asahi University*); Fujita, Hiroshi (*Gifu University*)

08:30-08:45 WeAT14.3
Characterizing Complex Shape in Biomedical Images
Bottema, Murk Jan* (*Flinders University*); Gontar, Amelia (*Flinders University*)

08:45-09:00 WeAT14.4
Statistical Region Merging and Segmentation in Abdominal CT
Lee, Gobert* (*Flinders University*)

WeAT15: 08:00-09:30 Webster Room
Modeling and Estimation of the Respiratory System for Clinical Applications (Invited Session)
Chair: Chbat, Nicolas W. (*Center of Excellence in Critical Care Innovation*)
Co-Chair: Heldt, Thomas (*Massachusetts Institute of Technology*)

08:00-08:15 WeAT15.1
Modeling of Cardiac Oscillations and Gaseous Mixing in Deadspace during Apnea
Laviola, Marianna* (*University of Nottingham*); Das, Anup (*University of Warwick*); Chikhani, Marc (*University of Nottingham*); Bates, Declan Gerard (*University of Warwick*); Hardman, Jonathan G. (*University of Nottingham*)

08:15-08:30 WeAT15.2
End-Inspiratory Occlusion in the Presence of Intrinsic PEEP
Albanese, Antonio* (*Philips Research North America*); Vicario, Francesco (*Philips Research North America*); Buizza, Roberto (*Philips Research North America*)

08:30-08:45 WeAT15.3
Two-Parameter Leak Estimation in Non-Invasive Ventilation
Vicario, Francesco* (*Philips Research North America*); Alkhairy, Samiya (*MIT*); Buizza, Roberto (*Philips Research North America*); Truschel, William (*Philips Respironics*)

08:45-09:00 WeAT15.4
Modeling Pediatric ARDS Patients
Saffaran, Sina (*The University of Warwick*); Das, Anup (*University of Warwick*); Hardman, Jonathan G. (*University of Nottingham*); Yehya, Nadir (*Children's Hospital of Philadelphia*); Bates, Declan Gerard* (*University of Warwick*)

09:00-09:15 WeAT15.5
Mathematical Modeling of Respiratory Drive in Patients on Pressure Support Ventilation
Thomsen, Lars Pilegaard* (*Aalborg Univ.*); Karbing, Dan Stieper (*Aalborg Univ.*); Rees, Stephen Edward (*Aalborg Univ.*)

09:15-09:30 WeAT15.6
Clinical Applications of Respiratory Modeling via Quantitative Capnography
Heldt, Thomas* (*Massachusetts Institute of Technology*); Mieloszyk, Rebecca (*Philips Healthcare, University of Washington*); Abid, Abubakar (*Massachusetts Institute of Technology*); Verghese, George (*Massachusetts Institute of Technology*); Krauss, Baruch (*Harvard Medical School*)

WeAT16: 08:00-09:30 Rushmer Room
Bioimpedance in Biomedical Applications and Research: Concepts (Minisymposium)
Chair: Bertemes-filho, Pedro (*The State Univ. of Santa Catarina*)

08:00-08:15 WeAT16.1
Numerical Simulations of Bioimpedance Phenomena
Krizaj, Dejan* (*Univ. of Ljubljana, Faculty of Electrical Engineering*)

08:15-08:30 WeAT16.2
The Information within and the Interpretation of the Bioimpedance Measurement
Tronstad, Christian* (*Oslo University Hospital*); Kalvoy, Haavard (*Rikshospitalet*); Martinsen, Ørjan G (*University of Oslo*)

08:45-09:00 WeAT16.4
Electrical Properties of Phantoms for Mimicking Breast Tissue
Grando Sirtoli, Vinicius (*Univ. do Estado de Santa Catarina*); Morcelles, Kaue Felipe (*Univ. do Estado de Santa Catarina*); Bertemes-filho, Pedro* (*The State Univ. of Santa Catarina*)

09:00-09:15 WeAT16.5
Designing Electrical Bioimpedance Circuits for Clinical Instrument
Bertemes-filho, Pedro* (*The State University of Santa Catarina*)

WeBT1: 14:20-15:50 Roentgen Hall
Brain Signal Processing for Brain-Computer Interfaces (BCIs) (Minisymposium)
Chair: Kim, Sung-Phil (*Ulsan National Institute of Science and Tech.*)

14:20-14:35 WeBT1.1
Signal Characterization for a Musical Rhythm BCI
Herff, Steffen (*Western Sydney Univ.*); Johnson, Garrett (*Old Dominion Univ.*); Milne, Andrew (*Western Sydney Univ.*); Herff, Christian (*Univ. of Bremen*); Kim, Jinsoo (*UNIST*); Shih, Jerry (*Mayo Clinic*); Krusienski, Dean* (*Old Dominion Univ.*)

14:35-14:50 WeBT1.2
The Network Properties of Motor Cortical Neural Activities
Sohn, Jeong-woo* (*Daegu-Gyeongbuk Medical Innovation Foundation*); Kang, Bong-Keun (*Daegu-Gyeongbuk Medical Innovation Foundation*); Choi, Jong-ryul (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*)

14:50-15:05 WeBT1.3
Decoding Analysis of Spatio-Temporal Ensemble Activity in Anterior Lateral Motor Cortical Neurons
 Chae, Soyoung* (*Ulsan National Institute of Science and Technology (UNIST)*); Kim, Sung-Phil (*Ulsan National Institute of Science and Technology*)

14:50-15:05 WeBT3.3
Dual-Modality Fluorescence Lifetime and Intravascular Ultrasound for Intravascular Coronary Imaging
 Marcu, Laura* (*University of California Davis*)

15:05-15:20 WeBT1.4
Modelling Abrupt Alteration in Neuron Tuning Preference from Point Process Observation
 Chen, Junjun (*Zhejiang Univ.*); Xu, Kai (*Zhejiang Univ.*); Wang, Yiwen* (*Hong Kong Univ. of Science and Technology*)

15:20-15:35 WeBT3.5
Looking into Coronary Plaque Biology: Intravascular Multimodal Optical Molecular Imaging Strategy
 Kim, Jin Won* (*Korea University Guro Hospital*)

WeBT2: 14:20-15:50 Cho Room
Frontiers in Perinatal and Pediatric Imaging (Invited Session)
Chair: Linguraru, Marius George (*Children's Natl. Health System*)

WeBT4: 14:20-15:50 Min Room
Novel Sensing Methods II (Oral Session)
Chair: Dong, Tao (*University College of Southeast Norway*)

14:50-15:05 WeBT2.3
Applying Sparse Coding on Putamen of Discriminating Premature Newborns
 Zhang, Jie* (*Arizona State Univ.*); Wang, Yalin (*Arizona State Univ.*); Shi, Jie (*School of Computing, Informatics, and Decision Systems Engineeri*); Ceschin, Rafeal (*Univ. of Pittsburgh Medical Center*); Nelson, Marvin (*Univ. of Southern California and Keck School of Medicine, c*); Panigraphy, Ashok (*Children's Hospital Los Angeles*); Lepore, Natasha (*Univ. of Southern California / Children's Hospital Los Ange*)

14:20-14:35 WeBT4.1
A Low Power Flash-FPGA based Brain Implant Micro-System of PID Control
 Xia, Lijuan* (*Electrical Engineering College*); Fattah, Nabeel (*Newcastle University*); Soltan, Ahmed (*Newcastle University, School of Electrical, Electronic and Compu*); Jackson, Andrew (*Newcastle University*); Chester, Eric Graeme (*Newcastle University*); Degenaar, Patrick (*Newcastle University*)

15:20-15:35 WeBT2.5
Does Speech Rely on Right Anterior Putamen?
 Vlasova, Roza* (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Wang, Yalin (*Arizona State University*); Dicks, Adrienne (*Geneva Foundation*); Dean, Douglas (*University of Wisconsin-Madison*); O'Muircheartaigh, Jonathan (*Brown University*); Gonzalez, Sara (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Nguyen, Binh Kien (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Nelson, Marvin (*University of Southern California and Keck School of Medicine*); Deoni, Sean (*University of Colorado*); Lepore, Natasha (*University of Southern California / Children's Hospital Los Angeles*)

14:35-14:50 WeBT4.2
Smart Mat System with Pressure Sensor Array for Unobtrusive Sleep Monitoring
 Li, Wei* (*Fudan University*); Sun, Chenglu (*Fudan University*); Yuan, Wei (*Printable Electronics Research Centre, Suzhou Institute of Nanot*); Gu, Weibing (*Printable Electronics Research Centre, Suzhou Institute of Nanot*); Cui, Zheng (*Printable Electronics Research Centre, Suzhou Institute of Nanot*); Chen, Wei (*Fudan University*)

15:35-15:50 WeBT2.6
Central Sulcus Development in Early Childhood
 Gajawelli, Niharika* (*USC*); Deoni, Sean (*Univ. of Colorado*); Dirks, Holly (*Brown Univ.*); Dean, Douglas (*Univ. of Wisconsin-Madison*); O'Muircheartaigh, Jonathan (*Brown Univ.*); Wang, Yalin (*Arizona State Univ.*); Nelson, Marvin (*Univ. of Southern California and Keck School of Medicine, c*); Coulon, Olivier (*Aix-Marseille Univ.*); Lepore, Natasha (*Univ. of Southern California / Children's Hospital Los Ange*)

14:50-15:05 WeBT4.3
Design of a Microfluidic Paper-Based Device for Analysis of Biomarkers from Urine Samples on Diapers
 Couto, Adriana (*University of Minho*); Dong, Tao* (*University College of Southeast Norway*)

15:35-15:50 WeBT2.7
Design of Patient-Specific Concentric Tube Robots using Path Planning from 3D Ultrasound
 Morimoto, Tania* (*Stanford University*); Cerrolaza, Juan J. (*Imperial College London*); Hsieh, Michael (*Stanford University*); Cleary, Kevin (*Children's National Medical Center*); Okamura, Allison (*Stanford University*); Linguraru, Marius George (*Children's National Health System*)

15:05-15:20 WeBT4.4
Stability of Colorimetric Results in the Detection of Urine Biomarkers using a Paper-Based Analytical Device
 Bertão, Ana (*Høgskolen i Sørøst-Norge avd Vestfold*); Dong, Tao* (*University College of Southeast Norway*)

15:35-15:50 WeBT2.8
Cranial Ultrasound-Based Prediction of Post Hemorrhagic Hydrocephalus Outcome in Premature Neonates with Intraventricular Hemorrhage
 Roshanitabrzi, Pooneh* (*Children's Natl. Health System*); Obeid, Rawad (*Children's Natl. Health System*); Mansoor, Awais (*Children's Natl. Health System*); Ensel, Scott (*Children's Natl. Medical Center*); Cerrolaza, Juan J. (*Imperial College London*); Penn, Anna (*Children's Natl. Medical Center*); Linguraru, Marius George (*Children's Natl. Health System*)

15:20-15:35 WeBT4.5
Injection Moulded Microneedle Sensor for Real-Time Wireless pH Monitoring
 Mirza, Khalid* (*Imperial College London*); Zuliani, Claudio (*Imperial College London*); Hou, Benjamin (*Imperial College London*); Ng, Fu Siong (*Imperial College London*); Peters, Nicholas (*Imperial College London*); Toumazou, Christofer (*Imperial College London*)

WeBT3: 14:20-15:50 Park Room
Next Generation Intravascular Imaging – II (Minisymposium)
Chair: Yoo, Hongki (*Hanyang University*)

15:35-15:50 WeBT4.6
Carbon Nanospikes for Biosensing Applications
 Shanta, Aysha Siddique* (*The University of Tennessee*); Mamun, Khandaker (*University of Tennessee*); Hensley, Dale (*oak ridge National laboratory*); Lavrik, Nickolay (*oak ridge National laboratory*); Islam, Syed Kamrul (*University of Tennessee*); McFarlane, Nicole (*University of Tennessee*)

WeBT8: 14:20-15:50 Schwan Room
Motor Neuroprostheses (Oral Session)
Chair: Youn, Inchan (*Korea Institute of Science and Technology*)

14:20-14:35 WeBT3.1
Guiding Coronary Interventions with Light and Sound
 van Soest, Gijs* (*Erasmus MC*)

14:20-14:35 WeBT8.1
Multiscale Decoding for Reliable Brain-Machine Interface Performance Over Time
 Hsieh, Han-Lin* (*Univ. of Southern California*); Wong, Yan Tat (*New York Univ.*); Pesaran, Bijan (*New York Univ.*); Shanechi, Maryam (*Univ. of Southern California*)

14:35-14:50 WeBT8.2
An Unsupervised Learning Algorithm for Multiscale Neural Activity
 Abbaspourazad, Hamidreza* (*Univ. of Southern California*); Shanechi, Maryam (*Univ. of Southern California*)

14:50-15:05	WeBT8.3	Electromyographic Bridge—A Multi-Movement Volitional Control Method for Functional Electrical Stimulation: Prototype System Design and Experimental Validation Zhou, Yuxuan (<i>School of Basic Medical Science, Nanjing Medical Univ.</i>); Wang, Haipeng (<i>Southeast Univ., Institute of RF- & OE-ICs</i>); Cao, Xiaopeng (<i>Southeast Univ.</i>); Bi, Zhengyang (<i>Southeast Southeast Univ., State Key Lab of Bioelectronics</i>); Gao, Yujie (<i>Southeast Univ.</i>); Chen, XiaoBin (<i>Southeast Univ.</i>); Lü, Xiaoying* (<i>Southeast Univ.</i>); Wang, Zhigong (<i>Southeast Univ.</i>)	
15:05-15:20	WeBT8.4	Low-Intensity Focused Ultrasound Stimulator using Focal Depth Controller for Improved Targeting in Neuromuscular Rehabilitation Oh, Sungjin (<i>Korea Institute of Science and Technology</i>); Kim, DongHwee (<i>Korea Institute of Science and Technology</i>); Youn, Inchan* (<i>Korea Institute of Science and Technology</i>)	
15:20-15:35	WeBT8.5	Towards a Wearable Hand Exoskeleton with Embedded Synergies Burns, Martin (<i>Stevens Institute of Technology</i>); Van Orden, Katie (<i>Stevens Institute of Technology</i>); Patel, Vrajeshri (<i>Stevens Institute of Technology</i>); Vinjamuri, Ramana* (<i>Stevens Institute of Technology</i>)	
WeBT9: 14:20-15:50	Plonsey Room	Neural Interfaces I (Oral Session) Chair: Kim, Keehoon (<i>Korea Institute of Science and Technology</i>)	
14:20-14:35	WeBT9.1	An Integrated Multichannel Neural Recording Analog Front-End ASIC with Area-Efficient Driven Right Leg Circuit Tang, Tao* (<i>NTU</i>); Goh, Wang Ling (<i>Nanyang Technological University</i>); Yao, Lei (<i>Institute of Microelectronics, Singapore</i>); Cheong, Jia Hao (<i>Institute of Microelectronics</i>); Gao, Yuan (<i>Institute of Microelectronics, Singapore</i>)	
14:35-14:50	WeBT9.2	Rodent Wearable Ultrasound System for Wireless Neural Recording Piech, David* (<i>University of California - Berkeley</i>); Kay, Joshua (<i>University of California - Berkeley</i>); Boser, Bernhard (<i>UC Berkeley</i>); Maharbiz, Michel (<i>University of California, Berkeley</i>)	
14:50-15:05	WeBT9.3	A Handheld Device for Magnetically Inserting a Neural Interface into a Peripheral Nervous System Yim, Sehyuk (<i>Korea Institute of Science and Technology</i>); Hwang, Donghyun (<i>Korea Institute of Science and Technology</i>); Ihn, Yong Seok (<i>Korea Institute of Science and Technology</i>); Jeong, Jinwoo (<i>Sungkyunkwan University</i>); Oh, Sang-Rok (<i>Korea Institute of Science and Technology</i>); Kim, Keehoon* (<i>Korea Institute of Science and Technology</i>)	
15:05-15:20	WeBT9.4	Unidirectional Ephaptic Stimulation between Two Myelinated Axons Capllonch Juan, Miguel* (<i>Univ. of Essex</i>); Kolbl, Florian (<i>Univ. of Bordeaux</i>); Sepulveda, Francisco (<i>Univ. of Essex</i>)	
15:20-15:35	WeBT9.5	Novel Integration and Packaging Concepts of Highly Miniaturized Inductively Powered Neural Implants Khalifa, Adam* (<i>Johns Hopkins Univ.</i>); Karimi, Yasha (<i>Stony Brook Univ.</i>); Stanacevic, Milutin (<i>Stony Brook Univ.</i>); Etienne-Cummings, Ralph (<i>Johns Hopkins Univ.</i>)	
15:35-15:50	WeBT9.6	Design of Contact Zone Topography for Implantable High-Channel Electrical Connectors Koch, Julia* (<i>Univ. of Freiburg</i>); Schuettler, Martin (<i>Univ. of Freiburg</i>); Stieglitz, Thomas (<i>Univ. of Freiburg</i>)	
WeBT10: 14:20-15:50	Schmitt Room	Voice Frequency Analysis: Expectation for the Convenient but Powerful Diagnostic Tool for Neuropsychiatric Disorders (Invited Session) Chair: Morimoto, Yuji (<i>National Defense Medical College</i>) Co-Chair: Tokuno, Shinichi (<i>The University of Tokyo</i>)	
14:20-14:35	WeBT10.1	Introduction of Pathophysiological Voice Analysis for Disease Tokuno, Shinichi* (<i>The Univ. of Tokyo</i>); Mitsuyoshi, Shunji (<i>Dept. of Verbal Analysis of Pathophysiology Graduate School of M</i>)	
14:35-14:50	WeBT10.2	Algorithm to Distinguish between Articulatory Disorder, Depression and Parkinson's Disease by Voice Omiya, Yasuhiro* (<i>PST Inc.</i>); Hagiwara, Naoki (<i>PST Inc.</i>)	
14:50-15:05	WeBT10.3	Novel Voice Indicator for Distinguishing Parkinson's Disease Shinohara, Shuji* (<i>The University of Tokyo</i>); Tokuno, Shinichi (<i>The University of Tokyo</i>)	
15:05-15:20	WeBT10.4	Voice Acoustics as Predictor of Clinical Depression Score Nik Hashim, Nik Nur Wahidah* (<i>Intl. Islamic Univ. Malaysia</i>)	
15:20-15:35	WeBT10.5	Difference in Voice Analysis Result by Pre and Post Processing of Telephone Line Hagiwara, Naoki* (<i>PST Inc.</i>); Omiya, Yasuhiro (<i>PST Inc.</i>); Shinohara, Shuji (<i>The Univ. of Tokyo</i>); Nakamura, Mitsuteru (<i>The Univ. of Tokyo</i>); Higuchi, Masakazu (<i>The Univ. of Tokyo</i>); Mitsuyoshi, Shunji (<i>Dept. of Verbal Analysis of Pathophysiology Graduate School of M</i>); Tokuno, Shinichi (<i>The Univ. of Tokyo</i>)	
WeBT11: 14:20-15:50	Greatbatch Room	Pulse Transit Time/Arterial Stiffness (Oral Session) Chair: Avolio, Alberto P (<i>Macquarie University</i>) Co-Chair: Sivaprakasam, Mohanasankar (<i>Indian Institute of Technology Madras</i>)	
14:20-14:35	WeBT11.1	Reproducibility of Photoplethysmography-Based Local Pulse Transit Time Measurement Beckmann, Nils* (<i>Univ. of Duisburg-Essen</i>); Viga, Reinhard (<i>Univ. of Duisburg-Essen</i>); Dogangün, Aysegül (<i>Univ. of Duisburg-Essen</i>); Grabmaier, Anton (<i>Univ. of Duisburg-Essen</i>)	
14:35-14:50	WeBT11.2	Pulse Arrival Time (PAT) Measurement based on Arm ECG and Finger PPG Signals – Comparison of PPG Feature Detection Methods for PAT Calculation Rajala, Satu* (<i>Nokia Technologies</i>); Ahmaniemi, Teemu (<i>Nokia Technologies</i>); Lindholm, Harri (<i>Nokia Technologies</i>); Taipalus, Tapio (<i>Nokia Technologies</i>)	
14:50-15:05	WeBT11.3	Pulse Arrival Time Measurement with Coffee Provocation Ahmaniemi, Teemu* (<i>Nokia Technologies</i>); Rajala, Satu (<i>Nokia Technologies</i>); Lindholm, Harri (<i>Nokia Technologies</i>); Taipalus, Tapio (<i>Nokia Technologies</i>)	
15:05-15:20	WeBT11.4	Increased Arterial Stiffness does not Respond to Renal Denervation in an Animal Model of Secondary Hypertension Yao, Yimin (<i>Dept. of BioMedical Sciences, Faculty of Medicine and Health</i>); Hildreth, Cara (<i>Dept. of BioMedical Sciences, Faculty of Medicine and Health</i>); Li, Sheran (<i>Dept. of BioMedical Sciences, Faculty of Medicine and Health</i>); Boyd, Rochelle (<i>Dept. of BioMedical Sciences, Faculty of Medicine and Health</i>); Kouchaki, Zahra (<i>Macquarie University</i>); Butlin, Mark (<i>Macquarie University</i>); Avolio, Alberto P* (<i>Macquarie University</i>); Pilowksy, Paul M (<i>Heart Research Institute and University of Sydney</i>); Phillips, Jacqueline Kathleen (<i>Faculty of Medicine and Health Sciences, Macquarie University</i>)	

15:20-15:35 WeBT11.5
Brachial Artery Stiffness Estimation using ARTSENS
 V, Raj Kiran* (*IIT Madras*); PM, Nabeel (*Indian Institute of Tech. Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Tech. Madras*); Shah, Malay Ilesh (*Healthcare Tech. Innovation Center (HTIC), Indian Institute*); Sivaprakasam, Mohanasankar (*Indian Institute of Tech. Madras*)

14:50-15:05 WeBT13.3
High Speed X-Ray Analysis of Liquid Delivery during Jet Injection
 Mckeage, James William* (*Auckland Bioengineering Institute*); Brennan, Kieran (*The University of Auckland*); Park, Geehoon (*Massachusetts Institute of Technology*); Hogan, N. Catherine (*Massachusetts Institute of Technology*); Hunter, Ian (*Massachusetts Institute of Technology*); Ruddy, Bryan (*University of Auckland*); Nielsen, Poul (*The University of Auckland*); Taberner, Andrew (*The University of Auckland*)

15:35-15:50 WeBT11.6
Modeling Young and Adult Patients with Cirrhosis through a Three Element Windkessel (WK3e)
 Cymberknop, Leandro Javier (*Universidad Tecnológica Nacional*); Farro, Ignacio (*School of Medicine, Republic University*); Arbeitman, Claudia (*Engineering and Exact and Natural Sciences Faculty, Favaloro Uni*); Cardelino, Juan (*Faculty of Engineering, Republic University*); Armentano, Ricardo Luis* (*Republic University*)

15:05-15:20 WeBT13.4
Nonlithographic Fabrication of Inflatable and Deflatable Polydimethylsiloxane (PDMS) Micro-Channels for a Magnetically Actuated Drug Delivery System
 Kim, Hyun (*Seoul National University*); Kim, Pyojin (*Seoul National University*); Seo, Jong Mo* (*Seoul National University, School of Engineering*)

WeBT12: 14:20-15:50 Geddes Room
Ambulatory Diagnostic and Therapeutic Systems (Oral Session)
Chair: Chbat, Nicolas W. (*Center of Excellence in Critical Care Innovation*)

15:20-15:35 WeBT13.5
Ampoule and Nozzle Development for Needle-Free Injections
 Liu, John* (*Massachusetts Institute of Technology*); Hogan, N. Catherine (*Massachusetts Institute of Technology*); Hunter, Ian (*Massachusetts Institute of Technology*)

14:20-14:35 WeBT12.1
SVM Classifier on Chip for Melanoma Detection
 Affifi, Shereen (*Auckland University of Technology*); GholamHosseini, Hamid* (*Auckland University of Technology*); Sinha, Roopak (*Auckland University of Technology*)

15:35-15:50 WeBT13.6
Nanoparticle-Based Delivery of an Anti-Proliferative Metal Chelator to Tumor Cells
 Kang, You Jung (*Pennsylvania State Univ.*); Kuo, Chung-Fan (*Univ. of Houston*); Majd, Sheereen* (*Univ. of Houston*)

14:35-14:50 WeBT12.2
Developing Interactive and Simple Electromyogram PONG Game for Foot Dorsiflexion and Plantarflexion Rehabilitation Exercise
 Hee, Cheok Lek (*Monash Univ. Malaysia*); Chong, Tune Hau (*Monash Univ. Malaysia*); Gouwanda, Darwin* (*Monash Univ. Malaysia*); Gopalai, Alpha Agape (*Curtin Univ. Sarawak Campus*); Low, Cheng Yee (*Univ. Teknologi MARA*); Hanapiah, Fazah Akhtar (*Univ. Teknologi Mara*)

WeBT14: 14:20-15:50 Schaldach Room
Deformable Models for Image Analysis (Oral Session)
Chair: Gonzalez Ballester, Miguel Angel (*Univ. Pompeu Fabra*)

14:50-15:05 WeBT12.3
Automatic Detection and Labeling of Self-Stimulatory Behavioral Patterns in Children with Autism Spectrum Disorder
 Min, Cheol-Hong* (*University of St. Thomas*)

14:20-14:35 WeBT14.1
Rodent Brain Extraction using B-Spline based Deformable Model
 Huang, Weimin* (*Institute for Infocomm Research, Agency for Science Technology a*); Ling, Chen (*NTU*); Huang, Su (*Institute for Infocomm Research, A*STAR, Singapore*); Lu, Zhongkang (*Institute for Infocomm Research*); Lin, Zhiping (*Nanyang Technological University*)

15:05-15:20 WeBT12.4
Design of Focal Brain Cooling System for Suppressing Epileptic Seizures
 Hata, Kei (*Kyoto Univ.*); Fujiwara, Koichi* (*Kyoto Univ.*); Kano, Manabu (*Kyoto Univ.*); Inoue, Takao (*Yamaguchi Univ.*); Nomura, Sadahiro (*Yamaguchi Univ.*); Imoto, Hirochika (*Yamaguchi Univ.*); Suzuki, Michiyasu (*Yamaguchi Univ.*)

14:35-14:50 WeBT14.2
Individual Muscle Segmentation in MR Images: A 3D Propagation through 2D Non-Linear Registration Approaches
 Ogier, Augustin* (*Aix Marseille Univ, CNRS, Marseille, France*); Sdika, Michaël (*Creatis*); Fouré, Alexandre (*Aix Marseille Univ, CNRS, CRMBM, Marseille, France*); Le Troter, Arnaud (*Aix Marseille Univ, CNRS, CRMBM, Marseille, France*); Bendahan, David (*Aix Marseille Univ, CNRS, CRMBM, Marseille, France*)

15:20-15:35 WeBT12.5
Smartphone App to Investigate the Relationship between Social Connectivity and Mental Health
 Boonstra, Tjeerd W. (*University of New South Wales*); Werner-Seidler, Aliza (*University of New South Wales*); O'Dea, Bridianne (*University of New South Wales*); Larsen, Mark Erik* (*University of New South Wales*); Christensen, Helen (*University of New South Wales*)

14:50-15:05 WeBT14.3
A Novel Non-Rigid Registration Algorithm for ZebraFish Larval Images
 Ghosal, Sayan (*Jadavpur University*); Banerjee, Soumava (*Jadavpur University*); Tiso, Natascia (*University of Padova*); Grisan, Enrico* (*University of Padova*); Chowdhury, Ananda (*Jadavpur University*)

WeBT13: 14:20-15:50 Dunn Room
Drug Delivery Routes, Release and Formulation (Oral Session)

15:05-15:20 WeBT14.4
Parallel Implementation of a Nonrigid Image Registration Algorithm for Lung Tumor Boundary Tracking in Quasi Real-Time MRI
 Tahmasebi, Nazanin* (*Univ. of Alberta*); Boulanger, Pierre (*Univ. of Alberta*); Punithakumar, Kumaradevan (*Univ. of Alberta*)

14:20-14:35 WeBT13.1
Spatial Targeting of Tumor-Associated Macrophage and Tumor Cells with a Designer Nanocarrier for Cancer Chemo-Immunotherapy
 Wang, Jun* (*South China University of Technology*)

15:20-15:35 WeBT14.5
Characterization of Single Cell Dynamic Morphology by Local Deformation Pattern Modeling
 Li, Heng (*Beijing Institute of Technology*); Liu, Zhiwen* (*Beijing Institute of Technology*); Pang, Fengqian (*Beijing Institute of Technology*); Shi, Yonggang (*Beijing Institute of Technology*)

14:35-14:50 WeBT13.2
Needle-Free Small-Volume Liquid Injection System Powered by a Rotary Actuator
 Zhang, Aoyu* (*Peking University*); Hogan, N. Catherine (*Massachusetts Institute of Technology*); Hunter, Ian (*Massachusetts Institute of Technology*)

- 15:35-15:50 WeBT14.6
A Statistical Shape Model of the Skull Developed from a South African Population
 Lugadilu, Brian Ingasia (*Univ. of Capetown*); Richards, Craig (*Univ. of Capetown*); Reyneke, Corius (*Univ. of Capetown*); Douglas, Tania S (*Univ. of Cape Town*); Mutsvangwa, Tinashé Ernest Muzvidzwa* (*Univ. of Cape Town*)
- 14:50-15:05 WeBT16.3
Vessel Extraction in Retinal Images using Automatic Thresholding and Gabor Wavelet
 Ali, Aziah* (*Universiti Kebangsaan Malaysia*); Hussain, Aini (*Universiti Kebangsaan Malaysia*); Wan Zaki, Wan Mimi Diyana (*Universiti Kebangsaan Malaysia*)
- 15:05-15:20 WeBT16.4
A New Two-Dimensional Matched Filter based on the Modified Chebyshev Type I Function for Retinal Vessels Detection
 Dharmawan, Dhimas Arief* (*Nanyang Technological University*); Ng, Boon Poh (*Nanyang Technological University*)
- 15:20-15:35 WeBT16.5
Retinal Biometrics based on Iterative Closest Point Algorithm
 Hatanaka, Yuji* (*University of Shiga Prefecture*); Tajima, Mikiya (*University of Shiga Prefecture*); Kawasaki, Ryo (*Yamagata University*); Saito, Koko (*Shinoda General Hospital*); Ogohara, Kazunori (*University of Shiga Prefecture*); Muramatsu, Chisako (*Gifu University*); Sunayama, Wataru (*The University of Shiga Prefecture*); Fujita, Hiroshi (*Gifu University*)
- 15:35-15:50 WeBT16.6
An Experimental Evaluation of the Accuracy of Keypoints-Based Retinal Image Registration
 Hernandez-Matas, Carlos* (*FORTH*); Zabulis, Xenophon (*Foundation for Resrch & Technology*); Argyros, Antonis (*University of Crete*)
- WeBT15: 14:20-15:50 Webster Room
Pulmonary Systems (Oral Session)
Chair: Heldt, Thomas (*Massachusetts Institute of Technology*)
Co-Chair: Jané, Raimon (*Institute for Bioengineering de Catalunya (IBEC)*)
- 14:20-14:35 WeBT15.1
Investigating the Effect of Cardiac Oscillations and Dead-space Gas Mixing during Apnea using Computer Simulation
 Laviola, Marianna* (*University of Nottingham*); Das, Anup (*University of Warwick*); Chikhani, Marc (*University of Nottingham*); Bates, Declan Gerard (*University of Warwick*); Hardman, Jonathan G. (*University of Nottingham*)
- 14:35-14:50 WeBT15.2
Evaluation of Indirect Measures of Neural Inspiratory Time from Invasive and Noninvasive Recordings of Respiratory Activity
 García-Castellote, Daniel (*Univ. Politècnica de Catalunya*); Torres, Abel* (*Inst. for Bioeng. of Catalonia (IBEC) - BarcelonaTech*); Estrada, Luis (*Inst. for Bioeng. de Catalunya*); Sarlabous, Leonardo (*Inst. for Bioeng. of Catalonia (IBEC)*); Jané, Raimon (*Inst. for Bioeng. de Catalunya (IBEC)*)
- 14:50-15:05 WeBT15.3
Statistical Analysis of the Age Dependence of the Normal Capnogram
 Mieloszyk, Rebecca (*Philips Healthcare, Univ. of Washington*); Krauss, Baruch (*Harvard Medical School*); Montagu, Diana (*Tufts Univ. School of Dental Medicine*); Andolfatto, Gary (*Univ. of British Columbia, Lions Gate Hospital*); Barbi, Egidio (*IRCCS Burlo Garofolo Children's Hospital, Trieste*); Verghese, George (*MIT*); Heldt, Thomas* (*MIT*)
- 15:05-15:20 WeBT15.4
Imaging of Regional Air Distributions in Porcine Lungs using High Performance Electrical Impedance Tomography System
 Jang, Geuk Young (*Dept. of Biomedical Engineering, Graduate School, Kyung Hee*); Kim, Young-Bok (*Kyung-Hee Univ, IIRC*); Wi, Hun (*Kyunghee University*); Oh, Tong In (*Kyunghee University*); Chi Ryang, Chung (*Samsung Medical Center, Sungkyunkwan University School of Medici*); Suh, Gee Young (*Samsung Medical Center, Sungkyunkwan University School of Medici*); Woo, Eung Je* (*Kyung Hee University*)
- 15:20-15:35 WeBT15.5
Monitoring of Cardiac Output and Lung Ventilation by Electrical Impedance Tomography in a Porcine Model of Acute Lung Injury
 Hochhausen, Nadine* (*RWTH Aachen Univ., Section Medical Technology at the Depart*); Dohmeier, Henriette (*RWTH Aachen Univ., Section Medical Technology at the Depart*); Rossaint, Rolf (*RWTH Aachen Univ., Dept. of Anesthesiology*); Czaplik, Michael (*Univ. Hospital RWTH Aachen*)
- WeBT16: 14:20-15:50 Rushmer Room
Retinal Imaging I (Oral Session)
- 14:20-14:35 WeBT16.1
A Novel Method for Segmentation of Infrared Scanning Laser Ophthalmoscope (ir-SLO) Images of Retina
 Ajaz, Aqsa* (*RMIT University*); Aliahmad, Behzad (*RMIT University*); Kant Kumar, Dinesh (*RMIT University*)
- 14:35-14:50 WeBT16.2
A Fluid-Dynamic based Approach to Reconnect the Retinal Vessels in Fundus Photography
 Calivà, Francesco* (*University of Lincoln*); Hunter, Andrew (*University of Lincoln*); Chudzik, Piotr (*University of Lincoln*); Ometto, Giovanni (*Aarhus University Hospital*); Antiga, Luca (*Orobix srl*); Al-Diri, Bashir (*The University of Lincoln*)
- WeCT1-01: 16:10-17:10 Roentgen Hall
Myographic Signal Analysis I (Poster Session)
- 16:10-16:12 WeCT1-01.1
Design of sEMG-Detecting Circuit for EMG-Bridge
 Chen, XiaoBin (*Southeast Univ.*); Zhou, Yuxuan (*School of Basic Medical Science, Nanjing Medical Univ.*); Wang, Haipeng (*Southeast Univ., Institute of RF- & OE-ICs*); Lü, Xiaoying* (*Southeast Univ.*); Wang, Zhigong (*Southeast Univ.*)
- 16:12-16:14 WeCT1-01.2
The Effect of the Preparation Instruction on the Functional Connectivity between Forearm Muscles during Movement's Initiation
 Saidane, Yosra* (*SUP'COM*); Ben Jebara, Sofia (*SUP'COM*)
- 16:14-16:16 WeCT1-01.3
sEMG Feature Selection and Classification using SVM-RFE
 Tosin, Maurício C (*UFRGS*); Majolo, Mariano (*UFRGS*); Chedid, Raissan (*UFRGS*); Cene, Vinicius H. (*UFRGS*); Favieiro, Gabriela Winkler* (*Federal University of Rio Grande do Sul (UFRGS)*); Balbinot, Alexandre (*Federal University of Rio Grande do Sul (UFRGS)*)
- 16:16-16:18 WeCT1-01.4
EMG-Based Energy Expenditure Optimization for Active Prosthetic Leg Tuning
 Atri, Roozbeh* (*Florida International University*); Marquez, Juan S. (*Florida International University*); Bai, Ou (*Florida International University*)
- 16:18-16:20 WeCT1-01.5
Muscle Fatigue Assessment through Electrodermal Activity Analysis during Isometric Contraction
 Greco, Alberto* (*Univ. of Pisa*); Guidi, Andrea (*Univ. of Pisa*); Felici, Federica (*Istituto Italiano di Tecnologia*); Leo, Andrea (*IMT School for Advanced Studies*); Ricciardi, Emiliano (*Univ. of Pisa*); Bianchi, Matteo (*Univ. of Pisa*); Bicchi, Antonio (*Univ. of Pisa*); Citi, Luca (*Univ. of Essex*); Valenza, Gaetano (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*)
- 16:20-16:22 WeCT1-01.6
Consistency of Surface Electromyography Assessment at Lower Limb Selected Muscles during Vertical Countermovement
 Rodrigues, Carlos M. B.* (*INESCTEC - Technology & Science Associate Laboratory*); Correia, Miguel (*Universidade do Porto, Faculdade de Engenharia*); Abrantes, João M. C. S. (*MovLab - ULHT*); Rodrigues, Marco Aurélio Benedetti (*Federal Univ. of Pernambuco*); Nadal, Jurandir (*Federal Univ. of Rio de Janeiro*)

16:22-16:24 WeCT1-01.7
Increasing the Robustness against Force Variation in EMG Motion Classification by Common Spatial Patterns
 Li, Xiangxin (*Shenzhen Institutes of Advanced Tech., Chinese Academy of Sc*); Fang, Peng (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Tian, Lan (*Shenzhen Institutes of Advanced Tech., Chinese Academy of*); Li, Guanglin* (*Shenzhen Institutes of Advanced Tech.*)

16:14-16:16 WeCT1-03.3
Classification of Respiratory Disturbances in Rett Syndrome Patients using Restricted Boltzmann Machine
 O'Leary, Heather* (*Boston Children's Hospital*); Mayor Torres, Juan Manuel (*Boston Children's Hospital*); Poon, Chi-Sang (*Massachusetts Institute of Technology*); Kaufmann, Walter (*Greenwood Genetic Center*); Sahin, Mustafa (*Boston Children's Hospital*)

16:24-16:26 WeCT1-01.8
Capacitively Coupled EMG Detection via Ultra-Low-Power Microcontroller STFT
 Roland, Theresa* (*Johannes Kepler Univ. Linz*); Baumgartner, Werner (*Johannes Kepler Univ. Linz*); Amsuess, Sebastian (*Univ. Medical Center, Georg August Univ., Goettingen*); Russold, Michael (*Otto Bock Healthcare Products GmbH*)

16:16-16:18 WeCT1-03.4
ECG Authentication in Post-Exercise Situation
 Sung, Dongsuk (*Seoul National University*); Kim, Jeehoon (*Seoul National University*); Koh, Myungjun (*Seoul National University*); Park, Kwang S.* (*Seoul National University*)

WeCT1-02: 16:10-17:10 Roentgen Hall
Neural Signal Analysis I (Poster Session)

16:18-16:20 WeCT1-03.5
Bivariate Empirical Mode Decomposition for ECG-Based Biometric Identification with Emotional Data
 Ferdinando, Hany* (*University of Oulu*); Seppänen, Tapio (*University of Oulu*); Alasaarela, Esko (*University of Oulu*)

16:10-16:12 WeCT1-02.1
Personalized Features for Attention Detection in Children with Attention Deficit Hyperactivity Disorder
 Fahimi, Fatemeh* (*Nanyang Technological University*); Guan, Cuntai (*Nanyang Technological University*); Goh, Wooi Boon (*Nanyang Technological University*); Ang, Kai Keng (*Institute for Infocomm Research*); Lim, Choon Guan (*Institute of Mental Health*); Lee, Tih Shih (*Duke-NUS Graduate Medical School*)

16:20-16:22 WeCT1-03.6
Cancelable ECG Biometrics using GLRT and Performance Improvement using Guided Filter with Irreversible Guide Signal
 Kim, Hanvit* (*Ulsan National Institute of Science and Technology*); Nguyen, Minh Phuong (*Ulsan National Institute of Science and Technology (UNIST)*); Chun, Se Young (*Ulsan National Institute of Science and Technology (UNIST)*)

16:12-16:14 WeCT1-02.2
Modular Framework for Detection of Inter-Ictal Spikes in iEEG
 Kesner, Filip* (*Faculty of Information Tech., Brno Univ. of Tech.*); Sekanina, Lukas (*Faculty of Information Tech., Brno Univ. of Tech.*); Brazdil, Milan (*Masaryk Univ. Brno*)

16:22-16:24 WeCT1-03.7
Similarity based Hierarchical Clustering of Physiological Parameters for the Identification of Health States – A Feasibility Study
 Schrupf, Fabian* (*Leipzig University of Applied Sciences (HTWK)*); Bausch, Gerold (*Leipzig University of Applied Sciences*); Sturm, Matthias (*Leipzig University of Applied Sciences (HTWK)*); Fuchs, Mirco (*Laboratory for Biosignal Processing, Leipzig University of Appli*)

16:14-16:16 WeCT1-02.3
Bispectral Analysis of Spontaneous EEG Activity from Patients with Moderate Dementia Due to Alzheimer's Disease
 Gomez, Carlos* (*Univ. of Valladolid*); Vaquerizo-Villar, Fernando (*Biomedical Engineering Group, Univ. of Valladolid*); Poza, Jesus (*Univ. of Valladolid*); Ruiz, Saúl J. (*Biomedical Engineering Group, Univ. of Valladolid*); Tola-Arribas, Miguel A. (*Dept. of Neurology, Hospital Universitario Río Hortega*); Cano, Mónica (*Dept. of Clinical Neurophysiology, Hospital Universitario R*); Hornero, Roberto (*Univ. of Valladolid*)

WeCT1-04: 16:10-17:10 Roentgen Hall
Signal Pattern Classification – EEG II (Poster Session)

16:16-16:18 WeCT1-02.4
A Fully Automated Method for Segmentation and Classification of Local Field Potential Recordings: Preliminary Results
 Díaz-Parra, Antonio (*Univ. Politècnica de València*); Canals, Santiago (*Instituto de Neurociencias, Consejo Superior de Investigaciones*); Moratal, David* (*Univ. Politècnica de València*)

16:10-16:12 WeCT1-04.1
EEG Emotion Recognition using Reduced Channel Wavelet Entropy and Average Wavelet Coefficient Features with Normal Mutual Information Method
 Candra, Henry (*Univ. of Technology Sydney*); Yuwono, Mitchell (*Univ. of Technology Sydney*); Chai, Rifai (*Univ. of Technology, Sydney*); Nguyen, Hung T.* (*Univ. of Technology, Sydney*); Su, Steven Weidong (*Univ. of Technology, Sydney*)

16:18-16:20 WeCT1-02.5
On the Impact of Spike Segmentation on Motor Unit Identification in Dynamic Surface Electromyograms
 Glaser, Vojko* (*University of Maribor, Faculty of Electrical Engineering and Comp*); Holobar, Ales (*University of Maribor, Faculty of Electrical Engineering and Compu*)

16:12-16:14 WeCT1-04.2
Fast Spike Detection in EEG using Eigenvalue Analysis and Clustering of Spatial Amplitude Distribution
 Fukami, Tadanori* (*Yamagata University*); Shimada, Takamasa (*Tokyo Denki University*); Ishikawa, Bunnoshin (*Hotoku-kai Utsunomiya Hospital*)

WeCT1-03: 16:10-17:10 Roentgen Hall
Signal Pattern Classification – Cardiovascular Signals II (Poster Session)

16:14-16:16 WeCT1-04.3
Rotational Data Augmentation for Electroencephalographic Data
 Krell, Mario Michael (*University of California Berkeley*); Kim, Su Kyoung* (*German Research Center for Artificial Intelligence (DFKI) GmbH*)

16:10-16:12 WeCT1-03.1
Automated Diagnosis of Coronary Artery Disease using Pattern Recognition Approach
 Desai, Usha* (*NMAM Inst. of Univ. Nitte*); Nayak, C Gurudas (*Manipal Inst. of Univ., Manipal Univ.*); Seshikala, G (*REVA Univ.*); Martis, Roshan Joy (*Ngee Ann Polytechnic*)

16:16-16:18 WeCT1-04.4
Surface and Intracranial EEG Spike Detection based on Discrete Wavelet Decomposition and Random Forest Classification
 Le Douget, Jean-Eudes* (*Bioelectrics Lab, ICM Paris & Bioserenity*); Fouad, Amal (*Faculty of Medicine, Ain-Shams University*); Maskani Filali, Mohamed (*Bioelectrics Lab, ICM Paris & Bioserenity*); Pyrzowski, Jan (*Bioelectrics Lab, ICM Paris & Bioserenity*); Le Van Quyen, Michel (*ICM Research Center*)

16:12-16:14 WeCT1-03.2
Irregular Heartbeat Classification using Kronecker Product Equations
 Boussé, Martijn* (*KU Leuven*); Goovaerts, Griet (*KU Leuven*); Vervliet, Nico (*KU Leuven*); Debals, Otto (*KU Leuven*); Van Huffel, Sabine (*KU Leuven*); De Lathauwer, Lieven (*KU Leuven*)

- 16:18-16:20 WeCT1-04.5
Analysis of Electroencephalogram of Patients with Specific Low Back Pain with the Massage Treatment
 Xiangjun, Sun (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Li, Huihui* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Du, Wenjing (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Wenmin, Chen (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Zhou, Fang (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Wang, Lei (*Shenzhen Institutes of Advanced Tech.*)
- 16:22-16:24 WeCT2-01.7
A Study of Feature Extraction for Alzheimer's Disease based on Resting-State fMRI
 Mao, Shuai (*Harbin Institute of Technology Shenzhen Graduate School*); Zhang, Changle (*Harbin Institute of Technology Shenzhen Graduate School*); Gao, Na (*Harbin Institute of Technology*); Wang, Yan (*Harbin Institute of Technology Shenzhen Graduate School*); Yang, YanWu (*HITSZ, ShenZhen, Guangdong Province, China*); Guo, Xin (*Harbin Institute of Technology Shenzhen Graduate School*); Ma, Heather Ting* (*Harbin Institute of Technology Shenzhen Graduate School*)
- 16:20-16:22 WeCT1-04.6
EEG-Based Auditory Attention Decoding using Unprocessed Binaural Signals in Reverberant and Noisy Conditions
 Aroudi, Ali* (*University of Oldenburg, Dept. of Medical Physics and Acoustics*); Doclo, Simon (*University of Oldenburg*)
- 16:22-16:24 WeCT1-04.7
EEG-Based Emotion Classification using Innovative Features and Combined SVM and HMM Classifier
 Guo, Kairui* (*University of Technology, Sydney*); Candra, Henry (*University of Technology Sydney*); Yu, Hairong (*University of Technology, Sydney*); Li, Huiqi (*Beijing Institute of Technology*); Nguyen, Hung T. (*University of Technology, Sydney*); Su, Steven Weidong (*University of Technology, Sydney*)
- 16:26-16:28 WeCT2-01.8
Music and the Brain – Design of an MEG Compatible Piano
 Chacon-Castano, Julian (*Massachusetts Institute of Tech.*); Rathbone, Daniel (*Massachusetts Institute of Tech.*); Hoffman, Rachel (*Massachusetts Institute of Tech.*); Yang, Heng (*Massachusetts Institute of Tech.*); Pantazis, Dimitrios (*MIT*); Yang, Jason (*Massachusetts Institute of Tech.*); Hornberger, Erik (*Sumitomo Heavy Industries, Ltd.*); Hanumara, Nevan* (*Massachusetts Institute of Tech.*)
- 16:26-16:28 WeCT2-01.9
Three-Way ROC Validation of RS-fMRI Visual Information Propagation Transfer Functions used to Differentiate between RRMS and CIS Optic Neuritis Patients
 Shahrabi Farahani, Ehsan (*Univ. of Calgary*); Choudhury, Samiul (*Univ. of Calgary*); Cortese, Filomeno (*Univ. of Calgary*); Costello, Fiona (*Univ. of Calgary*); Goodyear, Brad (*Univ. of Calgary*); Smith, Michael* (*Univ. of Calgary*)
- WeCT2-01: 16:10-17:10 Cho Room
Neuroimaging: MRI, MEG and EEG I (Poster Session)
- 16:10-16:12 WeCT2-01.1
A Radiomics Evaluation of 2D and 3D MRI Texture Features to Classify Brain Metastases from Lung Cancer and Melanoma
 Ortiz-Ramón, Rafael (*Universitat Politècnica de València*); Larroza, Andres (*Universidad de Valencia*); Arana, Estanislao (*Radiology Dept., Fundación Instituto Valenciano de Oncología*); Moratal, David* (*Universitat Politècnica de València*)
- 16:12-16:14 WeCT2-01.2
Investigating BOLD Spectral Power of Intrinsic Connectivity Networks in Fibromyalgia: A Multivariate Analysis of Resting-State fMRI Data
 Jarrahi, Behnaz* (*Stanford Univ.*); Martucci, Katherine (*Stanford School of Medicine*); Nilakantan, Aneesa (*Stanford School of Medicine*); Mackey, Sean (*Stanford Univ. School of Medicine*)
- 16:14-16:16 WeCT2-01.3
Atlas based Sparse Logistic Regression for Alzheimer's Disease Classification
 Barros, Helena (*ISR - Institute for Systems and Robotisc, Instituto Superior Téc*); Silveira, Margarida* (*Institute for Systems and Robotics - Instituto Superior Técnico*)
- 16:16-16:18 WeCT2-01.4
PEAR: PEriodic and ApeRiodic Signal Separation for Fast fMRI
 Weizman, Lior* (*Technion, Israel Institute of Technology*); Miller, Karla (*Oxford University Centre for Functional MRI of the Brain (FMRIB)*); Eldar, Yonina (*Technion, Israel Institute of Technology*); Maayan, Osher (*Technion, Israel Institute of Technology*); Chiew, Mark (*Oxford University Centre for Functional MRI of the Brain (FMRIB)*)
- 16:18-16:20 WeCT2-01.5
Cortical Response of the Projected-Thumb Tactile Sensation under TENS by MEG
 Chen, Ying (*Shanghai Jiaotong University*); Li, Mengnan (*Shanghai Jiaotong University*); Cao, Chunyan (*Dept. of Functional Neurosurgery, RuiJin Hospital Shanghai*); Zhu, Xiaolei (*Dept. of Radiology, RuiJin Hospital Shanghai Jiao Tong Univ*); Sui, Xiaohong* (*Shanghai Jiao Tong University*)
- 16:20-16:22 WeCT2-01.6
Precise Localization of Silicone-Based Intercranial Planar Electrodes in Magnetic Resonance Imaging
 Erhardt, Johannes B.* (*University of Freiburg*); Koenig, Kathrin (*University of Freiburg*); Leupold, Jochen (*University of Freiburg*); Pasluosta, Cristian Federico (*University of Freiburg*); Stieglitz, Thomas (*University of Freiburg*)
- 16:28-16:30 WeCT2-01.10
Feasibility Study of Imaging Fast Neural Activity in Retinal Tissue using Electrical Impedance Tomography
 Zhu, Danyi* (*The University of Sydney*); Fang, Xiunan (*School of Electrical and Information Engineering, The University*); Eiber, Calvin D. (*University of New South Wales*); Avery, James (*University College London*); Holder, David (*University College London*); McEwan, Alistair (*The University of Sydney*)
- 16:30-16:32 WeCT2-01.11
Evaluating Network Brain Connectivity in Alcohol Postdependent State using Network-Based Statistic
 Díaz-Parra, Antonio (*Universitat Politècnica de València*); Pérez-Ramírez, Úrsula (*Universitat Politècnica de València*); Pacheco, Jesús (*Instituto de Neurociencias, Consejo Superior de Investigaciones*); Pfarr, Simone (*Depts. of Psychopharmacology & Addiction Medicine, Central Insti*); Sommer, Wolfgang H. (*Depts. of Psychopharmacology & Addiction Medicine, Central Insti*); Moratal, David* (*Universitat Politècnica de València*); Canals, Santiago (*Instituto de Neurociencias, Consejo Superior de Investigaciones*)
- 16:32-16:34 WeCT2-01.12
Relationship between Amplitude of Resting-State fNIRS Global Signal and EEG Vigilance Measures
 Chen, Yuxuan (*Univ. of Oklahoma*); Farrand, Jesse (*Univ. of Oklahoma*); Tang, Julia (*Univ. of Oklahoma*); Chen, Yafen (*Univ. of Oklahoma*); O'Keefe, Johnny (*The Univ. of Oklahoma*); Shou, Guofa (*Univ. of Oklahoma*); Ding, Lei (*Univ. of Oklahoma*); Yuan, Han* (*Univ. of Oklahoma*)
- 16:34-16:36 WeCT2-01.13
Assessment of Chemoradiotherapy Response in Glioma with Magnetic Resonance Amide Proton Transfer Imaging in a Rodent Model
 Zhao, Jing (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Chen, Yinsheng (*Sun Yat-Sen University*); Zhao, Yiyi (*Sun Yat-Sen University*); Yang, Shasha (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Chen, Zhongping (*Sun Yat-Sen University*); Wu, Yin* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*)
- 16:36-16:38 WeCT2-01.14
EEG Source Estimation Accuracy in Presence of Simulated Cortical Lesions
 Caschera, Stefano* (*Sapienza University of Rome*); Petti, Manuela (*Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*); Mattia, Donatella (*Fondazione Santa Lucia IRCCS*); Astolfi, Laura (*University of Rome Sapienza*)

WeCT2-02: 16:10-17:10 Cho Room
X-Ray and CT Imaging II (Poster Session)

16:10-16:12 WeCT2-02.1
Structure and Location Preserving Topological Representation with Applications on CT Segmentation

Awawdeh, Shatha Fawzi (*BMIT Research Group, School of Information Technologies, Unvers*); Cui, Hui* (*The University of Sydney*); Wang, Xiu Ying (*The University of Sydney*); Feng, Dagan (*The University of Sydney*)

16:12-16:14 WeCT2-02.2

Monte Carlo Simulation of Radiation Dose Distribution in X-Ray Imaging at Shanghai Synchrotron Radiation Facility

Bai, Huiping (*Shanghai Jiao Tong University*); Chen, Yi (*Shanghai Jiao Tong University*); Guo, Han (*Shanghai Synchrotron Radiation Facility*); Zhao, Jun (*Shanghai Jiao Tong University*); Sun, Jianqi* (*Shanghai Jiao Tong University*)

16:14-16:16 WeCT2-02.3

A Novel Pixel Value Space Statistics Map of the Pulmonary Nodule for Classification in Computerized Tomography Images

Jiang, Hongyang (*Sino-Dutch Biomedical and Information Engineering School, Northe*); Ma, He* (*Northeastern Univ.*); Qian, Wei (*Northeastern Univ.*); Wei, Guohui (*Northeastern Univ.*); Zhao, Xinzhuo (*Northeastern Univ.*); Gao, Mengdi (*Sino-Dutch Biomedical and Information Engineering School, Northe*)

16:16-16:18 WeCT2-02.4

Dose Calculation in Computerized Tomography

Morató, Sergio* (*Institute for Industrial, Radiophysical and Environmental Safety*); García, Clara (*ISIRYM*); Juste, Belen (*Polytechnic Univ. of Valencia*); Miró, Rafael (*Polytechnic Univ. of Valencia*); Verdú, Gumersindo (*Polytechnic Univ. of Valencia*)

16:18-16:20 WeCT2-02.5

Intervertebral Disc Detection in X-Ray Images using Faster R-CNN

Sa, Ruhan* (*State University of New York (SUNY) at Buffalo*); Owens Jr, William (*State University of New York (SUNY) at Buffalo*); Wiegand, Raymond (*Spine Metrics, Inc.*); Studin, Mark (*University of Bridgeport College of Chiropractic*); Capoferri, Donald (*Academy of Chiropractic*); Bahooora, Kenneth (*Academy of Chiropractic*); Greaux, Alexander (*Academy of Chiropractic*); Rattray, Robbrey (*Academy of Chiropractic*); Hutton, Adam (*Academy of Chiropractic*); Cintineo, John (*Academy of Chiropractic*); Chaudhary, Vipin (*SUNY Buffalo*)

16:20-16:22 WeCT2-02.6

Extract-and-Match Geometric Corner and Step Pattern Approach for Registration of Fluoroscopic X-Ray Sequences

Lee, Jimmy Addison* (*Institute for Infocomm Research, ASTAR*); Xu, Mengdi (*Institute for Infocomm Research*); Cheng, Jun (*Institute for Infocomm Research, AStar*); Fu, Huazhu (*Institute for Infocomm Research, A*STAR*); Wong, Damon (*Institute for Infocomm Research*); Foin, Nicolas (*National Heart Centre Singapore*)

16:22-16:24 WeCT2-02.7

Non-Local Means Filter Denoising for DEXA Images

Al-Antari, Mugahed A. (*Dept. of Biomedical Engineering, College of Electronics and*); Al-Masni, Mohammed A. (*Dept. of Biomedical Engineering, Kyung Hee University*); Kilany, Mohamed (*Kyung Hee University*); Hussain, Dildar (*Dept. of Biomedical Engineering, Kyung Hee University*); Valarezo Añazco, Edwin (*Dept. of Biomedical Engineering, Kyung Hee University and E*); Rivera, Patricio (*Dept. of Biomedical Engineering, Kyung Hee University*); Gi, Geon (*Dept. of Biomedical Engineering, Kyung Hee University*); Jeong-min, Park (*Dept. of Biomedical Engineering, Kyung Hee University*); Kim, Tae-yeon (*Dept. of Biomedical Engineering, Kyung Hee University*); Park, Se-Je (*B.M.Tech Worldwide Ltd. Co., Seongnam, Republic of Korea*); Shin, Jeong-Sik (*B.M.Tech Worldwide Ltd. Co., Seongnam, Republic of Korea*); Han, Seung-Moo (*Dept. of Biomedical Engineering, College of Electronics and*); Kim, Tae-Seong* (*Kyung Hee University*)

16:24-16:26 WeCT2-02.8

Automatic Vertebrae Localization from CT Scans using Volumetric Descriptors

Karsten, Juan (*University of St Andrews*); Arandjelovic, Ognjen* (*University of St Andrews*)

16:26-16:28 WeCT2-02.9

Development of Semi-Automatic Procedure for Detection and Tracking of Fiducial Markers for Orofacial Kinematics during Natural Feeding

Bunyak, Filiz (*University of Missouri Columbia*); Shiraishi, Naru (*Niigata University*); Palaniappan, Kannappan (*University of Missouri-Columbia*); Lever, Teresa (*University of Missouri*); Avivi-Arber, Limor (*University of Toronto*); Takahashi, Kazutaka* (*University of Chicago*)

16:28-16:30 WeCT2-02.10

Patient-Specific Respiratory Motion Estimation using Sparse Motion Field Presentation

Chen, Dong (*Shanghai Jiao Tong University*); Xie, Hongzhi (*Peking Union Medical College Hospital*); Zhang, Shuyang (*Peking Union Medical College Hospital*); Chen, Weisheng (*Affiliated East Hospital of Xiamen University*); Gu, Lixu* (*Shanghai Jiaotong University*)

16:30-16:32 WeCT2-02.11

A Novel Hybrid Approach for Reconstruction of Coronary Bifurcations using Angiography and OCT

Andrikos, Ioannis (*Univ. of Ioannina*); Sakellarios, Antonis (*Unit of Medical Tech. and Application Systems, Dept of Mate*); Siogkas, Panagiotis (*FORTH-IMBB*); Rigas, Georgios (*Univ. of Ioannina*); Exarchos, Themis P. (*Unit of Medical Tech & Intelligent Info*); Athanasiou, Lambros (*Massachusetts Institute of Tech.*); Karanasos, Antonis (*Medical School, Univ. of Athens*); Toutouzas, Kostas (*Medical School, Univ. of Athens*); Tousoulis, Dimitris (*Medical School, Univ. of Athens*); Michalis, Lampros (*Univ. of Ioannina*); Fotiadis, Dimitrios I.* (*Univ. of Ioannina*)

16:32-16:34 WeCT2-02.12

Characterization of Dental Pathologies using Digital Panoramic X-Ray Images based on Texture Analysis

K, Veena Divya* (*R.V. College of Engineering, Bengaluru*); Jatti, Dr.Anand (*RVCE, Bengaluru*); Joshi, Revan (*D.A. Pandu Memorial R.V. Dental College and Hospital.*); Krishna.S, Dr.Deepu (*Appollo Hospital, Bengaluru*)

WeCT3-01: 16:10-17:10 Park Room
Image Classification and Feature Extraction I (Poster Session)

16:10-16:12 WeCT3-01.1

Glaucoma Classification from Retina Optical Coherence Tomography Angiogram

Ong, Ee Ping* (*Inst. for Infocomm Research*); Cheng, Jun (*Inst. for Infocomm Research, AStar*); Wong, Damon (*Inst. for Infocomm Research*); Liu, Jiang (*Ningbo Inst. of Materials Technology and Engineering, Chinese*); Tay, Elton L.T. (*Tan Tock Seng Hospital*); Yip, Leonard W.L. (*Tan Tock Seng Hospital*)

16:12-16:14 WeCT3-01.2

Analyzing Orientation Patterns of Human Skin Fibroblasts using Image Gradient Information

Bashar, Khayrul* (*Ochanomizu University*); Hashimoto, Kei (*Program for Leading Graduate School, Graduate School of Humanity*); Gotoh, Mari (*Endowed Research Division of Human Welfare Sciences*); Kori, Hiroshi (*Program for Leading Graduate School, Dept. of Information S*)

16:14-16:16 WeCT3-01.3

Hair and Bare Skin Discrimination for Laser-Assisted Hair Removal Systems

Cayir, Sercan* (*TOBB ETÜ*); Yetik, Imam Samil (*TOBB University of Economics and Technology*)

16:16-16:18	WeCT3-01.4	Fully Automated Detection of Lamina Cribrosa in Optical Coherence Tomography: Framework and Illustrative Examples Syga, Piotr* (<i>Faculty of Fundamental Problems of Technology, Wrocław Univ</i>); Sielużycki, Cezary (<i>Faculty of Fundamental Problems of Technology, Wrocław Univ</i>); Krzyżanowska-Berkowska, Patrycja (<i>Ophthalmology Clinic, Wrocław Medical Univ.</i>); Iskander, D Robert (<i>Wrocław Univ. of Technology</i>)	16:18-16:20	WeCT3-02.5	Semi-Automated Enhanced Breast Tumor Segmentation for CT Image Wang, Chao (<i>Harbin University of Science and Technology</i>); Li, Meng (<i>Southeast University</i>); Liu, Xia (<i>Harbin University of Science and Technology</i>); Liu, Zaiyi (<i>Dept. of Radiology, Guangdong General Hospital, Guangdong A</i>); Zang, Yali (<i>Institute of Automation, Chinese Academy of Sciences</i>); Liu, Zhenyu (<i>Institute of Automation, Chinese Academy of Sciences</i>); Dong, Di (<i>Chinese Academy of Sciences</i>); Liang, changhong (<i>Guangdong Provincial People's Hospital</i>); Tian, Jie* (<i>Chinese Academy of Sciences</i>)
16:18-16:20	WeCT3-01.5	Stability Assessment of Radiomic Features Computed on ADC Maps in Soft-Tissue Sarcoma Bologna, Marco* (<i>Politecnico di Milano</i>); Montin, Eros (<i>Politecnico di Milano</i>); Corino, Valentina (<i>Politecnico di Milano</i>); Mainardi, Luca (<i>Politecnico di Milano</i>)	16:20-16:22	WeCT3-01.6	Cardiac Image Segmentation using Generalized Polynomial Chaos Expansion and Level Set Function Du, Dongping* (<i>Texas Tech University</i>); Du, Yuncheng (<i>Clarkson University</i>)
16:20-16:22	WeCT3-01.6	A mRMRMSRC Feature Selection Method for Radiomics Approach Liu, Tongtong (<i>Fudan University</i>); Wu, Guoqing (<i>Fudan University</i>); Yu, Jinhua* (<i>Fudan University</i>); Guo, Yi (<i>Fudan University</i>); Wang, Yuanyuan (<i>Fudan University</i>); Shi, Zhifeng (<i>Huanshan Hospital</i>); Chen, Liang (<i>Huanshan Hospital</i>)	16:22-16:24	WeCT3-02.7	Using Cystoscopy to Segment Bladder Tumors with a Multivariate Approach in Different Color Spaces Freitas, Nuno Renato* (<i>University of Minho</i>); Vieira, Pedro Miguel (<i>University of Minho</i>); Brandao Lima, Verissimo (<i>Universidade do Minho</i>); Lima, Estêvão (<i>ICVS/3Bs</i>); Lima, Carlos Manuel Gregorio Santos (<i>University of Minho</i>)
16:22-16:24	WeCT3-01.7	Application of MRI Texture Analysis in the Study of the Posterior Fossa Tumors Growing Trend in Children Li, Mengmeng* (<i>Zhengzhou Univ.</i>); Shang, Zhigang (<i>Zhengzhou Univ.</i>); Dong, Yonghui (<i>Zhengzhou Univ.</i>); Zhang, Yong (<i>The First Affiliated Hospital of Zhengzhou Univ.</i>); Li, Ya (<i>The First Affiliated Hospital of Zhengzhou Univ.</i>)	WeCT3-03: 16:10-17:10 Park Room Machine Learning in Imaging III (Poster Session)		
16:24-16:26	WeCT3-01.8	Preoperative Parathyroid Localization using Joint Planar Imaging Srikram, Richalannaphat (<i>Faculty of Engineering, Chulalongkorn University</i>); Jarumaneeroj, Pisit (<i>Chulalongkorn University</i>); Chaiwatanarat, Tawatchai (<i>Faculty of Medicine, Chulalongkorn University</i>); Rakvongthai, Yothin* (<i>Faculty of Medicine, Chulalongkorn University</i>)	16:10-16:12	WeCT3-03.1	Retinal Hemorrhage Detection by Rule-Based and Machine Learning Approach Xiao, Di* (<i>Commonwealth Scientific and Industrial Research Organization</i>); Yu, Shuang (<i>Commonwealth Scientific and Industrial Research Organization</i>); Vignarajan, Janardhan (<i>CSIRO</i>); An, Dong (<i>Lions Eye institute</i>); Tay-Kearney, Mei-Ling (<i>Royal Perth Hospital</i>); Kanagasingam, Yogi (<i>The Australian eHealth Research Centre, Perth, CSIRO.</i>)
16:26-16:28	WeCT3-01.9	Fully Automated Blink Detection for Uveal Melanoma Radiotherapy Cavusculu, Melih Ege* (<i>TOBB ETÜ</i>); Yetik, Imam Samil (<i>TOBB University of Economics and Technology</i>); Yeginer, Mete (<i>Hacettepe University</i>)	16:12-16:14	WeCT3-03.2	Image Quality Classification for DR Screening using Deep Learning Yu, FengLi* (<i>Nanjing University of Aeronautics and Astronautics</i>); Sun, Jing (<i>Nanjing University of Aeronautics and Astronautics</i>); Li, Annan (<i>Institute for Infocomm Research, ASTAR</i>); Cheng, Jun (<i>Institute for Infocomm Research, AStar</i>); Wan, Cheng (<i>Nanjing University of Aeronautics and Astronautics</i>); Liu, Jiang (<i>Ningbo Institute of Materials Technology and Engineering, Chinese</i>)
WeCT3-02: 16:10-17:10 Park Room Image Segmentation II (Poster Session)			16:14-16:16	WeCT3-03.3	Deep Convolutional Neural Networks for Left Ventricle Segmentation Horan, Kelsey (<i>The Graduate Center, CUNY</i>); Molaei, Somayeh* (<i>Univ. of Michigan</i>); Najarian, Kayvan (<i>Univ. of Michigan - Ann Arbor</i>); Nallamothu, Brahmajee (<i>Univ. of Michigan</i>); Kahrobaei, Delaram (<i>The Graduate Center, CUNY</i>); Ebrahim Shiri, Mohammad (<i>Amirkabir Univ. of Technology</i>)
16:10-16:12	WeCT3-02.1	Automated Ovarian Follicular Monitoring: A Novel Real-Time Approach Faghih, Rose T.* (<i>University of Houston</i>); Styer, Aaron (<i>Harvard Medical School</i>); Brown, Emery N (<i>MGH-Harvard Medical School-MIT</i>)	16:16-16:18	WeCT3-03.4	Deep Learning based Nucleus Classification in Pancreas Histological Images Chang, Young Hwan* (<i>Oregon Health and Science Univ.</i>); Thibault, Guillaume (<i>Oregon Health & Science Univ.</i>); Madin, Owen (<i>Oregon Health and Science Univ.</i>); Azimi, Vahid (<i>Oregon Health and Science Univ.</i>); Meyers, Cole (<i>Oregon Health and Science Univ.</i>); Johnson, Brett (<i>Oregon Health and Science Univ.</i>); Link, Jason (<i>Oregon Health and Science Univ.</i>); Margolin, Adam (<i>Oregon Health and Science Univ.</i>); Gray, Joe (<i>Oregon Health & Science Univ.</i>)
16:12-16:14	WeCT3-02.2	An Embedded System for Image Segmentation and Multimodal Registration in Noninvasive Skin Cancer Screening Diaz, Silvana (<i>University of Concepcion</i>); Soto, Javier E. (<i>Universidad de Concepción</i>); Inostroza, Fabián (<i>Universidad de Concepción</i>); Godoy, Sebastián E. (<i>Universidad de Concepción</i>); Figueroa, Miguel* (<i>Universidad de Concepcion</i>)	16:18-16:20	WeCT3-03.5	Deep Tessellated Retinal Image Detection with Convolutional Neural Networks Lyu, Xingzheng* (<i>Zhejiang Univ.</i>); Li, Hai (<i>Zhejiang Univ.</i>); Zhen, Yi (<i>Ophthalmic Disease Intelligent Diagnosis Joint Lab of Sha</i>); Ji, Xin (<i>Beijing Shangong Medical Technology Co., Ltd., Beijing, China</i>); Zhang, Sanyuan (<i>Zhejiang Univ.</i>)
16:14-16:16	WeCT3-02.3	Automated Lesion Segmentation and Dermoscopic Feature Segmentation for Skin Cancer Analysis Pezhman Pour, Mansoureh (<i>Northumbria University</i>); Seker, Huseyin* (<i>The University of Northumbria at Newcastle</i>); Shao, Ling (<i>University of East Anglia</i>)			
16:16-16:18	WeCT3-02.4	Robust MR Image Segmentation using the Trimmed Likelihood Estimator in Asymmetric Student's-T Mixture Model Zhou, Yi (<i>East China Univ. of Science and Technology</i>); Zhu, Hongqing* (<i>East China Univ. of Science and Technology</i>); Tao, Xuan (<i>East China Univ. of Science and Technology</i>)			

16:20-16:22 WeCT3-03.6
Development of Automatic Retinal Vessel Segmentation Method in Fundus Images via Convolutional Neural Networks
 Song, Joonyoung* (*Gwangju Institute of Science and Technology (GIST)*); Lee, Boreom (*Gwangju Institute of Science and Technology (GIST)*)

16:16-16:18 WeCT4-02.4
A Quad-Cantilevered Plate Micro-Sensor for Intracranial Pressure Measurement
 Lalkov, Vasko (*New York University Abu Dhabi*); Qasaimeh, Mohammad* (*Division of Engineering, New York University Abu Dhabi (NYUAD)*)

16:22-16:24 WeCT3-03.7
Iterative Deep Convolutional Encoder-Decoder Network for Medical Image Segmentation
 Kim, Jung Uk* (*Korea Advanced Institute of Science and Technology (KAIST)*); Kim, Hak Gu (*Korea Advanced Institute of Science and Technology (KAIST)*); Ro, Yong Man (*Korea Advanced Institute of Science and Technology*)

16:18-16:20 WeCT4-02.5
A Sub 125 nW Sub-Threshold Analog Adaptive Sampler in 180 nm CMOS
 Laurenson, Callum* (*Monash Univ.*); Yuce, Mehmet (*Monash Univ.*); Redouté, Jean-Michel (*Monash Univ.*)

16:24-16:26 WeCT3-03.8
Ensemble of Convolutional Neural Networks for Classification of Breast Microcalcification from Mammograms
 Sert, Egemen (*Middle East Technical Univ.*); Ertekin, Seyda (*Middle East Technical Univ., Massachusetts Institute of Tec*); Halici, Ugur* (*Middle East Technical Univ.*)

WeCT4-03: 16:10-17:10 Min Room
Optical and Photonic Systems I (Poster Session)

16:10-16:12 WeCT4-03.1
A Novel Hardware Implementation for Detecting Respiration Rate using Photoplethysmography
 Prinabe, Joseph Barry Yoo Sik* (*University of Sydney*); Jones, Peter (*The University of Sydney*); Thamrin, Cindy (*Woolcock Institute of Medical Research, University of Sydney*); McEwan, Alistair (*The University of Sydney*)

WeCT4-01: 16:10-17:10 Min Room
Body Area Network Communication I (Poster Session)

16:10-16:12 WeCT4-01.1
Comparison of Impedance Cardiogram with Continuous Wave Radar using Body-Contact Antennas
 Buxi, Dilpreet (*Monash University*); Dugar, Rahul (*Monash University*); Redouté, Jean-Michel (*Monash University*); Yuce, Mehmet* (*Monash University*)

16:12-16:14 WeCT4-03.2
A Video/IMU Hybrid System for Movement Estimation in Infants
 Machireddy, Archana* (*Oregon Health and Science Univ.*); Van Santen, Jan (*Oregon Health and Science Univ.*); Wilson, Jenny (*Oregon Health & Science Univ.*); Myers, Julianne (*Oregon Health & Science Univ.*); Hadders-Algra, Mijna (*Univ. of Groningen*); Song, Xubo (*Oregon Health & Science Univ.*)

16:12-16:14 WeCT4-01.2
A MAC Protocol with High Scalability for Motion Capture based on Frequency Division Multiple and Time Division Multiple Access
 Zhao, Guoru* (*Shenzhen Institutes of Advanced Technology Chinese Academy of Sci*); Li, Jie (*Wuhan University of Technology*); Liang, Shengyun (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Yongfeng, Wang (*School of Mechanical Engineering, Hebei University of Technology*); Ma, Yingnan (*Beijing Research Center of Urban System Engineering*); Gao, Xing (*Beijing Research Center of Urban System Engineering*)

16:14-16:16 WeCT4-03.3
Running Wavelet Archetype Aids the Determination of Heart Rate from the Video Photoplethysmogram during Motion
 Addison, Paul* (*Medtronic*); Foo, David Ming Hui (*Medtronic*); Jacquel, Dominique (*Medtronic*)

16:14-16:16 WeCT4-01.3
Modeling and Characterization of Different Channels based on Human Body Communication
 Li, Jingzhen (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Nie, Zedong* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Liu, Yuhang (*Shenzhen Institute of Advanced Technology*); Wang, Lei (*Shenzhen Institutes of Advanced Technology*)

16:16-16:18 WeCT4-03.4
Using a New PPG Indicator to Increase the Accuracy of PTT-Based Continuous Cuffless Blood Pressure Estimation
 Lin, Wan-Hua (*Shenzhen Institutes of Advanced Technology*); Wang, Hui (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Samuel, Oluwarotimi Williams (*Shenzhen Institutes of Advanced Technology*); Li, Guanglin* (*Shenzhen Institutes of Advanced Technology*)

WeCT4-02: 16:10-17:10 Min Room
Integrated Implantable Sensors I (Poster Session)

16:18-16:20 WeCT4-03.5
Predicting Food Nutrition Facts using Pocket-Size Near-Infrared Sensor
 Thong, Yoke Jia (*Australia E-health research centre CSIRO*); Nguyen, Thuong (*CSIRO*); Zhang, Qing* (*CSIRO*); Karunanithi, M. (*CSIRO Digital Productivity Flagship*); Yu, L. (*Shanxi Univ.*)

WeCT4-04: 16:10-17:10 Min Room
Physiological Modeling and Analysis I (Poster Session)

16:10-16:12 WeCT4-02.1
Reever Control: A Biosignal Controlled Interface
 Cene, Vinicius H. (*UFRGS*); Favieiro, Gabriela Winkler* (*Federal University of Rio Grande do Sul (UFRGS)*); Nedel, Luciana (*UFRGS*); Balbinot, Alexandre (*Federal University of Rio Grande do Sul (UFRGS)*)

16:10-16:12 WeCT4-04.1
Affordable Sensor based Gaze Tracking for Realistic Psychological Assessment
 Gavas, Rahul (*TCS Research and Innovation, Tata Consultancy Services Ltd.*); Roy, Sangheeta (*TCS Research and Innovations, Tata Consultancy Services Ltd.*); Chatterjee, Debatri (*TCS Innovation Lab*); Tripathy, Soumya Ranjan (*TCS Research and Innovation, Tata Consultancy Services Ltd.*); Chakravarty, Kingshuk (*Tata Consultancy Services Ltd.*); Sinha, Aniruddha* (*Tata Consultancy Services Ltd.*); Lahiri, Uttama (*Indian Institute of Technology, Gandhinagar*)

16:12-16:14 WeCT4-02.2
A 274µ W Clock Synchronized Wireless Body Area Network IC with Super-Regenerative RSSI for Biomedical Ad-Hoc Network System
 Lee, Yongsu* (*KAIST*); Yoo, Hoi-Jun (*KAIST*)

16:12-16:14 WeCT4-04.2
Towards Precise Tracking of Electric-Mechanical Cardiac Time Intervals through Joint ECG and BCG Sensing and Signal Processing
 Zhang, Haihong* (*Institute for Infocomm Research*); Zimin, Wang (*Guilin Univ. of Electronic Tech.*); Dong, Kejun (*Nanyang Technological Univ.*); Lin, Zhiping (*Nanyang Technological Univ.*); Ng, Soon Huat (*Institute for Infocomm Research*)

16:14-16:16 WeCT4-02.3
A Wearable Multi-Pad Electrode Prototype for Selective Functional Electrical Stimulation of Upper Extremities
 Wang, Haipeng (*Southeast University, Institute of RF- & OE-ICs*); Guo, Aiwen (*Southeast University*); Bi, Zhengyang (*Southeast Southeast University, State Key Lab of Bioelectronics*); Li, Fei (*Southeast University*); Lü, Xiaoying (*Southeast University*); Wang, Zhigong* (*Southeast University*)

16:14-16:16	WeCT4-04.3	Ambulatory Gastric Mucosal Slow Wave Recording for Chronic Experimental Studies Paskaranandavadivel, Niranchan* (<i>The University of Auckland</i>); Angeli, Timothy Robert (<i>Auckland Bioengineering Institute, University of Auckland</i>); Stocker, Abigail (<i>University of Louisville Hospital</i>); Mcelmurray, Lindsay (<i>University of Louisville Hospital</i>); O'Grady, Gregory (<i>University of Auckland</i>); Abell, Thomas (<i>The Division of Digestive Diseases, University of Mississippi Me</i>); Cheng, Leo K (<i>The University of Auckland</i>)	16:14-16:16	WeCT5-01.3	An MRI-Compatible Force Sensor for Measuring Differential Isometric Precision Grip Force Han, Chungmin* (<i>University of Texas at Austin</i>); Oblak, Ethan (<i>University of Texas at Austin</i>); Abraham, Lawrence (<i>University of Texas at Austin</i>); Ferrari, Paul (<i>University of Texas at Austin</i>); McManis, Mark (<i>Dell Children's Medical Center of Central Texas</i>); Schnyer, David (<i>University of Texas, Austin</i>); Sulzer, James (<i>University of Texas at Austin</i>)
16:16-16:18	WeCT4-04.4	Ex Vivo Animal-Model Assessment of a Non-Invasive System for Loss of Resistance Detection during Epidural Blockade Carassiti, Massimiliano (<i>University Campus Bio-Medico of Rome</i>); Quarta, Rossella (<i>Università Campus Bio-Medico di Roma, Rome-Italy</i>); Mattei, Alessia (<i>Università Bampus Bio-Medico di Roma</i>); Tesei, Marco (<i>Università Campus Bio-Medico di Roma</i>); Saccomandi, Paola* (<i>University Campus Bio-Medico of Rome</i>); Massaroni, Carlo (<i>Università Campus Bio-Medico di Roma</i>); Setola, Roberto (<i>Univ. Campus Bio-Medico</i>); Schena, Emiliano (<i>University of Rome Campus Bio-Medico</i>)	16:16-16:18	WeCT5-01.4	Using Point Cloud Data to Improve Three Dimensional Gaze Estimation Wang, Haoifei* (<i>Hong Kong University of Science and Technology</i>); Antonelli, Marco (<i>Hong Kong University of Science and Technology</i>); Shi, Bertram E (<i>Hong Kong University of Science and Technology</i>)
16:18-16:20	WeCT4-04.5	Overnight Non-Contact Continuous Vital Signs Monitoring using an Intelligent Automatic Beam-Steering Doppler Sensor at 2.4 GHz Batchu, Sandeep (<i>Texas Tech Univ.</i>); Narasimhachar, Harikrishna (<i>Texas Tech Univ.</i>); Hall, Travis (<i>Texas Tech Univ.</i>); Lopez, Jerry (<i>Texas Tech Univ.</i>); Nguyen, Tam (<i>Texas Tech Univ. Health Sciences Center</i>); Banister, Ron (<i>Texas Tech Univ. Health Center</i>); Lie, Donald Yu-Chun* (<i>Texas Tech Univ.</i>)	16:18-16:20	WeCT5-01.5	An Efficient Color Correction Method for Smartphone Camera-Based Health Monitoring Applications Dang, Duc* (<i>Texas Tech University</i>); Cho, Chae Ho (<i>Texas Tech University</i>); Kim, Daeik (<i>Chonnam National University</i>); Kwon, Oh Seok (<i>Korea Research Institute of Bioscience and Biotechnology</i>); Chong, Jo Woon (<i>Texas Tech University</i>)
16:20-16:22	WeCT4-04.6	Permanency Analysis on Human Electroencephalogram Signals for Pervasive Brain-Computer Interface Systems Sadeghi, Koosha (<i>Arizona State University</i>); Lee, Junghyo* (<i>Arizona State University</i>); Banerjee, Ayan (<i>Computer Science</i>); Sohankar, Javad (<i>Arizona State University</i>); Gupta, Sandeep K. S. (<i>Arizona State University</i>)	16:20-16:22	WeCT5-01.6	Quantification Assessment of Bradykinesia in Parkinson's Disease based on a Wearable Device Lin, Zhirong (<i>Quanzhou Institute of Equipment Manufacturing, Haixi Institutes.</i>); Dai, Houde* (<i>Quanzhou Institute of Equipment Manufacturing, Haixi Institutes.</i>); Xiong, Yongsheng (<i>Quanzhou Institute of Equipment Manufacturing, Haixi Institutes.</i>); Xia, Xuke (<i>Quanzhou Institute of Equipment Manufacturing, Haixi Institutes.</i>); Horng, Shi-Jinn (<i>National Taiwan University of Science and Technology</i>)
WeCT4-05: 16:10-17:10	Min Room	Power Efficient BSN I (Poster Session)	WeCT5-02: 16:10-17:10	Lee Room	Novel Physiological Monitoring Methods I (Poster Session)
16:10-16:12	WeCT4-05.1	Energy Efficient LoRa GPS Tracker for Dementia Patients Hadwen, Timothy Ryan (<i>Australian eHealth Research Centre</i>); Smallbon, Vanessa Jane (<i>CSIRO AEHRC</i>); Zhang, Qing* (<i>CSIRO</i>); D'Souza, Matthew (<i>The University of Queensland</i>)	16:10-16:12	WeCT5-02.1	Recovery of Forearm Occluded Trajectory in Kinect using a Wrist-Mounted Inertial Measurement Unit Jatesiktat, Prayook* (<i>NTU</i>); Ang, Wei Tech (<i>Nanyang Technological University</i>)
16:12-16:14	WeCT4-05.2	Charge Pumping with Finger Capacitance for Body Sensor Energy Harvesting Zhou, Alyssa* (<i>University of California, Berkeley</i>); Maharbiz, Michel (<i>University of California, Berkeley</i>)	16:12-16:14	WeCT5-02.2	Effect of Electrode Material on the Sensitivity of Interdigitated Electrodes used for Electrical Cell-Substrate Impedance Sensing Technology Martinez Santamaria, Jaime Andres* (<i>Institut des Nanotechnologies de Lyon</i>); Montalibet, Amalric (<i>INL UMR-5270 - INSA Lyon</i>); McAdams, Eric (<i>INSA Lyon</i>); Faivre, Magalie (<i>Institut des Nanotechnologies de Lyon</i>); Ferrigno, Rosaria (<i>Université Claude Bernard Lyon 1</i>)
16:14-16:16	WeCT4-05.3	Polypyrrole RVC Biofuel Cells for Powering Medical Implants Roxby, Daniel Ninio* (<i>University of Technology, Sydney</i>); Ting, Simon (<i>University of Technology Sydney</i>); Nguyen, Hung T. (<i>University of Technology, Sydney</i>)	16:14-16:16	WeCT5-02.3	The SPLENDID Chewing Detection Challenge Papapanagiotou, Vasileios (<i>Aristotle University of Thessaloniki</i>); Diou, Christos* (<i>Aristotle University of Thessaloniki</i>); Zhou, Lingchuan (<i>CSEM SA</i>); van den Boer, Janet (<i>Wageningen University</i>); Mars, Monica (<i>Wageningen University</i>); Delopoulos, Anastasios (<i>Aristotle University of Thessaloniki</i>)
WeCT5-01: 16:10-17:10	Lee Room	Clinical Applications of Sensing Technology I (Poster Session)	16:16-16:18	WeCT5-02.4	Wireless Chest Wearable Vital Sign Monitoring Platform for Hypertension Janjua, Ghalib Muhammad Waqas* (<i>Ulster University</i>); Guldenring, Daniel (<i>University of Ulster</i>); Finlay, Dewar (<i>University of Ulster</i>); McLaughlin, James (<i>University of Ulster</i>)
16:10-16:12	WeCT5-01.1	Development of a Wearable Support System to Aid the Visually Impaired in Independent Mobilization and Navigation Froneman, Tayla (<i>Stellenbosch Univ.</i>); Van Den Heever, Dawie (<i>Stellenbosch Univ.</i>); Dellimore, Kiran* (<i>Philips Research</i>)	16:18-16:20	WeCT5-02.5	Performance of Compressive Sensing for the Reconstruction of Different QRS Pulses in ECG Signals Pant, Jeevan Kumar (<i>Ryerson University</i>); Krishnan, Sridhar* (<i>Ryerson University</i>)
16:12-16:14	WeCT5-01.2	Application of Infrared Scanning of the Neck Muscles to Control a Cursor in Human-Computer Interface Safavi, Seyedemahya (<i>University of California Irvine</i>); Sundaram, Subramanian Meenakshi (<i>University of California, Irvine</i>); Gorji, Ali Heydari (<i>University of California, Irvine</i>); Udaiwal, Neha Satishkumar (<i>University of California, Irvine</i>); Chou, Pai H.* (<i>University of California, Irvine</i>)			

WeCT5-03: 16:10-17:10 Lee Room
Sensing Methods and Systems I (Poster Session)

16:10-16:12 WeCT5-03.1
Respiratory Rate Measurements via Doppler Radar for Health Monitoring Applications
 Alemaryeen, Ala (*Univ. of North Dakota*); Noghanian, Sima (*Univ. of North Dakota*); Fazel-Rezai, Reza* (*Univ. of North Dakota*)

16:12-16:14 WeCT5-03.2
Development of Wearable Muscle Fatigue Detection System using Capacitance Coupling Electrodes
 Kobayashi, Takahiro* (*Kindai University*); Okada, Shima (*Faculty of Science and Engineering, Kinki University*); Makikawa, Masaaki (*Ritsumeikan University*); Shiozawa, Naruhiro (*Ritsumeikan University*); Kosaka, Manabu (*Kindai Univ.*)

16:14-16:16 WeCT5-03.3
A Tracking Algorithm for Cell Motility Assays in CMOS Systems
 Martinez-Gomez, Cristina (*Instituto de Microelectrónica de Sevilla / Universidad de Sevilla*); Olmo, Alberto (*Universidad de Sevilla*); Huertas, Gloria (*Instituto de Microelectronica de Sevilla / Universidad de Sevilla*); Perez, Pablo (*Instituto de Microelectronica de Sevilla / Universidad de Sevilla*); Andres, Maldonado-Jacobi (*Instituto de Microelectronica de Sevilla / Universidad de Sevilla*); Yufera, Alberto* (*University of Seville*)

16:16-16:18 WeCT5-03.4
Proof of Concept Laplacian Estimate Derived for Noninvasive Tripolar Concentric Ring Electrode with Incorporated Radius of the Central Disc and the Widths of the Concentric Rings
 Makeyev, Oleksandr (*Diné College*); Lee, Colin (*Diné College*); Besio, W. G.* (*University of Rhode Island*)

WeCT5-04: 16:10-17:10 Lee Room
Sensor Systems I (Poster Session)

16:10-16:12 WeCT5-04.1
Non-Invasive Sensor based Automated Smoking Activity Detection
 Bhandari, Babin (*Deakin Univ.*); Lu, JianChao (*Deakin Univ.*); Zheng, Xi (*Deakin Univ.*); Rajasegarar, Sutharshan* (*Deakin Univ.*); Karmakar, Chandan (*Deakin Univ.*)

16:12-16:14 WeCT5-04.2
Rich Context Information for Just-in-Time Adaptive Intervention Promoting Physical Activity
 Cruciani, Federico* (*Ulster University*); Nugent, Chris (*University of Ulster*); Cleland, Ian (*University of Ulster*); McCullagh, Paul (*University of Ulster*)

16:14-16:16 WeCT5-04.3
Home-Based Upper Extremity Rehabilitation Support using a Contactless Ultrasonic Sensor
 Griffith, Henry* (*Michigan State University*); Biswas, Subir (*Michigan State University*)

16:16-16:18 WeCT5-04.4
MuSeSe – A Multisensor Armchair for Unobtrusive Vital Sign Estimation and Motion Artifact Analysis
 Hoog Antink, Christoph* (*RWTH Aachen University, Aachen, Germany*); Leonhardt, Steffen (*RWTH Aachen University*); Schulz, Florian (*RWTH Aachen University*); Walter, Marian (*RWTH Aachen University*)

16:18-16:20 WeCT5-04.5
A Low-Power High-Sensitivity Analog Front-End for PPG Sensor
 Lin, Binghui (*Shanghai Jiao Tong University*); Mohamed, Atef (*Shanghai Jiao Tong University*); Wang, Guoxing* (*Shanghai Jiao Tong University*)

16:20-16:22 WeCT5-04.6
Ultrasonic Thermal Dust: A Method to Monitor Deep Tissue Temperature Profiles
 Ozilgen, Burak Arda* (*University of California Berkeley*); Maharbiz, Michel (*University of California, Berkeley*)

16:22-16:24 WeCT5-04.7
A ROIC for Mn(TPP)Cl-DOP-THF-Polyhema PVC Membrane Modified N-Channel Si3N4 ISFET Sensitive to Histamine
 Samah, N. L. M. A. (*Universiti Teknologi MARA*); Lee, Khuan Y.* (*Universiti Teknologi MARA*); Sulaiman, S.A. (*Universiti Teknologi MARA*); Jarmin, R (*Universiti Teknologi MARA*)

16:24-16:26 WeCT5-04.8
Novel Carbon Fiber Probe for Temperature Monitoring during Thermal Therapies
 Saccomandi, Paola* (*Univ. Campus Bio-Medico of Rome*); Schena, Emiliano (*Univ. of Rome Campus Bio-Medico*); Caponero, Michele Arturo (*ENEA - Centro Ricerche Frascati*); Gassino, Riccardo (*Dept. of Electronics & Telecommunications, Politecnico di*); Hernandez, Juan (*IHU-Strasbourg*); Perrone, Guido (*Dept. of Electronics & Telecommunications, Politecnico di*); Vallan, Alberto (*Dept. of Electronics & Telecommunications, Politecnico di*); Diana, Michele (*IRCAD: Research Institute against Cancer of Digestive System, St*); Costamagna, Guido (*Unit of Digestive Endoscopy, Univ. Cattolica del Sacro Cuor*); Marescaux, Jacques (*IRCAD*)

16:26-16:28 WeCT5-04.9
Pulse Oximetry in the Neck – A Proof of Concept
 Peng, M.* (*Imperial College London*); Imtiaz, S.A. (*Imperial College London*); Rodriguez-Villegas, E. (*Imperial College London*)

16:28-16:30 WeCT5-04.10
Temperature Influence on the Response at Low Airflow of a Variable Orifice Flowmeter
 Massaroni, Carlo (*Università Campus Bio-Medico di Roma*); Schena, Emiliano* (*University of Rome Campus Bio-Medico*); Silvestri, Sergio (*Università Campus Bio-Medico di Roma*)

WeCT6-01: 16:10-17:10 Zworykin Room
Biomaterials and Patterning II (Poster Session)

16:10-16:12 WeCT6-01.1
Functionalized Electromagnetic Actuation Method for Aggregated Nanoparticles Steering
 Kafash hoshlar, Ali (*Gyeongsang National Univ.*); Anh Le, Tuan (*Gyeongsang National Univ.*); Ul Amin, Faiz (*Gyeongsang National Univ.*); Kim, Myeong Ok (*Gyeongsang National Univ.*); Yoon, Jungwon* (*Gyeongsang National Univ.*)

WeCT6-02: 16:10-17:10 Zworykin Room
Cell and Protein Interaction with External Fields II (Poster Session)

16:10-16:12 WeCT6-02.1
Dynamic Electromechanical Control of Biomolecules using a Nano Virtual Cathode Display
 Miyazako, Hiroki* (*The Univ. of Tokyo*); Mabuchi, Kunihiko (*The Univ. of Tokyo*); Hoshino, Takayuki (*Univ. of Tokyo*)

WeCT6-03: 16:10-17:10 Zworykin Room
Micro- and Nano-Sensors (Poster Session)

16:10-16:12 WeCT6-03.1
Rapid Prototyping of Microscale and Flexible Electrochemical Biosensors using Direct Write
 Nguyen, Tran (*Purdue University - Biomedical Engineering*); Lam, Stephanie (*Purdue University*); Shi, Riyi (*Purdue University*); Lee, Hyowon* (*Purdue University*)

16:12-16:14 WeCT6-03.2
Strain Gauge Integrated Implantable Magnetic Microactuators
 Yang, Qi (*Purdue University*); Lee, Hyowon* (*Purdue University*)

16:14-16:16 WeCT6-03.3
Evaluation of Printed Microsensors for Microphysiometry
 Feil, Michael (*University of Applied Sciences Munich*); Wiest, Joachim* (*cellasys GmbH*)

16:16-16:18 WeCT6-03.4
Analysis of Cellular Dielectric Properties Enhanced by Iron Oxide Nanoparticles within a Dielectrophoresis Device
 Oh, Eun Seol (*Univ.*); Park, Insoo (*Yonsei Univ., Dept. of Biomedical Engineering*); Ko, Kwan Hwi (*Yonsei Univ.*); Lee, Sang Woo (*Yonsei Univ.*); Key, Jaehong* (*Yonsei Univ.*)

16:18-16:20	WeCT6-03.5	Top-Down Fabrication of Arrayed Silicon Nanowire using (111)-Silicon Substrate Lee, Sangmin* (<i>Kyung Hee University</i>); Choi, Yeok In (<i>Kyung Hee University</i>)	Zworykin Room Microfluidic Techniques, Methods and Systems (Poster Session)
16:20-16:22	WeCT6-03.6	Lung Cancer Cell Volatile Organic Compounds (VOCs) Detection via Surface Enhanced Raman Spectroscopy Shim, On (<i>Korea University</i>); Choi, Yeonho* (<i>Korea University</i>); Quan, Yu Hua (<i>Dept. of Thoracic and Cardiovascular Surgery, Korea University</i>); Kim, Hyun Koo (<i>Dept. of BioMedical Sciences, College of Medicine, Korea Univ</i>)	WeCT6-05.1 A Microfluidic Device as a Tool for C. Elegans Nictation Study Choi, Junhee (<i>Seoul National University</i>); Kim, Sungjong (<i>Seoul National University</i>); Choi, Jin Woo (<i>Seoul National University</i>); Lee, Jung Chan* (<i>Seoul National University College of Medicine</i>); Kim, Hee Chan (<i>Seoul National University</i>); Lee, Junho (<i>Seoul National University</i>)
16:22-16:24	WeCT6-03.7	Classification of Exosome by Surface Enhanced Raman Spectroscopy (SERS) and Principal Component Analysis (PCA) Park, Jaena (<i>Korea University</i>); Shin, Hyunku (<i>Korea University</i>); Choi, Byeong Hyeon (<i>Dept. of BioMedical Sciences, College of Medicine, Korea Univ.</i>); Jeong, Hyesun (<i>Korea University</i>); Jung, Jik Han (<i>KAIST</i>); Kim, Hyun Koo (<i>Dept. of BioMedical Sciences, College of Medicine, Korea Univ.</i>); Hong, Sunghoi (<i>Korea University</i>); Park, Ji Ho (<i>KAIST</i>); Choi, Yeonho* (<i>Korea University</i>)	WeCT6-05.2 High Pressure Nanofluidic Micropump based on Electrolysis Liang, Fupeng (<i>Southeast Univ.</i>); Qiao, Yi (<i>Southeast Univ.</i>); Ju, An (<i>Southeast Univ.</i>); Li, Junji (<i>Southeast Univ.</i>); Lu, Na (<i>Southeast Univ.</i>); Tu, Jing (<i>Southeast Univ.</i>); Lu, Zuhong* (<i>Southeast Univ.</i>)
WeCT6-04: 16:10-17:10	Zworykin Room	Microfluidic Applications (Poster Session)	WeCT6-05.3 Quantitative Analysis of Chemical Release and Uptake in Cells-on-Paper Samples Trouillon, Raphaël* (<i>EPFL</i>); Letizia, Maria Cristina (<i>EPFL</i>); Gijs, Martin (<i>EPFL</i>)
16:10-16:12	WeCT6-04.1	In Vitro 3D Model of Mammary Duct based Microfluidic System Cho, Youngkyu* (<i>Korea Univ.</i>); Chung, Seok (<i>Korea Univ.</i>)	WeCT6-05.4 Characterization of the Trap Dielectrophoretic Force of Microspheres in a Microfluidic Device Choi, Seungyeop (<i>Yonsei University</i>); Park, Insoo (<i>Yonsei University, Dept. of Biomedical Engineering</i>); Kim, Min-Hyung (<i>Yonsei University, Dept. of Biomedical Engineering</i>); Lee, Sang Woo* (<i>Yonsei University</i>)
16:12-16:14	WeCT6-04.2	Development of a 3D in Vitro Innervated Skin Model on a Microfluidic Chip Ohk, Kyungeun* (<i>Korea Univ.</i>); Chung, Seok (<i>Korea Univ.</i>)	WeCT6-05.5 Microchip-Based Single Cell Assay Platform to Evaluate Responses of Tumors to Therapeutic Combinations Choi, Jongchan (<i>GIST</i>); Kim, Hanbyul (<i>GIST</i>); Yang, Sung* (<i>Gwangju Institute of Science and Technology (GIST)</i>)
16:14-16:16	WeCT6-04.3	Microfluidic Analysis Platform (MAP) for Leukocyte Extraction from Whole Blood Tan, Justin (<i>National University of Singapore</i>); Kim, Sangho* (<i>National University of Singapore</i>)	WeCT6-05.6 Rapid Scalable Fabrication of Micro/Nano Through-Hole Membrane Tahk, Dongha (<i>Seoul National University</i>); Paik, Sang-Min (<i>Seoul National University</i>); Lim, Jungeun (<i>Seoul National University</i>); Bang, Seokyoung (<i>Seoul National University</i>); Jeon, Noo Li* (<i>Seoul National University</i>)
16:16-16:18	WeCT6-04.4	Difference of Dielectrophoretic Response of Live Human Breast Cancer Cell in Various Frequency Sweep Rate Ko, Kwan Hwi (<i>Yonsei Univ.</i>); Kim, Min-Hyung (<i>Yonsei Univ., Dept. of Biomedical Engineering</i>); Park, Insoo (<i>Yonsei Univ., Dept. of Biomedical Engineering</i>); Lim, Jongwon (<i>Yonsei Univ.</i>); Lee, Sang Woo* (<i>Yonsei Univ.</i>)	WeCT6-05.7 Tunable Herringbone Structure Device for Particle Focusing Hyun, Ji-chul (<i>GIST</i>); Yang, Sung* (<i>Gwangju Institute of Science and Technology (GIST)</i>)
16:18-16:20	WeCT6-04.5	Controlled Detachment of Cells Cultured within a Microfluidic Chip for Re-Analysis Lee, SeungJin (<i>Sungkyunkwan University</i>); Lim, Wanyoung (<i>Sungkyunkwan University</i>); Park, Sungsu (<i>Sungkyunkwan University</i>); Baac, Hyoung Won* (<i>Sungkyunkwan University</i>)	WeCT6-05.8 A Microengineered Human Cornea-on-a-Chip for Evaluating Ocular Drugs Kim, Jungkyu* (<i>Texas Tech Univ.</i>); Estlack, Zachary (<i>Texas Tech Univ.</i>); Bennet, Devasier (<i>Texas Tech Univ.</i>)
16:20-16:22	WeCT6-04.6	Flat-Faced and Coded Microcapsules for Multiplexing Bioassays Jeong, Yunjin* (<i>Dept. of Electrical and Computer Engineering, Seoul National</i>); Han, Haejun (<i>Celetics Inc., Seoul, Korea</i>); Song, Younghoon (<i>Dept. of Electrical and Computer Engineering, Seoul National</i>); Kwon, Sunghoon (<i>Dept. of Electrical and Computer Engineering, Seoul National</i>)	WeCT7-01: 16:10-17:10 BioRobotics and Biomechanics I (Poster Session)
16:22-16:24	WeCT6-04.7	Pancreatic Islet-on-a-Chip with Controlled Flow Condition for Long-Term Maintenance of Islet Characteristics Jun, Yesi* (<i>Korea Univ.</i>); Lee, Sang Hoon (<i>College of Health science, Korea Univ.</i>); Chung, Seok (<i>Korea Univ.</i>)	WeCT7-01.1 Development and Testing of a New Cognitive Technological Tool for Episodic Memory: A Feasibility Study Maselli, Martina* (<i>Scuola Superiore Sant'Anna</i>); Fiorini, Laura (<i>Scuola Superiore Sant'Anna</i>); Castro, Emanuela (<i>Scuola Superiore Sant'Anna</i>); Baldoli, Ilaria (<i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i>); Tocchini, Stefania (<i>USL Nordovest Toscana</i>); Timpano Sportiello, Marco (<i>USL Nordovest Toscana</i>); Cavallo, Filippo (<i>Scuola Superiore Sant'Anna</i>); Cecchi, Francesca (<i>Scuola Superiore Sant'Anna</i>); Laschi, Cecilia (<i>Scuola Superiore Sant'Anna</i>)

- 16:12-16:14 WeCT7-01.2
Feasibility Study on the Assessment of Auditory Sustained Attention through Walking Motor Parameters in Mild Cognitive Impairments and Healthy Subjects
 Fiorini, Laura (*Scuola Superiore Sant'Anna*); Maselli, Martina* (*Scuola Superiore Sant'Anna*); Castro, Emanuela (*Scuola Superiore Sant'Anna*); Tocchini, Stefania (*USL Nordovest Toscana*); Timpano Sportiello, Marco (*USL Nordovest Toscana*); Laschi, Cecilia (*Scuola Superiore Sant'Anna*); Cecchi, Francesca (*Scuola Superiore Sant'Anna*); Cavallo, Filippo (*Scuola Superiore Sant'Anna*)
- 16:14-16:16 WeCT7-01.3
Modeling and Analysis of Individual with Lower Extremity Amputation Locomotion using Prosthetic Feet and Running-Specific Prostheses
 Murai, Akihiko* (*National Institute of Advanced Industrial Science and Technology*); Hobara, Hiroaki (*Japan Society for the Promotion of Science*); Hashizume, Satoru (*National Institute of Advanced Industrial Science and Technology*); Kobayashi, Yoshiyuki (*National Institute of Advanced Industrial Science and Technology*); Tada, Mitsunori (*National Institute of Advanced Industrial Science and Technology*)
- 16:16-16:18 WeCT7-01.4
A Multimodal Interface to Resolve the Midas-Touch Problem in Gaze Controlled Wheelchair
 Meena, Yogesh Kumar* (*Ulster University*); Cecotti, Hubert (*University of Ulster*); Wong-Lin, KongFatt (*University of Ulster*); Prasad, Girijesh (*University of Ulster*)
- 16:18-16:20 WeCT7-01.5
Design, Implementation and Performance Validation of UOMPro Artificial Hand: Towards Affordable Hand Prostheses
 Manodara Acharige, Nisal (*University of Moratuwa*); Ruhunage, Isuru* (*University of Moratuwa*); Wickramasinghe Siriwardhana, Janaka Subodha Madhuranga (*University of Moratuwa*); Perera, Chamika Janith (*University of Moratuwa*); Lalitharatne, Thilina Dulantha (*University of Moratuwa*)
- 16:20-16:22 WeCT7-01.6
Construction of a Soft Wearable Body Cooling System for Persons with Spinal Cord Injury
 Takashima, Atsushi* (*National Rehabilitation Center for Persons with Disabilities*); Sato, Kensuke (*Chiba Institute of Technology*); Takizawa, Kenta (*Tokyo Institute of Technology, National Rehabilitation Center fo*); Suzurikawa, Jun (*Research Institute of National Rehabilitation Center for Persons*); Higuchi, Yukiharu (*National Rehabilitation Center for Persons with Disabilities*); Huang, Ming (*Nara Institute of Science and Technology*); Teshima, Yoshinori (*Chiba Institute of Technology*); Tamura, Toshiyo (*Waseda University*); Kurabayashi, Daisuke (*Tokyo Institute of Technology*); Inoue, Takenobu (*Research Institute of National Rehabilitation Center for Persons*); Ogata, Toru (*National Rehabilitation Center for Persons with Disabilities*)
- 16:22-16:24 WeCT7-01.7
Wireless Navigation of Pigeons using Polymer-Based Fully Implantable Stimulator: A Pilot Study using Depth Electrodes
 Seo, Jungmin* (*Seoul National University*); Choi, Gwang Jin (*Seoul National University*); Park, Sangwan (*Seoul National University College of Veterinary Medicine*); Lee, Jihun (*Brown University, school of Engineering*); Baek, Changhoon (*Seoul National University*); Jang, Jungwoo (*Seoul National University*); Lim, Jaegook (*Seoul National University College of Veterinary Medicine*); Shin, Soowon (*Seoul National University*); Seo, Kangmoon (*Seoul National University College of Veterinary Medicine*); Seo, Jong Mo (*Seoul National University, School of Engineering*); Song, Yoon-Kyu (*Seoul National University*); Kim, Sung June (*Seoul National University*)
- 16:24-16:26 WeCT7-01.8
A Novel Hidden Markov Model-Based Pattern Discrimination Method with the Anomaly Detection for EMG Signals
 Mukaeda, Takayuki* (*Graduate School of Engineering, Yokohama National University*); Shima, Keisuke (*Yokohama National University*)
- 16:26-16:28 WeCT7-01.9
Robust Tracking of Dexterous Continuum Robots: Fusing FBG Shape Sensing and Stereo Vision
 Zhang, Rumei (*Shenyang Institute of Automation (SIA), Chinese Academy of Scien*); Zhou, Yuanyuan (*Shenyang Institute of Automation, Chinese Academy of Sciences*); Kong, Lingzhi (*Northeastern Univ.*); Han, Jianda (*The State Key Laboratory of Robotics, Shenyang Institute of Autom*); Liu, Hao* (*Shenyang Institute of Automation, Chinese Academy of Sciences*)
- 16:28-16:30 WeCT7-01.10
A Distributed Cerebellar-Inspired Learning Model for Robotic Arm Control
 Lin, Xiangqian (*Dalian University of Technology*); Liu, Rong* (*Dalian University of Technology*)
- 16:30-16:32 WeCT7-01.11
A Theoretical Study and Implementation of Spinal Traction System with Real-Time Biosignal Feedback System
 Chang, Hojong* (*Institute for Information Technology Convergence, KAIST*); Kim, Tae-Ho (*KAIST*); Nam, Hyoung Ho (*E-ONE Co., Ltd.*); Kim, Ki-duk (*Sun Medical Center*)
- 16:32-16:34 WeCT7-01.12
Augmented Marker Tracking for Peri-Acetabular Osteotomy Surgery
 Pflugi, Silvio (*University of Bern*); Vasireddy, Rakesh (*Institute for Surgical Technology and Biomechanics, University o*); Lerch, Till (*Dept. of Orthopedic Surgery, Inselspital, University of Ber*); Ecker, Timo Michael (*Dept. of Orthopedic Surgery, Inselspital, University of Ber*); Tannast, Moritz (*Dept. of Orthopedic Surgery, Inselspital, University of Ber*); Boemke, Nane (*Institute for Anatomy, University of Bern*); Siebenrock, Klaus (*Dept. of Orthopedic Surgery, Inselspital, University of Ber*); Zheng, Guoyan* (*University of Bern*)
- 16:34-16:36 WeCT7-01.13
Efficacy of a Knee Orthosis that uses an Elastic Element
 Kamada, Ippai* (*Osaka University*); Uemura, Mitsunori (*Osaka University*); Hirai, Hiroaki (*Osaka University*); Miyazaki, Fumio (*Osaka University*)
- 16:36-16:38 WeCT7-01.14
Design and Development of Platform Ankle Rehabilitation Robot with Shape Memory Alloy based Actuator
 Chong, Tune Hau (*Monash University Malaysia*); Gouwanda, Darwin* (*Monash University Malaysia*); Gopalai, Alpha Agape (*Curtin University Sarawak Campus*); Low, Cheng Yee (*Universiti Teknologi MARA*); Hanapiah, Fazah Akhtar (*Universiti Teknologi Mara*)
- 16:38-16:40 WeCT7-01.15
Shape Memory Effect of Nano-Ferromagnetic Particle Doped NiTi for Orthopedic Devices and Rehabilitation Techniques
 Gautam, Arvind Kumar (*IIT Hyderabad*); Balouria, Anuradha (*IIT Hyderabad*); Acharyya, Amit* (*Indian Institute of Technology Hyderabad*); Acharyya, Swati Ghosh (*UOH Hyderabad*); Panwar, Madhuri (*IIT Hyderabad*); Naik, Ganesh R (*University of Technology Sydney*)
- 16:40-16:42 WeCT7-01.16
Effects of Wide Step Walking on Swing Phase Hip Muscle Forces and Spatio-Temporal Gait Parameters
 Bajelan, Soheil (*Victoria University, Melbourne*); Nagano, Hanatsu (*Victoria University*); Sparrow, William (*Victoria University*); Begg, Rezaul* (*Victoria University*)
- WeCT7-02: 16:10-17:10 Herrick Room
Assistive and Cognitive Robotics in Aided Living (Poster Session)
- 16:10-16:12 WeCT7-02.1
Design of a Speech to Sign Language Transliteration System
 Acostupa, Juan José* (*Nacional University of Engineering*); Campos Trinidad, Maykol Jampiers (*Nacional University of Engineering*); López Zapata, Erwin Daniel (*Universidad Nacional de Ingeniería*); Salazar Arévalo, Renzo Sebastián (*Nacional University of Engineering*)

WeCT7-03: 16:10-17:10 Biomechanics and Robotics – Clinical Evaluation in Rehabilitation and Orthopedics (Poster Session)	Herrick Room	16:14-16:16 Standing Balance Exercise using Lower Limb Exoskeleton Choi, Taejin (<i>Korea Institute of Science & Tech.</i>); Chong, Eunsuk (<i>Korea Institute of Science & Tech.</i>); Hwang, Yoha (<i>Korea Institute of Science & Tech.</i>); Kim, Seung-Jong (<i>Korea Institute of Science & Tech.</i>); Kim, Hyungmin (<i>Korea Institute of Science & Tech.</i>); Lee, Jong Min* (<i>Korea Institute of Science & Tech.</i>); Choi, Junhyuk (<i>Korea Institute of Science & Tech.</i>); Lee, Jiyeon (<i>Foundation for Industry Corporation, Univ. of Ulsan</i>); Chun, Min Ho (<i>Asan Medical Center, Univ. of Ulsan</i>)	WeCT7-07.3
16:10-16:12 The Effect of Foot Pressure and Maximal Oxygen Consumption According to Muscle Imbalance Improvement using Sound Feedback Kang, Seung Rok (<i>Jeonbuk Natl. Univ.</i>); Hong, ChulUn (<i>Chonbuk Natl. Univ.</i>); Kwon, Taekyu* (<i>Chonbuk Natl. Univ.</i>)	WeCT7-03.1		
WeCT7-04: 16:10-17:10 Biomechanics and Robotics in Sports (Poster Session)	Herrick Room	16:16-16:18 A Double 4-Bar Linkages Mechanism for Ankle Assist Device Kim, Jeonghun* (<i>SAIT (Samsung Advanced Institute of Tech.)</i>); Choi, Hyun Do (<i>SAIT (Samsung Advanced Institute of Tech.)</i>); Shim, Youngbo (<i>Samsung Advanced Institute of Tech.</i>)	WeCT7-07.4
16:10-16:12 Passive Knee Exoskeleton for Cycling Assistance: Wavelet Spectral Analysis of EMG Signals in Dynamic Exercise Chaichaowarat, Ronnapee* (<i>Tohoku University</i>); Kinugawa, Jun (<i>Tohoku University</i>); Kosuge, Kazuhiro (<i>Tohoku University</i>)	WeCT7-04.1		
WeCT7-05: 16:10-17:10 Hardware and Control Developments in Rehabilitation Robotics (Poster Session)	Herrick Room	16:10-16:12 Change in Functional Networks for Transitions between States of Consciousness during Midazolam-Induced Sedation Lee, Minji (<i>Korea University</i>); Sanders, Robert D. (<i>University of Wisconsin</i>); Yeom, Seul-Ki (<i>Korea University</i>); Won, Dong-Ok (<i>Korea University</i>); Kim, Hwi-Jae (<i>Korea University</i>); Lee, Bo-Ram (<i>Korea University</i>); Seo, Kwang-Suk (<i>Seoul National University Dental Hospital</i>); Kim, Hyun Jeong (<i>Seoul National University Dental Hospital</i>); Tononi, Giulio (<i>University of Wisconsin</i>); Lee, Seong-Whan* (<i>Korea University</i>)	WeCT8-01.1
16:10-16:12 Development of Electromagnetic Manipulation Nano-Robot Treatment System Tumurbaatar, Batgerel* (<i>Chonbuk National Univ.</i>); Lee, Jun Hee (<i>Chonbuk National Univ.</i>); Kim, Jeong In (<i>Chonbuk National Univ.</i>); Park, Chan Hee (<i>Chonbuk National Univ.</i>); Kim, Cheol Sang (<i>Chonbuk National Univ.</i>)	WeCT7-05.1		
16:12-16:14 A Pilot Study to Investigate How the Speed of Flipping up a Seat of Assist Chairs Affects Sit-to-Stand Suda, Atsushi* (<i>National Institute of Technology, Maizuru College</i>); Suzuki, Tatsuto (<i>University College London</i>); Ohnishi, Hiro (<i>National Institute of Technology, Maizuru College</i>); Murotaki, Takao (<i>National Institute of Technology, Maizuru College</i>); Nick, Tyler (<i>University College London</i>)	WeCT7-05.2		
16:14-16:16 A Preliminary Study for Evaluation of a Belt-Driven Assistive Robot Applied to Vocal Amplification Lee, Sang-Yoep (<i>Seoul National University</i>); Cho, Kyu-Jin* (<i>Seoul National University</i>)	WeCT7-05.3		
WeCT7-06: 16:10-17:10 Humanoid Robotics (Poster Session)	Herrick Room	16:12-16:14 Neuronal Activity in Human Anterior Cingulate Cortex Modulates with Internal Cognitive State during Multi-Source Interference Task Walmer, Matthew (<i>Johns Hopkins Univ.</i>); Sklar, Samuel (<i>Johns Hopkins Univ.</i>); Sacré, Pierre (<i>Johns Hopkins Univ.</i>); Schevon, Catherine (<i>Columbia Univ. Medical Center</i>); Srinivasan, Shraddha (<i>Columbia Univ. Medical Center</i>); Banks, Garrett (<i>Columbia Univ. Medical Center</i>); Yates, Mark (<i>Columbia Univ. Medical Center</i>); McKhann, Guy (<i>Columbia Univ. Medical Center</i>); Sheth, Sameer (<i>Columbia Univ. Medical Center</i>); Sarma, Sridevi V. (<i>Johns Hopkins Univ.</i>); Smith, Elliot* (<i>Columbia Univ. Medical Center</i>)	WeCT8-01.2
16:10-16:12 Design and Drive System of a Robotic Hand Oriented to Interpret Sign Language Campos Trinidad, Maykol Jampiers (<i>National University of Engineering</i>); López Zapata, Erwin Daniel* (<i>Universidad Nacional de Ingeniería</i>); Acostupa, Juan José (<i>Nacional University of Engineering</i>); Salazar Arévalo, Renzo Sebastián (<i>National University of Engineering</i>)	WeCT7-06.1		
WeCT7-07: 16:10-17:10 Rehabilitation Robotics and Biomechanics – Exoskeleton Robotics (Poster Session)	Herrick Room	16:14-16:16 Spatial Constraints of Binocularly Matched Information on Perceived Depth Resulted from Temporal Interocular Asynchrony Bi, Fanya (<i>School of Biomedical Engineering, Shanghai Jiao Tong University</i>); Ni, Rui (<i>Dept. of Psychology, Wichita State University</i>); Chen, Yao* (<i>Shanghai Jiao Tong University</i>)	WeCT8-01.3
16:10-16:12 Biomechanical Hip Mechanism for a Novel Flexible Exoskeleton Lee, Minhyung* (<i>Samsung Advanced Institute and Tech.</i>); Lee, Younbaek (<i>SAIT (Samsung Advanced Institute of Tech.)</i>); Lee, Jongwon (<i>Samsung Electronics Co., Ltd.</i>); Choi, ByungJune (<i>Samsung Advanced Institute of Tech.</i>); Kim, Jeonghun (<i>SAIT (Samsung Advanced Institute of Tech.)</i>)	WeCT7-07.1		
16:12-16:14 A LQR Controller for the Walking of a Lower-Limb Rehabilitation Exoskeleton Miranda Pereira, P. (<i>Universidad Nacional de ingeniería</i>); García Chávez, G.E.* (<i>Universidad Nacional de Ingeniería</i>); Choquehuanca, E. (<i>Universidad Nacional de Ingeniería</i>); Milián Ccopa, L.P. (<i>Universidad Nacional de Ingeniería</i>)	WeCT7-07.2		
		16:16-16:18 An Input-Output Linear Time Invariant Model Captures Neuronal Firing Response to External and Behavioral Events D'Aleo, Raina* (<i>Johns Hopkins Univ.</i>); Rouse, Adam (<i>Univ. of Rochester Medical Center</i>); Schieber, Marc (<i>Univ. of Rochester</i>); Sarma, Sridevi V. (<i>Johns Hopkins Univ.</i>)	WeCT8-01.4
		16:18-16:20 Localizing Neuronal Somata from Multi-Electrode Array In-Vivo Recordings using Deep Learning Buccino, Alessio Paolo* (<i>University of Oslo</i>); Ness, Torbjørn V (<i>Norwegian University of Life Sciences</i>); Einevoll, Gaute (<i>Norwegian University of Life Sciences</i>); Cauwenberghs, Gert (<i>University of California San Diego</i>); Häfliger, Philipp (<i>University of Oslo, Dept. of Informatics</i>)	WeCT8-01.5
		16:20-16:22 Electro-Mechanical Response of a 3D Nerve Bundle Model to Mechanical Loads Leading to Axonal Injury Cinelli, Ilaria* (<i>NUI of Galway</i>); Destrade, Michel (<i>CNRS / Université Pierre et Marie Curie</i>); Duffy, Maeve (<i>NUI Galway</i>); McHugh, Peter (<i>NUI of Galway</i>)	WeCT8-01.6

- 16:22-16:24 WeCT8-01.7
EEG Alpha Power Change during Working Memory Encoding in Adults with Different Memory Performance Levels
 Wang, Ruimin* (*Kyushu University*); Kamezawa, Risako (*Graduate School of Systems Life Sciences, Kyushu University*); Watanabe, Aiko (*Kyushu University*); Iramina, Keiji (*Kyushu University, Japan*)
- WeCT8-02: 16:10-17:10 Schwan Room
Brain-Computer Interface IV (Poster Session)
- 16:12-16:14 WeCT8-02.2
Finger Movements are Mainly Represented by a Linear Transformation of Energy in Band-Specific ECoG Signals
 Marjaninejad, Ali (*University of Southern California*); Taherian, Babak (*University of Southern California*); Valero-Cuevas, Francisco* (*University of Southern California*)
- 16:14-16:16 WeCT8-02.3
Active Brainwave Pattern Generation for Brain-to-Machine Communication
 Ganesh, Swathi (*San Diego State Univ.*); Timm, Dale (*San Diego State Univ.*); Moon, Kee* (*San Diego State University*); Lee, Sung Q (*ETRI*); Youm, Woosub (*ETRI*)
- 16:16-16:18 WeCT8-02.4
A Sloreata Study for Gaze-Independent BCI Speller
 An, Xingwei* (*Tianjin University*); Wei, Jinwen (*Tianjin University*); Liu, Shuang (*Tianjin University*); Ming, Dong (*Tianjin University*)
- 16:18-16:20 WeCT8-02.5
The Effect of Semantic Congruence for Visual-Auditory Bimodal Stimuli
 An, Xingwei* (*Tianjin Univ.*); Cao, Yong (*China Astronaut Research and Training Center*); Wei, Jinwen (*Tianjin Univ.*); Liu, Shuang (*Tianjin Univ.*); Jiao, Xuejun (*China Astronaut Research and Training Center*); Ming, Dong (*Tianjin Univ.*)
- 16:20-16:22 WeCT8-02.6
A Brain Machine Interface for Command based Control of a Wheelchair using Conditioning of Oscillatory Brain Activity
 Hamad, Eyad* (*German Jordanian University*); Al-Gharabli, Samer (*Pharmaceutical and Chemical Engineering Dept., German Jorda*); Saket, Munib (*Pharmaceutical and Chemical Engineering Dept., German Jorda*); Jubran, Omar (*German Jordanian University*)
- 16:22-16:24 WeCT8-02.7
A Hybrid BCI Web Browser based on EEG and EOG Signals
 He, Shenghong (*South China University of Technology*); Yu, Tianyou (*South China University of Technology, Chinese*); Gu, Zhenghui (*South China University of Technology, China*); Li, Yuanqing* (*South China University of Technology*)
- 16:24-16:26 WeCT8-02.8
A Real-Time Spike Sorting Method based on the Embedded GPU
 Yang, Zelan (*Zhejiang University*); Zhang, Shaomin (*Zhejiang University*); Xu, Kedi (*Zhejiang University, Qiushi Academy for Advanced Studies*); Tian, Xiang* (*Zhejiang University*); Zheng, Xiaoxiang (*Zhejiang University*)
- 16:26-16:28 WeCT8-02.9
Performance Predictors of Motor Imagery Brain-Computer Interface based on Spatial Abilities for Upper Limb Rehabilitation
 Pacheco, Kevin (*Cayetano Heredia University*); Acuña, Kevin José (*Pontifical Catholic University of Peru*); Carranza, Erick (*Pontificia Universidad Católica del Perú*); Achanccaray, David* (*Pontifical Catholic University of Peru*); Andreu-Perez, Javier (*Imperial College London*)
- 16:28-16:30 WeCT8-02.10
Facial Expression Classification using EEG and Gyroscope Signals
 Toth, Jake (*University of Sheffield*); Arvaneh, Mahnaz* (*University of Sheffield*)
- 16:30-16:32 WeCT8-02.11
EEG-Based Classification of Bilingual Unspoken Speech using ANN
 Balaji, Advait* (*BITS Pilani KK Birla Goa Campus*); Haldar, Aparajita (*Birla Institute of Technology and Science, Pilani, K K Birla Goa*); Patil, Keshav (*Birla Institute of Technology and Science, Pilani, K. K. Birla G*); Thandayam, Sai Ruthvik (*BITS Pilani KK Birla Goa Campus*); C A, Valliappan (*BITS Pilani KK Birla Goa Campus*); Jartarkar, Mayur (*Birla Institute of Technology and Science, Pilani, K. K. Birla G*); Baths, Veeky (*BITS Pilani KK Birla Goa Campus*)
- 16:32-16:34 WeCT8-02.12
Quantifying the Maladaptive Neurophysiological Correlates Leading to Lapses of Attention during the SART: Towards Real-Time Mental State Monitoring of Mind-Wandering
 Martel, Adrien* (*Trinity College Dublin*); Arvaneh, Mahnaz (*University of Sheffield*); Taylor, Adam (*The University of Sheffield*); Dockree, Paul (*Trinity College Dublin*); Robertson, Ian (*Trinity College Dublin*)
- WeCT8-03: 16:10-17:10 Schwan Room
Neural Signal Processing III (Poster Session)
- 16:10-16:12 WeCT8-03.1
A Pilot Study on the Evaluation of Normal Phonating Function based on High-Density sEMG Topographic Maps
 Zhu, Mingxing (*ShenZhen Institutes of Advanced Tech. Chinese Academy of Sc*); Liang, Faya (*Otorhinolaryngology Head & Neck Dept., Sun Yat - Sen Me*); Samuel, Oluwarotimi Williams (*Shenzhen Institutes of Advanced Tech.*); Chen, Shixiong* (*Shenzhen Institutes of Advanced Tech.*); Yang, Wanzhang (*Dept. of Rehabilitation Medicine, Shenzhen Sixth People's H*); Lu, Lin (*Rehabilitation Dept., Shenzhen Hospital of Southern Med*); Zou, Haiqing (*Shenzhen Yingda Strong Tech. Co.*); Li, Peng (*Third Affiliated Hospital of Sun Yat-Sen Univ.*); Li, Guanglin (*Shenzhen Institutes of Advanced Tech.*)
- 16:12-16:14 WeCT8-03.2
Classification of Multi-Class Motor Imagery EEG using Four Band Common Spatial Pattern
 Mahmood, Amama* (*School of Electrical Engineering and Computer Science, Natl.*); Zainab, Rida (*School of Electrical Engineering and Computer Science, Natl.*); Ahmad, Rushda Basir (*School of Electrical Engineering and Computer Science, Natl.*); Saeed, Maryam (*School of Electrical Engineering and Computer Science, Natl.*); Kamboh, Awais Mehmood (*School of Electrical Engineering and Computer Science, Natl.*)
- 16:14-16:16 WeCT8-03.3
Information Processing of Passive Joint Motion to Spinal Nervous System
 Matsubara, Sige hito* (*Kumamoto Health Science Univ.*); Igasaki, Tomohiko (*Kumamoto Univ.*); Iiyama, Junichi (*Kumamoto Health Science Univ.*); Murayama, Nobuki (*Kumamoto Univ.*)
- 16:16-16:18 WeCT8-03.4
Comparative Evaluation of Different Wavelet Thresholding Methods for Neural Signal Processing
 Barabino, Gianluca (*University of Cagliari*); Baldazzi, Giulia (*University of Cagliari*); Sulas, Eleonora (*University of Cagliari*); Carboni, Caterina* (*Università di Cagliari*); Raffo, Luigi (*University of Cagliari*); Pani, Danilo (*University of Cagliari*)
- 16:18-16:20 WeCT8-03.5
Multi-Resolution Multi-Trial Sparse Classification Model for Decoding Visual Memories from Hippocampal Spikes in Human
 Song, Dong* (*University of Southern California*); She, Xiwei (*Zhejiang University*); Hampson, Robert (*Wake Forest School of Medicine*); Deadwyler, Sam (*Wake Forest University*); Berger, Theodore (*University of Southern California*)

WeCT8-04: 16:10-17:10 Schwan Room
Neurological Disorders II (Poster Session)

16:10-16:12 WeCT8-04.1
Performance Analysis of Risk-Aware Control in Upper Limb of Patients with Post-Stroke Hemiparesis

Hao, Huaqing (*Shanghai Jiao Tong Univ.*); Gu, Lin (*Shanghai Ruijin Rehabilitation Hospital*); Bao, Yong (*Dept. of Rehabilitation Medicine, Ruijin Rehabilitation Hospital*); Xie, Qing (*Ruijin Hospital Shanghai Jiaotong Univ. School of Medicine*); Lan, Ning (*Shanghai Jiao Tong Univ.*); Niu, Chuanxin M.* (*Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.*)

16:12-16:14 WeCT8-04.2
A Novel HFO-Based Method for Unsupervised Localization of the Seizure Onset Zone in Drug-Resistant Epilepsy

Murphy, Paige (*Univ. of Connecticut*); von Paternos, Adam (*Univ. of Connecticut*); Santaniello, Sabato* (*Univ. of Connecticut*)

WeCT9-01: 16:10-17:10 Plonsey Room
Neural Interfaces II (Poster Session)

16:10-16:12 WeCT9-01.1
Nanostructured Platinum as an Electrochemically and Mechanically Stable Electrode Coating

Boehler, Christian* (*University of Freiburg*); Oberueber, Felix (*University of Freiburg*); Stieglitz, Thomas (*University of Freiburg*); Asplund, Maria (*University of Freiburg*)

16:12-16:14 WeCT9-01.2
Signal Correlation between Wet and Original Dry Electrodes in Electroencephalogram According to the Contact Impedance of Dry Electrodes

Higashi, Yuichiro (*University of Hyogo*); Yokota, Yusuke (*National Institute of Information and Communications Technology*); Naruse, Yasushi* (*National Institute of Information and Communications Technology*)

16:14-16:16 WeCT9-01.3
Design of Experiment Evaluation of Sputtered Thin Film Platinum Surface Metallization on Alumina Substrate for Implantable Conductive Structures

Kiele, Patrick* (*University of Freiburg*); Čvančara, Paul (*University of Freiburg*); Mueller, Matthias (*University of Freiburg*); Stieglitz, Thomas (*University of Freiburg*)

16:16-16:18 WeCT9-01.4
High Performance Iridium Oxide/Platinum Nano-Leaves Composite Coatings on Microelectrodes for Neural Stimulation/Recording

Zeng, Qi (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Xia, Kai (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Sun, Bin (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Wu, Tianzhun* (*Shenzhen Institutes of Advanced Technology (SIAT), Chinese Acade*); Humayun, Mark (*University of Southern California*)

16:18-16:20 WeCT9-01.5
Low SNR Neural Spike Detection using Scaled Energy Operators for Implantable Brain Circuits

Tariq, Taimoor* (*School of Electrical Engineering and Computer Science, Natl.*); Satti, Muhammad Hashim (*School of Electrical Engineering and Computer Science, Natl.*); Saeed, Maryam (*School of Electrical Engineering and Computer Science, Natl.*); Kamboh, Awais Mehmood (*School of Electrical Engineering and Computer Science, Natl.*)

16:20-16:22 WeCT9-01.6
Building Wireless Implantable Neural Interfaces within Weeks for Neuroscientists

Bentler, Christian* (*Universität Freiburg*); Stieglitz, Thomas (*University of Freiburg*)

16:22-16:24 WeCT9-01.7
Safe Direct Current Stimulator Design for Reduced Power Consumption and Increased Reliability

Fridman, Gene* (*Johns Hopkins University*)

16:24-16:26 WeCT9-01.8

A Miniaturized UWB Antenna for Implantable Data Telemetry

Haas, Michael* (*University of Ulm*); Schweizer, Benedikt (*University of Ulm*); Anders, Jens (*University of Ulm*); Ortmanns, Maurits (*University of Ulm*)

16:26-16:28 WeCT9-01.9
3D Printed Wire Electrode Carrier for a Pilot Study of the Functional Brain Mapping

Baek, Changhoon (*Seoul National University*); Jang, Jungwoo (*Seoul National University*); Park, Sangwan (*Seoul National University College of Veterinary Medicine*); Song, Yoon-Kyu (*Seoul National University*); Seo, Kangmoon (*Seoul National University College of Veterinary Medicine*); Seo, Jong Mo* (*Seoul National University, School of Engineering*)

16:28-16:30 WeCT9-01.10
A Convex-Shaped, PDMS-Parylene Hybrid MultiChannel ECoG-Electrode Array

Lee, Woo Ram (*Seoul National University, EFE lab*); Im, Changkyun (*BK21 Plus Seoul National University*); Koh, Chin Su (*Yonsei University*); Kim, Jun-Min* (*Seoul University*); Seo, Jong Mo (*Seoul National University, School of Engineering*); Shin, Hyung-Cheul (*Hallym University*)

16:30-16:32 WeCT9-01.11
Flexible Microelectrode Array for Retinal Prosthesis

Sun, Bin (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Li, Tengyue (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Xia, Kai (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Zeng, Qi (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Wu, Tianzhun* (*Shenzhen Institutes of Advanced Technology (SIAT), Chinese Acade*); Humayun, Mark (*University of Southern California*)

16:32-16:34 WeCT9-01.12
A Comparative Study of Light and Electrically Evoked Response of Retinal Ganglion Cells

Biswas, Satarupa (*Indian Institute of Technology (IIT), Kharagpur*); Sikdar, Debdeep (*IIT Kharagpur*); Das, Soumen (*Indian Institute of Technology, Kharagpur*); Mahadevappa, Manjunatha* (*Indian Institute of Technology Kharagpur*)

16:34-16:36 WeCT9-01.13
Chitosan Conduit Combined with Naringin Facilitate Remyelination in Injured Sciatic Nerves by Increasing Neurotrophins

Rong, Wei (*Beijing Tsinghua Chang Gung Hospital, Tsinghua University*); Cai, Xu (*Dept. of Orthopedics, Beijing Tsinghua Chang Gung Hospital*); Pan, Yongwei (*Dept. of Orthopedics, Beijing Tsinghua Chang Gung Hospital*); Song, Fei (*Dept. of Orthopedics, Beijing Tsinghua Chang Gung Hospital*); Zhao, Zhe (*Dept. of Orthopedics, Beijing Tsinghua Chang Gung Hospital*); Sun, Changjiao (*Dept. of Orthopedics, Beijing Tsinghua Chang Gung Hospital*); Xiao, Songhua* (*Beijing Tsinghua Chang Gung Hospital, Tsinghua University*)

WeCT9-02: 16:10-17:10 Plonsey Room
Neural Stimulation III (Poster Session)

16:10-16:12 WeCT9-02.1
Imaging of Population Spikes Induced by Repetitive Stimulus Pulses in Mouse Cerebral Slices in Vitro

Nomoto, Tomohiro (*Osaka University*); Tanaka, Yuta (*Osaka University*); Hayashida, Yuki* (*Osaka University*); Yagi, Tetsuya (*Osaka University, Gard. Eng*)

16:12-16:14 WeCT9-02.2
Subdural Recordings from an Awake Human Brain for Measuring Current Intensity during Transcranial Direct Current Stimulation

Salimpour, Yousef* (*Johns Hopkins School of Medicine*); Liu, Chang-Chia (*Johns Hopkins University*); Webber, William Robert (Bob) (*Johns Hopkins University*); Mills, Kelly (*Johns Hopkins University*); Anderson, William S. (*Johns Hopkins School of Medicine, Dept. of Neurosurgery*)

16:14-16:16 WeCT9-02.3
Effects of Anode Position on the Responses Elicited by Transcutaneous Spinal Cord Stimulation
 Masugi, Yohei* (*Tokyo International University*); Obata, Hiroki (*Kyushu Institute of Technology*); Nakazawa, Kimitaka (*The University of Tokyo*)

16:16-16:18 WeCT9-03.4
Motor Imagery Enhancement Paradigm using Moving Rubber Hand Illusion System
 Song, Minsu (*DGIST (Daegu Gyeongbuk Institute of Science and Technology)*); Kim, Jonghyun* (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)

16:16-16:18 WeCT9-02.4
A Pilot Study of Planar Coil based Magnetic Stimulation using Acute Hippocampal Slice in Mice
 Park, Heejin (*Gwangju Institute of Science and Technology*); Kang, Heekyung (*Chonnam National Univ.*); Wang, Ming (*Chonnam National Univ. Hospital*); Chung, Euiheon (*Gwangju Institute of Science and Technology*); Jo, Jihoon (*Chonnam National Univ. Medical School*); Kim, Sohee* (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)

16:18-16:20 WeCT9-03.5
The Impact of an Anti-Gravity Treadmill (AlterG) Training on Walking Capacity and Corticospinal Tract Structure in Children with Cerebral Palsy
 Azizi, Shahla (*Dept. of Medical Physics and Biomedical Engineering*); Marzbani, Hengameh (*Tehran University of Medical Sciences*); Raminfar, Samira (*Dept. of Neuroscience and Addiction Studies, School of Adva*); Moradi Birgani, Parmida (*Tehran University of Medical Sciences*); Rasooli, Amirhossein (*Tehran University of Medical Sciences*); Mirbagheri, Mehdi* (*Northwestern University/RIC*)

16:18-16:20 WeCT9-02.5
Localization of Ultrasound Waveform for Low Intensity Ultrasound-Induced Neuromodulation in a Mouse Model
 Song, Kang-Il* (*Korea Institute of Science and Technology*); Lee, Seul (*College of Dentistry, Kyung Hee University*); Park, Sunghee (*Korea Institute of Science and Technology*); Hwang, Dosik (*Yonsei University*); Kim, Hyungmin (*Korea Institute of Science and Technology*); Youn, Inchan (*Korea Institute of Science and Technology*)

16:20-16:22 WeCT9-03.6
Oscillating Field Stimulation Inhibits Astrocyte Activation and Astroglial Scar Formation after Spinal Cord Injury in Rats
 Zhang, Cheng (*Chinese Academy of Sciences, Beijing.*); Zhang, Guanghao (*Institute of Electrical Engineering, Chinese Academy of Sciences*); Wang, Aihua (*Chinese Academy of Sciences*); Wu, Changzhe (*Chinese Academy of Sciences*); Huo, Xiaolin* (*Chinese Academy of Sciences*)

16:20-16:22 WeCT9-02.6
Research on the Synchronous Detection of Neuronal Signals under a Nerve Stimulation System Control
 Zhang, Yu (*Chinese Academy of Sciences, Institutes of Electronics*); Xu, Shengwei (*Institute of Electronics, Chinese Academy of Science*); Yang, Lili (*University of Chinese Academy of Sciences*); Xiao, Guihua (*University of Chinese Academy of Sciences*); Zhang, Song (*Institute of Electronics, Chinese Academy of Sciences*); Gao, Fei (*Chinese Academy of Sciences, Institutes of Electronics*); Li, Ziyue (*Chinese Academy of Sciences, Institutes of Electronics*); Wang, Mixia (*Institute of Electronics, Chinese Academy of Sciences*); Song, Yilin (*Institute of Electronics, Chinese Academy of Science*); Cai, Xinxia* (*Institute of Electronics, Chinese Academy of Sciences*)

16:22-16:24 WeCT9-03.7
Quantitative Assessment for Upper-Limb Motor Function by using EMG and Kinematic Analysis in the Practice of Occupational Therapy
 Kim, Jinuk (*Handong Global Univ.*); Kim, Hyeonseok (*Handong Global Univ.*); Kim, Jaehyo* (*Handong Global Univ.*)

16:22-16:24 WeCT9-02.7
In-Vitro Validation of a Closed-Loop Optogenetic Stimulation Device
 Edward, Epsy Shiny* (*Deakin University*); Kouzani, Abbas Z. (*Deakin University*)

WeCT9-04: 16:10-17:10 Plonsey Room
Sensory Neuroprostheses I (Poster Session)

16:10-16:12 WeCT9-04.1
A Preliminary Study to Identify a Neurophysiological Correlate of Electroacoustic Pitch Matching in Cochlear Implant Users
 Tan, Chin-Tuan* (*University of Texas, Dallas*)

WeCT9-03: 16:10-17:10 Plonsey Room
Neurorehabilitation II (Poster Session)

16:12-16:14 WeCT9-04.2
Retinal Electrostimulation in Rats: Activation Thresholds from Superior Colliculus and Visual Cortex Recordings
 Barriga-Rivera, Alejandro* (*Univ. of New South Wales*); Guo, Tianruo (*Univ. of New South Wales*); Morley, John William (*Univ. of Western Sydney*); Lovell, Nigel H. (*Univ. of New South Wales*); Suaning, Gregg (*The Univ. of Sydney*)

16:10-16:12 WeCT9-03.1
Optimal Inter-Stimulus Interval for Paired Associative Stimulation with Mechanical Stimulation
 Kim, Euisun* (*Georgia Institute of Technology*); Ueda, Jun (*Georgia Institute of Technology*); Shinohara, Minoru (*Georgia Institute of Technology*)

16:14-16:16 WeCT9-04.3
Testing Stimulus Protocols in Retinal-Prosthesis Patients
 Gonzalez Calle, Alejandra* (*University of Southern California*); Weiland, James (*University of Michigan*)

16:12-16:14 WeCT9-03.2
Restoring Proper Task Mechanics of the Hand Post-Stroke by Targeted Assistance of Hand Muscles
 Lee, Sang Wook* (*Catholic University of America*); Vermillion, Billt (*Catholic University of America*); Sandri Heidner, Gustavo (*The Catholic University of America*)

WeCT10-01: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Data Mining II (Poster Session)

16:14-16:16 WeCT9-03.3
Weight Drop Impact System and Its Output Signal Analysis for Inducing Large Animal Spinal Cord Injury Model
 Kim, Hyeongbeom (*Dankook Univ., Collage of Medicine, Dept. of Biomedical Engineer*); Kim, Jong-Wan (*Dankook Univ., Institute of Tissue Regeneration Engineering*); Hyun, Jung Keun (*Dankook University*); Chung, Phil-Sang (*Dankook Univ., Dept. of Otolaryngology, BLI Korea*); Park, Ilyong* (*Dankook Univ., Collage of Medicine, Dept. of Biomedical Engineer*)

16:10-16:12 WeCT10-01.1
Identifying Personal Health Experience Tweets with Deep Neural Networks
 Jiang, Keyuan* (*Purdue Univ. Northwest*); Gupta, Ravish (*Purdue Univ. Northwest*); Gupta, Matrika (*Purdue Univ. Northwest*); Calix, Ricardo (*Purdue Univ. Northwest*); Bernard, Gordon (*Vanderbilt Univ. Medical Center*)

16:12-16:14 WeCT10-01.2
Video Analysis of “YouTube Funnies” to Aid the Study of Human Gait and Falls – Preliminary Results and Proof of Concept
 Taati, Babak* (*Toronto Rehabilitation Institute and University of Toronto*); Lohia, Pranay (*Indian Institute of Technology, Kharagpur*); Mansfield, Avril (*Toronto Rehabilitation Institute*); Ashraf, Ahmed (*University of Toronto*)

- 16:14-16:16 WeCT10-01.3
3-Year Risk Prediction of Coronary Heart Disease in Hypertension Patients: A Preliminary Study
 Chen, Runge (*Shenzhen Institute of Advanced Technology, Chinese Academy of Sc*); Yang, Yujie (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Miao, Fen (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Cai, Yun-Peng (*SIAT*); Lin, Denan (*Shenzhen Medical Information Center*); Zheng, Jing (*Shenzhen Medical Information Center*); Li, Ye* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*)
- 16:16-16:18 WeCT10-01.4
Prediction of Influenza a Virus Infections in Humans using an Artificial Neural Network Learning Approach
 Chrysostomou, Charalambos* (*The Cyprus Institute*); Seker, Huseyin (*The University of Northumbria at Newcastle*)
- 16:18-16:20 WeCT10-01.5
Data Quality Improvement of a Multicenter Clinical Trial Dataset
 Zaccaria, Gian Maria (*Politecnico di Torino*); Rosati, Samanta (*Politecnico di Torino*); Castagneri, Cristina (*Politecnico di Torino*); Ferrero, Simone (*Universita' di Torino*); Ladetto, Marco (*Azienda Ospedaliera SS Antonio e Biagio e C. Arrigo, Alessandria*); Boccadoro, Mario (*Universita' di Torino*); Balestra, Gabriella* (*Politecnico di Torino*)
- 16:20-16:22 WeCT10-01.6
Discovering Explanatory Models to Identify Relevant Tweets on Zika
 Muppalla, RoopTeja* (*Knoesis - Wright State University*); Miller, Michele (*Wright State University*); Banerjee, Tanvi (*Wright State University*); Romine, William (*Wright State University*)
- WeCT10-02: 16:10-17:10 Schmitt Room
Imaging Informatics – Medical Image Processing and Visualization I (Poster Session)
- 16:10-16:12 WeCT10-02.1
Fast Segmentation and Modeling of Hepatic Components for the Planning of Robot-Assisted Liver Tumor Ablation
 Zhou, Jiayin* (*Institute for Infocomm Research*); Chi, Yanling (*Institute for Infocomm Research*); Huang, Weimin (*Institute for Infocomm Research, Agency for Science Technology a*); Toe, Kyaw Kyar (*Institute for Infocomm Research, A*STAR*); Chui, Chee Kong (*National University of Singapore*); Chang, Stephen KY (*National University of Singapore*)
- 16:12-16:14 WeCT10-02.2
Cloud Solution for Histopathological Image Analysis using Region of Interest based Compression
 Kanakatte, Aparna* (*Tata Consultancy Services*); Subramanya, Rakshit (*TCS*); Delampady, Ashik (*TCS*); Nayak, Rajarama (*TCS*); P, Balamuralidhar (*TATA Consultancy Services*); Gubbi, Jayavardhana (*Tata Consultancy Services*)
- 16:14-16:16 WeCT10-02.3
Analysis of Computerized Optokinetic Nystagmus Induction and Effect of Contrast on Ocular Fatigue
 Kim, Ji Sung (*Seoul National University*); Baek, Changhoon (*Seoul National University*); Yoo, Sunyoung (*Seoul National University*); Seo, Jong Mo* (*Seoul National University, School of Engineering*); Hwang, Jeong Min (*Seoul National University School of Medicine*)
- 16:16-16:18 WeCT10-02.4
MRI based Automated Diagnosis of Alzheimer's: Fusing 3D Wavelet-Features with Clinical Data
 Ayaz, Aymen (*National University of Sciences and Technology, Islamabad, Pakis*); Ahmad, Muhammad Zubair (*University of Manitoba*); Khurshid, Khawar (*Michigan State University*); Kamboh, Awais Mehmood* (*School of Electrical Engineering and Computer Science, National*)
- 16:18-16:20 WeCT10-02.5
Semi-Automated Nasal Pap Mask Sizing using Facial Photographs
 Johnston, Benjamin* (*University of Sydney*); McEwan, Alistair (*The University of Sydney*); de Chazal, Philip (*University of Sydney*)
- 16:20-16:22 WeCT10-02.6
A Hybrid Approach for Nucleus Stain Separation in Histopathological Images
 Bhat, Harsha (*TCS*); Kanakatte, Aparna* (*Tata Consultancy Services*); Nayak, Rajarama (*TCS*); Gubbi, Jayavardhana (*Tata Consultancy Services*)
- 16:22-16:24 WeCT10-02.7
Assisting People with Nystagmus through Image Stabilization: Using an ARX Model to Overcome Processing Delays
 Pölzer, Stephan (*Johannes Kepler University*); Miesenberger, Klaus* (*Johannes Kepler University*)
- 16:24-16:26 WeCT10-02.8
Software Implementation and Hardware Acceleration of Retinal Vessel Segmentation for Diabetic Retinopathy Screening Tests
 Cavinato, Lara* (*Politecnico di Milano*); Fidone, Irene (*Politecnico di Milano*); Bacis, Marco (*Politecnico di Milano*); Del Sozzo, Emanuele (*Politecnico di Milano*); Durelli, Gianluca Carlo (*Politecnico di Milano*); Santambrogio, Marco (*Politecnico di Milano*)
- 16:26-16:28 WeCT10-02.9
Detection and Classification of the Breast Abnormalities in Digital Mammograms via Regional Convolutional Neural Network
 Al-Masni, Mohammed A. (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Al-Antari, Mughed A. (*Dept. of Biomedical Engineering, College of Electronics and*); Jeong-min, Park (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Gi, Geon (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Kim, Tae-yeon (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Rivera, Patricio (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Valarezo Añazco, Edwin (*Dept. of Biomedical Engineering, Kyung Hee Univ. and E*); Han, Seung-Moo (*Dept. of Biomedical Engineering, College of Electronics and*); Kim, Tae-Seong* (*Kyung Hee Univ.*)
- WeCT10-03: 16:10-17:10 Schmitt Room
Sensor Informatics – Sensors and Sensor Systems I (Poster Session)
- 16:10-16:12 WeCT10-03.1
Evaluation of NISHIJIN E-Textile for 12-Lead ECG Measurement through Automatic ECG Analyzer
 Kuroda, Tomohiro* (*Kyoto University*); Shiomi, Hiroki (*Kyoto University*); Minamino-Muta, Eri (*Kyoto University*); Yamashita, Yugo (*Kyoto University*); Iwao, Tomohide (*Kyoto University*); Tamura, Hiroshi (*Kyoto University*); Ueshima, Kazuo (*Teijin Frontier Co. Ltd.*); Kimura, Takeshi (*Kyoto University*)
- 16:12-16:14 WeCT10-03.2
Edge Caching and Dynamic Vision Sensing for Low Delay Access to Visual Medical Information
 Chen, Ziyang* (*King's College London*); Shikh-Bahaei, Tamanna (*Queen Mary University of London*); Luff, Paul (*King's College London*); Shikh-Bahaei, Mohammad (*King's College London*)
- 16:14-16:16 WeCT10-03.3
Recognizing Cigarette Smoke Inhalations using Hidden Markov Models
 Ramos-Garcia, Raul Ignacio (*University of Alabama*); Tiffany, Stephen (*State University of New York at Buffalo*); Sazonov, Edward* (*University of Alabama*)

16:16-16:18 WeCT10-03.4
Electromyogram-Based Method to Secure Wireless Body Sensor Networks for Rehabilitation Systems
 Zhang, Guanghe (*Institute of Computing Tech., Chinese Academy of Sciences*); Samuel, Oluwarotimi Williams (*Shenzhen Institutes of Advanced Tech.*); Liu, Fanghua (*Jiangxi Normal University*); Chen, Shixiong (*Shenzhen Institutes of Advanced Tech.*); Zhou, Hui (*Shenzhen Institute of Advanced Tech.*); Zhang, Haoshi (*Shenzhen Institutes of Advanced Tech.*); Li, Guanglin* (*Shenzhen Institutes of Advanced Tech.*)

16:16-16:18 WeCT11-01.4
Physiologically Motivated Detection of Atrial Fibrillation
 Couceiro, Ricardo* (*University of Coimbra*); Henriques, Jorge (*University of Coimbra*); Paiva, Rui Pedro (*University of Coimbra*); Antunes, Manuel (*University of Coimbra*); de Carvalho, Paulo (*University of Coimbra*)

WeCT11-02: 16:10-17:10 Greatbatch Room
Cardiac Mechanics I (Poster Session)

16:18-16:20 WeCT10-03.5
A Tapping Device for Recording and Quantitative Characterization of Rhythmic/Auditory Sequences
 Piazza, Caterina (*Politecnico di Milano and Scientific Institute IRCCS E.Medea*); Cesareo, Ambra* (*Dipartimento di Elettronica, Informazione e Bioingegneria, Polit*); Caccia, Martina (*School of Advanced Studies IUSS Pavia –Dept. of Neurocognition*); Reni, Gianluigi (*IRCCS*); Lorusso, Maria Luisa (*Unit of Neuropsychology of Developmental Disorders, Scientific I*)

16:10-16:12 WeCT11-02.1
Replication of Pressure-Volume Loop with Controllable ESPVR and EDPVR Curves on a Personalized Mock Circulatory Loop based on Elastance Function
 Wang, Yaxin* (*Univ. of Cambridge*); Smith, Peter Alex (*Texas Heart Institute*); De Sciscio, Paul (*Univ. of Cambridge*); Sampaio, Luiz C. (*Texas Heart Institute*); Cohn, William E. (*Texas Heart Institute*); Xu, Liping (*Univ. of Cambridge*); McMahon, Richard (*Dept. of Engineering, Univ. of Cambridge*)

16:20-16:22 WeCT10-03.6
Development of the Viewing Distance Measuring Device in Smartphone Use
 Seo, Min-Won (*Seoul National University*); Kim, Won-jae (*Dept. of Ophthalmology, College of Medicine, Yeungnam Univ.*); Seo, Jong Mo* (*Seoul National University, School of Engineering*); Kim, Jun-Min (*Seoul University*); Hwang, Jeong Min (*Seoul National University School of Medicine*)

16:12-16:14 WeCT11-02.2
Real-Time Model-Based Control of Afterload for in Vitro Cardiac Tissue Experimentation
 Garrett, Amy (*The University of Auckland*); Pham, Toan (*University of Auckland*); Loiselle, Denis (*The University of Auckland*); Han, June-Chiew (*The University of Auckland*); Taberner, Andrew* (*The University of Auckland*)

16:22-16:24 WeCT10-03.7
Chewing Detection from an In-Ear Microphone using Convolutional Neural Networks
 Papapanagiotou, Vasileios (*Aristotle University of Thessaloniki*); Diou, Christos* (*Aristotle University of Thessaloniki*); Delopoulos, Anastasios (*Aristotle University of Thessaloniki*)

16:14-16:16 WeCT11-02.3
Synergy of First Principles Modelling with Predictive Control for a Biventricular Assist Device: In Silico Evaluation Study
 Koh, Vivian* (*Univ. of Malaya*); Ho, Yong Kuen (*Monash Univ. Malaysia*); Stevens, Michael Charles (*Univ. of New South Wales*); Salamonsen, Robert F (*Alfred Hospital*); Lovell, Nigel H. (*Univ. of New South Wales*); Lim, Einly (*Univ. of Malaya*)

16:24-16:26 WeCT10-03.8
Automated Long-Term Contactless Temperature Monitoring in Animals via a Thermographic Camera
 Anishchenko, Lesya* (*BMSTU*); Razevig, Vladimir (*Bauman Moscow State Technical University*); Bugaev, Aleksandr (*Bauman Moscow State Technical University*); Tataraidze, Alexander (*Bauman Moscow State Technical University*)

16:16-16:18 WeCT11-02.4
Monte Carlo Method Applied to the Evaluation of the Relationship between Ejection Fraction and Its Constituent Components
 Kerkhof, Peter LM* (*VU University Medical Center*); Yoo, B.W. (*Dept. Clinical Pharmacology, Severance Hospital, Yonsei Univ.*); Merillon, Jean Paul (*Suresnes*); Peace, Richard A. (*Royal Victoria Infirmary, Newcastle upon Tyne Hospitals NHS Foun*); Handly, Neal (*Dept. Emergency Medicine, Drexel University College of Medicine*)

16:26-16:28 WeCT10-03.9
Segmentation of Gait Sequences using Inertial Sensor Data in Hereditary Spastic Paraplegia
 Martindale, Christine F* (*Friedrich-Alexander-Universität Erlangen-Nürnberg*); Strauss, Martin (*Friedrich-Alexander-Universität Erlangen-Nürnberg*); Gaßner, Heiko (*Universitätsklinikum Erlangen, Dept. of Molecular Neurology*); List, Julia (*Universitätsklinikum Erlangen, Dept. of Molecular Neurology*); Müller, Meinard (*International Audio Laboratories Erlangen, Erlangen, Germany*); Klucken, Jochen (*University Hospital Erlangen*); Kohl, Zacharias (*Universitätsklinikum Erlangen, Dept. of Molecular Neurology*); Eskofier, Bjoern M (*Friedrich-Alexander-Universität Erlangen-Nürnberg*)

16:18-16:20 WeCT11-02.5
An in Vitro Study of the Influence of Monocusp Patch Size on the Hemodynamics for Reconstructing Right Ventricular Outflow Tract in Tetralogy of Fallot
 Feng, Wentao (*Beihang University*); Yao, Jie (*Beihang University*); Yang, Xianda (*Beihang University*); Chu, Zhaowei (*Beihang University*); Guo, Meng (*Beihang University*); Wang, Lizhen (*Beihang University*); Fan, Yubo* (*Beihang University*)

WeCT11-01: 16:10-17:10 Greatbatch Room
Cardiac Electrophysiology I (Poster Session)

16:20-16:22 WeCT11-02.6
Sex-Specific Aspects of Left and Right Ventricular Volume Regulation in Patients following Tetralogy of Fallot Repair
 Kerkhof, Peter LM* (*VU University Medical Center*); Yoo, B.W. (*Dept. Clinical Pharmacology, Severance Hospital, Yonsei University*); Van de Ven, Peter (*VU University Medical Center, Amsterdam*); Handly, Neal (*Dept. Emergency Medicine, Drexel University College of Medicine*)

16:12-16:14 WeCT11-01.2
A Novel Method for Mapping Cardiac Signals during Atrial Fibrillation using Sequential Data Collection
 Nguyen, Bao* (*AFTx, Inc.*); Kurian, Thomas (*Seton Heart Institute*); Nayeri, Payam (*Colorado School of Mines*); Edwards, Jerome (*CardioNXT, Inc.*); Kessman, Paul (*AFTx*); Atkinson, Jeffrey (*AFTx*); Hoff, William (*Colorado School of Mines*)

WeCT11-03: 16:10-17:10 Greatbatch Room
Heart Rate Variability I (Poster Session)

16:14-16:16 WeCT11-01.3
Effects of Electrophysiological Heterogeneity on Vulnerability to Re-Entry in Human Ventricular Tissue: A Simulation Study
 Song, Biao (*Fudan University*); Jin, Lian (*Fudan University*); Wang, Jianfei (*Fudan University*); Qian, Li (*Fudan University*); Wu, Xiaomei* (*Fudan University*)

16:10-16:12 WeCT11-03.1
Reliability Evaluation of R-R Interval Measurement Status for Time Domain Heart Rate Variability Analysis with Wearable ECG Devices
 Eguchi, Kana* (*NTT Corporation*); Aoki, Ryosuke (*NTT Corporation*); Yoshida, Kazuhiro (*NTT Service Evolution Laboratories*); Yamada, Tomohiro (*NTT*)

- 16:12-16:14 WeCT11-03.2
Real-Time Identification of Heart Rate Responses via Auxiliary-Model-Based Damped RLS Scheme
 Argha, Ahmadsreza* (*Univ. of New South Wales*); Ye, Lin (*Univ. of Technology, Sydney (UTS)*); Cao, Kai (*Univ. of Technology, Sydney*); Su, Steven Weidong (*Univ. of Technology, Sydney*); Celler, Branko George (*Univ. of New South Wales*)
- 16:14-16:16 WeCT11-03.3
Simple and Objective Screening of Major Depressive Disorder by Heart Rate Variability Analysis during Paced Respiration and Mental Task Conditions
 Kobayashi, Mai* (*The University of Electro-Communications*); Sun, Guanghao (*The University of Electro-Communications*); Shinba, Toshikazu (*Shizuoka Saiseikai General Hospital*); Matsui, Takemi (*Tokyo Metropolitan University*); Kirimoto, Tetsuo (*The University of Electro-Communications*)
- 16:16-16:18 WeCT11-03.4
The Role of Nonlinear Coupling in Human-Horse Interaction: A Preliminary Study
 Lanata', Antonio (*University of Pisa*); Guidi, Andrea (*University of Pisa*); Baragli, Paolo (*Dept. of Veterinary Sciences, University of Pisa*); Valenza, Gaetano (*University of Pisa*); Scilingo, Enzo Pasquale* (*University of Pisa*)
- 16:18-16:20 WeCT11-03.5
Heart Rate Variability Analysis during Muscle Fatigue Due to Prolonged Isometric Contraction
 Guidi, Andrea (*University of Pisa*); Greco, Alberto* (*University of Pisa*); Felici, Federica (*Istituto Italiano di Tecnologia*); Leo, Andrea (*IMT School for Advanced Studies*); Ricciardi, Emiliano (*University of Pisa*); Bianchi, Matteo (*University of Pisa*); Bicchi, Antonio (*University of Pisa*); Valenza, Gaetano (*University of Pisa*); Scilingo, Enzo Pasquale (*University of Pisa*)
- 16:20-16:22 WeCT11-03.6
Increased Beat-to-Beat Variation in Diastolic Phase Percentages in Patients with Congestive Heart Failure
 Li, Peng* (*Shandong University*); Yu, Lei (*Shanxi University*); Li, Yang (*Shandong University*); Karmakar, Chandan (*Deakin University*); Liu, Changchun (*Shandong University*)
- 16:22-16:24 WeCT11-03.7
Characterization and Classification of Patients with Different Levels of Cardiac Death Risk by using Poincare Plot Analysis
 Rodriguez, Javier (*Institute for Bioengineering de Catalunya (IBEC)*); Voss, Andreas (*University of Applied Sciences Jena*); Caminal, Pere (*Technical University of Catalonia (UPC)*); Bayes-Genis, Antoni (*Hospital de la Santa Creu i Sant Pau*); Giraldo, Beatriz* (*Universitat Politècnica de Catalunya*)
- WeCT11-04: 16:10-17:10 Greatbatch Room
Vascular Hemodynamics I (Poster Session)
- 16:10-16:12 WeCT11-04.1
A Novel Acoustic Catheter Stethoscope based Acquisition and Signal Processing Framework to Extract Multiple Bio Signals
 Chetlur Adithya, Prashanth* (*Univ. of South Florida*); Sankar, Ravi (*Univ. of South Florida*); Moreno, Wilfrido (*Univ. of South Florida*); Hart, Stuart (*Univ. of South Florida*)
- 16:12-16:14 WeCT11-04.2
Tomographic Particle Image Velocimetry for the Validation of Hemodynamic Simulations in an Intracranial Aneurysm
 Roloff, Christoph (*University of Magdeburg*); Berg, Philipp* (*University of Magdeburg*); Redel, Thomas (*Siemens AG*); Janiga, Gabor (*University of Magdeburg*); Thévenin, Dominique (*University of Magdeburg*)
- 16:14-16:16 WeCT11-04.3
In Search for a Better Stent: Surrogate based Multi-Objective Optimization of Stent Design under Influence of Vessel Wall Deformation
 Putra, Narendra Kurnia* (*Tohoku Univ.*); Palar, Pramudita Satria (*Tohoku Univ.*); Anzai, Hitomi (*Tohoku Univ.*); Shimoyama, Koji (*Tohoku Univ.*); Ohta, Makoto (*Univ. of Tohoku*)
- 16:16-16:18 WeCT11-04.4
Computational Estimation of the Hemodynamic Significance of Coronary Stenoses in Arterial Branches Deriving from CCTA: A Proof-of-Concept Study
 Siogkas, Panagiotis (*FORTH-IMBB*); Rigas, Georgios (*University of Ioannina*); Exarchos, Themis P. (*Unit of Medical Tech & Intelligent Info*); Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Mate*); Papafaklis, Michail (*Medical School, University of Ioannina*); Pelosi, Gualtiero (*Institute of Clinical Physiology, National Research Council, 561*); Parodi, Oberdan (*CNR Clinical Physiology Institute - Milan*); Michalis, Lampros (*University of Ioannina*); Fotiadis, Dimitrios I.* (*University of Ioannina*)
- 16:18-16:20 WeCT11-04.5
Development of Hand Blood Circulation Measurement System for Raynaud Syndrome using Infrared Imaging
 Hwang, Yunchan (*Seoul National University*); Seo, Min-Won (*Seoul National University*); Seo, Jong Mo* (*Seoul National University, School of Engineering*)
- 16:20-16:22 WeCT11-04.6
Acute Effects of Incremental Exercise on Central Hemodynamics in Young Basketball Athletes
 Zhang, Yahui (*Northeastern University*); Qi, Lin (*Northeastern University*); Xu, Lisheng* (*Northeastern University*); Yao, Yang (*Northeastern University*); Lv, Wenlong (*Northeastern University*); Du, Chenglin (*Northeastern University*)
- WeCT11-05: 16:10-17:10 Greatbatch Room
Cardiac Catheterization (Poster Session)
- 16:10-16:12 WeCT11-05.1
Training Simulator for Mechanical Circulatory Support using Extra-Corporeal Membrane Oxygenation
 Gupta, Shashwat (*Univ. of Illinois at Urbana-Champaign*); Doose, Mark Daniel (*Univ. of Illinois at Urbana-Champaign*); Chembrammel, Pramod (*Univ. of Illinois at Urbana-Champaign*); Raman, Jai (*Oregon Health and Sciences Univ.*); Kesavadas, Thenkurussi* (*Univ. of Illinois at Urbana-Champaign*)
- WeCT11-07: 16:10-17:10 Greatbatch Room
Cardiac Mechanics, Structure and Function – Artificial Heart and Valves (Poster Session)
- 16:10-16:12 WeCT11-07.1
Evaluation of Cardiovascular Simulator with Computer Simulation
 Lee, Min Woo (*Sangji Univ. Oriental Biomedical Eng.*); Jang, Min (*Sangji Univ. East-West Medical Eng.*); Lee, Ju-Yeon (*Institute of Applied Medical Eng., Helmholtz Institute, R*); Shin, Sang Hoon* (*Sangji Univ. Oriental Biomedical Engineering*)
- 16:12-16:14 WeCT11-07.2
Handmade Tri-Leaflet Valved Stents for Pulmonary Valve Reconstruction Ex Vivo and in Vivo Study
 Chen, Wei-Ling (*Kaohsiung Veterans General Hospital*); Kan, Chung-Dann* (*National Cheng Kung Univ. Hospital, Dept. of Surgery*)
- WeCT11-08: 16:10-17:10 Greatbatch Room
Cardiac Mechanics, Structure and Function – Ventricular Assist Devices (Poster Session)
- 16:10-16:12 WeCT11-08.1
Optimizing Spiral Groove Bearing Geometry to Maximize Washout in Axial Cardiac Assist Devices
 Bieritz, Shelby* (*Rice University*); Sampaio, Luiz C. (*Texas Heart Institute*); Grande-Allen, Jane (*Rice University*); Cohn, William E. (*Texas Heart Institute*); Tansley, Geoff (*Griffith University, Queensland, Australia*)
- 16:12-16:14 WeCT11-08.2
Simple and Rapid Optical Assessment of Blood Cell Damage Caused by Electroporation
 Yano, Tetsuya* (*Hirosaki University*); Sakota, Daisuke (*National Institute of Advanced Industrial Science and Technology*); Mitamura, Yoshinori (*Hokkaido University*)

16:14-16:16 WeCT11-08.3
Development of Mock Circulation System for Extracorporeal Membrane Oxygenation
 Joo, Yoon Ha (*Seoul National University*); Lee, Jung Chan* (*Seoul National University College of Medicine*)

16:26-16:28 WeCT12-02.9
Estimation of Peripheral Blood Volume and Interstitial Fluid Volume in Hemodialysis Patients using Bioimpedance Techniques
 Zhu, Fansan* (*Renal Research Institute*); Kotanko, Peter (*Renal Research Institute*); Levin, Nathan W. (*Renal Research Institute*)

WeCT12-01: 16:10-17:10 Geddes Room
Clinical Engineering I (Poster Session)

16:28-16:30 WeCT12-02.10
Large Dynamic Range Optical Cavity based Sensor using a Low Cost Three-Laser System
 Rho, Donggee (*Baylor Univ.*); Kim, Seung* (*Baylor Univ.*)

16:10-16:12 WeCT12-01.1
IMU-Based Real-Time Pose Measurement System for Anterior Pelvic Plane in Total Hip Replacement Surgeries
 Cao, Zhe (*Tsinghua Univ.*); Su, Shaojie (*Tsinghua Univ.*); Tang, Hao (*Beijing Ji Shui Tan hospital*); Zhou, Yixin (*Beijing Ji Shui Tan hospital the 4th Medical College of Peking Un*); Wang, Zhihua (*Tsinghua Univ.*); Chen, Hong* (*Tsinghua Univ.*)

16:30-16:32 WeCT12-02.11
Biomechanical Procedure to Assess Sleep Restriction on Motor Control and Learning
 Umemura, Guilherme Silva (*University of São Paulo*); López Noriega, Carlos (*University of São Paulo*); Soares, Daniel Fuess (*University of São Paulo*); Forner-Cordero, Arturo* (*Polytechnic School. University of Sao Paulo*)

16:12-16:14 WeCT12-01.2
Asthma Academy: Developing Educational Technology to Improve Asthma Medication Adherence and Intervention Efficiency
 Nair, Aiswaria* (*Georgia Institute of Technology*); Freedle, Karen (*Children's Healthcare of Atlanta, Emory University*); Cheng, Chihwen (*Georgia Institute of Technology*); Wang, May D. (*Georgia Tech and Emory University*)

16:32-16:34 WeCT12-02.12
A General Descriptor for Detecting Abnormal Action Performance from Skeletal Data
 Elkholy, Amr* (*Egypt-Japan Univ. for Science and Technology (E-JUST)*); Hus sein, Mohamed (*Egypt-Japan Univ. for Science and Technology (E-JUST)*); Gomaa, Walid (*Egypt-Japan Univ. for Science and Technology (E-JUST)*); Damen, Dima (*Univ. of Bristol*); Saba, Emmanuel (*Alexandria Univ.*)

16:14-16:16 WeCT12-01.3
The First Transthyretin Familial Amyloid Polyneuropathy Gait Quantification Study – Preliminary Results
 Vilas-Boas, Maria* (*Faculty of Engineering, University of Porto*); Rocha, Ana Patricia (*University of Aveiro*); Choupina, Hugo Miguel Pereira (*University of Porto*); Fernandes, José Maria (*University of Aveiro*); Coelho, Teresa (*Unidade Corino de Andrade, Hospital Santo António, Centro Hospit*); Cunha, Joao Paulo Silva (*INESC TEC*)

16:34-16:36 WeCT12-02.13
Degree of RF MRI Coil Detuning for an Anatomically Realistic Respiratory Cycle Modeled with the Finite Element Method
 Tran, Anh Le (*Worcester Polytechnic Inst.*); Makarov, Sergey* (*Electrical & Computer Eng., Worcester Polytechnic Inst.*)

16:16-16:18 WeCT12-01.4
Automatic Positioning Device for Cutting Three-Dimensional Tissue in Living or Fixed Samples: Proof of Concept
 Quiñones, Dario Ruben (*Center for Biomaterials and Tissue Engineering, Universitat Poli*); Pérez-Feito, Ricardo (*Thermodynamics Dept., Universitat Politècnica de València*); García-Manrique, Juan Antonio (*Institute of Design for Manufacturing and Automated Production.*); Canals, Santiago (*Instituto de Neurociencias, Consejo Superior de Investigaciones*); Moratal, David* (*Universitat Politècnica de València*)

16:36-16:38 WeCT12-02.14
Design of the Wearable Device for Hemiplegic Gait Detection using an Accelerometer and a Gyroscope
 Shin, Hangsik* (*Chonnam National Univ.*); Park, Sooji (*Chonnam National Univ.*); Lee, Jun Seok (*Chonnam National Univ.*); Kwak, Jaekyung (*Chonnam National Univ.*)

16:18-16:20 WeCT12-01.5
Comparison of the Onset of Uterine Contractions Determined from Tocodynamometry and Maternal Perception
 Wang, Ying (*Beijing Univ. of Technology*); Gao, Pei (*Beijing Univ. of Technology*); Qiu, Qian (*Beijing Univ. of Technology*); An, Yang (*Beijing Univ. of Technology*); Hao, Dongmei* (*Beijing Univ. of Technology*); Yang, Fangwei (*Yiwu Central Hospital*); Zhou, Xiya (*Peking Union Medical College Hospital*); Yang, Lin (*Beijing Univ. of Technology*); Yang, Yimin (*Beijing Univ. of Technology*); Li, Xuwen (*Beijing Univ. of Technology*); Zhang, Song (*Beijing Univ. of Technology*); Zheng, Dingchang (*Anglia Ruskin Univ.*)

16:38-16:40 WeCT12-02.15
Classification of Voluntary Coughs Applied to the Screening of Respiratory Disease
 Infante, Christian (*Massachusetts Institute of Technology*); Chamberlain, Daniel (*Massachusetts Institute of Technology*); Kodgule, Rahul (*Chest Research Foundation*); Fletcher, Richard Ribon* (*Massachusetts Institute of Technology*)

WeCT12-02: 16:10-17:10 Geddes Room
Diagnostic Devices II (Poster Session)

16:40-16:42 WeCT12-02.16
Noninvasive Evaluation of Corneal Viscoelasticity based on Displacement in Response to Acoustic Radiation Force
 Lv, Zhen (*Shenzhen Univ.*); Wang, Qingmin (*Shenzhen Univ.*); Liu, Fu-Long (*Shenzhen Univ.*); Zhang, Peng-Peng (*Shenzhen Univ.*); Gao, Xue-Hua (*Shenzhen Univ.*); Guo, Yanrong (*Shenzhen Univ.*); Zhang, Xin-Yu* (*Shenzhen Univ.*)

WeCT12-03: 16:10-17:10 Geddes Room
Health Technologies I (Poster Session)

16:22-16:24 WeCT12-02.7
ARTSENS Orientation Navigation System: A Study Towards Faster Arterial Stiffness Measurements
 Joseph, Jayaraj* (*HTIC, Indian Institute of Technology Madras*); ten Dam, Anne Maria (*University of Twente*)

16:10-16:12 WeCT12-03.1
The Motion Influence on Respiration Rate Estimation from Low-Resolution Thermal Sequences during Attention Focusing Tasks
 Kwasniewska, Alicja (*Gdansk University of Technology*); Ruminski, Jacek* (*Gdansk University of Technology*); Wtorek, Jerzy (*Gdansk University of Technology*)

16:24-16:26 WeCT12-02.8
An Electrical Impedance Tomography (EIT) Multi-Electrode Needle-Probe Device for Local Assessment of Heterogeneous Tissue Impedivity
 Meroni, Davide* (*Politecnico di Milano*); Carpano Maglioli, Camilla (*Fondazione Istituto Italiano di Tecnologia*); Bovio, Dario (*Politecnico di Milano*); Greco, Francesco G. (*Bioengineering Lab*); Aliverti, Andrea (*Politecnico di Milano*)

16:12-16:14 WeCT12-03.2
Electroencephalographic Neurofeedback to Up-Regulate Frontal Theta Rhythms: Preliminary Results
 Shoji, Yutaka* (*RMIT Univ.*); Cvetkovic, Dean (*RMIT Univ.*); Patti, Chanakya Reddy (*Royal Melbourne Institute of Tech.*)

16:14-16:16	WeCT12-03.3	Implementation of a Manually Operated Blood Pressure Monitor based on Energy Harvesting for use in Resource-Constrained Settings Gruterich, Martin (<i>RWTH Aachen University</i>); Aelen, Paul (<i>Eindhoven Technical University</i>); Wouters, Kees (<i>Philips Research</i>); Dellimore, Kiran* (<i>Philips Research</i>)	WeCT13-01: 16:10-17:10 Dunn Room Drug Delivery Routes – Ocular Drug Delivery (Poster Session)
16:16-16:18	WeCT12-03.4	Facial Geometry and Speech Analysis for Depression Detection Pampouchidou, Anastasia* (<i>Univ. de Bourgogne</i>); Simantiraki, Olympia (<i>Univ. del Pais Vasco</i>); Vazakopoulou, Calliope-Marina (<i>Tech. Educational Institute of Crete</i>); Chatzaki, Charikleia (<i>Tech. Educational Institute of Crete</i>); Padiaditis, Matthew (<i>ICS-FORTH</i>); Maridaki, Anna (<i>Tech. Educational Institute of Crete</i>); Marias, Kostas (<i>Foundation for Res. & Tech. Hellas</i>); Simos, Panagiotis (<i>Dept. of Psychiatry, Univ. of Crete</i>); Yang, Fan (<i>Univ. de Bourgogne</i>); Meriaudeau, Fabrice (<i>Univ. de Bourgogne</i>); Tsiknakis, Manolis (<i>ICS-FORTH</i>)	16:10-16:12 WeCT13-01.1 Pen-Type Separable Microneedle for Sustained Corneal Drug Delivery Lee, Kang Ju (<i>Yonsei Univ.</i>); Cho, Wonwoo (<i>Yonsei Univ.</i>); Song, Hyun Beom (<i>Seoul National Univ.</i>); Kim, Jeong Hun (<i>Seoul National Univ.</i>); Ryu, WonHyoun* (<i>Yonsei Univ.</i>)
16:18-16:20	WeCT12-03.5	A Novel Approach for Quantification of Contour Irregularities of Diabetic Foot Ulcers and Its Association with Ischemic Heart Disease Rani, Priya (<i>VIT University</i>); Aliahmad, Behzad* (<i>RMIT University</i>); Kant Kumar, Dinesh (<i>RMIT University</i>)	16:12-16:14 WeCT13-01.2 Development of Mucoadhesive Nanoparticles for Topical Delivery of Dexamethasone to the Eye Kim, Se Na (<i>Seoul National University</i>); Kwak, Ji Min (<i>Seoul National University</i>); Kim, Cho Rim (<i>Seoul National University</i>); Huh, Beom Kang (<i>Seoul National University</i>); Lee, Seung Ho (<i>Institute of Medical & Biological Engineering, Medical Research</i>); Choy, Young Bin* (<i>Seoul National University</i>)
WeCT12-04: 16:10-17:10	Geddes Room	Therapeutic Systems I (Poster Session)	WeCT13-02: 16:10-17:10 Dunn Room Drug Delivery Routes – Oral drug delivery (Poster Session)
16:10-16:12	WeCT12-04.1	Estimates of Peak Electric Fields Induced by Transcranial Magnetic Stimulation in Pregnant Women as Patients using an FEM Full-Body Model Yanamadala, Janakinadh* (<i>Worcester Polytechnic Institute</i>); Noetscher, Gregory (<i>Worcester Polytechnic Institute</i>); Makarov, Sergey (<i>Electrical and Computer Engineering, Worcester Polytechnic Inst.</i>); Pascual-Leone, Alvaro (<i>Harvard Medical School</i>)	16:10-16:12 WeCT13-02.1 Nanostructured Microparticles Embedded with Mucoadhesive Polymer for their Prolonged Retention in Gastrointestinal Tract Huh, Beom Kang (<i>Seoul National University</i>); Park, Chun Gwon (<i>Dana-Farber Cancer Institute</i>); Kim, Se Na (<i>Seoul National University</i>); Lee, Seung Ho (<i>Institute of Medical & Biological Engineering, Medical Research</i>); Choy, Young Bin* (<i>Seoul National University</i>)
16:12-16:14	WeCT12-04.2	Electric Field Characteristics of Low-Field Synchronized Transcranial Magnetic Stimulation (sTMS) Deng, Zhi-De* (<i>National Institute of Mental Health</i>); Lisanby, Sarah (<i>Duke University</i>)	WeCT13-03: 16:10-17:10 Dunn Room Drug Delivery Routes – Transdermal Drug Delivery (Poster Session)
16:14-16:16	WeCT12-04.3	Optimization of Transcostal Phased-Array Refocusing using Sparse Semidefinite Relaxation Method Almekkawy, Mohamed* (<i>Penn State University</i>); McMahon, Daniel (<i>Penn State University</i>); Alqarni, Hanan (<i>Penn State University</i>); He, Jiayu (<i>Penn State University</i>)	16:10-16:12 WeCT13-03.1 Dissolving Microneedles Patch for Skin Vaccination Lee, Jeong Woo* (<i>Georgia Institute of Technology</i>); Joyce, Jessica (<i>Georgia Institute of Technology</i>); Prausnitz, Mark (<i>Georgia Institute of Technology</i>)
16:16-16:18	WeCT12-04.4	Personalization of a Compartmental Physiological Model for an Artificial Pancreas through Integration of Patient's State Estimation Jallon, Pierre (<i>CEA Grenoble</i>); Lachal, Sylvain (<i>CEA LETI</i>); Franco, Céline (<i>TIMC-IMAG</i>); Charpentier, Guillaume (<i>Centre Hospitalier Sud-Francilien, Dept. of Diabetes and En</i>); Huneker, Erik (<i>Diabeloop</i>); Doron, Maeva* (<i>CEA LETI</i>)	16:12-16:14 WeCT13-03.2 NIR-Triggered Ibuprofen Release from PDMS Embedded Mesoporous Silica Coated Gold Nanorods Riaz, Zertasha (<i>Sungkyunkwan University</i>); Yoon, Seokyoung (<i>Sungkyunkwan University</i>); Lee, Hoo Jeong (<i>Sungkyunkwan University</i>); Lee, Jung Heon* (<i>Sungkyunkwan University</i>)
16:18-16:20	WeCT12-04.5	An Adaptive DC-Balanced and Multi-Mode Stimulator IC with 1GΩ Output Impedance for Compact Electro-Acupuncture System Lee, Jiwon* (<i>Korea Advanced Institute of Science and Technology</i>); Kim, Minseo (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Kim, Kwantae (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Song, Kiseok (<i>K-healthwear</i>); Lee, Sanghoon (<i>Kyung Hee University</i>); Kim, Weon (<i>Kyung Hee University Hospital</i>); Woo, Jong Shin (<i>Kyung Hee University School of Medicine</i>); Yoo, Hoi-Jun (<i>KAIST</i>)	WeCT13-04: 16:10-17:10 Dunn Room Drug Delivery Systems and Carriers – Nucleic Acid Drug Delivery (Poster Session)
			16:10-16:12 WeCT13-04.1 A Synthetic Biology Approach to Deliver Cargos by Bacterial Carrier Chao, Yun-Peng* (<i>Feng Chia University</i>); Chiang, Chung-Jen (<i>China Medical University</i>)
			16:12-16:14 WeCT13-04.2 Development of Bacterial Drug Carrier for Targeted Cancer Therapy Chiang, Chung-Jen* (<i>China Medical University</i>); Chao, Yun-Peng (<i>Feng Chia University</i>)
			WeCT13-06: 16:10-17:10 Dunn Room Drug Release and Solubility – Controlled/Sustained/Modified Release (Poster Session)
			16:10-16:12 WeCT13-06.1 Silicone Implants Enabled with Local, Sustained Delivery of Triamcinolone Jeon, Beom Su (<i>Seoul National University</i>); Huh, Beom Kang (<i>Seoul National University</i>); Shin, Byung Ho (<i>Seoul National University</i>); Kim, Byung Hwi (<i>Seoul National University</i>); Heo, Chan Yeong (<i>College of Medicine, Seoul National University</i>); Choy, Young Bin* (<i>Seoul National University</i>)

WeCT13-07: 16:10-17:10 Dunn Room
Formulation Design – Oligonucleotide (Poster Session)

16:10-16:12 WeCT13-07.1
Design of Guide RNAs for CRISPR/Cas9-Mediated Alkaline Phosphatase Gene Knockout in Human Cell Line
 Bartels, Alan* (*Tufts University*)

WeCT13-08: 16:10-17:10 Dunn Room
Micro and Nano Formulation – Microparticles/Microspheres (Poster Session)

16:10-16:12 WeCT13-08.1
Different Size and Shape of Nano/Micro Particle Fabrication via Top-Down Method
 Oh, Eun Seol (*Yonsei Univ.*); Aryal, Susmita (*Yonsei Univ.*); Kim, Boram (*Yonsei Univ.*); Park, SangHyo (*Yonsei Univ.*); Kim, Sun (*Yonsei Univ.*); Key, Jaehong* (*Yonsei Univ.*)

WeCT13-09: 16:10-17:10 Dunn Room
Micro and Nano Formulation – NanoTechnology/Nanoparticles (Poster Session)

16:10-16:12 WeCT13-09.1
Drug Release Control from Magnetic Thermosensitive Liposomes using Magnetic Hyperthermia and Magnetic Particle Imaging
 Shimada, Kazuki* (*Osaka University*); Yamanaka, Saki (*Osaka University*); Maruyama, Shuki (*Kyoto University Hospital*); Murase, Kenya (*Osaka University*)

WeCT13-10: 16:10-17:10 Dunn Room
BME and Global Health (Poster Session)

16:10-16:12 WeCT13-10.1
A Study on Trend and Development of Predictable Treatment Medical Device's Establishment – Software
 Yi, Jayeon (*Samsung Advanced Institute for Health Sciences & Technology*); Yoon, Yeup* (*Sungkyungwan*)

16:12-16:14 WeCT13-10.2
A Study on Amendment for the Medical Device Standard of Root Canal Filling Pastes and Root Canal Sealers
 Kim, Hyoung-sik* (*Ministry of Food & Drug Safety*); Song, Harim (*Ministry of Food & Drug Safety*); Lee, Junho (*Ministry of Food & Drug Safety*); Nam, Eunsuk (*Ministry of Food & Drug Safety*); Yoo, Sihyung (*Ministry of Food & Drug Safety*); Park, Chang Won (*National Institute of Food & Drug Safety Evaluation, Ministry*)

WeCT13-11: 16:10-17:10 Dunn Room
Instruction and Learning (Poster Session)

16:10-16:12 WeCT13-11.1
A Study on Development of a Guideline for Performance Evaluation of Intraocular Lens
 You, Jihye* (*Ministry of Food & Drug Safety*); Yoo, Sihyung (*Ministry of Food & Drug Safety*); Lee, Seeun (*Ministry of Food & Drug Safety*); Kim, Sun Young (*MFDS*); Park, Chang Won (*National Inst. of Food & Drug Safety Evaluation, Ministry*)

16:12-16:14 WeCT13-11.2
VR-Based Support System Development for Rehabilitation Training of Children with Cerebral Palsy
 HyunJong, Lee (*Dept. of Rehabilitation & Assistive Tech., National Re*); Hyosun, Kweon* (*Dept. of Rehabilitation & Assistive Tech., National Re*); Jae Ho, Kim (*Dept. of Rehabilitation & Assistive Tech., National Re*); Hyunkyung, Kim (*Dept. of Pediatric Rehabilitation, National Rehabilitation*)

WeCT14-01: 16:10-17:10 Schaldach Room
Advances in Biomedical Imaging I (Poster Session)

16:10-16:12 WeCT14-01.1
Long Term Monitoring of a Pressure Ulcer Risk Patient using Thermal Images
 Bennett, Stephanie Louise* (*Carleton University*); Goubran, Rafik A. (*Carleton University*); Knoefel, Frank-Dietrich (*Bruyere Continuing Care, University of Ottawa, Carleton University*)

16:12-16:14 WeCT14-01.2
Impact of Injection Time on Migration of SPECT Seizure Onset in Temporal Lobe Epilepsy

Ramchuankiat, Saranya (*Faculty of Engineering, Chulalongkorn Univ.*); Jarumaneeroj, Pisit (*Chulalongkorn Univ.*); Limotai, Chusak (*Chulalongkorn Univ.*); Tepmongkol, Supatporn (*Faculty of Medicine, Chulalongkorn Univ.*); Rakhvongthai, Yothin* (*Faculty of Medicine, Chulalongkorn Univ.*)

16:14-16:16 WeCT14-01.3
Automated Age-Related Macular Degeneration Screening System using Fundus Images

Kunumpol, Patthapol (*Thammasat University*); Umpaipant, Wachirawit (*Thammasat University*); Navapol, Kanchanaranya (*Thammasat University*); Charoenpong, Theekapun (*Srinakharinwirot University*); Vongkittirux, Sakchai (*Thammasat University*); Kupakanjana, Tayakorn (*Thammasat University*); Tantibundhit, Charturong* (*Thammasat University*)

16:16-16:18 WeCT14-01.4

Multi-Scale Locally Low-Rank Noise Reduction for High-Resolution Dynamic Quantitative Cardiac MRI
 Moeller, Steen (*Univ. of Minnesota*); Weingartner, Sebastian (*Univ. of Minnesota*); Akcakaya, Mehmet* (*Univ. of Minnesota*)

16:18-16:20 WeCT14-01.5
Comparative Analysis of Different Versions of a Human Model Located Inside a 1.5T MRI Whole Body RF Coil

Kozlov, Mikhail* (*Max Planck Institute for Human Cognitive and Brain Sciences*); Tankaria, Harshal (*Worcester Polytechnic Inst.*); Noetscher, Gregory (*Worcester Polytechnic Institute*); Makarov, Sergey (*Electrical and Computer Engineering, Worcester Polytechnic Instit*)

16:20-16:22 WeCT14-01.6
Investigating the Effect of Coil Model Losses on Computational Electromagnetic Exposure of an ASTM Phantom at 64 MHz MRI

Kozlov, Mikhail* (*Max Planck Institute for Human Cognitive & Brain Sciences*); Horner, Marc (*ANSYS, Inc.*); Kainz, Wolfgang (*Food & Drug Administration*); Angelone, Leonardo M. (*US Food & Drug Administration, Center for Devices & Radiolog*)

16:22-16:24 WeCT14-01.7
Automatic Fetal Body and Amniotic Fluid Segmentation from Fetal Ultrasound Images by Encoder-Decoder Network with Inner Layers

Li, Yan* (*Waseda Univ.*); Xu, Rong (*Waseda Univ.*); Ohya, Jun (*Waseda Univ.*); Iwata, Hiroyasu (*Waseda Univ.*)

16:24-16:26 WeCT14-01.8
Automatic Identification of Blood Vessel Cross-Section for Central Venous Catheter Placement using a Cascading Classifier

Ikhsan, Mohammad* (*National University of Singapore*); Tan, Kok Kiong (*National University of Singapore*); Putra, Andi Sudjana (*National University of Singapore*); Chew, Tsong Huey Sophia (*Singapore General Hospital*); Kong, Chee Fai (*Singapore General Hospital*)

16:26-16:28 WeCT14-01.9
GPU-Based Computation for Brain Spatio-Temporal Networks Definition

Purgato, Andrea* (*Politecnico di Milano*); Reggiani, Enrico (*Politecnico di Milano*); D'Arnese, Eleonora (*Politecnico di Milano*); Berger-Wolf, Tanya (*University of Illinois at Chicago*); Grimaldi, Marco (*Neurocenter Humanitas Research Hospital*); Durelli, Gianluca Carlo (*Politecnico di Milano*); Santambrogio, Marco (*Politecnico di Milano*)

WeCT14-02: 16:10-17:10 Schaldach Room
Optical Imaging III (Poster Session)

16:10-16:12 WeCT14-02.1
Automatic Detection of Hyperreflective Foci in Optical Coherence Tomography B-Scans using Morphological Component Analysis
 Rabbani, Hossein* (*Isfahan Univ. of Medical Sciences*); Ghasemi Kamasi, Zeinab (*West Virginia University*); Mokhtary, Marzieh (*Isfahan University of Medical Sciences*)

- 16:12-16:14 WeCT14-02.2
Fibroatheroma Identification in Intravascular Optical Coherence Tomography Images using Deep Features
 Xu, Mengdi* (*Institute for Infocomm Research*); Cheng, Jun (*Institute for Infocomm Research, AStar*); Li, Annan (*Institute for Infocomm Research, AStar*); Lee, Jimmy Addison (*Institute for Infocomm Research, AStar*); Wong, Damon (*Institute for Infocomm Research*); Taruya, Akira (*Wakayama Medical University*); Tanaka, Atsushi (*Wakayama Medical University*); Foin, Nicolas (*National Heart Centre Singapore*); Wong, Philip (*National Heart Centre Singapore*)
- 16:14-16:16 WeCT14-02.3
Exact Localization of Breakpoints of Retinal Pigment Epithelium in Optical Coherence Tomography of Optic Nerve Head
 Mokhtary, Marzieh (*Isfahan Univ. of Medical Sciences*); Rabbani, Hossein* (*Isfahan Univ. of Medical Sciences*); Mehri Dehnavi, Alireza (*Isfahan Univ. of Medical Sciences, School of Advanced Techn*); Kafieh, Rahele (*Isfahan Univ. of Medical Sciences*)
- 16:16-16:18 WeCT14-02.4
The Analysis of Eye Blinking Pattern using High-Frame-Rate Camera
 Lee, Woon-Hee (*Seoul National University*); Seo, Jong Mo* (*Seoul National University, School of Engineering*); Hwang, Jeong Min (*Seoul National University School of Medicine*)
- 16:18-16:20 WeCT14-02.5
Blood Oxygenation Changes Resulting from Subthreshold High Frequency Repetitive Transcranial Magnetic Stimulation
 Li, Rihui (*Year*); Wang, Chushan (*Guangdong Provincial Work-injury Rehabilitation Hospital*); Huang, Kairong (*Guangdong Provincial Work-injury Rehabilitation Hospital*); Shi, Zhixi (*Guangdong Provincial Work-injury Rehabilitation Hospital*); Wang, Jun (*Guangdong Provincial Work-injury Rehabilitation Hospital*); Zhang, Yingchun* (*University of Houston*)
- 16:20-16:22 WeCT14-02.6
Recognition of Protozoan Parasites from Microscopic Images: Eimeria Species in Chickens and Rabbits as a Case Study
 Abdalla, Mohamed A E (*Northumbria University*); Seker, Huseyin* (*The University of Northumbria at Newcastle*)
- WeCT14-03: 16:10-17:10 Schaldach Room
Electrical Impedance Imaging (Poster Session)
- 16:10-16:12 WeCT14-03.1
Low-Frequency Electrical Conductivity Images of Liver Tissue Damage: in Vivo Animal Cirrhosis Model
 Choi, Bup Kyung (*Kyung Hee University*); Katoch, Nitish (*Kyung Hee University*); Sajib, Saurav Z K (*Kyung Hee University*); Kim, Hyung Joong (*Kyung Hee University*); Kwon, Ohin (*Konkuk University*); Woo, Eung Je* (*Kyung Hee University*)
- 16:12-16:14 WeCT14-03.2
Bio-Admittance Imaging on Acupuncture Points during Cold and Heat Stimulation
 Kim, Jungyoon* (*Korea Institute of Oriental Medicine*); Cho, Jung-Hee (*Korea Institute of Oriental Medicine*); Lee, Sanghun (*Korea Institute of Oriental Medicine*); Kim, Jaeuk U (*Korean Institute of Oriental Medicine*)
- 16:14-16:16 WeCT14-03.3
Development of Active Electrode Belt for Multi-Channel Electrical Impedance Tomography in Thorax
 Park, Jun Hwan (*Kyung Hee University*); Oh, Tong In (*Kyunghee University*); Woo, Eung Je* (*Kyung Hee University*)
- 16:16-16:18 WeCT14-03.4
Development of Multi-Modal Sensor Module for Cardiac Function Measurement Operating with the Real-Time Electrical Impedance Tomography
 Choi, Hyun Tae (*Kyung Hee University*); Park, Jun Hwan (*Kyung Hee University*); Oh, Tong In* (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*)
- 16:18-16:20 WeCT14-03.5
Detection of Upper Airway Obstruction using Electrical Impedance Tomography
 Kim, Young Eun (*Kyung Hee University*); Kim, Sang-Wook (*Gyeongsang National University*); Oh, Tong In* (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*)
- 16:20-16:22 WeCT14-03.6
Monitoring of Lung Volume Recruitment in VILI Model using EIT System
 Kim, Young-Bok (*Kyung-Hee Univ, IIRC*); Jang, Geuk Young (*Dept. of Biomedical Engineering, Graduate School, Kyung Hee*); Lee, Minhyoung (*Kyunghee Univ., Samsung Electronics*); Oh, Tong In* (*Kyunghee Univ.*); Woo, Eung Je (*Kyung Hee Univ.*)
- WeCT14-04: 16:10-17:10 Schaldach Room
Infra-Red Imaging (Poster Session)
- 16:10-16:12 WeCT14-04.1
A Dual-Spectrum Infrared Imaging Approach for Detection of Breast Cancer based on Single Visit
 Yang, Ai-Su* (*National Taiwan University*); Lin, Ruo Jhen (*National Taiwan University*); Chang, Yeun-Chung (*Depts of Medical Imaging National Taiwan University Hospit*); Chen, Chung-Ming (*National Taiwan University*)
- 16:12-16:14 WeCT14-04.2
Active Thermal Infrared Imaging for Label-Free Tumor Detection
 Oh, Gyungseok Oh (*Gwangju Institute of Science and Technology*); Chung, Euiheon* (*Gwangju Institute of Science and Technology*)
- WeCT14-05: 16:10-17:10 Schaldach Room
MR Molecular Imaging (Poster Session)
- 16:10-16:12 WeCT14-05.1
An Automated Single-Scan Z-Spectrum Analysis Method for Amide Proton Transfer Imaging
 Son, Jong Bum (*The University of Texas MD Anderson Cancer Center*); Rauch, Gaiane Margishvili (*The University of Texas MD Anderson Cancer Center*); Hwang, Ken-Pin (*The University of Texas M.D. Anderson Cancer Center*); Ma, Jingfei* (*University of Texas MD Anderson Cancer Center*)
- WeCT14-06: 16:10-17:10 Schaldach Room
Multimodal Image Fusion (Poster Session)
- 16:10-16:12 WeCT14-06.1
Development of High-Resolution Magnetic Particle Imaging System for Small Animal Experiments
 Murase, Kenya* (*Osaka University*)
- 16:12-16:14 WeCT14-06.2
Photoacoustic, Ultrasound, and Magnetic Resonance Fusion Imaging
 Kim, Jeesu (*POSTECH*); Park, Sara (*Pohang Univ., of Science & Tech.*); Kim, Chulhong* (*Pohang Univ., of Science & Tech.*)
- WeCT14-07: 16:10-17:10 Schaldach Room
Multimodal Imaging (Poster Session)
- 16:10-16:12 WeCT14-07.1
Comparison of Volume and Cortical Surface-Based Standardized Uptake Value Ratio of 18F-Fludeoxyglucose PET
 Kim, Seonjik (*Catholic Univ. of Daegu*); Sin, In-Tae (*Catholic Univ. of Daegu*); Yoon, Uicheul* (*Catholic Univ. of Daegu*)
- 16:12-16:14 WeCT14-07.2
The Relation between Rhythmical Brain Electrical Activity and Hemodynamics Studied by EEG and fNIRS
 Lachert, Piotr* (*Nalecz Institute of Biocybernetics and Biomedical Engr. Po*); Janusek, Dariusz (*Inst of Biocybernetics & Biomed Engr*); Pulawski, Przemyslaw (*Nalecz Institute of Biocybernetics and Biomedical Engr. Po*); Milej, Daniel (*Nalecz Institute of Biocybernetics and Biomedical Engr. PA*); Sawosz, Piotr (*Institute of Biocybernetics and Biomedical Engr.*); Kacprzak, Michal (*Institute of Biocybernetics and Biomedical Engr.*); Cieslak-Blinowska, Katarzyna (*Warsaw Univ.*)

16:14-16:16 WeCT14-07.3
Single Laser Pulse Induced Dual Nonlinear Photoacoustic Signals
 Gao, Fei* (*Shanghai Tech Univ.*); Feng, Xiaohua (*Nanyang Technological Univ.*); Zhang, Ruochong (*Nanyang Tech. Univ.*); Liu, Siyu (*Nanyang Tech. Univ.*); Ding, Ran (*Nanyang Tech. Univ.*); Zheng, Yuanjin (*Nanyang Tech. Univ.*)

16:18-16:20 WeCT15-02.5
Sleep Apnoea Diagnosis using Respiratory Effort-Based Signals – A Comparative Study
 Sadr, Nadi* (*University of Sydney*); Jayawardhana, Madhuka (*University of Sydney*); de Chazal, Philip (*University of Sydney*)

16:16-16:18 WeCT14-07.4
In Vivo Photoacoustic Imaging and Multiplexed Identification of Surface-Enhanced Raman Scattering using Dual Modal Nanoprobe
 Lee, Seunghyun (*Pohang University of Science and Technology (POSTECH)*); Kim, Chulhong* (*Pohang University of Science and Technology*)

16:20-16:22 WeCT15-02.6
Mhealth Tools for Monitoring Obstructive Sleep Apnea Patients at Home: Proof-of-Concept
 Cámara, Miguel Ángel (*Inst. for Bioengineering of Catalonia*); Castillo Escario, Yolanda (*Inst. for Bioengineering of Catalonia (IBEC)*); Blanco-Almazán, Dolores (*Inst. for Bioengineering of Catalonia*); Estrada, Luis (*Inst. for Bioengineering de Catalunya*); Jané, Raimon* (*Inst. for Bioengineering de Catalunya (IBEC)*)

WeCT15-01: 16:10-17:10 Webster Room
Respiratory Systems I (Poster Session)

WeCT15-03: 16:10-17:10 Webster Room
Cardiovascular and Respiratory Signal Processing – Heart Rate and Blood Pressure Variability (Poster Session)

16:10-16:12 WeCT15-01.1
Development and Validation of a Computational Simulator for Pediatric Acute Respiratory Distress Syndrome Patients
 Saffaran, Sina (*The University of Warwick*); Das, Anup (*University of Warwick*); Hardman, Jonathan G. (*University of Nottingham*); Yehya, Nadir (*Children's Hospital of Philadelphia*); Bates, Declan Gerard* (*University of Warwick*)

16:10-16:12 WeCT15-03.1
Unconstrained Pulse Transit Time (PTT) Estimation using Z-Axis Ballistocardiogram and Photoplethysmogram
 Heo, Jeong (*Seoul National Univ., Interdisciplinary Program for Bioengi*); Park, Kwang S.* (*Seoul National Univ.*)

16:12-16:14 WeCT15-01.2
Nonparametric Modelling of VO2 Response to Exercise
 Ye, Lin* (*University of Technology, Sydney (UTS)*); Argha, Ahmadrza (*University of New South Wales*); Celler, Branko George (*University of New South Wales*); Zhang, Yi (*University of Electronic Science and Technology of China*); Nguyen, Hung T. (*University of Technology, Sydney*); Su, Steven Weidong (*University of Technology, Sydney*)

WeCT15-04: 16:10-17:10 Webster Room
Cardiovascular and Respiratory Signal Processing – Non-Linear Cardiovascular or Cardiorespiratory Relations (Poster Session)

16:14-16:16 WeCT15-01.3
Development of a Real-Time Breathing-Rate Monitor using Difference Operation Method and Adaptive Windowing on ECG Signal
 Singh, Rahul Kumar* (*IIT Kharagpur*); Negi, Shubham (*IIT Kharagpur*); Chandrika Sreekantan, Anoop (*Indian Institute of Space Science and Technology Trivandrum*)

16:10-16:12 WeCT15-04.1
Phonocardiography based Method to Detect Fetal Breathing Movements
 Goda, Márton Áron* (*Pázmány Péter Catholic University, Faculty of Information Techno*); Kovács, Ferenc (*Pázmány Péter Catholic University, Faculty of Information*)

WeCT15-02: 16:10-17:10 Webster Room
Sleep Apnea I (Poster Session)

WeCT15-05: 16:10-17:10 Webster Room
Cardiovascular and Respiratory Signal Processing – Pulse Transit Time (Poster Session)

16:10-16:12 WeCT15-02.1
Monitoring of Nocturnal Central Sleep Apnea in Heart Failure Patients using Noncontact Respiratory Differences
 Armitstead, Jeffrey Peter* (*Res Med Ltd., University of Sydney*); Khushaba, Rami N. (*University of Technology, Sydney (UTS)*); Schindhelm, Klaus (*University of New South Wales*)

16:10-16:12 WeCT15-05.1
The Effect of Peak Detection Methods on Measuring Pulse Transit Time
 Maeda, Yuka* (*University of Tsukuba*); Sekine, Masaki (*Osaka Electro-Communication University*); Tamura, Toshiyo (*Waseda University*); Mizutani, Koichi (*University of Tsukuba*)

16:12-16:14 WeCT15-02.2
Relationship between Heart Rate Excursion and Apnea Duration in Patients with Obstructive Sleep Apnea
 Solà-Soler, Jordi* (*Universitat Politècnica de Catalunya*); Giraldo, Beatriz (*Universitat Politècnica de Catalunya*); Fiz Fernandez, José Antonio (*Navarra Hospital*); Jané, Raimon (*Institute for Bioengineering de Catalunya (IBEC)*)

16:12-16:14 WeCT15-05.2
Assessment of a Novel Noninvasive Continuous Blood Pressure Monitoring Method using Gyrocardiography
 Lee, ChangHsuan* (*Chang Gung University*); Verma, Vijay Kumar (*Chang Gung University*); Lin, Wen-Yen (*Chang Gung University*); Lee, Ming-Yih (*Chang Gung University*)

16:14-16:16 WeCT15-02.3
Characterization of a Tooth Microphone Coupled to an Oral Appliance Device: A New System for Monitoring OSA Patients
 Castillo, Yolanda (*Institute for Bioengineering of Catalonia (IBEC)*); Blanco-Almazán, Dolores (*Institute for Bioengineering of Catalonia*); Whitney, James (*Morgan State University*); Mersky, Barry (*Audiodontics*); Jané, Raimon* (*Institute for Bioengineering de Catalunya (IBEC)*)

WeCT15-06: 16:10-17:10 Webster Room
Cardiovascular and Respiratory Signal Processing – Time-Frequency, Time-Scale Analysis of Cardiorespiratory Variability (Poster Session)

16:16-16:18 WeCT15-02.4
Characterization of Microphones for Snoring and Breathing Events Analysis in Mhealth
 Castillo, Yolanda (*Institute for Bioengineering of Catalonia (IBEC)*); Cámara, Miguel Ángel (*Institute for Bioengineering of Catalonia*); Blanco-Almazán, Dolores (*Institute for Bioengineering of Catalonia*); Jané, Raimon* (*Institute for Bioengineering de Catalunya (IBEC)*)

16:10-16:12 WeCT15-06.1
Unconstrained Measurement of Heart Information using Ultra Wide Band Radar
 Kim, Hanbyul (*Seoul National University*); Koh, Myungjun (*Seoul National University*); Kim, Hae Sung (*BISWORKS*); Park, Kwang S.* (*Seoul National University*)

WeCT15-07: 16:10-17:10 Webster Room
Cardiovascular and Respiratory System Modeling – Blood Flow Models (Poster Session)

16:10-16:12 WeCT15-07.1
Arterial Fractional-Order Model
 Bahloul, Mohamed A.* (*KAUST*); Laleg Kirati, Taous Meriem (*King Abdullah University of Science and Technology (KAUST)*)

16:12-16:14	WeCT15-07.2	Computational Model of Human Circulatory System Combined with Respiratory System during Venovenous Extra-Corporeal Membrane Oxygenation Shin, Dong Ah (<i>Seoul National University</i>); Lee, Jung Chan* (<i>Seoul National University College of Medicine</i>); Kim, Hee Chan (<i>Seoul National University</i>)	Webster Room
16:14-16:16	WeCT15-07.3	Virtual Stenting of Multiple Intracranial Aneurysms Considering Thrombosis Modeling Berg, Philipp* (<i>University of Magdeburg</i>); Engel, Sebastian (<i>University of Magdeburg</i>); Janiga, Gabor (<i>University of Magdeburg</i>); Beuing, Oliver (<i>University Hospital Magdeburg</i>)	Webster Room
WeCT15-08: 16:10-17:10	Webster Room	Cardiovascular and Respiratory System Modeling – Cardiac Models (Poster Session)	
16:10-16:12	WeCT15-08.1	Effect of the Ventricular Myocardium Characteristics on the Distribution of Defibrillation Electric Fields Qian, Li (<i>Fudan Univ.</i>); Wang, Jianfei (<i>Fudan Univ.</i>); Jin, Lian (<i>Fudan Univ.</i>); Song, Biao (<i>Fudan Univ.</i>); Wu, X.* (<i>Fudan Univ.</i>)	Webster Room
16:12-16:14	WeCT15-08.2	Computational Prediction of Cardiac Electromechanical Function in Patients with Myocardial Fibrosis Lee, Jiyeong (<i>Kumoh National Institute of Tech.</i>); Marcellinus, Aroli (<i>Kumoh National Institute of Tech.</i>); Park, Jun Ik (<i>Kumoh National Institute of Tech. (KIT), South Korea</i>); Lim, Ki Moo* (<i>Kumoh National Institute of Tech.</i>)	Webster Room
WeCT15-09: 16:10-17:10	Webster Room	Cardiovascular and Respiratory System Modeling – Pulmonary Circulation (Poster Session)	
16:10-16:12	WeCT15-09.1	Characterization of Micro-Porous Palladium-Nickel Mesh Filter Ji, Hyo Chul (<i>Dongguk University College of Medicine</i>); Choi, Kyong-Hoon (<i>Kwangwoon University</i>); Kim, Jae Jong (<i>Dongguk University College of Medicine</i>); Moon, Sang-Hyub (<i>Dongguk University</i>); Chang, Kyung Hwa (<i>Dongguk University College of Medicine</i>); Park, Bong Joo (<i>Kwangwoon University</i>); Nam, Ki Chang* (<i>Dongguk University College of Medicine</i>)	Rushmer Room
WeCT15-10: 16:10-17:10	Webster Room	Cardiovascular and Respiratory System Modeling – Vascular Mechanics and Hemodynamics (Poster Session)	
16:10-16:12	WeCT15-10.1	A Stochastic Atherosclerotic Plaque Growth Model Foo, Zi Hui (<i>National University of Singapore</i>); Li, Yier (<i>National University of Singapore</i>); Buist, Martin Lindsay* (<i>National University of Singapore</i>)	Rushmer Room
WeCT15-11: 16:10-17:10	Webster Room	Pulmonary and Critical Care – Cardiopulmonary Resuscitation (Poster Session)	
16:10-16:12	WeCT15-11.1	Physiological Indicators for Return of Spontaneous Circulation during Cardiopulmonary Resuscitation Kim, Heejin (<i>Seoul National University</i>); Kim, Hee Chan* (<i>Seoul National University</i>)	Webster Room
WeCT15-12: 16:10-17:10	Webster Room	Respiratory Transport, Mechanics and Control – Periodic Breathing (Poster Session)	
16:10-16:12	WeCT15-12.1	Detection of Respiratory Events and Research on APAP Algorithm of Ventilator Zeng, Ling-Zi (<i>Sun Yat-Sen Univ., Guangzhou, China</i>); Luo, Yu-Xi* (<i>Sun Yat-Sen Univ.</i>); Huang, Shao-Xiong (<i>School of Eng., Sun Yat-Sen Univ.</i>); Liang, Jiu-Xing (<i>School of Eng., Sun Yat-Sen Univ.</i>); Li, Jia-Quan (<i>School of Eng., Sun Yat-Sen Univ.</i>)	Webster Room
WeCT15-13: 16:10-17:10	Webster Room	Sleep – Obstructive Sleep Apnea (Poster Session)	
16:10-16:12	WeCT15-13.1	Model-Based Phenotyping of Obstructive Sleep Apnea in Pediatric Obesity for Personalized Theranostics Nava-Guerra, Leonardo* (<i>University of Southern California</i>); Khoo, Michael (<i>University of Southern California</i>)	Webster Room
16:12-16:14	WeCT15-13.2	Automatic Detection of Obstructive Sleep Apnea based on Convolution Neural Network Urtnasan, Erdenebayar (<i>Yonsei University</i>); Kang, KyuMin (<i>Yonsei University</i>); Lee, Kyoung Joung* (<i>Yonsei University</i>); Park, Jonguk (<i>Yonsei University</i>)	Webster Room
WeCT15-14: 16:10-17:10	Webster Room	Sleep – Sleep Apnea Therapy (Poster Session)	
16:10-16:12	WeCT15-14.1	ActiveAir™: A Vent for a Smaller PAP Device Malouf, Gordon Joseph* (<i>Res Med</i>); Dantanarayana, Muditha (<i>Res Med</i>); Finch, Charles (<i>Res Med</i>); Cutcliffe, Graham (<i>Res Med</i>)	Rushmer Room
WeCT16-01: 16:10-17:10	Rushmer Room	Clinical Robots (Poster Session)	
16:10-16:12	WeCT16-01.1	Rapid Manipulation of External Control Capsule Endoscope using Head Mounted Display Interface Lee, Seonggeon (<i>Gachon University</i>); Lee, Hanji (<i>Gachon University</i>); Hwang, Youngeun (<i>Gachon University</i>); Kim, Jaeseung (<i>Gachon University</i>); Park, Jongoh (<i>Chonnam National University</i>); Lee, Jong Hee (<i>Woo Young Medical Co., Ltd.</i>); Son, Young Don* (<i>Gachon University</i>)	Rushmer Room
WeCT16-02: 16:10-17:10	Rushmer Room	Computer-Assisted Surgery (Poster Session)	
16:10-16:12	WeCT16-02.1	Robot-Assisted Bone Reposition System for Orthognathic Surgery Woo, Sang-Yoon (<i>Seoul Natl. Univ.</i>); Kang, Se Ryong (<i>Seoul Natl. Univ.</i>); Lee, Sang Jeong (<i>Seoul Natl. Univ.</i>); Yoo, Ji Yong (<i>Seoul Natl. Univ.</i>); Choi, Min Hyuk (<i>Seoul Natl. Univ.</i>); Yi, WonJin* (<i>Seoul Natl. Univ Sch of Dentistry</i>)	Rushmer Room
16:12-16:14	WeCT16-02.2	Implementation of a Microsurgical Injector based on a Distance Feedback using Swept Source Optical Coherence Tomography Im, Jintaek (<i>DGIST</i>); Jang, Sunjin (<i>DGIST</i>); Song, Cheol* (<i>DGIST</i>)	Rushmer Room
16:14-16:16	WeCT16-02.3	Automatic Control of Steerable Ablation Catheter Hu, Zhenkai (<i>Asan Medical Center</i>); Moon, Youngjin (<i>Asan Medical Center</i>); Choi, Jaesoon* (<i>Asan Institute for Life Sciences, Asan Medical Center</i>)	Rushmer Room
WeCT16-03: 16:10-17:10	Rushmer Room	Image Guided Surgery (Poster Session)	
16:10-16:12	WeCT16-03.1	Characterization of the Interaction between Ultrasonic Motor and Ultrahigh Field MRI for Safe Interventional Operations Shokrollahi, Peyman (<i>University of Toronto</i>); Shokrollahi, Elnaz* (<i>University of Toronto</i>); Drake, James (<i>University of Toronto, CIGITI, Hospital for Sick Children</i>); Goldenberg, Andrew A. (<i>University of Toronto</i>)	Rushmer Room
16:12-16:14	WeCT16-03.2	Image Guidance Surgery System for Mandibular Proximal Segment Reposition using Electromagnetic Tracking System Lee, Sang Jeong (<i>Seoul Natl. Univ.</i>); Woo, Sang-Yoon (<i>Seoul Natl. Univ.</i>); Yoo, Ji Yong (<i>Seoul Natl. Univ.</i>); Choi, Min Hyuk (<i>Seoul Natl. Univ.</i>); Kang, Se Ryong (<i>Seoul Natl. Univ.</i>); Yi, WonJin* (<i>Seoul Natl. Univ Sch of Dentistry</i>)	

16:14-16:16 WeCT16-03.3
A Method of Initial Positioning of the Virtual Fibula Model in the Fibula Free Flap Mandible Reconstruction using Image Guided Navigation System
 Yoo, Ji Yong (Seoul National University); Woo, Sang-Yoon (Seoul National University); Lee, Sang Jeong (Seoul National University); Choi, Min Hyuk (Seoul National University); Kang, Se Ryong (Seoul National University); Yi, WonJin* (Seoul National Univ Sch of Dentistry)

16:16-16:18 WeCT16-03.4
Augmented Reality System with a Simple Interface for Endoscopic Ear Surgery
 Lee, Seongpung (DGIST); Cho, Byunghyun (Kyushu Univ.); Matsumoto, Nozomu (Kyushu Univ.); Hashizume, Makoto (Kyushu Univ.); Hong, Jaesung* (DGIST)

WeCT16-04: 16:10-17:10 Rushmer Room
Motion Cancellation in Surgical Robotics (Poster Session)

16:10-16:12 WeCT16-04.1
Visual Stimuli Modification of Hand Tremor in Virtual Reality for Micro-Surgical Tasks
 Prada, John (DGIST); Park, Taiwoo (Michigan State University); Jang, Sunjin (DGIST); Song, Cheol* (DGIST)

WeCT16-05: 16:10-17:10 Rushmer Room
New Technologies and Methodologies in Medical Robotics (Poster Session)

16:10-16:12 WeCT16-05.1
Analysis of Algorithm for Simulated Partial Gravity Condition using a Three Dimensional Clinostat
 Hong, Nhayoung (Seoul National University); Lim, Min Hyuk (Dept. of Biomedical Engineering, Seoul National University); Kim, Yoon Jae (Seoul National University); Kim, Myungjoon (Interdisciplinary Program in Bioengineering, Seoul National Univ); Lee, Chiwon (Korea Electrotechnology Research Institute); Kim, Sungwan* (Seoul National University)

16:12-16:14 WeCT16-05.2
System Development for in Vivo and in Vitro Organ Elasticity Measurements
 Takano, Noriyuki (Teikyo Heisei University); Kim, Daeyoung (Teikyo Heisei University); Kobayashi, Etsuko* (The University of Tokyo); Kiguchi, Kazuo (Kyushu University); Sakuma, Ichiro (The University of Tokyo)

WeCT16-06: 16:10-17:10 Rushmer Room
Prosthetics – Modeling and Simulation in Biomechanics (Poster Session)

16:10-16:12 WeCT16-06.1
Study on Control of Multiple Robots in Wire-Driven Surgery
 Seo, Sangbo (Gacheon); Cho, Yun Sung (Gachon University Medical Campus); Choi, Han-Sol (Gachon University); Kim, Kwang Gi* (Gachon University)

WeCT16-07: 16:10-17:10 Rushmer Room
Robot-Aided Surgery – Remote Surgery Systems / Telesurgery (Poster Session)

16:10-16:12 WeCT16-07.1
Tension Measurement and Physical Compensation System Design for Wire-Driven Surgical Robots
 Cho, Yun Sung (Gachon Univ. Medical Campus); Choi, Han-Sol (Gachon Univ.); Kim, Kwang Gi* (Gachon Univ.)

WeCT16-08: 16:10-17:10 Rushmer Room
Robotic Prosthetics (Poster Session)

16:10-16:12 WeCT16-08.1
Artificial Ligament-Joint Design for a Bioinspired Hand
 Kim, Sang-Hun (Seoul National Univ.); Yun, Sung-Sik (Seoul National Univ.); Cho, Kyu-Jin* (Seoul National Univ.)

16:12-16:14 WeCT16-08.2
Design of the Regression Model for Grasping Pattern in the Reaching Phase of Myoelectric Prosthetic Hand
 Cho, Woorim (Handong); Noh, Jiho (Handong); Kim, Jaehyo* (Handong Global University)

16:14-16:16 WeCT16-08.3
A Novel Practical Approach to Prosthetic Control of Continuous Multi-Fingered Kinematics with a Low-Cost Wearable sEMG Device
 Shibata, Tsuyoshi* (Kyushu Institute of Technology); Shibata, Tomohiro (Kyushu Institute of Technology)

16:16-16:18 WeCT16-08.4
Prosthetic Hand Wrist Connector Reliability Enhancement by Strongly Coupled Wireless Energy Transfer
 Germany, Enrique I.* (University of Concepcion); Saavedra, Francisco (University of Concepcion); Gomez, Britam (University of Concepcion); Pino, Esteban J (Universidad de Concepcion); Aqueveque, Pablo (University of Concepcion)

16:18-16:20 WeCT16-08.5
Fusion of Depth Sensing, Kinetics and Kinematics for Intent Prediction of Lower Limb Prostheses
 Krausz, Nili Eliana* (Northwestern University); Hargrove, Levi (Rehabilitation Institute of Chicago)

WeCT16-09: 16:10-17:10 Rushmer Room
Surgical Robotics (Poster Session)

16:10-16:12 WeCT16-09.1
Spherical-Coordinate Manipulator with Circular Telescopic Rail Driven by Rapson's Slider for Laparoscopic Surgery
 Han, SeungSeong* (Osaka Institute of Technology); Mizobuchi, Fumiya (Osaka Institute of Technology); Kawai, Toshikazu (Osaka Institute of Technology); Nishikawa, Atsushi (Shinshu Univ.); Nishizawa, Yuji (Dept. of Gastroenterological Surgery, Faculty of Medicine.); Nakamura, Tatsuo (Kyoto Univ.)

16:12-16:14 WeCT16-09.2
Locally Operated Master-Slave Control System with Mechanically Separable Master Device for Laparoscopic Forceps Manipulator
 Kobayashi, Hiroyuki* (Osaka Institute of Technology); Kawai, Toshikazu (Osaka Institute of Technology); Nishikawa, Atsushi (Shinshu University); Horise, Yuki (Tokyo Women's Medical University); Masamune, Ken (The University of Tokyo)

16:14-16:16 WeCT16-09.3
Development of Surgical Device for Closed Reduction of Facial Bone Fracture
 Lee, Hoyul (Asan Medical Center); Moon, Youngjin (Asan Medical Center); Jeong, Woo Shik (Dept. of Plastic & Reconstructive Surgery, College of Medic); Choi, Jong Woo (Dept. of Plastic & Reconstructive Surgery, College of Medic); Choi, Jaesoon* (Asan Institute for Life Sciences, Asan Medical Center)

WeCT16-10: 16:10-17:10 Rushmer Room
Tactile Displays and Perception (Poster Session)

16:10-16:12 WeCT16-10.1
Frequency Optimization System for Ultrasound Tactile Stimulation using Stationary Wave
 Choi, Jeongbong (Hanyang University); Cho, Kyeong Won (Hanyang University); Park, Jinh (Hanyang University); Yook, Sunhyun (Hanyang University); Kim, Sun I. (Osong Medical Innovation foundation); Kim, In-Young (Hanyang University); Jang, DongPyo* (Hanyang University)

WeCT16-11: 16:10-17:10 Rushmer Room
Therapeutic Robotics in Rehabilitation (Poster Session)

16:10-16:12 WeCT16-11.1
Effect of Short-Term Sling Exercise with Whole Body Vibration Recovery on Heart Rate and Blood of Lactate
 Juhwan, Oh* (National Chonbuk University); Taekyu, Kwon (National Chonbuk University)

16:12-16:14

WeCT16-11.2

Air Pocket Gloves for Finger-Based Occupational Therapy of Hemiplegic Patients

Yoon, Juseon (*Handong University*); Kim, YoungChan (*Handong Global University*); Kim, Mi Ju (*Handong Global University*); Kim, Jaehyo* (*Handong Global University*)

WeCT16-13: 16:10-17:10

Rushmer Room

Wearable Robotic Systems – Orthotics (Poster Session)

16:10-16:12

WeCT16-13.1

Assistance Effect of a Wearable Hip-Assist Robot during Stair Ascent in Elderly Adults

Kim, Dong-Seok (*Sungkyunkwan University*); Lee, Hwang-Jae (*Samsung Medical Center*); Lee, Suhyun (*Samsung Medical Center*); Chang, Won Hyuk (*Samsung Medical Center, Sungkyunkwan University School of Medici*); Jang, Junwon (*Samsung Electronics*); Choi, Byung-Ok (*Sungkyunkwan University School of Medicine*); Ryu, Gyu Ha* (*Samsung Medical Center*); Kim, Yun-Hee (*Samsung Medical Center*)

ThAT1: 08:00-09:30 Roentgen Hall
Brain and Physiological Networks: Methods and Applications (Invited Session)
Chair: Faes, Luca (*University of Trento*)
Co-Chair: Ding, Lei (*University of Oklahoma*)

08:00-08:15 ThAT1.1
Causal Brain-Heart Information Transfer during Visual Emotional Elicitation in Healthy Subjects: Preliminary Evaluations and Future Perspectives
 Faes, Luca (*University of Trento*); Greco, Alberto (*University of Pisa*); Lanata', Antonio (*University of Pisa*); Barbieri, Riccardo (*Politecnico di Milano*); Scilingo, Enzo Pasquale (*University of Pisa*); Valenza, Gaetano* (*University of Pisa*)

08:15-08:30 ThAT1.2
Information Transfer and Information Modification to Identify the Structure of Cardiovascular Networks
 Faes, Luca* (*Univ. of Trento*); Nollo, Giandomenico (*Univ. of Trento*); Krohova, Jana (*Comenius Univ. in Bratislava*); Czippelova, Barbora (*Dept. of Physiology, Comenius Univ., Jessenius Faculty*); Turianikova, Zuzana (*Dept. of Physiology, Comenius Univ., Jessenius Faculty*); Javorka, Michal (*Comenius Univ., Jessenius Faculty of Medicine*)

08:45-09:00 ThAT1.4
Inferring Directed Interactions between Cortical Dipole Activities using Coupled Delay Differential Equations
 Leistriz, Lutz* (*Jena University Hospital, Friedrich Schiller University Jena*); Huonker, Ralph (*Jena University Hospital*); Witte, Herbert (*Jena University Hospital Friedrich Schiller University*); Goetz, Theresa (*Institute of Medical Statistics, Computer Sciences and Documenta*)

09:00-09:15 ThAT1.5
Signal-Adaptive, Frequency-Selective and Time-Variant Analysis of Interactions between Time Series: Comparison of Linear, Nonlinear, Undirected and Directed Approaches
 Schiecke, Karin* (*Jena Univ. Hospital, Friedrich Schiller Univ. Jena*); Piper, Diana (*Jena Univ. Hospital, Friedrich Schiller Univ. Jena*); Pester, Britta (*Jena Univ. Hospital, Friedrich Schiller Univ. Jena*); Benninger, Franz (*Epilepsy Monitoring Unit, Dept. of Child and Adolescent Neu*); Feucht, Martha (*Epilepsy Monitoring Unit, Dept. of Child and Adolescent Neu*); Witte, Herbert (*Jena Univ. Hospital Friedrich Schiller Univ.*); Leistriz, Lutz (*Jena Univ. Hospital, Friedrich Schiller Univ. Jena*)

09:15-09:30 ThAT1.6
Probing Electrophysiological Intrinsic Brain Networks through Modeling and Computation
 Ding, Lei* (*Univ. of Oklahoma*); Yuan, Han (*Univ. of Oklahoma*)

09:15-09:30 ThAT1.7
Functional Connectivity Analysis of Multiplex Muscle Network across Frequencies
 Kerkman, Jennifer N.* (*Vrije Universiteit Amsterdam*); Daffertshofer, Andreas (*Vrije Universiteit Amsterdam*); Gollo, Leonardo (*QIMR Berghofer Medical Research Institute*); Breakspear, Michael (*QIMR Berghofer Medical Research Institute*); Boonstra, Tjeerd W. (*University of New South Wales*)

ThAT2: 08:00-09:30 Cho Room
Biomedical Applications of Terahertz Imaging and Spectroscopy (Invited Session)
Chair: MacPherson, Emma (*Chinese University of Hong Kong*)
Co-Chair: Kim, Seongsin M. (*The University of Alabama*)

08:00-08:15 ThAT2.1
Terahertz in Vivo Imaging of Human Skin
 MacPherson, Emma* (*Chinese University of Hong Kong*)

08:15-08:30 ThAT2.2
Label-Free Terahertz Reflection Imaging for Detection of Malignant Brain Tumor
 Ji, Young Bin* (*Yonsei University*)

08:30-08:45 ThAT2.3
Recent Advances in Terahertz Medical Imaging
 Oh, Seung Jae* (*Yonsei University*)

08:45-09:00 ThAT2.4
Investigation of THz Bio-Metamaterials for Biosensing and Imaging
 Smiley, Brianna (*Univ. of Alabama*); Park, Seung Jo (*Univ. of Alabama*); Pal, Sharmistha (*Univ. of Alabama*); Maleski, Alexander (*Univ. of Alabama*); Gungordu, M. Zeki (*Univ. of Alabama*); Mollah, A. Shahab (*Univ. of Alabama*); Philip, Elizabeth (*Univ. of Alabama*); Kung, Patrick (*Univ. of Alabama*); Kim, Yonghyun (*Univ. of Alabama*); Kim, Seongsin M.* (*The Univ. of Alabama*)

ThAT4: 08:00-09:30 Min Room
New Sensing Techniques I (Oral Session)
Chair: Scilingo, Enzo Pasquale (*University of Pisa*)

08:00-08:15 ThAT4.1
A New Hand Function Assessment Method using an Infrared Imaging Device
 Fang, Qiang* (*MIT University*); Gu, Xudong (*The 2nd hospital of Jiaying*)

08:15-08:30 ThAT4.2
Frequency-Range Optimized Preprocessing Methods for Quantitative Analysis of Glucose in Blood Serum from Broadband Dielectric Spectra
 Wang, Rui (*NTT Device Technology Labs*); Nakamura, Masahito* (*NTT Corp.*); Tanaka, Yujiro (*NTT Device Technology Labs.*); Tajima, Takuro (*NTT Device Technology Labs*)

08:30-08:45 ThAT4.3
Three-Dimensional Electrodes Formation using Liquid Metal in Micro Channels for 3-Axis Capacitive Force Sensor
 Tatsuho, Nagatomo* (*Keio Univ.*); Miki, Norihisa (*Univ.*)

08:45-09:00 ThAT4.4
Monitoring Voluntary Blink Magnitude through a Wearable Eye-Tracking System: A Preliminary Study
 Lanata', Antonio (*Univ. of Pisa*); Guidi, Andrea (*Univ. of Pisa*); Greco, Alberto (*Univ. of Pisa*); Valenza, Gaetano (*Univ. of Pisa*); Scilingo, Enzo Pasquale* (*Univ. of Pisa*)

09:00-09:15 ThAT4.5
Can Accelerometry Data Improve Estimates of Heart Rate Variability from Wrist PPG Sensors?
 Kos, Maciej Rafal* (*Northeastern Univ.*); Li, Xuan (*Northeastern Univ.*); Khaghani-Far, Iman (*Northeastern Univ.*); Gordon, Christine (*Northeastern Univ.*); Pavel, Misha (*Northeastern Univ.*); Jimison, Holly (*Northeastern Univ.*)

09:15-09:30 ThAT4.6
Flexible Sensor Sheet for Real-Time Pressure Monitoring in Artificial Knee Joint during Total Knee Arthroplasty
 Tanabe, Fumika* (*Osaka Univ.*); Yoshimoto, Shusuke (*Osaka Univ.*); Noda, Yuki (*Osaka Univ.*); Araki, Teppei (*Osaka Univ.*); Uemura, Takafumi (*Osaka Univ.*); Takeuchi, Yoshinori (*Osaka Univ.*); Imai, Masaharu (*Osaka Univ.*); Sekitani, Tsuyoshi (*Osaka Univ.*)

ThAT5: 08:00-09:30 Lee Room
Current Advances in Seismocardiography and Ballistocardiography (Minisymposium)
Chair: Tavakolian, Kouhyar (*Assistant Professor*)
Co-Chair: Di Rienzo, Marco (*Fondazione Don Carlo Gnocchi*)

08:00-08:15 ThAT5.1
Detecting Indications of Acute Myocardial Infarction using Smartphone Only Solution
 Koivisto, Tero* (*Univ. of Turku*); Lahdenoja, Olli (*Technology Research Center, Univ. of Turku*); Hurnanen, Tero (*Technology Research Center, Univ. of Turku*); Jafari Tadi, Mojtaba (*Univ. of Turku*); Lehtonen, Eero Lennart (*Univ. of Turku*); Vasankari, Tuija (*Heart Center, Turku Univ. Hospital*); Saraste, Antti (*Heart Center, Turku Univ. Hospital*); Kiviniemi, Tuomas (*Heart Center, Turku Univ. Hospital*); Airaksinen, Juhani (*Heart Center, Turku Univ. Hospital*); Pänkäälä, Mikko (*Univ. of Turku*)

08:15-08:30	ThAT5.2	Wearable Gyrocardiography: Towards Continuous Assessment of Myocardial Contractility and Hemodynamics Jafari Tadi, Mojtaba* (<i>University of Turku</i>); Lehtonen, Eero Lennart (<i>University of Turku</i>); Saraste, Antti (<i>Heart Center, Turku University Hospital</i>); Pänkäälä, Mikko (<i>University of Turku</i>); Koivisto, Tero (<i>University of Turku</i>)	08:15-08:30	ThAT7.2	Effects of Counteracting External Valgus Moment on Lateral Tibial Cartilage Contact Conditions and Tibial Rotation Shriram, Duraisamy* (<i>Singapore University of Technology and Design</i>); Parween, Rizuwana (<i>Singapore University of Technology and Design</i>); Lee, Yee Han Dave (<i>Changi General Hospital Singapore</i>); Karupppasamy, Subburaj (<i>Singapore University of Technology and Design (SUTD)</i>)
08:30-08:45	ThAT5.3	Seismocardiogram Features and Ultrasound Counterparts Di Rienzo, Marco* (<i>Fondazione Don Carlo Gnocchi</i>); Lombardi, Prospero (<i>Fondazione Don Carlo Gnocchi ONLUS</i>); Racca, Vittorio (<i>Fondazione Don Carlo Gnocchi ONLUS</i>); Peritore, Angelica (<i>Fondazione Don Carlo Gnocchi ONLUS</i>); Pezzano, Antonio (<i>Fondazione Don Carlo Gnocchi ONLUS</i>); Vaini, Emanuele (<i>Polo Tecnologico, Fondazione Don Carlo Gnocchi</i>)	08:30-08:45	ThAT7.3	Assessment of 3D Morphological Characteristics of the Shoulder Bones using Statistical Shape Modeling: An Application to Handedness Inyang, Adijat Omowumi* (<i>Univ. of Cape Town</i>); Fouefack, Jean-Rassaire (<i>Univ. of Cape Town</i>); Sivarasu, Sudesh (<i>Univ. of Cape Town</i>); Roche, Stephen (<i>Univ. of Cape Town</i>); Borotikar, Bhushan (<i>IMT Atlantique</i>); Burdin, Valerie (<i>IMT Atlantique/Institut Mines Telecom - INSERM U1101</i>); Mutsvangwa, Tinashe Ernest Muzvidzwa (<i>Univ. of Cape Town</i>)
08:45-09:00	ThAT5.4	Seismocardiographic Correlations to Age, Gender and BMI Sørensen, Kasper* (<i>Aalborg University</i>); Jensen, Ask Schou (<i>Aalborg University</i>); Hansen, John (<i>Aalborg University</i>); Søgaard, Peter (<i>Aalborg University Hospital</i>); Struijk, Johannes (<i>Aalborg University</i>); Schmidt, Samuel Emil (<i>Aalborg University</i>)	08:45-09:00	ThAT7.4	The use of Shear Thickening Polymer as a Hip Protector Lee, Taeyong* (<i>Ewha Womans University</i>); Hwang, Dong-Gyu (<i>Ewha Womans University</i>); Ogihara, Naomichi (<i>Keio University</i>); Ito, Kohta (<i>Keio University</i>)
ThAT6: 08:00-09:30		Zworykin Room	ThAT8: 08:00-09:30		
Biomaterial Cell Interaction and Bioprinting (Oral Session)			Schwan Room		
08:00-08:15	ThAT6.1	Micro-Patterned Films of Bio-Functionalized Conducting Polymers for Cellular Engineering Park, SooHyun (<i>Penn State Univ.</i>); Abidian, Mohammad Reza (<i>Univ. of Houston</i>); Majd, Sheereen* (<i>Univ. of Houston</i>)	09:00-09:15	ThAT7.5	Risk Estimation for Intervertebral Disc Pressure through Musculoskeletal Joint Reaction Force Simulation Imamura, Yumeko* (<i>The National Institute of Advanced Industrial Science and Techno</i>); Ayusawa, Ko (<i>National Institute of Advanced Industrial Science and Tech.</i>); Yoshida, Eiichi (<i>National Institute of Advanced Industrial Science and Tech.</i>)
08:15-08:30	ThAT6.2	Visible Light-Based Stereolithography Bioprinting of Cell-Adhesive Gelatin Hydrogels Wang, Zongjie (<i>Univ. of British Columbia</i>); Tian, Zhenlin (<i>Univ. of British Columbia</i>); Jin, Xian (<i>Univ. of British Columbia</i>); Holzman, Jonathan (<i>Univ. of British Columbia</i>); Menard, Frederic (<i>Univ. of British Columbia</i>); Kim, Keekyoung* (<i>Univ. of British Columbia Okanagan Campus</i>)	09:15-09:30	ThAT7.6	Subject-Specific Shoulder Muscle Attachment Region Prediction using Statistical Shape Models: A Validity Study Salhi, Asma* (<i>IMT Atlantique</i>); Burdin, Valerie (<i>IMT Atlantique/Institut Mines Telecom - INSERM U1101</i>); Mutsvangwa, Tinashe Ernest Muzvidzwa (<i>University of Cape Town</i>); Sivarasu, Sudesh (<i>University of Cape Town</i>); Brochard, Sylvain (<i>CHRU Brest</i>); Borotikar, Bhushan (<i>IMT Atlantique</i>)
08:30-08:45	ThAT6.3	Manual Centrifuge System: Bearing-Based Hand Spinner Made with 3-D Printer Yoo, Sunyoung (<i>Seoul National University</i>); Lee, Seung Jae (<i>Seoul National University</i>); Seo, Jong Mo* (<i>Seoul National University, School of Engineering</i>)	ThAT8: 08:00-09:30		
08:45-09:00	ThAT6.4	Directed Cell Migration in Co-Cultures by Topographic Curvature for Heterogeneous Tissue Engineering Okutani, Chihiro* (<i>University of Tokyo</i>); Wagatsuma, Akira (<i>University of Tokyo</i>); Mabuchi, Kunihiko (<i>The University of Tokyo</i>); Hoshino, Takayuki (<i>University of Tokyo</i>)	Schwan Room		
09:00-09:15	ThAT6.5	Development of Biomimetic System for Scale Up of Cell Spheroids – Building Blocks for Cell Transplantation Baba, Kazutomo* (<i>University of Tsukuba</i>); Sankai, Yoshiyuki (<i>University of Tsukuba</i>)	Brain-Computer Interface I (Oral Session) Chair: Harrer, Stefan (<i>IBM Research</i>)		
09:15-09:30	ThAT6.6	Enabling 3D Hepatocyte Spheroids for Microphysiometry Eggert, Sebastian* (<i>cellasys GmbH</i>); Alexander, Frank (<i>cellasys GmbH</i>); Wiest, Joachim (<i>cellasys GmbH</i>)	08:00-08:15	ThAT8.1	Neural Decoding of Attentional Selection in Multi-Speaker Environments without Access to Separated Sources O'Sullivan, James* (<i>Columbia University</i>); Chen, Zhuo (<i>Columbia University</i>); Herrero, Jose (<i>Feinstein Institute for Medical Research</i>); Sheth, Sameer (<i>Columbia University Medical Center</i>); McKhann, Guy (<i>Columbia University Medical Center</i>); Mehta, Ashesh (<i>Feinstein Institute for Medical Research</i>); Mesgarani, Nima (<i>Columbia University</i>)
ThAT7: 08:00-09:30		Herrick Room	08:15-08:30	ThAT8.2	TrueNorth-Enabled Real-Time Classification of EEG Data for Brain-Computer Interfacing Kiral-Kornek, Filiz Isabell (<i>University of Melbourne</i>); Mendis, Dulini (<i>University of Melbourne</i>); Nurse, Ewan (<i>University of Melbourne</i>); Mashford, Benjamin Scott (<i>IBM Research Australia</i>); Freestone, Dean Robert (<i>The University of Melbourne</i>); Grayden, David B. (<i>The University of Melbourne</i>); Harrer, Stefan* (<i>IBM Research</i>)
08:00-08:15	ThAT7.1	Gender Difference of Ankle Stability in the Sagittal and Frontal Planes Lee, Hyunglae* (<i>Arizona State University</i>); Hanzlick, Harrison (<i>Arizona State University</i>)	08:30-08:45	ThAT8.3	An Eighty-Target High-Speed Chinese BCI Speller Han, Chengcheng (<i>Xi'an Jiaotong University</i>); Xu, Guanghua* (<i>Xi'an Jiaotong University</i>); Xie, Jun (<i>Xi'an Jiaotong University</i>); Li, Min (<i>School of Mechanical Engineering, Xi'an Jiaotong University</i>); Zhang, Sicong (<i>Xi'an Jiaotong University</i>); Luo, Ailing (<i>Xi'an Jiaotong University</i>)

- 08:45-09:00 ThAT8.4
Cortical Oscillatory Dynamics of Tactile Selective Sensation – For a Novel Type of Somatosensory Brain-Computer Interface
 Yao, Lin* (*University Medical Center Goettingen, Georg-August-University*); Chen, Mei Lin (*University of Waterloo*); Sheng, Xinjun (*Shanghai Jiao Tong University*); Mrachacz-Kersting, Natalie (*Aalborg University*); Zhu, Xiangyang (*Shanghai Jiao Tong University*); Farina, Dario (*Bernstein Center for Computational Neuroscience, University Medic*); Jiang, Ning (*University of Waterloo*)
- 09:00-09:15 ThAT8.5
Dynamic Tracking of Non-Stationarity in Human ECoG Activity
 Yang, Yuxiao* (*Univ. of Southern California*); Chang, Edward (*UCSF*); Shanechi, Maryam (*Univ. of Southern California*)
- 09:15-09:30 ThAT8.6
Movement-Related Brain Oscillations Vary with Lesion Location in Severely Paralyzed Chronic Stroke Patients
 Ray, Andreas Markus* (*Tuebingen University*); López-Larraz, Eduardo (*University of Tübingen*); da Cruz Figueiredo, Thiago (*University of Tübingen*); Birbaumer, Niels (*Eberhard-Karls-University*); Ramos-Murguialday, Ander (*Eberhard Karls University of Tübingen/TECNALIA*)
- ThAT9: 08:00-09:30 Plonsey Room
Challenges in the Restoration of Vision through Retinal Neurostimulation (Minisymposium)
Chair: Weiland, James (*University of Michigan*)
Co-Chair: Suaning, Gregg (*The University of Sydney*)
- 08:00-08:15 ThAT9.1
Cortical Responses Driven by Epi-Retinal Stimulation in Rodent
 Xie, Hui (*City Univ. of Hong Kong*); Wang, Yi (*City Univ. of Hong Kong*); Chan, Leanne LH* (*City Univ. of Hong Kong*)
- 08:15-08:30 ThAT9.2
Challenges in Suprachoroidal Retinal Neuroprosthesis
 Suaning, Gregg* (*The University of Sydney*)
- 08:30-08:45 ThAT9.3
Experimental Animal Model for the Evaluation of the Artificial Retina
 Seo, Jong Mo* (*Seoul National Univ., School of Engineering*); Chung, Hum (*Seoul National Univ. School of Medicine*); Cho, Bum Joo (*Seoul National Univ. School of Medicine*)
- 08:45-09:00 ThAT9.4
Development of a Second-Generation Device for Suprachoroidal-Transretinal Stimulation
 Kanda, Hiroyuki* (*Osaka Univ.*); Kamei, Motohiro (*Osaka Univ.*); Sakaguchi, Hirokazu (*Osaka Univ.*); Endo, Takao (*Osaka Univ.*); Hirota, Masakazu (*Osaka Univ.*); Morimoto, Takeshi (*Osaka Univ.*); Nishida, Kentaro (*Osaka Univ.*); Kishima, Haruhiko (*Osaka Univ.*); Miyoshi, Tomomitsu (*Osaka Univ.*); Terasawa, Yasuo (*NIDEK Co.*); Oosawa, Kouji (*Nidek Co., Ltd.*); Ozawa, Motoki (*Nidek Co., Ltd.*); Fujikado, Takashi (*Osaka Univ.*)
- 09:00-09:15 ThAT9.5
Strategies to Improve Visual Function for Retinal Prosthesis Patients
 Weiland, James* (*University of Michigan*)
- ThAT10: 08:00-09:30 Schmitt Room
General and Theoretical Informatics – Predictive Analytics I (Oral Session)
Chair: Iyer, Ravishankar (*University of Illinois at Urbana-Champaign*)
- 08:00-08:15 ThAT10.1
Prediction of Adenocarcinoma Development using Game Theory
 Athreya, Arjun* (*Univ. of Illinois at Urbana-Champaign*); Armstrong, Don (*Univ. of Illinois at Urbana-Champaign*); Gundling, William (*Dept. of Molecular and Integrative Physiology, Univ. o.*); Wildman, Derek (*Univ. of Illinois*); Kalbarczyk, Zbigniew (*Univ. of Illinois at Urbana-Champaign*); Iyer, Ravishankar (*Univ. of Illinois at Urbana-Champaign*)
- 08:15-08:30 ThAT10.2
Learning from Different Perspectives: Robust Cardiac Arrest Prediction via Temporal Transfer Learning
 Ho, Joyce C.* (*Emory University*); Park, Yubin (*The University of Texas at Austin*)
- 08:30-08:45 ThAT10.3
Predictive Modeling for Corrective Maintenance of Imaging Devices from Machine Logs
 Balasheb Patil, Ravindra* (*Philips Research India*); Patil, Meru (*Philips India Limited*); Ravi, Vidya (*Philips*); Naik, Sarif Kumar (*Philips Electronics India Ltd*)
- 08:45-09:00 ThAT10.4
Data-Driven Strategies for Robust Forecast of Continuous Glucose Monitoring Time-Series
 Fiorini, Samuele* (*University of Genoa*); Martini, Chiara (*University of Genoa*); Malpassi, Davide (*University of Genoa*); Cordera, Renzo (*University of Genoa*); Maggi, Davide (*University of Genoa*); Verri, Alessandro (*University of Genoa*); Barla, Annalisa (*University of Genoa*)
- 09:00-09:15 ThAT10.5
Prediction of Temperature Induced Office Worker's Performance during Typing Task using EEG
 Nayak, Tapsya (*Univ. of Texas at San Antonio*); Zhang, Tinghe (*Univ. of Texas, San Antonio*); Mao, Zijing (*Univ. of Texas at San Antonio*); Xu, Xiaojing (*Univ. of Tennessee, Knoxville*); Pack, Daniel (*Univ. of Tennessee*); Dong, Bing (*Univ. of Texas, San Antonio*); Huang, Yufei* (*Univ. of Texas at San Antonio*)
- ThAT11: 08:00-09:30 Greatbatch Room
Blood Pressure Monitoring (Oral Session)
Chair: Mukkamala, Ramakrishna (*Michigan State University*)
Co-Chair: Sugimachi, Masaru (*Natl Cardio Center Research Inst*)
- 09:15-09:30 ThAT10.6
Consensus Motifs as Adaptive and Efficient Predictors for Acute Hypotensive Episodes
 Pathinarupothi, Rahul Krishnan (*Amrita Vishwa Vidyapeetham*); Rangan, Ekanath* (*Amrita Vishwa Vidyapeetham*)
- 08:00-08:15 ThAT11.1
Model-Based Estimation of Radial Artery Blood Pressure from Recordings of the Nexfin Monitor
 Imaduddin, Syed (*Massachusetts Institute of Technology*); Heldt, Thomas* (*Massachusetts Institute of Technology*)
- 08:15-08:30 ThAT11.2
A Simple Method for Reconstruction of Continuous Brachial Artery Pressure from Continuous Digital Artery Pressure in Humans
 Zhang, Pandeng* (*Chinese Academy of Sciences*); Qiu, Quanli (*SIAT*); Luo, Ying (*Shenzhen sun yat-sen cardiovascular hospital*); Zhou, Yanxia (*Shenzhen Municipal Second People's Hospital, Guangdong Pro*); Liu, Jia (*Chinese Academy of Sciences*)
- 08:30-08:45 ThAT11.3
Measurement of Carotid Blood Pressure and Local Pulse Wave Velocity Changes during Cuff Induced Hyperemia
 PM, Nabeel* (*Indian Institute of Technology Madras*); Karthik, Srinivasa (*HTIC IIT Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)
- 08:45-09:00 ThAT11.4
Analysis of a GMR-Based Plethysmograph Transducer and Its Utility for Real-Time Blood Pressure Measurement
 Chugh, Vinit Kumar* (*IIT Kharagpur*); Kalyan, Kubera (*IIT Kharagpur*); Chandrika Sreekantam, Anoop (*Indian Institute of Space Science and Tech. Trivandrum*); Patra, Amit (*Indian Institute of Tech. Kharagpur*); Negi, Shubham (*IIT Kharagpur*)
- 09:00-09:15 ThAT11.5
Regression Analysis and Transfer Function in Estimating the Parameters of Central Pulse Waves from Brachial Pulse Wave
 Chai, Rui (*Northeastern University*); Li, Siman (*Northeastern University*); Xu, Lisheng* (*Northeastern University*); Yao, Yang (*Northeastern University*); Hao, Liling (*Northeastern University*)

09:15-09:30	ThAT11.6	Novel Blood Pressure Estimation Method using Single Photoplethysmography Feature Chen, Yang (<i>Harbin Institute of Technology Shenzhen Graduate School</i>); Cheng, Shuo (<i>Harbin Institute of Technology</i>); Wang, Tong (<i>Harbin Institute of Technology, Shenzhen Graduate School</i>); Ma, Heather Ting* (<i>Harbin Institute of Technology Shenzhen Graduate School</i>)	08:30-08:45	ThAT13.3	Using Impedance to Track Fracture Healing Rates in Mice in Vivo: A Pilot Study Lin, Monica* (<i>UC Berkeley / UC San Francisco</i>); Hu, Diane (<i>Univ. of California - San Francisco</i>); Yang, Frank (<i>Univ. of California - San Francisco</i>); Herfat, Safa (<i>Univ. of California, San Francisco</i>); Bahney, Chelsea (<i>Univ. of California, San Francisco</i>); Marmor, Meir (<i>Univ. of California, San Francisco</i>); Maharbiz, Michel (<i>Univ. of California, Berkeley</i>)
ThAT12: 08:00-09:30		Geddes Room			
Modeling of Modern Devices and Technologies with Computational Human Phantoms – I (Invited Session) Chair: Hyde, Damon (<i>Boston Children's Hospital and Harvard Medical School</i>)			08:45-09:00	ThAT13.4	Effect of Temperature Variation on Remote Pressure Readout in Wirelessly Powered Intracranial Pressure Monitoring System Khan, Muhammad Waqas Ahmad (<i>Tampere Univ. of Tech.</i>); Rizwan, Muhammad (<i>Tampere Univ. of Tech., Finland</i>); Sydänheimo, Lauri (<i>Tampere Univ. of Tech.</i>); Ratmat-Samii, Yahya (<i>Univ. of California, Los Angeles</i>); Ukkonen, Leena (<i>Tampere Univ. of Tech.</i>); Bjorninen, Toni* (<i>Tampere Univ. of Tech.</i>)
08:00-08:15	ThAT12.1	Computational Modeling for Regulatory Science at the FDA Iacono, Maria Ida* (<i>Food and Drug Administration</i>); Rajan, Sunder (<i>Food and Drug Administration</i>); Kainz, Wolfgang (<i>Food and Drug Administration</i>); Lochner, Donna R. (<i>Food and Drug Administration (FDA)</i>); Angelone, Leonardo M. (<i>US Food and Drug Administration, Center for Devices and Radiolog</i>)	09:00-09:15	ThAT13.5	Implantable Bladder Volume Sensor based on Resistor Ladder Network Composed of Conductive Hydrogel Composite Kim, Mi Kyung* (<i>Korea Advanced Institute of Science and Tech. (KAIST)</i>); Kim, Hyojung (<i>Korea Advanced Institute of Science and Tech.</i>); Jung, Yeon Su (<i>KAIST</i>); AlAdem, Kenana (<i>Khalifa University</i>); Bawazir, Sarah (<i>Khalifa University</i>); Stefanini, Cesare (<i>Scuola Superiore Sant'Anna</i>); Lee, Hyunjoo Jenny (<i>Korea Advanced Institute of Science and Tech. (KAIST)</i>)
08:15-08:30	ThAT12.2	Application of Realistic Human Head Models for Evaluating induced Electric Fields: A Discussion on Feasible Model Creation, Influential Model Assumptions, and Necessary Degree of Complexity Wenger, Cornelia* (<i>Novocure GmbH</i>); Miranda, Pedro Cavaleiro (<i>Faculdade de Ciências, Universidade de Lisboa</i>)	09:15-09:30	ThAT13.6	Integrating Coupled Magnetoelastic Sensors onto a Flexible Hernia Mesh for High Dynamic Range Strain Measurements Liao, Amy* (<i>UC Berkeley</i>); Harris, Hobart (<i>UCSF</i>); Maharbiz, Michel (<i>University of California, Berkeley</i>)
08:30-08:45	ThAT12.3	Neurotrauma Evaluation in a 3D Electro-Mechanical Model of a Nerve Bundle Cinelli, Ilaria* (<i>NUI of Galway</i>); Destrade, Michel (<i>CNRS / Universite Pierre et Marie Curie</i>); Duffy, Maeve (<i>NUI Galway</i>); McHugh, Peter (<i>NUI of Galway</i>)	ThAT14: 08:00-09:30 Schaldach Room Machine Learning in Imaging I (Oral Session) Chair: Ye, Jong Chul (<i>Korea Advanced Inst of Science and Tech</i>)		
08:45-09:00	ThAT12.4	Subject Specific Bioelectric Head Modeling: Effects of Numerical Method Choice and Clinical Considerations Hyde, Damon* (<i>Boston Children's Hospital and Harvard Medical School</i>); Dannhauer, Moritz (<i>Univ. of Utah</i>); Brooks, Dana (<i>Northeastern Univ.</i>); Warfield, Simon K. (<i>Harvard Medical School</i>)	08:00-08:15	ThAT14.1	Abnormality Detection of Mammograms by Discriminative Dictionary Learning on DSIFT Descriptors Tavakoli, Nasrin (<i>Isfahan Univ. of Technology</i>); Karimi, Maryam (<i>Isfahan Univ. of Technology</i>); Nejadi, Mansour (<i>Isfahan Univ. of Technology</i>); Karimi, Nader (<i>Isfahan Univ. of Technology</i>); Soroushmehr, S.M.Reza* (<i>Univ. of Michigan, Ann Arbor</i>); Samavi, Shadrokh (<i>McMaster Univ.</i>); Najarian, Kayvan (<i>Univ. of Michigan - Ann Arbor</i>)
09:00-09:15	ThAT12.5	Evaluating Electric Field Distribution in the Heads of Patients Treated with Tumor Treating Fields using Realistic Human Models Created with a Deformable Template Urman, Noa (<i>Novocure</i>); Hershkovich, Hadas Sara (<i>Novocure Ltd., Haifa, Israel</i>); Weinberg, Uri (<i>Novocure</i>); Wenger, Cornelia (<i>Novocure GmbH</i>); Kirson, Eilon David (<i>Novocure</i>); Bomzon, Ze'ev* (<i>Novocure</i>)	08:15-08:30	ThAT14.2	Exudate Detection for Diabetic Retinopathy with Convolutional Neural Networks Yu, Shuang (<i>Commonwealth Scientific and Industrial Research Organization</i>); Xiao, Di* (<i>Commonwealth Scientific and Industrial Research Organization</i>); Kanagasingam, Yogi (<i>The Australian eHealth Research Centre, Perth, CSIRO.</i>)
09:15-09:30	ThAT12.6	Modeling Fibrous Tissues via Boundary Element Method using a Thin-Wire Approximation: Test Results Makarov, Sergey* (<i>Electrical and Computer Engineering, Worcester Polytechnic Instit</i>); Pascual-Leone, Alvaro (<i>Harvard Medical School</i>); Nummenmaa, Aapo (<i>Massachusetts General Hospital</i>)	08:30-08:45	ThAT14.3	CEUS-Based Classification of Liver Tumors with Deep Canonical Correlation Analysis and Multi-Kernel Learning Lehang, Guo (<i>Shanghai Tenth People's Hospital</i>); Dan, Wang* (<i>Shanghai Tenth People's Hospital</i>); Huixiong, Xu (<i>Shanghai Tenth People's Hospital</i>); Yiyi, Qian (<i>Shanghai University</i>); Chaofeng, Wang (<i>Shanghai University</i>); Zheng, Xiao (<i>Shanghai University</i>); Zhang, Qi (<i>Shanghai University</i>); Shi, Jun (<i>Shanghai University</i>)
ThAT13: 08:00-09:30		Dunn Room			
Implantable Sensors I (Oral Session) Chair: Song, Dong (<i>University of Southern California</i>)			08:45-09:00	ThAT14.4	A Multi-View Deep Convolutional Neural Networks for Lung Nodule Segmentation Wang, Shuo (<i>Chinese Academy of Sciences</i>); Mu, Zhou (<i>Stanford Univ.</i>); Gevaert, Olivier (<i>The Stanford Center for Biomedical Informatics Research, Stanfor</i>); Tang, Zhenchao (<i>Shandong Univ., Weihai</i>); Dong, Di (<i>Chinese Academy of Sciences</i>); Liu, Zhenyu (<i>Institute of Automation, Chinese Academy of Sciences</i>); Tian, Jie* (<i>Chinese Academy of Sciences</i>)
08:00-08:15	ThAT13.1	Chronic Multi-Region Recordings from the Rat Hippocampus in Vivo with a Flexible Parylene-Based Multi-Electrode Array Xu, Huijing* (<i>Univ. of Southern California</i>); Meng, Ellis (<i>Univ. of Southern California</i>); Berger, Theodore (<i>Univ. of Southern California</i>); Song, Dong (<i>Univ. of Southern California</i>)			
08:15-08:30	ThAT13.2	Development and Characterization of a Fully Flexible Stimulation System based on Embedded Liquid Metal Channels David, Romain* (<i>Keio University</i>); Miki, Norihisa (<i>University</i>)			

09:00-09:15	ThAT14.5	Surgical-Tools Detection based on Convolutional Neural Network in Laparoscopic Robot-Assisted Surgery Choi, Bareum (<i>Asan Institute for Life Sciences, Asan Medical Center</i>); Jo, Kyungmin (<i>Asan Institute for Life Sciences, Asan Medical Center</i>); Choi, Songe (<i>Asan Institute for Life Sciences, Asan Medical Center</i>); Choi, Jaesoon* (<i>Asan Institute for Life Sciences, Asan Medical Center</i>)	08:45-09:00	ThAT17.4	Towards VO2 Monitoring: Validation of a Heart Rate based Algorithm Manzoni, Cecilia (<i>EPFL</i>); Carrard, Apolline (<i>VO2Sport</i>); Fontana, Elisa (<i>VO2Sport</i>); Lemay, Mathieu (<i>CSEM</i>); Bertschi, Mattia (<i>CSEM</i>); Delgado-Gonzalo, Ricard* (<i>CSEM</i>)
09:15-09:30	ThAT14.6	Deep Learning-Based Diabetic Retinopathy Assessment on Embedded System Ardiyanto, Igi* (<i>Universitas Gadjah Mada</i>); Adi Nugroho, Hanung (<i>Universitas Gadjah Mada</i>); Buana, Ratna Lestari Budiani (<i>Universitas Gadjah Mada</i>)	09:00-09:15	ThAT17.5	A Portable Platform to Collect and Review Behavioral Data Simultaneously with Neurophysiological Signals Jiang, Tianxiao* (<i>Univ. of Houston</i>); Siddiqui, Hasan (<i>Univ. of Houston</i>); Ray, Shruti (<i>Univ. of Houston</i>); Ince, Nuri Firat (<i>Univ. of Houston</i>); Ozturk, Musa (<i>Univ. of Houston</i>); Asman, Priscella (<i>Univ. of Houston</i>)
ThAT15: 08:00-09:30	Webster Room	Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea I (Minisymposium) Chair: Khoo, Michael (<i>University of Southern California</i>) Co-Chair: Penzel, Thomas (<i>Charite Universitätsmedizin Berlin</i>)	09:15-09:30	ThAT17.6	A Simple, Remote, Video based Breathing Monitor Regev, Nir* (<i>Ben-Gurion University of the Negev</i>); Wulich, Dov (<i>Ben-Gurion University of the Negev</i>)
08:00-08:15	ThAT15.1	Development of Methods for Sleep Disordered Breathing to Identify Phenotypes Penzel, Thomas* (<i>Charite Universitätsmedizin Berlin</i>); Schoebel, Christoph (<i>Charite Universitätsmedizin Berlin</i>); Glos, Martin (<i>Charite-Universitätsmedizin Berlin</i>); Schwarz, Lisa (<i>Charite - Universitätsmedizin Berlin</i>); Prochnow, Lisa (<i>Charite - Universitätsmedizin Berlin</i>); Fietze, Ingo (<i>Charite-Universitätsmedizin Berlin</i>)	ThAT18: 08:00-09:30	Montgomery Hall	Principal and Independent Component Analysis I (Oral Session)
08:15-08:30	ThAT15.2	ECG Detection and Risk-Stratification of Sleep Apnea by the Analysis of Cyclic Variation of Heart Rate Hayano, Junichiro* (<i>Nagoya City University</i>); Watanabe, Eiichi (<i>Fujita Health University</i>); Yoshida, Yutaka (<i>Nagoya City University Graduate School of Medical Sciences</i>); Yuda, Emi (<i>Nagoya City University Graduate School of Medical Sciences</i>)	08:00-08:15	ThAT18.1	On the use of Higher-Order Tensors to Model Muscle Synergies Ebied, Ahmed* (<i>University of Edinburgh</i>); Spyrou, Loukianos (<i>University of Edinburgh</i>); Kinney-Lang, Eli (<i>University of Edinburgh</i>); Escudero, Javier (<i>University of Edinburgh</i>)
08:30-08:45	ThAT15.3	Analyses of Breathing Pattern during Wakefulness as a Tool for Identifying OSA Phenotype and for Predicting the Success of Treatment Yamauchi, Motoo* (<i>Nara Medical University</i>)	08:15-08:30	ThAT18.2	Exploring Optimal Myoelectric Feature Indices for Forearm Control Strategy using Robust Principal Component Analysis Kanoga, Suguru* (<i>National Institute of Advanced Industrial Science and Tech.</i>); Murai, Akihiko (<i>National Institute of Advanced Industrial Science and Tech.</i>); Tada, Mitsunori (<i>National Institute of Advanced Industrial Science and Tech.</i>)
08:45-09:00	ThAT15.4	Dynamic Upper Airway MRI during Sleep Onset: An Experimental Study Kim, Yoon-Chul* (<i>Samsung Medical Center, Sungkyunkwan Univ. School of Medicine</i>); Khoo, Michael (<i>Univ. of Southern California</i>); Nayak, Krishna (<i>Univ. of Southern California</i>)	08:30-08:45	ThAT18.3	Coupling Scatter Correction with Bandpass Filtering for Pre-Processing in the Quantitative Analysis of Glucose from Near-Infrared Spectra Alrezi, Osamah* (<i>Sheffield University</i>); Patchava, Krishna Chaitanya (<i>The University of Sheffield</i>); Benaissa, Mohammed (<i>The University of Sheffield</i>); Alshebellei, Saleh (<i>KSU</i>)
ThAT17: 08:00-09:30	Eindhoven Hall	Signal Processing – Wearable Devices (Oral Session) Chair: Barbieri, Riccardo (<i>Politecnico di Milano</i>)	08:45-09:00	ThAT18.4	Modified Thresholding Technique of MMSPCA for Extracting Respiratory Activity from Short Length PPG Signal Motin, Mohammad Abdul (<i>PhD Student, University of Melbourne</i>); Karmakar, Chandan* (<i>Deakin University</i>); Palaniswami, Marimuthu (<i>The University of Melbourne</i>)
08:00-08:15	ThAT17.1	Remote Gaze Tracking System for 3D Environments Liu, Congcong* (<i>Hong Kong University of Science and Technology</i>); Herrup, Karl (<i>Hong Kong University of Science and Technology</i>); Shi, Bertram E (<i>Hong Kong University of Science and Technology</i>)	09:00-09:15	ThAT18.5	Channels Selection using Independent Component Analysis and Scalp Map Projection for EEG-Based Driver Fatigue Classification Chai, Rifai* (<i>Univ. of Tech., Sydney</i>); Naik, Ganesh R (<i>Univ. of Tech. Sydney</i>); Ling, Steve (<i>Univ. of Tech. Sydney</i>); Tran, Yvonne (<i>Univ. of Tech., Sydney</i>); Craig, Ashley (<i>The Univ. of Sydney</i>); Nguyen, Hung T. (<i>Univ. of Tech., Sydney</i>)
08:15-08:30	ThAT17.2	Estimation of Blood Pressure from Non-Invasive Data Shukla, Satya Narayan* (<i>University of Massachusetts Amherst</i>)	09:15-09:30	ThAT18.6	Motion Artifact Reduction in PPG Signals based on Periodic Component Factorization Lo, Po Wen* (<i>The Chinese University of Hong Kong</i>); Li, Charles X.-T. (<i>The Chinese University of Hong Kong</i>); Wang, Jiankun (<i>The Chinese University of Hong Kong</i>); Meng, Max Q.-H. (<i>The Chinese University of Hong Kong</i>)
08:30-08:45	ThAT17.3	Assessment of Instantaneous Cardiovascular Dynamics from Video Plethysmography Valenza, Gaetano (<i>Univ. of Pisa</i>); Iozzia, Luca (<i>Politecnico di Milano</i>); Cerina, Luca (<i>Politecnico di Milano</i>); Mainardi, Luca (<i>Politecnico di Milano</i>); Barbieri, R.* (<i>Politecnico di Milano</i>)	ThBT1: 10:50-12:20	Roentgen Hall	Neural Hyperscanning: Toward Multiple-Brain Models of Cognitive Functions (Minisymposium) Chair: Astolfi, Laura (<i>University of Rome Sapienza</i>) Co-Chair: Ding, Mingzhou (<i>University of Florida</i>)
			10:50-11:05	ThBT1.1	Quantifying Brain-to-Brain Synchrony with Total Interdependence Wan, Lu (<i>Univ. of Florida</i>); Ding, Mingzhou* (<i>Univ. of Florida</i>)

11:20-11:35	ThBT1.3	Linear and Nonlinear Hyperlink Analysis based on Subspace Decomposition and MIC for Two-Person Neuroscience Study Zhang, Zong (<i>Beijing Normal Univ., Key Laboratory of Cognitive Neuroscience</i>); Zhao, Yang (<i>Beijing Normal Univ., Key Laboratory of Cognitive Neuroscience</i>); Dai, Ruina (<i>Key Laboratory of Cognitive Neuroscience and Learning, Beijing No</i>); Duan, Lian (<i>Key Laboratory of Cognitive Neuroscience and Learning, Beijing No</i>); Li, Zheng (<i>Beijing Normal Univ.</i>); Zhu, Chaozhe* (<i>Key Laboratory of Cognitive Neuroscience and Learning, Beijing No</i>); Long, Zhiying (<i>Beijing Normal Univ.</i>)	12:05-12:20	ThBT3.6	Environment Effects at Phantom-Based X-Ray Pose Measurements Thuerauf, Sabine* (<i>fortiss GmbH An-Institut Technische Univ. München Mailing</i>); Koerner, Mario (<i>Siemens Healthcare GmbH</i>); Vogt, Florian (<i>Siemens Healthcare GmbH</i>); Hornung, Oliver (<i>Siemens Healthcare GmbH</i>); Nasser, M. Ali (<i>Technische Univ. Muenchen</i>); Knoll, Alois (<i>Tech. Univ. Munich</i>)
11:50-12:05	ThBT1.5	Hyperscanning: A New Approach to the Study of the Physiological Basis of Human Social Interaction Astolfi, Laura* (<i>University of Rome Sapienza</i>)	ThBT4: 10:50-12:20 Min Room New Sensing Techniques II (Oral Session)		
ThBT2: 10:50-12:20 Cho Room Radiation Induced Acoustic Imaging (Minisymposium) Chair: Min, Jung-Joon (<i>Chonnam National Univ. Medical School</i>) Co-Chair: Lee, Changho (<i>Chonnam National Univ. Medical School</i>)		10:50-11:05	ThBT2.1	Development of an Intraluminal Intestinal Photoplethysmography Sensor Patel, Zaibaa* (<i>City, University of London</i>); Thaha, Mohamed (<i>The Royal London Hospital, Bart's Health NHS Trust</i>); Kyriacou, Panayiotis (<i>City University London</i>)	
10:50-11:05	ThBT2.1	Theranostic with Radiation-Induced Ultrasound Emission (TRUE) Xiang, Liangzhong* (<i>University of Oklahoma</i>)	11:05-11:20	ThBT4.2	Instrumentation, Electrode Choice and Challenges in Human Skin Memristor Measurement Pabst, Oliver* (<i>University of Oslo</i>); Tronstad, Christian (<i>Oslo University Hospital</i>); Martinsen, Ørjan G (<i>University of Oslo</i>)
11:05-11:20	ThBT2.2	Targeted Molecular Theranostics using Engineered Microbes Min, Jung-Joon* (<i>Chonnam National University Medical School</i>)	11:20-11:35	ThBT4.3	Flexible Organic TFT Bio-Signal Amplifier using Reliable Chip Component Assembly Process with Conductive Adhesive Yoshimoto, Shusuke* (<i>Osaka Univ.</i>); Uemura, Takafumi (<i>Osaka Univ.</i>); Akiyama, Mihoko (<i>Osaka Univ.</i>); Ihara, Yoshihiro (<i>Research & Development Division, Shinko Electric Industries Co.</i>); Otake, Satoshi (<i>Research & Development Division, Shinko Electric Industries Co.</i>); Fujii, Tomoharu (<i>Research & Development Division, Shinko Electric Industries Co.</i>); Araki, Teppei (<i>Osaka Univ.</i>); Sekitani, Tsuyoshi (<i>Osaka Univ.</i>)
11:20-11:35	ThBT2.3	Photoacoustic Imaging with Biodegradable Agents Lee, Changho* (<i>Chonnam National University Medical School</i>); Kim, Chulhong (<i>Pohang University of Science and Technology</i>)	ThBT3: 10:50-12:20 Park Room X-Ray and CT Imaging I (Oral Session) Chair: Moratal, David (<i>Universitat Politècnica de València</i>)		
10:50-11:05	ThBT3.1	Interactive Patient-Specific 3D Approximation of Scapula Bone Shape from 2D X-Ray Images using Landmark-Constrained Statistical Shape Model Fitting Mutsvangwa, Tinashe Ernest Muzvidzwa* (<i>University of Cape Town</i>); Wasswa, William (<i>Mbarara University of Technology</i>); Burdin, Valérie (<i>Institut Telecom/Telecom Bretagne - INSERM U650</i>); Borotikar, Bhushan (<i>IMT Atlantique</i>); Douglas, Tania S (<i>University of Cape Town</i>)	11:35-11:50	ThBT4.4	Continuous Systolic and Diastolic Blood Pressure Estimation Utilizing Long Short-Term Memory Network Lo, Po Wen* (<i>The Chinese University of Hong Kong</i>); Li, Charles X.-T. (<i>The Chinese University of Hong Kong</i>); Wang, Jiankun (<i>The Chinese University of Hong Kong</i>); Cheng, Jiyu (<i>The Chinese University of Hong Kong</i>); Meng, Max Q.-H. (<i>The Chinese University of Hong Kong</i>)
11:05-11:20	ThBT3.2	Arytenoid Cartilage Feature Point Detection using Laryngeal 3D CT Images in Parkinson's Disease Desai, Nandakishor* (<i>University of Melbourne</i>); Rao, Aravinda (<i>The University of Melbourne</i>); Palaniswami, Paari (<i>Monash University</i>); Thyagarajan, Dominic (<i>Monash Medical Centre</i>); Palaniswami, Marimuthu (<i>The University of Melbourne</i>)	11:50-12:05	ThBT4.5	An in Vivo MEMS Sensor System for Percutaneous Measurement of Urinary Bladder Clausen, Ingelin* (<i>SINTEF Digital, Norway</i>); W Tvedt, Lars Geir (<i>SINTEF ICT, Norway</i>); Hellandsvik, Are (<i>SINTEF Digital</i>); Rognlien, Dag Kristian (<i>SINTEF Digital</i>); Glott, Thomas (<i>Sunnaas Rehabilitation Hospital</i>)
11:20-11:35	ThBT3.3	Multiple Mucociliary Transit Marker Tracking in Synchrotron X-Ray Images using the Global nearest Neighbor Method Jung, Hye-Won* (<i>UNISA</i>); Lee, Ivan (<i>The Univ. of South Australia</i>); Lee, Sang-Heon (<i>The Univ. of South Australia</i>); Parsons, David (<i>Women's and Children's Hospital</i>); Donnelley, Martin (<i>Univ. of Adelaide, Women's and Children's Hospital</i>)	12:05-12:20	ThBT4.6	Performance Assessment of Dry Electrodes for Wearable Long Term Cardiac Rhythm Monitoring: Skin-Electrode Impedance Spectroscopy Bosnjak, Antonio (<i>Univ. de Carabobo.</i>); Kennedy, Alan (<i>Intelesens</i>); Linares, Pedro (<i>Univ. of Carabobo</i>); Borges, Maira (<i>Univ. de Carabobo</i>); McLaughlin, James (<i>Univ. of Ulster</i>); Escalona, Omar Jacinto* (<i>Univ. of Ulster</i>)
11:35-11:50	ThBT3.4	A One-Dimensional Fluid Simulation Method of the Narrow Vessel for the Real-Time Angiography Simulation Lee, Jongbeom (<i>KAIST (Korea Advanced Institute of Science and Technology)</i>); Kim, Myeongjin (<i>KAIST (Korea Advanced Institute of Science and Technology)</i>); Lee, Doo Yong* (<i>KAIST</i>)	ThBT5: 10:50-12:20 Lee Room Emerging Technologies for Cuffless Unobtrusive Blood Pressure Monitoring: Celebration of 200th Birth Anniversary of Carl Ludwig (Minisymposium) Chair: Carey, Carole C. (<i>Former U.S. Food and Drug Administration</i>) Co-Chair: Ding, Xiao-Rong (<i>The Chinese University of Hong Kong</i>)		
11:50-12:05	ThBT3.5	The use of Subject-Specific Finite Element Analysis of L1-L4 Vertebra to Screening Osteoporosis in Postmenopausal Women Alacreu, Elena (<i>Center for Biomaterials and Tissue Engineering, Universitat Poli</i>); Arana, Estanislao (<i>Radiology Dept., Fundación Instituto Valenciano de Oncología</i>); Moratal, David* (<i>Universitat Politècnica de València</i>)	10:50-11:05	ThBT5.1	Measurement and Analysis of Daily Blood Pressure over a Two-Year Period Chen, Wenxi* (<i>Univ. of Aizu</i>); Tamura, Toshiyo (<i>Waseda Univ.</i>)
			11:05-11:20	ThBT5.2	Method for Wearable Central Blood Pressure Monitoring and Its Multi-Signal Conditioning Approach Fierro, Germán (<i>Univ. de la Republica</i>); Silveira, Fernando* (<i>Univ. de la Republica</i>); Armentano, Ricardo Luis (<i>Republic Univ.</i>)

11:20-11:35	ThBT5.3	A Novel Deep Learning based Approach for Continuous Blood Pressure Estimation Miao, Fen (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>); Liu, Xueliang (<i>Hefei University of Technology</i>); Li, Ye* (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>)	ThBT7: 10:50-12:20 Motion Analysis (Oral Session) Chair: Thomas, Louise (<i>Simon Fraser University</i>)	Herrick Room
11:35-11:50	ThBT5.4	Flexible Electronics for Cuffless Blood Pressure Measurements Zhao, Ni* (<i>The Chinese University of Hong Kong</i>)	10:50-11:05 Human Locomotion Analysis: Identifying a Dynamic Mapping between Upper and Lower Limb Joints using the Koopman Operator Boudali, A. Mounir* (<i>The University of Sydney</i>); Sinclair, Peter James (<i>The University of Sydney</i>); Smith, Richard (<i>The University of Sydney</i>); Manchester, Ian (<i>Umeå University</i>)	ThBT7.1
11:50-12:05	ThBT5.5	Unobtrusive Sensing of Intra-Aneurysm Sac Pressure in Patients after Endovascular Aneurysm Repair Poon, Carmen C. Y.* (<i>The Chinese University of Hong Kong</i>); Zheng, Yali (<i>The Chinese University of Hong Kong</i>); Lau, James Y. W. (<i>The Chinese University of Hong Kong</i>)	11:05-11:20 Fusing Motion-Capture and Inertial Measurements for Improved Joint State Recovery: An Application for Sit-to-Stand Actions Matthew, Robert, Peter* (<i>UC Berkeley</i>); Seko, Sarah (<i>UC Berkeley</i>); Bajcsy, Ruzena (<i>UC Berkeley, CITRIS</i>)	ThBT7.2
12:05-12:20	ThBT5.6	A Systematic Classification of Cuffless Blood Pressure Monitoring Techniques: The Three-Layer Framework Sola, Josep (<i>CSEM - Centre Suisse d'Electronique et Microtechnique</i>); Proença, Martin (<i>Swiss Center for Electronics and Microtechnology (CSEM)</i>); Braun, Fabian (<i>CSEM SA</i>); Delgado-Gonzalo, Ricard* (<i>CSEM</i>); Ferrario, Damien (<i>CSEM</i>); Renevey, Philippe (<i>CSEM</i>); Verjus, Christophe (<i>CSEM</i>); Lemay, Mathieu (<i>CSEM</i>); Chételat, Olivier (<i>CSEM</i>); Bertschi, Mattia (<i>CSEM</i>); Krauss, Jens (<i>CSEM</i>)	11:20-11:35 Quantifying the Effects of On-the-Fly Changes of Seating Configuration on the Stability of a Manual Wheelchair Thomas, Louise* (<i>Simon Fraser University</i>); Borisoff, Jaimie F. (<i>British Columbia Institute of Technology</i>); Sparrey, Carolyn (<i>Simon Fraser University</i>)	ThBT7.3
ThBT6: 10:50-12:20 Biomaterials and Patterning I (Oral Session)	Zworykin Room		11:35-11:50 Simulation of Oxygen Uptake and Leg Joint Reaction Force during Ergometer Exercise under Altered Gravity Tagawa, Yoshihiko (<i>Kurume Univ.</i>); Yamamoto, Naosuke* (<i>Kurume Univ.</i>); Omoto, Masayuki (<i>Kurume Univ.</i>); Matsuse, Hiroo (<i>Kurume Univ. Hospital</i>); Shiba, Naoto (<i>Kurume Univ. Hospital</i>)	ThBT7.4
10:50-11:05	ThBT6.1	Protein Patterning using Germanium as a Sacrificial Layer Lu, Bochao* (<i>University of California Berkeley</i>); Maharbiz, Michel (<i>University of California, Berkeley</i>)	11:50-12:05 Analysis of Gait Pattern during Stair Walk for Improvement of Gait Training Robot Park, Sang-Eun (<i>Biomedical Engineering Research Center, Asan Medical Center</i>); Ho, Ye Ji (<i>the Biomedical Engineering Research Center, Asan Medical Center</i>); Moon, Youngjin (<i>Asan Medical Center</i>); Choi, Jaesoon* (<i>Asan Institute for Life Sciences, Asan Medical Center</i>)	ThBT7.5
11:05-11:20	ThBT6.2	Conducting Polymer Microcontainers for Biomedical Applications Antensteiner, Martin (<i>University of Houston</i>); Khorrami, Milad (<i>University of Houston</i>); Fallahianbijan, Fatemeh (<i>Penn State University</i>); Borhan, Ali (<i>The Pennsylvania State University</i>); Abidian, Mohammad Reza* (<i>University of Houston</i>)	12:05-12:20 Body Pose Estimation in Depth Images for Infant Motion Analysis Hesse, Nikolas* (<i>Fraunhofer Institute of Optronics, System Technologies and Image</i>); Schröder, A. Sebastian (<i>Dept. of Paediatric Neurology and Dev. Medicine, D</i>); Müller-Felber, Wolfgang (<i>Dept. of Paediatric Neurology and Developmental Medicine, D</i>); Bodensteiner, Christoph (<i>Fraunhofer Institute of Optronics, System Technologies and Image</i>); Arens, Michael (<i>Fraunhofer Institute of Optronics, System Technologies and Image</i>); Hofmann, Ulrich G. (<i>University of Freiburg</i>)	ThBT7.6
11:20-11:35	ThBT6.3	Mechanical Properties of Triply Periodic Minimal Surface Structures Mimicking the Microstructure of Woodpecker's Cranial Bone Ni, Yikun (<i>Beihang University</i>); Wang, Lizhen (<i>Beihang University</i>); Fan, Yubo* (<i>Beihang University</i>)	ThBT8: 10:50-12:20 Brain-Computer Interface II (Oral Session)	Schwan Room
11:35-11:50	ThBT6.4	Self-Spreading Method for Forming Lipid Bilayer on a Patterned Agarose Gel: Toward Precise Lipid Bilayer Patterning Shimba, Kenta* (<i>Tokyo Institute of Technology</i>); Shoji, Kazuma (<i>Tokyo Institute of Technology</i>); Miyamoto, Yoshitaka (<i>Nagoya University</i>); Yagi, Tohru (<i>Tokyo Institute of Technology</i>)	10:50-11:05 Electrocortical Amplitude Modulations of Human Level-Ground, Slope, and Stair Walking Luu, Trieu Phat* (<i>University of Houston</i>); Brantley, Justin (<i>University of Houston</i>); Zhu, Fangshi (<i>University of Houston</i>); Contreras-Vidal, José (<i>University of Houston</i>)	ThBT8.1
11:50-12:05	ThBT6.5	Tunable Nanostructured Conducting Polymers for Neural Interface Applications Abidian, Mohammad Reza* (<i>University of Houston</i>); Antensteiner, Martin (<i>University of Houston</i>)	11:05-11:20 EEG-Guided Robotic Mirror Therapy System for Lower Limb Rehabilitation Marghi, Yeganeh M.* (<i>Northeastern Univ.</i>); Farjadian, Amir Bahador (<i>Northeastern Univ.</i>); Yen, Sheng-che (<i>Northeastern Univ.</i>); Erdogmus, Deniz (<i>Northeastern Univ.</i>)	ThBT8.2
12:05-12:20	ThBT6.6	Simple and Fast Polydimethylsiloxane (PDMS) Patterning using a Cutting Plotter and Vinyl Adhesives to Achieve Etching Results Kim, Hyun (<i>Seoul National University</i>); Yoo, Sunyoung (<i>Seoul National University</i>); Kim, Ji Sung (<i>Seoul National University</i>); Wang, Zihuan (<i>Seoul National University</i>); Lee, Woon-Hee (<i>Seoul National University</i>); Koo, Kyojin (<i>University of Ulsan</i>); Seo, Jong Mo* (<i>Seoul National University, School of Engineering</i>); Cho, Dong Il (<i>Seoul National University</i>)	11:20-11:35 Boosting Performance in Brain-Machine Interface by Classifier-Level Fusion based on Accumulative Training Models from Multi-Day Data Yang, Huijuan* (<i>Institute for Infocomm Research, Agency for Science, Tech.</i>); Libedinsky, Camilo (A*STAR); Guan, Cuntai (<i>Nanyang Tech. Univ.</i>); Ang, Kai Keng (<i>Institute for Infocomm Research</i>); So, Rosa (<i>Institute for Infocomm Research</i>)	ThBT8.3

11:35-11:50	ThBT8.4	Stop State Classification in Intracortical Brain-Machine-Interface Koh, Tze Hui (<i>Institute for Infocomm Research</i>); Libedinsky, Camilo (A*STAR); Guan, Cuntai (<i>Nanyang Technological University</i>); Ang, Kai Keng (<i>Institute for Infocomm Research</i>); So, Rosa* (<i>Institute for Infocomm Research</i>)	ThBT10: 10:50-12:20	Schmitt Room	Authentication using Biological Signals (Minisymposium) Chair: Park, Kwang S. (<i>Seoul National University</i>) Co-Chair: Kim, Jason (<i>Korea Internet and Security Agency</i>)
11:50-12:05	ThBT8.5	A Frequency Recognition Method based on Multitaper Spectral Analysis and SNR Estimation for SSVEP-Based Brain-computer Interface Yang, Chen (<i>Tsinghua University</i>); Xu, Han (<i>Tsinghua University</i>); Wang, Yijun (<i>Institute of Semiconductors, Chinese Academy of Sciences</i>); Gao, Xiaorong* (<i>Tsinghua University</i>)	10:50-11:05	ThBT10.1	Merging Bio-Signals with Traditional Biometrics: Taking the Best of Both Worlds Sanchez-Reillo, Raul* (<i>Carlos III University of Madrid, University Group for Identifica</i>); Miranda-Escalada, Antonio (<i>Carlos III University of Madrid, University Group for Identifica</i>); Fernandez-Lopez, Pablo (<i>Carlos III University of Madrid, University Group for Identifica</i>); Sanchez-Casanova, Jorge (<i>Carlos III University of Madrid, University Group for Identifica</i>)
12:05-12:20	ThBT8.6	Learning to Control an SSVEP-Based BCI Speller in Naïve Subjects Zhihua Tang, Zhihua (<i>Hebei University of Technology</i>); Wang, Yijun* (<i>Institute of Semiconductors, Chinese Academy of Sciences</i>); Dong, Guoya (<i>Hebei University of Technology</i>); Pei, Weihua (<i>Institute of semiconductors, CAS</i>); Chen, Hongda (<i>institute of semiconductors, CAS</i>)	11:05-11:20	ThBT10.2	Development of Multi-Modal Bio-Signal Authentication Platform Kim, Jason* (<i>Korea Internet & Security Agency</i>); Lee, Saewoom (<i>KISA (Korea Internet & Security Agency)</i>)
ThBT9: 10:50-12:20	Plonsey Room	Neural Stimulation I (Oral Session) Chair: Jun, Sung Chan (<i>Gwangju Institute of Science and Tech.</i>) Co-Chair: Zhang, Cheng (<i>Chinese Academy of Sciences, Beijing</i>)	11:20-11:35	ThBT10.3	Implementing Biology-to-Machine (B2M) Protocol for a Telebiometric Biosignal Authentication Application Caras, John* (<i>Disney-Visa</i>)
10:50-11:05	ThBT9.1	A 64-Channels Neural Interface for Biopotentials Recording and PNS Stimulation Bisoni, Lorenzo (<i>Università di Cagliari</i>); Carboni, Caterina* (<i>Università di Cagliari</i>); Puddu, Roberto (<i>Università di Cagliari</i>); Barabino, Gianluca (<i>University of Cagliari</i>); Pani, Danilo (<i>University of Cagliari</i>); Raffo, Luigi (<i>University of Cagliari</i>); Mueller, Matthias (<i>University of Freiburg</i>); Stieglitz, Thomas (<i>University of Freiburg</i>); del Valle, Jaume (<i>Universitat Autònoma de Barcelona</i>); de la Oliva, Natàlia (<i>Universitat Autònoma de Barcelona</i>); Delgado-Martinez, Ignacio (<i>National University of Singapore</i>); Navarro, Xavier (<i>Universitat Autònoma de Barcelona</i>); Barbaro, Massimo (<i>University of Cagliari</i>)	11:35-11:50	ThBT10.4	Human Identification using Non-Invasive Biological Signals Kim, Jeehoon (<i>Seoul National University</i>); Park, Kwang S.* (<i>Seoul National University</i>)
11:05-11:20	ThBT9.2	Auditory Responses to Short-Wavelength Infrared Neural Stimulation of the Rat Cochlear Nucleus Jiang, Bin (<i>Chongqing Univ.</i>); Xia, Nan (<i>Chongqing Univ.</i>); Hou, Wensheng* (<i>Bioengineering Inst of Chongqing Univ</i>)	ThBT11: 10:50-12:20	Greatbatch Room	Recent Advances on Cuff-Less Blood Pressure Measurement Technology I (Minisymposium) Chair: Hahn, Jin-Oh (<i>University of Maryland</i>) Co-Chair: Inan, Omer (<i>Georgia Institute of Technology</i>)
11:20-11:35	ThBT9.3	A Computational Study on Effect of a Transcranial Channel as a Skull/Brain Interface in the Conventional Rectangular Patch-Type Transcranial Direct Current Stimulation Seo, Hyeon (<i>Gwangju Institute of Science and Tech.</i>); Kim, Hyoung-Ihl (<i>Gwangju Institute of Science and Tech.</i>); Jun, Sung Chan* (<i>Gwangju Institute of Science and Tech.</i>)	10:50-11:05	ThBT11.1	A Simultaneous Multisite Assessment of the Pulse Transit Time Di Rienzo, Marco* (<i>Fondazione Don Carlo Gnocchi</i>); Lombardi, Prospero (<i>Fondazione Don Carlo Gnocchi ONLUS</i>); Vaini, Emanuele (<i>Polo Tecnologico, Fondazione Don Carlo Gnocchi</i>)
11:35-11:50	ThBT9.4	Assessing RTMS Effects in MDS: Cross-Modal Comparison between Resting State EEG and fMRI Connectivity Chen, Yafen (<i>University of Oklahoma</i>); Li, Chuang (<i>University of Oklahoma</i>); Shou, Guofa (<i>University of Oklahoma</i>); Urbano, Diamond (<i>Laureate Institute for Brain Research</i>); Cha, Yoon-Hee (<i>Laureate Institute of Brain Research</i>); Ding, Lei (<i>University of Oklahoma</i>); Yuan, Han* (<i>University of Oklahoma</i>)	11:05-11:20	ThBT11.2	A Patch-Type Multi-Parameter Blood Pressure Monitoring Device: Performance of Surrogate Markers in Two Different Conditions Lee, Joonnyong (<i>Seoul National Univ.</i>); Park, Jonghyun (<i>Seoul National Univ., Graduate School</i>); Yang, Seungman (<i>Seoul National Univ.</i>); Sohn, Jangjay (<i>Seoul National Univ.</i>); Yoo, Byeongwook (<i>Interdisciplinary Program of Bioengineering, Seoul National Univ</i>); Lee, Saram (<i>Seoul National Univ. Hospital</i>); Kim, Hee Chan* (<i>Seoul National Univ.</i>)
11:50-12:05	ThBT9.5	Closed-Loop Low-Frequency DBS Restores Thalamocortical Relay Fidelity in a Computational Model of the Motor Loop Huang, Han (<i>Johns Hopkins University</i>); Santaniello, Sabato* (<i>University of Connecticut</i>)	11:20-11:35	ThBT11.3	Non-Invasive and Cuffless Device based on Pulse Transit Time for Blood Pressure Monitoring Sethi, Tavpritesh (<i>Indraprastha Institute of Information Technology Delhi</i>); Prakash, Suriya (<i>CSIR-CEERI</i>); Gupta, Surendra (<i>CSIR-CEERI</i>); Subramanian, Meera (<i>CSIR-CEERI</i>); Morey, Gautam (<i>Sofomo Embedded Solutions Pvt. Ltd</i>); Dash, Debasis (<i>CSIR-IGIB</i>); Agrawal, Anurag (<i>CSIR-IGIB</i>); Pesala, Bala* (<i>CSIR-CEERI</i>)
12:05-12:20	ThBT9.6	Electric Field Stimulation Protects Injured Spinal Cord from Secondary Inflammatory Response in Rats Huo, Xiaolin (<i>Chinese Academy of Sciences</i>); Zhang, Guanghao (<i>Institute of Electrical Engineering, Chinese Academy of Sciences</i>); Wu, Changzhe (<i>Chinese Academy of Sciences</i>); Zhang, Cheng* (<i>Chinese Academy of Sciences, Beijing.</i>)	11:35-11:50	ThBT11.4	Pressure Dependence of Arterial Pulse Wave Velocity: Influence on Calibration of Cuff-Less BP Monitoring based on Arterial Pulse Transit Time Avolio, Alberto P* (<i>Macquarie University</i>); Butlin, Mark (<i>Macquarie University</i>); Shirbani, Fatemeh (<i>Macquarie University, Faculty of Medicine and Health Sciences</i>)
			11:50-12:05	ThBT11.5	Unobtrusive Blood Pressure Monitoring via Pulse Transit Time Kim, Chang-Sei (<i>Univ. of Maryland</i>); Ober, Stephanie (<i>Univ. of Maryland College Park</i>); Carek, Andrew (<i>Georgia Institute of Tech.</i>); Ashouri, Hazar (<i>Georgia Institute of Tech.</i>); Inan, Omer (<i>Georgia Institute of Tech.</i>); Mukkamala, Ramakrishna (<i>Michigan State Univ.</i>); Hahn, Jin-Oh* (<i>Univ. of Maryland</i>)

12:05-12:20 ThBT11.6
Toward Ubiquitous Blood Pressure Monitoring via Pulse Transit Time: Maximum Calibration Period and Acceptable Accuracy
 Mukkamala, Ramakrishna* (*Michigan State University*); Hahn, Jin-Oh (*University of Maryland*)

ThBT12: 10:50-12:20 Geddes Room
Modeling of Modern Devices and Technologies with Computational Human Phantoms – II (Invited Session)
Chair: Nagaoka, Tomoaki (*National Institute Info and Comm Tech*)

10:50-11:05 ThBT12.1
Estimates of Peak Electric Fields Induced by Transcranial Magnetic Stimulation in a Pregnant Patient using an FEM Full-Body Model
 Yanamadala, Janakinadh* (*Worcester Polytechnic Inst.*); Noetscher, Gregory (*Worcester Polytechnic Inst.*); Makarov, Sergey (*Electrical & Computer Engineering, Worcester Polytechnic Instit*); Pascual-Leone, Alvaro (*Harvard Medical School*)

11:05-11:20 ThBT12.2
Posture Transformation for Voxel-Based Anatomical Human Models
 Nagaoka, Tomoaki* (*National Institute Info & Comm Tech*)

11:20-11:35 ThBT12.3
RF MRI Coil Detuning for Anatomically Realistic Respiratory Cycle Modeled with the Finite Element Method
 Tran, Anh Le (*Worcester Polytechnic Institute*); Makarov, Sergey* (*Electrical and Computer Engineering, Worcester Polytechnic Instit*)

11:35-11:50 ThBT12.4
The Visible Human Project Male CAD based Computational Phantom and Its use in Electromagnetic Simulations
 Noetscher, Gregory* (*Worcester Polytechnic Institute*); Htet, Aung Thu (*Worcester Polytechnic Institute*); Maino, Nicholas (*Worcester Polytechnic Institute*); Lacroix, Patrick (*wpi*)

ThBT13: 10:50-12:20 Dunn Room
Implantable Technologies and Systems (Oral Session)

10:50-11:05 ThBT13.1
A Study on Setting of the Fatigue Limit of Temporary Dental Implants
 Kim, Mi Hye* (*Ministry of Food and Drug Safety*); Eunjeong, Cho (*Ministry of Food and Drug Safety*); Jiwon, Lee (*Ministry of Food and Drug Safety*); Eunkyoo, Kim (*Medical Devices Research Division*); Sihyung, Yoo (*Ministry of Food and Drug Safety*); Park, Chang Won (*National Institute of Food and Drug Safety Evaluation, Ministry*)

11:05-11:20 ThBT13.2
A Wirelessly Powered Implantable Radiofrequency Nerve Lesioning System for the Treatment of Chronic Pain
 Tang, Sai Chun* (*Harvard Medical School, Brigham and Women's Hospital*); McDannold, Nathan (*Brigham & Women's Hospital*); Vaninetti, Michael (*University of California San Diego, VA San Diego Healthcare Syst*)

11:20-11:35 ThBT13.3
An IC-Based Controllable Stimulator for Respiratory Muscle Stimulation Investigations
 Castelli, Jonathan* (*Univ. of Bordeaux*); Kolbl, Florian (*Univ. of Bordeaux*); Siu, Ricardo (*Florida International Univ.*); N'Kaoua, Gilles (*CNRS, IMS UMR*); Bornat, Yannick (*IMS Laboratory*); Mangalore, Ashwin (*Univ. of Bordeaux, IMS, CNRS UMR*); Hillen, Brian (*Florida International Univ.*); Abbas, James (*Arizona State Univ.*); Renaud, Sylvie (*Univ. of Bordeaux1, IMS, Enseirb*); Jung, Ranu (*Florida International Univ.*); Lewis, Noëlle (*Univ. of Bordeaux 1, IPB, IMS, CNRS UMR*)

11:35-11:50 ThBT13.4
An Intracardiac Electrogram Model to Bridge Virtual Hearts and Implantable Cardiac Devices
 Ai, Weiwei* (*University of Auckland*); Patel, Nitish (*University of Auckland*); Roop, Parthasarathi (*University of Auckland*); Malik, Avinash (*University of Auckland*); Allen, Nathan (*University of Auckland*); Trew, Mark L. (*University of Auckland*)

11:50-12:05 ThBT13.5
A Wireless Optical Power System for Medical Implants using Low Power Near-IR Laser
 Saha, Anindo* (*American Intl. Univ.-Bangladesh*); Iqbal, Shabab (*American Intl. Univ.-Bangladesh*); Karmaker, Mithun (*American Intl. Univ.-Bangladesh*); Zinnat, Syeda Fairose (*American Intl. Univ.-Bangladesh*); Ali, M. Tanseer (*American Intl. Univ.-Bangladesh*)

ThBT14: 10:50-12:20 Schaldach Room
Machine Learning in Imaging II (Oral Session)
Chair: Unser, Michael (*EPFL*)

10:50-11:05 ThBT14.1
Deep Scattering Convolution Network based Features for Ultrasonic Fatty Liver Tissue Characterization
 Ramkrishna, Bharath* (*Indian institute of Tech. Hyderabad*); P, Rajalakshmi (*Indian Institute of Tech. Hyderabad*)

11:05-11:20 ThBT14.2
NucleiNet: A Convolutional Encoder-Decoder Network for Bio-Image Denoising
 Liu, Zi-chuan* (*Nanyang Technological Univ.*); Hu, Yi-fei (*Nanyang Technological Univ.*); Xu, Hang (*Nanyang Technological Univ.*); Nasser, Lamees (*Bioinformatics Institute (BII), A*STAR*); Boudier, Thomas (*A-STAR*); Coquent, Philippe (*Nanyang Technological Univ.*); Yu, Hao (*Nanyang Technological Univ.*)

11:20-11:35 ThBT14.3
Automated Discrimination of Dementia Spectrum Disorders using Extreme Learning Machine and Structural T1 MRI Features
 Kim, Jongin* (*Gwangju Institute of Science and Tech.*); Lee, Boreom (*Gwangju Institute of Science and Tech. (GIST)*)

11:35-11:50 ThBT14.4
Exploring Transfer Learning for Gastrointestinal Bleeding Detection on Small-Size Imbalanced Endoscopy Images
 Li, Xiuli* (*IBM Research – China*); Zhang, Hao (*ANKON Tech. Co., LTD - China*); Zhang, Xiaolu (*IBM Research – China*); Liu, Hao (*ANKON Tech. Co., LTD - China*); Xie, Guotong (*IBM Research – China*)

11:50-12:05 ThBT14.5
Brain Tumor Segmentation using Cascaded Deep Convolutional Neural Network
 Hussain, Saddam (*University of Engineering and Tech., Taxila*); Anwar, Syed* (*University of Engineering and Tech.*); Majid, Muhammad (*University of Engineering and Tech., Taxila*)

12:05-12:20 ThBT14.6
Surgical Tool Detection in Cataract Surgery Videos through Multi-Image Fusion Inside a Convolutional Neural Network
 Alhaji, Hassan (*Inserm*); Lamard, Mathieu (*Université de Bretagne Occidentale*); Charrière, Katia (*LaTIM - INSERM UMR 1101, Brest, F-29200 France*); Cochener, Béatrice (*CHU Morvan*); Quéllec, Gwenole* (*Inserm*)

ThBT15: 10:50-12:20 Webster Room
Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea II (Minisymposium)
Chair: Khoo, Michael (*University of Southern California*)
Co-Chair: Penzel, Thomas (*Charite Universitätsmedizin Berlin*)

10:50-11:05 ThBT15.1
Screening Patients for Risk of Sleep Apnea using Facial Photographs
 de Chazal, Philip* (*Univ. of Sydney*); Tabatabaei Balaei, Asghar (*Univ. of Sydney*); Nosrati, Hadis (*The Univ. of Sydney*)

11:05-11:20 ThBT15.2
Improving Diagnosis of OSA by Interpretation of Breath Sounds in mHealth
 Jané, Raimon* (*Institute for Bioengineering de Catalunya (IBEC)*); Castillo, Yolanda (*Institute for Bioengineering of Catalonia (IBEC)*); Cámara, Miguel Ángel (*Institute for Bioengineering of Catalonia*); Blanco-Almazán, Dolores (*Institute for Bioengineering of Catalonia*); Estrada, Luis (*Institute for Bioengineering de Catalunya*)

- 11:20-11:35 ThBT15.3
Directional Coupling in Cardiorespiratory System According to the Activation of Autonomic Nervous System Depending on Sleep Stages
 Yoon, Heenam (*Seoul National Univ.*); Lee, Yujin (*Seoul National Univ. Hospital*); Jeong, Do-Un (*Seoul National Univ. Hospital*); Park, Kwang S.* (*Seoul National Univ.*)
- 11:35-11:50 ThBT15.4
Quantitative Monitoring of Sleep Apnea and Hypopnea using Portable Electrical Impedance Tomography (EIT)
 Woo, Eung Je* (*Kyung Hee University*); Oh, Tong In (*Kyunghee University*); Wi, Hun (*Kyunghee University*)
- ThBT17: 10:50-12:20 Einthoven Hall
Signal Processing – Fetal and Neonatal Physiology (Oral Session)
Chair: Khandoker, Ahsan Habib (*Khalifa University of Science, Technology and Research*)
- 10:50-11:05 ThBT17.1
Automatic Quiet Sleep Detection based on Multifractality in Preterm Neonates: Effects of Maturation
 Lavanga, Mario* (*KU Leuven*); De Wel, Ofelie (*KU Leuven*); Caicedo Dorado, Alexander (*KU Leuven*); Heremans, Elisabeth (*KU Leuven*); Jansen, Katrien (*Dept. of Pediatrics, University Hospital Gasthuisberg, Leuven*); Dereymaeker, Anneleen (*Dept. of Development and Regeneration, University of Leuven*); Naulaers, Gunnar (*University Hospitals Leuven*); Van Huffel, Sabine (*KU Leuven Leuven*)
- 11:05-11:20 ThBT17.2
Mutual Information for Intrapartum Fetal Heart Rate Analysis
 Granero Belinchon Carlos, Granero (*Univ Lyon, Ens de Lyon, Univ Claude Bernard, CNRS, Lab d*); Roux, Stéphane* (*ENS Lyon, CNRS*); Garnier, Nicolas B. (*Univ Lyon, ENS de Lyon, Univ Claude Bernard, CNRS*); Abry, Patrice (*ENS Lyon, CNRS*); Doret, Muriel (*Hospices Civils de Lyon Univ. Lyon I*)
- 11:20-11:35 ThBT17.3
Portable Neonatal EEG Monitoring and Sonification on an Android Device
 Poveda Pena, Jonatan (*Univ. Politècnica de Catalunya*); O'Sullivan, Mark* (*Univ. College Cork*); Popovici, Emanuel (*Univ. College Cork*); Temko, Andriy (*Univ. College Cork*)
- 11:35-11:50 ThBT17.4
A Semi-Markov Chain Approach to Modeling Respiratory Patterns Prior to Extubation in Preterm Infants
 Onu, Charles Chijioke* (*McGill University*); Kanbar, Lara (*McGill University*); Shalish, Wissam (*McGill University*); Brown, Karen (*McGill University*); Sant'Anna, Guilherme Mendes (*McGill University*); Kearney, Robert Edward (*McGill University*); Precup, Doina (*McGill University*)
- 11:50-12:05 ThBT17.5
Influence of ECG Sampling Rate in Fetal Heart Rate Variability Analysis
 De Jonckheere, Julien* (*CHRU de Lille*); Jeanne, Mathieu (*CHRU de Lille*); Logier, Regis (*CHRU de Lille*)
- ThBT18: 10:50-12:20 Montgomery Hall
Neural Networks and Support Vector Machines I (Oral Session)
Chair: Huang, Yufei (*University of Texas at San Antonio*)
Co-Chair: Hwang, Han-Jeong (*Kumoh National Institute of Tech.*)
- 10:50-11:05 ThBT18.1
Convolutional Neural Networks for Event-Related Potential Detection: Impact of the Architecture
 Cecotti, Hubert* (*University of Ulster*)
- 11:05-11:20 ThBT18.2
Design of Deep Convolutional Networks for Prediction of Image Rapid Serial Visual Presentation Events
 Mao, Zijong (*UTSA*); Yao, Wan Xiang (*UTSA*); Huang, Yufei* (*University of Texas at San Antonio*)
- 11:20-11:35 ThBT18.3
A Novel Approach for Automatic Detection of Atrial Fibrillation based on Inter Beat Intervals and Support Vector Machine
 Andersen, Rasmus Sten* (*Technical University of Denmark*); Poulsen, Erik S. (*Cortrium ApS*); Puthusserypady, Sadasivan (*Technical University of Denmark*)
- 11:35-11:50 ThBT18.4
Informative Sensor Selection and Learning for Prediction of Lower Limb Kinematics using Generative Stochastic Neural Networks
 Chong, Eunsuk (*Korea Institute of Science and Technology*); Choi, Taejin (*Korea Institute of Science and Technology*); Kim, Hyungmin (*Korea Institute of Science and Technology*); Kim, Seung-Jong (*Korea Institute of Science and Technology*); Hwang, Yoha (*Korea Institute of Science and Technology*); Lee, Jong Min* (*Korea Institute of Science and Technology*)
- 11:50-12:05 ThBT18.5
Using Non-Iterative Methods and Random Weight Networks to Classify Upper-Limb Movements through sEMG Signals
 Cene, Vinicius H. (*UFRGS*); Favieiro, Gabriela Winkler* (*Federal University of Rio Grande do Sul (UFRGS)*); Balbinot, Alexandre (*Federal University of Rio Grande do Sul (UFRGS)*)
- ThCT3: 14:20-15:50 Park Room
Tissue Electromagnetic Property Mapping using Magnetic Resonance Imaging (MRI) (Minisymposium)
Chair: Lee, Joonsung (*Institute for Basic Science*)
Co-Chair: Lee, Seung-Kyun (*Sungkyunkwan University*)
- 14:20-14:35 ThCT3.1
Electric Properties Tomography for MRI – An Introduction
 Katscher, Ulrich* (*Philips Research Europe - Hamburg*)
- 14:35-14:50 ThCT3.2
TE=0 Phase Estimation in Multi-Echo Gradient Echo for Simultaneous Conductivity and Susceptibility Imaging
 Kim, Dong-Hyun* (*Yonsei University*)
- ThCT5: 14:20-15:50 Lee Room
Wearable Devices for Cardiovascular Monitoring (Invited Session)
Chair: Chon, Ki (*University of Connecticut*)
Co-Chair: Kim, Insoo (*University of Connecticut Health Center*)
- 14:20-14:35 ThCT5.1
Graphene-Based Implantable Electrocardiogram Flexible Monitoring Device
 Ma, Zhenqiang* (*Univ. of Wisconsin-Madison*); Bong, Jihye (*Univ. of Wisconsin, Madison*); Lee, Juhwan (*Univ. of Wisconsin, Madison*); Jung, Yei Hwan (*Univ. of Wisconsin, Madison*); Ryu, Jae Ha (*Univ. of Wisconsin, Madison*); Attia, Itzhak Z. (*Mayo Clinic*); Ladewig, Dorothy (*Mayo Clinic*); Friedman, Paul (*Mayo Clinic*)
- 14:35-14:50 ThCT5.2
Development of a Low-Cost Wearable Device for Intermittent and Continuous Monitoring of Paroxysmal Atrial Fibrillation
 Chon, Ki* (*University of Connecticut*)
- 14:50-15:05 ThCT5.3
Wearable Device for Cardiac Rehabilitation
 Lee, Hooseok (*Wonkwang University School of Medicine*); Chung, Heewon (*Wonkwang University School of Medicine*); Ko, Hoon (*Wonkwang University School of Medicine*); Lee, Jinseok* (*Wonkwang University School of Medicine*)
- 15:05-15:20 ThCT5.4
A Pulse Arrival Time based Index as Surrogates of Ankle Brachial Index for the Assessment of Peripheral Arterial Disease
 Poon, Carmen C. Y.* (*The Chinese Univ. of Hong Kong*); Yan, Bryan P. (*Prince of Wales Hospital, The Chinese Univ. of Hong Kong*); Lau, James Y. W. (*The Chinese Univ. of Hong Kong*); Zheng, Yali (*The Chinese Univ. of Hong Kong*)

15:20-15:35 ThCT5.5
Exploration and Validation of Alternate Sensing Methods for Wearable Continuous Pulse Transit Time Measurement using Optical and Bioimpedance Modalities
 Ibrahim, Bassem (Texas A&M Univ.); Nathan, Viswam (Texas A&M Univ.); Jafari, Roozbeh* (Texas A&M Univ.)

15:05-15:20 ThCT8.4
The Contribution of Different Frequency Bands in Class Separability of Covert Speech Tasks for BCIs
 Jahangiri, Amir* (University of Essex); Sepulveda, Francisco (University of Essex)

ThCT6: 14:20-15:50 Zworykin Room
Tissue Engineering (Oral Session)
 Chair: Lee, EunAh (Kyung Hee University)

15:20-15:35 ThCT8.5
EEG Classification for Motor Imagery BCI using Phase-Only Features Extracted by Independent Component Analysis
 Qureshi, Muhammad Naveed Iqbal (Gwangju Institute of Science and Technology, Gwangju); Cho, Dongrae (Gwangju Institute of Science and Technology); Lee, Boreom* (Gwangju Institute of Science and Technology (GIST))

14:20-14:35 ThCT6.1
Experimental Research on Oxygen Enrichment in Bioreactors based on Oxygen Carriers
 Wu, Changzhe (Chinese Academy of Sciences); Zhang, Cheng (Chinese Academy of Sciences, Beijing.); Zhang, Guanghao (Institute of Electrical Engineering, Chinese Academy of Sciences); Huo, Xiaolin* (Chinese Academy of Sciences)

15:35-15:50 ThCT8.6
Speeding Up SVM Training in Brain-Computer Interfaces
 Lee, David (The Catholic Univ. of Korea); Lee, Hee-Jae (The Catholic Univ. of Korea); Park, Sang-Hoon (The Catholic Univ. of Korea); Jung, Woo-Hyuk (The Catholic Univ. of Korea); Kim Jaeho, Jaeho (The Catholic Univ. of Korea, Dept. Digital Media); Lee, Sang-Goog* (the Catholic of Univ. of Korea)

14:35-14:50 ThCT6.2
In Vitro Cell Culture Study of the Conditions of Inhibition Effect of Tumors under Alternating Electric Field
 Huang, Chun-Hao (Chang Gung University); Lei, Kin Fong* (Chang Gung University)

ThCT9: 14:20-15:50 Plonsey Room
Neural Stimulation II (Oral Session)

14:50-15:05 ThCT6.3
Evaluation of Histological and Biomechanical Properties on Engineered Meniscus Tissues using Sonication Decellularization
 Mardhiyah, Ainaaul (International Islamic University Malaysia); Sha'ban, Munirah (International Islamic University Malaysia); Azhim, Azran* (International Islamic University Malaysia)

14:20-14:35 ThCT9.1
Predicting the Stimulation Effectiveness using Pre-Stimulation Neural States via Optogenetic Activation of the Medial Septum Glutamatergic Neurons Modulating the Hippocampal Neural Activity
 Park, Sang-Eon* (Georgia Institute of Technology); Laxpati, Nealen (Emory University School of Medicine, Georgia Institute of Techno); Connolly, Mark (Emory University); Mahmoudi, Babak (Emory University); Gross, Robert (Emory University)

15:05-15:20 ThCT6.4
Improve Blood Compatibility of Bioresorbable Magnesium Stents Coated with Functionalized Anti-CD34 Antibody and Heparin-Collagen Multiplayers
 Kan, Chung-Dann* (National Cheng Kung Univ. Hospital, Dept. of Surgery); Lai, Yi-Ping (National Cheng Kung University)

14:35-14:50 ThCT9.2
Galvanic Vestibular Stimulation (GVS) Effects on Impaired Interhemispheric Connectivity in Parkinson's Disease
 Lee, Soojin* (The University of British Columbia); Kim, Diana (The University of British Columbia); McKeown, Martin (University of British Columbia)

15:20-15:35 ThCT6.5
Evaluation of Recellularization on Decellularized Aorta Scaffolds Engineered by Ultrasonication Treatment
 Fitriatul, Nurul (International Islamic University Malaysia); Sha'ban, Munirah (International Islamic University Malaysia); Azhim, Azran* (International Islamic University Malaysia)

14:50-15:05 ThCT9.3
Network-Mediated Responses of ON Ganglion Cells to Electric Stimulation become Less Consistent Across Trials during Retinal Degeneration
 Lee, Jae-Ik* (Henry Ford Health System); Fried, Shelley (Massachusetts General Hospital / Harvard Medical School); Im, Maesoon (Henry Ford Health System)

15:35-15:50 ThCT6.6
A Three-Dimensional Cell Culture Device for Simulation of Hepatic Hypertension
 Kuo, Po-Ling* (National Taiwan University); Phung, Hao-Dinh (National Taiwan University)

15:05-15:20 ThCT9.4
An Artifact-Suppressed Stimulator for Simultaneous Neural Recording and Stimulation Systems
 Liu, Xu* (Beijing University of Technology); Yao, Lei (Institute of Microelectronics, Singapore); Li, Peng (Institute of Microelectronics); Liu, Lei (Nanyang Technological University, Singapore.); Zou, Xiaodan (Institute of Microelectronics, Singapore); Je, Minkyu (Institute of Microelectronics); Xu, Yong Ping (National University of Singapore)

ThCT8: 14:20-15:50 Schwan Room
Brain-Computer Interface III (Oral Session)
 Chair: Lee, Boreom (Gwangju Inst. of Science and Tech. (GIST))

14:20-14:35 ThCT8.1
Phase-Based SSVEPs for Real-Time Control of a Motorised Bed
 Gauci, Norbert (University of Malta); Falzon, Owen* (University of Malta); Camilleri, Tracey (University of Malta); Camilleri, Kenneth Patrick (University of Malta)

15:20-15:35 ThCT9.5
A Machine Learning Approach to Characterizing the Effect of Asynchronous Distributed Electrical Stimulation on Hippocampal Neural Dynamics in Vivo
 Connolly, Mark* (Emory University); Park, Sang-Eon (Georgia Institute of Technology); Gross, Robert (Emory University); Mahmoudi, Babak (Emory University)

14:35-14:50 ThCT8.2
Hierarchical Decoding of Grasping Commands from EEG
 Omedes, Jason* (Univ. of Zaragoza); Schwarz, Andreas (Graz, Univ. of Technology); Montesano, Luis (Universidad de Zaragoza); Müller-Putz, Gernot (Graz Univ. of Technology)

15:35-15:50 ThCT9.6
Effects of Transcranial Direct Current Stimulation on Steady-State Visual Evoked Potentials
 Liu, Bingchuan (Tsinghua University); Chen, Xiaogang (Institute of Biomedical Engineering, Chinese Academy of Medical); Yang, Chen (Tsinghua University); Wu, Jian (Tsinghua University); Gao, Xiaorong* (Tsinghua University)

14:50-15:05 ThCT8.3
Detection of Self-Paced Movement Intention from Pre-Movement Electroencephalogram Signals with Hilbert Transform
 Zeng, Hong* (Southeast University); Wu, Changcheng (Southeast University); Song, Aiguo (Southeast University); Xu, Baoguo (Southeast University); Li, Huijun (Southeast University); Pengcheng, Wen (AVIC Aeronautics Computing Technique Research Institute); Liu, Jia (Nanjing University of Information Sciences & Technology)

July 13 Thursday

ThCT10: 14:20-15:50 Schmitt Room
General and Theoretical Informatics – Algorithms I (Oral Session)

14:20-14:35 ThCT10.1
A Novel Blood Pressure Estimation Method Combining Wave Transit Time Model and Neural Network Model
Xu, Jun (*Shanghai Univ.*); Jiang, Jiehui* (*Shanghai Univ.*); Zhou, Hucheng (*Shanghai Univ.*); Yan, Zhuangzhi (*Shanghai Univ.*)

14:35-14:50 ThCT10.2
Assessment of Stress Wave Induced by Diode Laser
Oh, Han-Byeol (*Konkuk University*); Kim, Ji-Sun (*Konkuk University*); Baek, Jin-Young (*Konkuk University*); Jun, Jae-Hoon* (*Konkuk University*)

14:50-15:05 ThCT10.3
Elastic Modulus Estimation based on Local Displacement Observation of Elastic Body
Morita, Mitsuki* (*Kyoto University*); Nakao, Megumi (*Kyoto University*); Matsuda, Tetsuya (*Kyoto University*)

15:05-15:20 ThCT10.4
The Classification for “Equilibrium Triad” Sensory Loss based on sEMG Signals of Calf Muscles
Yu, Hairong* (*University of Technology, Sydney*); Guo, Kairui (*University of Technology, Sydney*); Luo, Jie (*Sun Yat-sen University*); Cao, Kai (*University of Technology, Sydney*); Nguyen, Hung T. (*University of Technology, Sydney*); Su, Steven Weidong (*University of Technology, Sydney*)

15:20-15:35 ThCT10.5
Likelihood-Based Artefact Detection in Continuously-Acquired Patient Vital Signs
Colopy, Glen Wright* (*Univ. of Oxford*); Zhu, Tingting (*Univ. of Oxford*); Clifton, Lei (*Univ. of Oxford*); Roberts, Stephen (*Univ. of Oxford*); Clifton, David (*Univ. of Oxford*)

15:35-15:50 ThCT10.6
Accuracy of a Wavelet-Based Fall Detection Approach using an Accelerometer and a Barometric Pressure Sensor
Ejupi, Andreas* (*Simon Fraser University (SFU)*); Galang, Chantel (*Simon Fraser University*); Aziz, Omar (*Simon Fraser University*); Park, Edward J. (*Simon Fraser University*); Robinovitch, Stephen (*Simon Fraser University*)

ThCT11: 14:20-15:50 Greatbatch Room
Recent Advances on Cuff-Less Blood Pressure Measurement Technology II (Minisymposium)
Chair: Mukkamala, Ramakrishna (*Michigan State University*)
Co-Chair: Mestha, Lalit, K. (*GE Global Research*)

14:20-14:35 ThCT11.1
Non-Invasive Beat-to-Beat Pulse Pressure Measurement and Pulse Wave Analysis at a Spot Check
Seo, Joohyun* (*Massachusetts Institute of Technology*); Sodini, Charles (*Massachusetts Institute of Technology*); Lee, Hae-Seung (*Massachusetts Institute of Technology*)

14:35-14:50 ThCT11.2
Cuffless Blood Pressure Monitoring at the Chest: Single-Channel Reflective PPG Sensors are Inaccurate
Sola, Josep (*CSEM - Centre Suisse d'Electronique et Microtechnique*); Vybornova, Anna (*EPFL*); Braun, Fabian (*CSEM SA*); Proença, Martin (*Swiss Center for Electronics and Microtechnology (CSEM)*); Delgado-Gonzalo, Ricard* (*CSEM*); Ferrario, Damien (*CSEM*); Verjus, Christophe (*CSEM*); Bertschi, Mattia (*CSEM*); Pierrel, Nicolas (*CHUV*); Degiorgis, Yan (*CHUV*); Schoettker, Patrick (*CHUV – Centre Hospitalier Universitaire Vaudois*)

14:50-15:05 ThCT11.3
Cuffless Blood Pressure Measurement using Ultrasound and Dual Photoplethysmograph Transducer
PM, Nabeel* (*Indian Institute of Tech. Madras*); Karthik, Srinivasa (*HTIC IIT Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Tech. Madras*); Chenniappan, M (*Ramakrishna Medical Centre*); Sivaprakasam, Mohanasankar (*Indian Institute of Tech. Madras*)

15:05-15:20 ThCT11.4
Wearable Continuous BP Monitoring Solution using PPG Signal
Singh, Wazir (*Indraprastha Institute of Information Tech., Delhi*); Jain, Monika (*Indraprastha Institute of Information Tech., Delhi*); Singh Chadha, Jaidev (*Delhi Technological University, Delhi*); Deb, Sujay* (*Indraprastha Institute of Information Tech., Delhi*)

15:20-15:35 ThCT11.5
Arterial Blood Pressure Estimation using Ultrasound: Clinical Results on Healthy Volunteers and a Medicated Hypertensive Volunteer
Zakrzewski, Aaron M.* (*Massachusetts Institute of Technology*); Anthony, Brian W. (*Massachusetts Institute of Technology*)

ThCT12: 14:20-15:50 Geddes Room
Modeling of Modern Devices and Technologies with Computational Human Phantoms – III (Invited Session)
Chair: Wenger, Cornelia (*Novocure GmbH*)

14:20-14:35 ThCT12.1
Impact of Computational Human Model on the Calculation of RF-Induced Voltages for Medical Devices in MRI
Brown, James (*MSEI*); Qiang, Rui* (1976); Stadnik, Paul (*Micro Systems Engineering, Inc.*); Stotts, Larry (*Biotronik*); Von Arx, Jeffrey (*Micro Systems Engineering, Inc.*)

14:35-14:50 ThCT12.2
Transmit Coil Design for Wireless Power Transfer for Medical Implants
Lemdiasov, Rosti (*Cambridge Consultants*); Venkatasubramanian, Arun* (*Cambridge Consultants*)

14:50-15:05 ThCT12.3
Determining the Dielectric Properties of Human Skin in the Frequency Range of 0.1 to 1 MHz, and Implications to the Modelling of Tumor Treating Fields
Hershkovich, Hadas Sara (*Novocure Ltd., Haifa, Israel*); Urman, Noa (*Novocure*); Naveh, Ariel (*Novocure Ltd.*); Yesharim, Ofir (*Novocure Ltd.*); Wassermann, Yoram (*Novocure Ltd., Haifa, Israel*); Kirson, Eilon David (*Novocure*); Bomzon, Ze'ev* (*Novocure*)

15:05-15:20 ThCT12.4
A Method for Initial Testing CAD Virtual Human Models
Louie, Sara (*Ansys, Inc.*); Horner, Marc (*ANSYS, Inc.*); Makarov, Sergey* (*Electrical and Computer Engineering, Worcester Polytechnic Institit*); Noetscher, Gregory (*Worcester Polytechnic Institute*)

15:20-15:35 ThCT12.5
A Comparison of Two Anatomical Body Models Derived from the Female Visible Human Project Data
Massey, Jackson White (*University of Texas at Austin*); Prokop, Alexander* (*Computer Simulation Technology*); Yilmaz, Ali (*University of Texas at Austin*)

15:35-15:50 ThCT12.6
Model of a Perfectly Matched RF MRI Coil for SAR Computations with Virtual Human Models
Makarov, Sergey* (*Electrical and Computer Engineering, Worcester Polytechnic Institit*); Bogdanov, Gene (*Worcester Polytechnic Institute*); Tankaria, Harshal (*Worcester Polytechnic Inst.*); Noetscher, Gregory (*Worcester Polytechnic Institute*); Louie, Sara (*Ansys, Inc.*); Nummenmaa, Aapo (*Massachusetts General Hospital*)

ThCT13: 14:20-15:50 Dunn Room
Tissue Stimulation Technologies (Oral Session)
Chair: Panescu, Dorin (*Advanced Cardiac Therapeutics*)
Co-Chair: Cheng, Leo (*The University of Auckland*)

14:20-14:35 ThCT13.1
Measurement of Perception Thresholds for Electrical Noise Stimuli
Karpul, David (*University of Western Sydney, University of Cape Town*); McIntyre, Sarah (*Western Sydney University*); van Schaik, André (*The University of Sydney*); Breen, Paul* (*University of Western Sydney*)

14:35-14:50 ThCT13.2
New Conducted Electrical Weapons: Finite Element Modeling of Safety Margins
 Panescu, Dorin* (*Advanced Cardiac Therapeutics*); Kroll, Mark William (*University of Minnesota*); Brave, Michael (*LAAW International, LLC, Scottsdale, AZ*)

14:50-15:05 ThCT13.3
System Design and Experimental Research of Lower Esophageal Sphincter Stimulator for Treatment of Gastroesophageal Reflux Disease
 Sun, Xinchun (*Southeast Univ.*); Tao, Wanjun (*Southeast Univ.*); Zhu, Chuangqing (*Southeast Univ.*); Zhao, Lili (*The First Affiliated Hospital of Nanjing Medical Univ.*); Wang, Min (*Nanjing Medical Univ.*); Lü, Xiaoying* (*Southeast Univ.*); Wang, Zhigong (*Southeast Univ.*); Fan, Zhining (*The First Affiliated Hospital of Nanjing Medical Univ.*)

15:05-15:20 ThCT13.4
Design and Application of a Novel Gastric Pacemaker
 Alighaleh, Saeed (*Auckland Bioengineering Institute, Univ. of Auckland*); Angeli, Timothy Robert (*Auckland Bioengineering Institute, Univ. of Auckland*); Sathar, Shameer (*Univ. of Auckland*); O'Grady, Gregory (*Univ. of Auckland*); Cheng, Leo K* (*The Univ. of Auckland*); Paskaranandavadivel, Niranchan (*The Univ. of Auckland*)

15:20-15:35 ThCT13.5
New Conducted Electrical Weapons: Electrical Safety Relative to Relevant Standards
 Panescu, Dorin* (*Advanced Cardiac Therapeutics*); Nerheim, Max (*TASER International*); Kroll, Mark William (*Univ. of Minnesota*); Brave, Michael (*LAAW International, LLC*)

15:35-15:50 ThCT13.6
New Conducted Electrical Weapons: Thoracic Cage Shielding Effect
 Panescu, Dorin* (*Advanced Cardiac Therapeutics*); Kroll, Mark William (*University of Minnesota*); Brave, Michael (*LAAW International, LLC, Scottsdale, AZ*)

ThCT14: 14:20-15:50 Schaldach Room
Deep Learning in Biomedical Image Analysis (Invited Session)
Chair: Jeong, Won-Ki (*Ulsan Natl. Inst. of Science & Tech. (UNIST)*)
Co-Chair: Ye, Jong Chul (*Korea Advanced Inst of Science & Tech*)

14:20-14:35 ThCT14.1
Detection of Lung Nodules on Thoracic MDCT Images based on Temporal Subtraction Technique
 Lu, Huimin* (*Kyushu Institute of Technology*); Tachibana, Rie (*Oshima National College of Maritime Technology*); Tan, Joo Kooi (*Kyushu Institute of Technology*); Kim, Hyoungseop (*Kyushu Institute of Technology*); Hirano, Yasushi (*Yamaguchi University*); Kido, Shoji (*Graduate School of Science and Technology for Innovation, Yamagu*)

14:35-14:50 ThCT14.2
Correlation Analysis of Functional MR Images with Education Level
 Kim, Sung-Woo (*Korea University*); Seong, Joon-Kyung* (*Korea University*)

14:50-15:05 ThCT14.3
Applications of Deep Learning in Medical Image Analysis
 Suk, Heung-Il* (*Korea University*)

15:05-15:20 ThCT14.4
Connectomics Image Analysis using Deep Learning
 Quan, Tran Minh (*Ulsan National Institute of Science and Technology (UNIST)*); Hildebrand, David G. C. (*The Rockefeller University*); Jeong, Won-Ki* (*Ulsan National Institute of Science and Technology (UNIST)*)

ThCT15: 14:20-15:50 Webster Room
Bioengineering Advances in the Diagnosis and Treatment of Sleep Apnea III (Issues in Therapeutic Modalities for Sleep-Disordered Breathing) (Minisymposium)
Chair: Khoo, Michael (*Univ. of Southern California*)
Co-Chair: Penzel, Thomas (*Charite Universitätsmedizin Berlin*)

14:20-14:35 ThCT15.1
An Industry Perspective on the Growth of Connected Care and Its Evolution to Personalised Treatment of Sleep-Disordered Breathing
 Armitstead, Jeffrey Peter* (*Res Med Ltd., University of Sydney*); Liu, Dongquan (*Res Med Asia Operations*); Schindhelm, Klaus (*University of New South Wales*)

14:35-14:50 ThCT15.2
Personalizing the Treatment of Sleep Apnea – Using Physiology to Better Predict Treatment Success and Guide Therapy Choice
 Edwards, Bradley Allan* (*Monash Univ.*); Sands, Scott Aaron (*Brigham and Women's Hospital and Harvard Medical School*); Joosten, Simon (*Monash Health and Monash Univ.*); Landry, Shane (*Monash Univ.*); Terrill, Philip Ian (*Univ. of Queensland*); Owens, Robert (*Harvard Medical School*); Malhotra, Atul (*Brigham and Women's Hospital and Harvard Medical School*); White, David P (*Brigham and Women's Hospital and Harvard Medical School*); Wellman, David Andrew (*Harvard Medical School*); Hamilton, Garun (*Dept. of Respiratory and Sleep Medicine, Monash Medical Cen*)

14:50-15:05 ThCT15.3
Effects of CPAP and Adaptive Servo-Ventilation on Cardiovascular Function in CHF-CSR: A Computer Simulation Study
 Khoo, Michael* (*University of Southern California*); Hu, Wen-Hsin (*University of Southern California*)

ThCT17: 14:20-15:50 Einthoven Hall
Signal Processing and Modelling Techniques for Fetal Monitoring (Invited Session)
Chair: Khandoker, Ahsan Habib (*Khalifa University of Science, Technology and Research*)

14:20-14:35 ThCT17.1
Investigating Fetal Myocardial Function in Heart Anomalies by Doppler Myocardial Performance Indices
 Khandoker, Ahsan Habib* (*Khalifa University of Science, Technology and Research*); Alangari, Haitham M. (*Khalifa University*); Marzbanrad, Faezeh (*The University of Melbourne*); Kimura, Yoshitaka (*Tohoku Univ*)

14:35-14:50 ThCT17.2
Detecting Fetal Heart Sounds by Means of Fractal Dimension Analysis in the Wavelet Domain
 Koutsiana, Elisavet* (*Lab. of Medical Informatics, The Medical School, Aristotle Univ*); Hadjileontiadis, Leontios (*Aristotle University of Thessaloniki*); Chouvarda, Ioanna (*Aristotle University*); Khandoker, Ahsan Habib (*Khalifa University of Science, Technology and Research*)

ThCT18: 14:20-15:50 Montgomery Hall
Kalman Filtering (Oral Session)
Chair: Hamid, Laith (*University of Kiel*)

14:20-14:35 ThCT18.1
Self-Reported Well-Being Score Modelling and Prediction: Proof-of-Concept of an Approach based on Linear Dynamic Systems
 Li, Xinyang (*National Univ. of Singapore*); Poli, Riccardo (*Univ. of Essex*); Valenza, Gaetano (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*); Citi, Luca* (*Univ. of Essex*)

14:35-14:50 ThCT18.2
Removal of Spurious Phase Variations in Oscillatory Signals
 Mortezapouraghdam, Zeinab* (*Saarland University*); Strauss, Daniel J. (*Saarland University, Medical Faculty*)

14:50-15:05	ThCT18.3	Spatial Projection as a Preprocessing Step for EEG Source Reconstruction using Spatiotemporal Kalman Filtering Hamid, Laith* (<i>Univ. of Kiel</i>); Al Farawn, Ali (<i>Univ. of Kufa</i>); Merlet, Isabelle (<i>INSERM - Universite de Rennes 1</i>); Japaridze, Natia (<i>Dept. of Neuropediatrics, Christian-Albrechts-Univ. of</i>); Heute, Ulrich (<i>Univ. of Kiel</i>); Stephani, Ulrich (<i>Christian-Albrechts-Univ. of Kiel</i>); Galka, Andreas (<i>Christian-Albrechts-Univ. of Kiel</i>); Wendling, Fabrice (<i>INSERM - Université de Rennes 1</i>); Siniatchkin, Michael (<i>Univ. of Kiel</i>)	16:12-16:14	ThDT1-02.2	Neuronal Desynchronization as Marker of an Impaired Brain Network Schulz, Steffen (<i>University of Applied Sciences Jena</i>); Legorburu Cladera, Borja (<i>Universitat Politècnica de Catalunya</i>); Giraldo, Beatriz (<i>Universitat Politècnica de Catalunya</i>); Bolz, Mathias (<i>University Hospital Jena</i>); Bär, Karl-Jürgen (<i>Friedrich-Schiller-University of Jena</i>); Voss, Andreas* (<i>University of Applied Sciences Jena</i>)
15:05-15:20	ThCT18.4	Source Reconstruction via the Spatiotemporal Kalman Filter and LORETA from EEG Time Series with 32 or Fewer Electrodes Hamid, Laith* (<i>Univ. of Kiel</i>); Al Farawn, Ali (<i>Univ. of Kufa</i>); Merlet, Isabelle (<i>INSERM - Universite de Rennes 1</i>); Japaridze, Natia (<i>Dept. of Neuropediatrics, Christian-Albrechts-Univ. of</i>); Heute, Ulrich (<i>Univ. of Kiel</i>); Stephani, Ulrich (<i>Christian-Albrechts-Univ. of Kiel</i>); Galka, Andreas (<i>Christian-Albrechts-Univ. of Kiel</i>); Wendling, Fabrice (<i>INSERM - Université de Rennes 1</i>); Siniatchkin, Michael (<i>Univ. of Kiel</i>)	16:14-16:16	ThDT1-02.3	Coherence Analysis of Invasive Blood Pressure and Its Noninvasive Indicators for Improvement of Cuffless Measurement Accuracy Ding, Xiao-Rong (<i>The Chinese University of Hong Kong</i>); Yan, Bryan P. (<i>Prince of Wales Hospital, The Chinese University of Hong Kong</i>); Zhang, Yuan-Ting (<i>The Chinese University of Hong Kong</i>); Liu, Jing (<i>The Chinese University of Hong Kong</i>); Su, Peng (<i>The Chinese University of Hong Kong</i>); Zhao, Ni* (<i>The Chinese University of Hong Kong</i>)
15:20-15:35	ThCT18.5	Detecting Dynamical Changes in Vital Signs using Switching Kalman Filter Almeida, Vania* (<i>Aston Univ.</i>); Nabney, Ian T. (<i>Aston Univ.</i>)	16:16-16:18	ThDT1-02.4	Phase-Amplitude Coupling Analysis of Spontaneous EEG Activity in Alzheimer's Disease Poza, Jesus* (<i>University of Valladolid</i>); Bachiller, Alejandro (<i>University of Valladolid</i>); Gomez, Carlos (<i>University of Valladolid</i>); Garcia, Maria (<i>University of Valladolid</i>); Núñez, Pablo (<i>University of Valladolid</i>); Gomez-Pilar, Javier (<i>University of Valladolid</i>); Tola-Arribas, Miguel A. (<i>Dept. of Neurology, Hospital Universitario Río Hortega</i>); Cano, Mónica (<i>Dept. of Clinical Neurophysiology, Hospital Universitario R</i>); Hornero, Roberto (<i>University of Valladolid</i>)
15:35-15:50	ThCT18.6	A Kalman Filter Approach with State Inequality Constraints for Real-Time Prediction of Intradialytic Hypotension using a PVDF Sensor Ansari, Sardar* (<i>Univ. of Michigan</i>); Molaei, Somayeh (<i>Univ. of Michigan</i>); Oldham, Kenn (<i>Univ. of Michigan</i>); Heung, Michael (<i>Univ. of Michigan</i>); Ward, Kevin (<i>Univ. of Michigan</i>); Najarian, Kayvan (<i>Univ. of Michigan - Ann Arbor</i>)	16:18-16:20	ThDT1-02.5	Study on the Effects of Brightness Contrast on Steady-State Motion Visual Evoked Potential Yan, Wenqiang (<i>Xi'an Jiaotong University</i>); Xu, Guanghua* (<i>Xi'an Jiaotong University</i>); Xie, Jun (<i>Xi'an Jiaotong University</i>); Li, Min (<i>School of Mechanical Engineering, Xi'an Jiaotong University</i>); Zhang, Sicong (<i>Xi'an Jiaotong University</i>); Luo, Ailing (<i>Xi'an Jiaotong University</i>)
ThDT1-01: 16:10-17:10	Roentgen Hall	Adaptive Filtering I (Poster Session)	ThDT1-03: 16:10-17:10	Roentgen Hall	Data Mining I (Poster Session)
16:10-16:12	ThDT1-01.1	EEG-Based Emotion Estimation using Adaptive Tracking of Discriminative Frequency Components Liu, Shuang* (<i>Tianjin Univ.</i>); Zhang, Di (<i>Tianjin Univ.</i>); Tong, Jingjing (<i>Tianjin Univ.</i>); He, Feng (<i>Tianjin Univ.</i>); Qi, Hongzhi (<i>Tianjin Univ.</i>); Zhang, L. (<i>Tianjin Univ.</i>); Ming, D. (<i>Tianjin Univ.</i>)	16:10-16:12	ThDT1-03.1	Template-DTW based on Inertial Signals: Preliminary Results for Step Characterization Mantilla, Juan* (<i>Univ. Paris Descartes</i>); Oudre, Laurent (<i>L2TI, Univ. Paris 13</i>); Barrios, Rémi (<i>COGNAC G Univ. Paris Descartes</i>); Vienne, Aliénor (<i>COGNACG, CNRS/SSA UMR 8257, Univ. Paris Descartes</i>); Ricard, Damien (<i>COGNACG, CNRS/SSA UMR 8257, Univ. Paris Descartes</i>)
16:12-16:14	ThDT1-01.2	A Template Subtraction Method for the Removal of Cardiogenic Oscillations on Esophageal Pressure Signals Grafshoff, Jan* (<i>University of Luebeck</i>); Petersen, Eike (<i>University of Lübeck</i>); Eger, Marcus (<i>Dräger Medical</i>); Bellani, Giacomo (<i>Dept. of Experimental Medicine, University of Milan-Bicocca</i>); Rostalski, Philipp (<i>Institute for Electrical Engineering in Medicine, University of</i>)	16:12-16:14	ThDT1-03.2	Using Spatial Features for Classification of Combined Motions based on Common Spatial Pattern Lu, Huiyang (<i>School of Data and Computer Science, Sun Yat-sen Univ.</i>); Zhang, Haoshi (<i>Shenzhen Institutes of Advanced Technology</i>); Wang, Zhong (<i>School of Data and Computer Science, Sun Yat-sen Univ.</i>); Wang, Ruomei (<i>School of Data and Computer Science, Sun Yat-sen Univ.</i>); Li, Guanglin* (<i>Shenzhen Institutes of Advanced Technology</i>)
16:14-16:16	ThDT1-01.3	FPGA Implementation of Adaptive Beamforming in Hearing Aids Samtani, Kartik (<i>National Institute of Tech. Karnataka</i>); Thomas, Jobin (<i>National Institute of Tech. Karnataka</i>); Varma, Abhinav (<i>National Institute of Tech. Karnataka</i>); David S., Sumam (<i>National Institute of Tech. Karnataka, Surathkal</i>); S. P., Deepu* (<i>National Institute of Tech. Karnataka</i>)	16:14-16:16	ThDT1-03.3	Surgical Gesture Classification using Dynamic Time Warping and Affine Velocity Cifuentes Quintero, Jenny Alexandra (<i>Universidad Nacional de Colombia</i>); Pham, Minh Tu* (<i>Institut National des Sciences Appliquées (INSA de Lyon)</i>); Moreau, Richard (<i>INSA-Lyon</i>); Prieto, Flavio (<i>Universidad Nacional de Colombia</i>); Boulanger, Pierre (<i>University of Alberta</i>)
16:16-16:18	ThDT1-01.4	Detection of user Independent Single Trial ERPs in Brain Computer Interfaces: An Adaptive Spatial Filtering Approach Leza Lahuerta, Cristina* (<i>Universidad Politecnica de Madrid</i>); Puthusserypady, Sadasivan (<i>Technical University of Denmark</i>)	16:16-16:18	ThDT1-03.4	Biological Tissues Identification from their Raman Spectral Signals Acquired by a Raman Needle Yang, Tangwen* (<i>Beijing Jiaotong University</i>); Zheng, Jiawen (<i>Beijing Jiaotong University</i>)
ThDT1-02: 16:10-17:10	Roentgen Hall	Connectivity Analysis I (Poster Session)	16:10-16:12	ThDT1-02.1	Low-Latency VLSI Architecture for Neural Cross-Frequency Coupling Analysis O Leary, Gerard* (<i>University of Toronto</i>); Valiante, Taufik A. (<i>University of Toronto</i>); Genov, Roman (<i>University of Toronto</i>)

16:18-16:20	ThDT1-03.5	Counting Malaria Parasites with a Two-Stage EM based Algorithm using Crowsourced Data Cabrera-Bean, Margarita* (Univ. Politècnica de Catalunya, UPC, BarcelonaTECH); Pagès-Zamora, Alba (Univ. Politècnica de Catalunya); Diaz-Vilor, Carles (Univ. Politecnica de Catalunya); Postigo Camps, Maria (Technical Univ. of Madrid); Cuadrado Sanchez, Daniel (Technical Univ. of Madrid); Luengo-Oroz, Miguel Angel (Univ. Politècnica de Madrid)	16:24-16:26	ThDT1-04.8	Comparison of Different Shielding Methods in Acquisition of Physiological Signals Jiang, Yanbing (Shenzhen Institutes of Advanced Tech.); Ji, Ning (Shenzhen Institutes of Advanced Tech.); Wang, Hui (Shenzhen Institutes of Advanced Tech., Chinese Academy of S); Liu, Xueyu (Chongqing University of Tech.); Geng, Yanjuan (Shenzhen Institutes of Advanced Tech.); Li, Peng (The Third Affiliated Hospital of Sun Yat-Sen University); Chen, Shixiong* (Shenzhen Institutes of Advanced Tech.); Li, Guanglin (Shenzhen Institutes of Advanced Tech.)
16:20-16:22	ThDT1-03.6	Elastic Net based Sparse Feature Learning and Classification for Alzheimer's Disease Identification Wang, Ling (University of Electronic Science and Technology of China); Liu, Yan* (University of Chinese Academy of Sciences); Zeng, Xiangzhu (Peking University Third Hospital, Beijing, China); Wang, Zheng (Capital University of Medical Sciences)	16:26-16:28	ThDT1-04.9	Investigation of Lagged Poincaré Plot Reliability in Ultra-Short Synthetic and Experimental Heart Rate Variability Series Nardelli, Mimma (University of Pisa); Greco, Alberto (University of Pisa); Bolea, Juan (Instituto de Investigación en Ingeniería de Aragón (I3A) Universi); Valenza, Gaetano (University of Pisa); Scilingo, Enzo Pasquale* (University of Pisa); Bailon, Raquel (University of Zaragoza)
16:22-16:24	ThDT1-03.7	Reducing False Asystole Alarms in Intensive Care Dekimpe, Remi (University Catholique de Louvain); Heldt, Thomas* (Massachusetts Institute of Technology)	ThDT2-01: 16:10-17:10	Cho Room	Optical Imaging (Poster Session)
ThDT1-04: 16:10-17:10	Roentgen Hall	Nonlinear Dynamic Analysis III (Poster Session)	16:10-16:12	ThDT2-01.1	Wound Scanning and Recovery Volume Prediction Kang, Juehyung (Hanyang Univ.); Yoo, Hongki* (Hanyang Univ.)
16:10-16:12	ThDT1-04.1	Elimination of Power Line Interference from ECG Signals using Recurrent Neural Networks Qiu, Yue* (Zhejiang University); Xiao, Feng (Zhejiang University); Shen, Haibin (Zhejiang University)	16:12-16:14	ThDT2-01.2	Fiber-Based Rotary Joint for Ultra-High Resolution OCT Kim, JunYoung (Hanyang University); Song, Joon Woo (Guro Hospital, Korea University); Kim, Jin Won (Korea University Guro Hospital); Yoo, Hongki* (Hanyang University)
16:12-16:14	ThDT1-04.2	A Novel Heart Rate Variability Analysis using Lagged Poincaré Plot: A Study on Hedonic Visual Elicitation Nardelli, Mimma (University of Pisa); Greco, Alberto (University of Pisa); Valenza, Gaetano (University of Pisa); Lanata, Antonio (University of Pisa); Bailon, Raquel (University of Zaragoza); Scilingo, Enzo Pasquale* (University of Pisa)	16:14-16:16	ThDT2-01.3	Reflective Spectral Probe based on Microsphere Choi, Myunghwan* (Sungkyunkwan University); Jo, Yongjae (Sungkyunkwan University)
16:14-16:16	ThDT1-04.3	Pressure Ulcer Risk Detection from Complexity of Activity Padhye, Nikhil* (Univ of Texas Health Science Center); Bergstrom, Nancy (The University of Texas Health Science Center at Houston); Rapp, Mary (Retired); Etcher, LuAnn (Spring Arbor University School of Human Services); Redeker, Nancy (Yale School of Nursing)	16:16-16:18	ThDT2-01.4	Photoacoustic Imaging of Dental Implant Kim, Chulhong* (Pohang University of Science and Technology); Lee, Donghyun (POSTECH); Park, Sungjo (POSTECH); Hyunjung, Kim (POSTECH)
16:16-16:18	ThDT1-04.4	Feature Analysis of Dysphonia Speech for Monitoring Parkinson's Disease Rueda, Alice* (Ryerson Univ.); Krishnan, Sridhar (Ryerson Univ.)	16:18-16:20	ThDT2-01.5	Intravital Fluorescence Imaging of Reactive Oxygen Species in Murine Carotid Atherosclerotic Plaque Kim, Chang-Soo (Hanyang University, Dept. of Biomedical Engineering); Park, Eun Jin (Korea University Guro Hospital, Cardiovascular Center, Multimoda); Ryu, Jiheun (Korea Advanced Institute of Science and Technology); Park, Kyeongsoon (Chung-Ang University, Dept. of Systems Biotechnology); Kim, Jin Won (Korea University Guro Hospital); Yoo, Hongki* (Hanyang University)
16:18-16:20	ThDT1-04.5	Heart Rate Variability in Patients with Major Depressive Disorder and Healthy Controls during Non-REM Sleep and REM Sleep Kwon, Hyunbin (Seoul National Univ.); Yoon, Heenam (Seoul National Univ.); Jung, Dawoon (Seoul National Univ.); Choi, Sangho (Seoul National Univ.); Choi, Jaewon (Seoul National Univ. Hospital); Lee, Yujin (Seoul National Univ. Hospital); Jeong, Do-Un (Seoul National Univ. Hospital); Park, Kwang S.* (Seoul National Univ.)	16:20-16:22	ThDT2-01.6	Development of Handheld Optical-Resolution Photoacoustic Probe Park, Kyungjin (Pohang University of Science and Technology); Kim, Jin Young (POSTECH); Lee, Changho (Chonnam National University Medical School); Ryu, Seon Young (POSTECH); Kim, Sehui (POSTECH); Baik, Jin Woo (Pohang University of Science and Technology); Kim, Jongbeom (POSTECH); Kim, Chulhong* (Pohang University of Science and Technology)
16:20-16:22	ThDT1-04.6	Complexity Analysis of EEG under Magnetic Stimulation on Acupoint of Guangming (GB37) Geng, Yuehua* (Hebei Univ. of Technology); Xing, Yangyang (Hebei Univ. of Technology); Zhang, Xin (Tianjin Polytechnic Univ.); Ge, Manling (Hebei Univ. of Technology)	16:22-16:24	ThDT2-01.7	Development of Indocyanine Green Fluorescence Imaging System using Near Infra-Red Light on Laparoscopic Surgery Park, Sunup (OSONG Medical Innovation Foundation); Yoo, Sojeong (OSONG Medical Innovation Foundation); Kang, Taegyeon (OSONG Medical Innovation Foundation); Kim, Seok-ki (National Cancer Center); Lee, Seungrag* (OSONG Medical Innovation Foundation)
16:22-16:24	ThDT1-04.7	Higuchi Fractal Dimension of the Electroencephalogram as a Biomarker for Early Detection of Alzheimer's Disease Al-nuaimi, Ali H. Hussein* (Univ. of Plymouth); Jammeh, Emmanuel (Plymouth Univ., School of Computing & Mathematics); Sun, Lingfen (Plymouth Univ., School of Computing & Mathematics); Ifeakor, Emmanuel (Univ. of Plymouth)			

16:24-16:26 ThDT2-01.8
Evaluation of Methods for Endoscopic 3D-Measurements using the Example of Endometriosis Diagnosis
Schuldt, Dennis* (*University of Applied Sciences and Arts Dortmund*); Sutorma, Andreas (*University of Applied Sciences and Arts Dortmund*); Tanriverdi, Fatih (*University of Applied Sciences and Arts Dortmund*); Thiem, Jörg (*University of Applied Sciences and Arts Dortmund*)

16:26-16:28 ThDT2-01.9
Ex-Vivo Elasticity Assessment of Stroke Rat Brain using ARFI-OCE
Chang, Yeon Hee (*DGIST*); Kim, Jihun (*DGIST*); Hwang, Jae Youn (*Daegu Gyeongbuk Institute of Science and Technology*); Oh, Yong-Seok (*DGIST*); Song, Cheol* (*DGIST*)

16:28-16:30 ThDT2-01.10
Physically-Synthesized Porous Gold Nanoparticles for Biological Applications
Wi, Jung-Sub* (*Korea Research Institute of Standards and Science*); Park, Jisoo (*Korea Research Institute of Standards and Science*); Kang, Heesung (*Korea Research Institute of Standards and Science*); Lee, Sang-Won (*Korea Research Institute of Standards and Science*); Lee, Tae Geol (*Korea Research Institute of Standards and Science*)

ThDT2-02: 16:10-17:10 Cho Room
Optical Imaging – Coherence Tomography (Poster Session)

16:10-16:12 ThDT2-02.1
Integrated Optical Coherence Tomography and Fluorescence Lifetime Imaging Catheter for Detecting Atherosclerotic Plaque in Vivo
Lee, Min Woo (*Hanyang Univ.*); Kang, Woo Jae (*KAIST*); Nam, Hyeong Soo (*Hanyang Univ.*); Song, Joon Woo (*Guro Hospital, Korea Univ.*); Kim, Jin Won (*Korea Univ. Guro Hospital*); Oh, Wang-Yuhl (*KAIST*); Yoo, Hongki* (*Hanyang Univ.*)

16:12-16:14 ThDT2-02.2
Visualization of Bioresorbable Vascular Scaffold Disruption by ECG-Triggered Ultra-High Speed OCT System and Investigation of Its Detrimental Effect on Arterial Healing by Integrated OCT/NIRF System
Nam, Hyeong Soo (*Hanyang Univ.*); Kim, Sunwon (*Korea Univ. Guro Hospital*); Park, Hyun-Sang (*KAIST*); Song, Joon Woo (*Guro Hospital, Korea Univ.*); Oh, Wang-Yuhl (*KAIST*); Kim, Jin Won (*Korea Univ. Guro Hospital*); Yoo, Hongki* (*Hanyang Univ.*)

16:14-16:16 ThDT2-02.3
Design and Fabrication of Gastrointestinal OCT Probe with Extended Depth of Focus
Xing, Jingchao (*Hanyang Univ.*); Yoo, Hongki* (*Hanyang Univ.*)

ThDT2-03: 16:10-17:10 Cho Room
Optical Imaging – Confocal Microscopy (Poster Session)

16:10-16:12 ThDT2-03.1
Boundary Detection Method in Skin Diseases by using Confocal Raman Micro-Spectroscopy
Sohn, Wonbum (*Kyunghee University*); Shin, Younggwon (*Kyung Hee University*); Kim, Soogeun (*Kyung Hee University*); Lee, Soo Yeol* (*Kyung Hee University*)

ThDT2-04: 16:10-17:10 Cho Room
Optical Imaging and Microscopy – Fluorescence Microscopy (Poster Session)

16:10-16:12 ThDT2-04.1
Automatic Segmentation of Z-Lines in Cardiac Cells from Microscope Fluorescence Images
Nolla-Colomer, Carme* (*Universitat Politècnica de Catalunya*); Vallmitjana, Alex (*Automatic Control Dept., Universitat Politècnica de Catalunya*); Marchena, Miquel (*Universitat Politècnica de Catalunya*); Echebarria, Blas (*Universitat Politècnica de Catalunya*); Herrainz, Adela (*Cardiovascular Research Center from the Spanish National Research*); Hove-Madsen, Leif (*Cardiovascular Research Center from the Spanish National Research*); Chen, S.R. Wayne (*University of Calgary*); Benitez, Raul (*Universitat Politècnica de Catalunya*)

ThDT2-05: 16:10-17:10 Cho Room
Optical Imaging and Microscopy – Microscopy (Poster Session)

16:10-16:12 ThDT2-05.1
HerNet: An Automated HER-2 Scoring Tool for Breast Cancer Screening using Deep Learning
Saha, Monjoy* (*Indian Institute of Technology Kharagpur*); Arun, Indu (*TMC, West Bengal*); Chakraborty, Chandan (*Indian Institute of Technology, Kharagpur*)

16:12-16:14 ThDT2-05.2
3D Position Detection of Cell Nuclei in Hematoxylin-Stained Histological Sections
Takano, Masashi (*Shibaura Institute of Technology*); Takahashi, Masanobu* (*Shibaura Institute of Technology*); Nakano, Masayuki (*Shonan Fujisawa Tokushukai Hospital*)

16:14-16:16 ThDT2-05.3
Skin Cell Heat Damage Evaluation for the Safety of Laser Medical Devices
Katagiri, Wataru* (*Keio Univ. Graduate School of Science and Tech.*); Nyberg, Tobias (*Royal Institute of Tech., Sweden*)

ThDT2-06: 16:10-17:10 Cho Room
Optical Imaging and Microscopy – Multi Photon Imaging (Poster Session)

16:10-16:12 ThDT2-06.1
Microfluidics-on-a-Tongue Imaging Chamber for Taste Mapping in Vivo
Han, Jisoo (*Sungkyunkwan University*); Choi, Myunghwan* (*Sungkyunkwan University*)

16:12-16:14 ThDT2-06.2
Real-Time Two-Photon Fluorescence Lifetime Imaging Microscopy for Deep-Tissue Tomography
Ryu, Jiheun* (*Korea Advance Institute of Science and Technology (KAIST)*); Jeong, Jae-Heon (*Korea Advanced Institute of Science and Technology (KAIST)*); Yoo, Hongki (*Hanyang University*); Gweon, Dae-Gab (*Korea Advanced Institute of Science and Technology (KAIST)*)

ThDT2-07: 16:10-17:10 Cho Room
Optical Imaging and Microscopy – Near Infra-Red Spectroscopy (Poster Session)

16:10-16:12 ThDT2-07.1
Measurement of Brain Hemodynamic Change According to Dietary Intake using Near-Infrared Spectroscopy
Fukuda, Keiko* (*Tokyo Metropolitan College of Industrial Technology*); Yuki, Muramatsu (*Tokyo Metropolitan College of Industrial Technology*); Hasegawa, Masahiro (*Tokyo Metropolitan College of Industrial Technology*)

16:12-16:14 ThDT2-07.2
Design of an Endoscope for Thermal Inspection
Kim, Keo-Sik* (*Electronics and Telecommunications Research Institute (ETRI)*); Min, Gihyeon (*Electronics and Telecommunications Research Institute (ETRI)*); Son, Dong Hoon (*Electronics and Telecommunications Research Institute (ETRI)*); Kang, Hyun Seo (*Electronics and Telecommunications Research Institute (ETRI)*); Kim, Sung Chang (*Electronics and Telecommunications Research Institute (ETRI)*)

ThDT2-08: 16:10-17:10 Cho Room
Optical Imaging and Microscopy – Neuroimaging (Poster Session)

16:10-16:12 ThDT2-08.1
Spectral Reflectometry on the Myelinated Axon
Kwon, Junhwan (*Center for Neuroscience Imaging Research, Inst. of Basic Sci*); Choi, Myunghwan* (*Sungkyunkwan Univ.*)

16:12-16:14 ThDT2-08.2
Simultaneous Optical and Electrical Measurements of Neural Activities from Clustered Neural Networks
Kim, Raeyoung (*KAIST*); Nam, Yoonkey* (*Korea Advanced Institute of Science and Technology*)

ThDT3-01: 16:10-17:10
Cardiac Imaging and Image Analysis (Poster Session)

16:10-16:12 ThDT3-01.1
Cardiac Cycle Phase Classification for Four-Dimensional Imaging of Zebrafish Embryos
He, Hengda (*School of Optical and Electronic Info., Huazhong Univ.*); Cheng, Chang-Chieh* (*Natl. Chiao Tung Univ.*); Chen, Yen-Ling (*Dept. of Applied Chemistry and Dept. of Biological Sci*); Liau, Ian (*Dept. of Applied Chemistry and Institute of Molecular Scien*); Ching, YuTai (*Natl. Chiao Tung Univ.*)

16:12-16:14 ThDT3-01.2
Fully Automated Lumen Morphology Segmentation and 3D Reconstruction Algorithms for Optical Coherence Tomography
Yang, Su (*Keimyung University*); Yoon, Hyuck-Jun (*Keimyung University*); Kim, Seon-Chil (*Keimyung University*); Lee, Jong-Ha* (*Keimyung University, School of Medicine*)

16:14-16:16 ThDT3-01.3
An Interactive Biventricular Modelling Tool using Subdivision Surface: Application to Congenital Heart Disease
Mauger, Charlene Alice* (*University of Auckland*); Gilbert, Kathleen (*University of Auckland*); Cowan, Brett (*University of Auckland*); Suinesiaputra, Avan (*University of Auckland*); Young, Alistair (*University of Auckland*)

ThDT3-02: 16:10-17:10
Dual-Energy X-Ray Imaging (Poster Session)

16:10-16:12 ThDT3-02.1
Dual Energy-Based Metal Segmentation for Metal Artifact Reduction in Dental Computed Tomography
Hegazy, Mohamed Abdalla Ahmed* (*Dept. of Biomed Eng., Kyung Hee Univ.*); Eldib, Mohamed Elsayed (*Dept. of Biomed Eng., Kyung Hee Univ.*); Hernandez, Daniel (*Kyung Hee Univ.*); Lee, Jeong Seok (*Korea Electrotechnology Research Institute*); Mun, Yang Ji (*Dept. of Biomed Eng., Kyung Hee Univ.*); Cho, Myung Hye (*Dept. of Biomed Eng., Kyung Hee Univ.*); Cho, Min Hyoung (*Kyung Hee Univ.*); Lee, Soo Yeol (*Kyung Hee Univ.*)

ThDT3-03: 16:10-17:10
EEG Imaging (Poster Session)

16:10-16:12 ThDT3-03.1
SigViewer: Visualizing Multimodal Signals Stored in XDF (Extensible Data Format) Files
Lin, Yida (*Columbia Univ.*); Brunner, Clemens* (*Univ. of Graz*); Sajda, Paul (*Columbia Univ.*); Faller, Josef (*Columbia Univ.*)

16:12-16:14 ThDT3-03.2
A Comparison of Single-Trial EEG Classification and EEG-Informed fMRI across Three MR Compatible EEG Recording Systems
Faller, Josef* (*Columbia University*); Hong, Linbi (*Columbia University*); Cummings, Jennifer (*Columbia University*); Sajda, Paul (*Columbia University*)

16:14-16:16 ThDT3-03.3
Second Order Blind Identification and Support Vector Machine Technique towards Imagery Movement Identification from EEG Signals
Kalogiannis, Gregory (*Aristotle University of Thessaloniki*); Hassapis, George* (*Aristotle University of Thessaloniki*)

ThDT3-04: 16:10-17:10
Micro-CT Imaging (Poster Session)

16:10-16:12 ThDT3-04.1
Automatic Optimization of Segmentation-Free Empirical Beam Hardening Correction
Mun, Yang Ji* (*Dept. of Biomed Engineering, Kyung Hee Univ.*); Hernandez, Daniel (*Kyung Hee Univ.*); Hegazy, Mohamed Abdalla Ahmed (*Dept. of Biomed Engineering, Kyung Hee Univ.*); Eldib, Mohamed Elsayed (*Dept. of Biomed Engineering, Kyung Hee Univ.*); Cho, Min Hyoung (*Kyung Hee Univ.*); Lee, Soo Yeol (*Kyung Hee Univ.*)

16:12-16:14 ThDT3-04.2

Ring Artifact Correction using Entropy Minimization
Eldib, Mohamed Elsayed* (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Hegazy, Mohamed Abdalla Ahmed (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Hernandez, Daniel (*Kyung Hee Univ.*); Lee, Jeong Seok (*Korea Electrotechnology Research Institute*); Mun, Yang Ji (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Cho, Myung Hye (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Cho, Min Hyoung (*Kyung Hee Univ.*); Lee, Soo Yeol (*Kyung Hee Univ.*)

16:14-16:16 ThDT3-04.3

Automatic Geometric Calibration for Cone Beam Micro-CT
Hernandez, Daniel* (*Kyung Hee Univ.*); Eldib, Mohamed Elsayed (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Hegazy, Mohamed Abdalla Ahmed (*Dept. of Biomedical Engineering, Kyung Hee Univ.*); Cho, Myung Hye (*Kyung Hee Univ.*); Lee, Soo Yeol (*Kyung Hee Univ.*); Mun, Yang Ji (*Dept. of Biomedical Engineering, Kyung Hee Univ.*)

ThDT3-05: 16:10-17:10
PET and SPECT Imaging (Poster Session)

16:10-16:12 ThDT3-05.1
Intracranial-Electrophysiologic Correlates of Cerebral Glucose Metabolic Abnormalities in Pediatric Epilepsy
Jeong, Jeong-Won* (*Wayne State Univ. School of Medicine*); Asano, Eishi (*Depts of Pediatrics and Neurology, Wayne State Univ.*); Juhasz, Csaba (*Wayne State Univ. School of Medicine*)

16:12-16:14 ThDT3-05.2
Using Cherenkov Radiation for Vertex Detection in a Compton Camera Setup for Nuclear Imaging
Mielke, Matthias* (*Univ. of Siegen*); Brück, Rainer (*Univ. of Siegen*); Fleck, Ivor (*Univ. Siegen, Dept. of Physics*)

16:14-16:16 ThDT3-05.3
Precise System Modeling for Image Reconstruction of Preclinical Quad-Head PET
Lee, Sooyoung (*Korea Univ.*); Bae, Seungbin (*ARALE Laboratory*); Kim, Kwangdon (*Korea Univ.*); Bae, Jaekwon (*Korea Institute of Radiological Medical Sciences*); Lee, Hakjae (*Korea Univ.*); Kim, Kyeong Min (*Korea Institute of Radiological and Medical Sciences*); Lee, Kisung* (*Korea Univ.*)

16:16-16:18 ThDT3-05.4
Feasibility Study of Data Acquisition System based on Oscilloscope for Radiation Detector
Yang, Jingue (*Chonnam National University*); Kang, Jihoon* (*Chonnam National University*)

16:18-16:20 ThDT3-05.5
Evaluation of Single Photon Emission Computed Tomography/Computed Tomography (SPECT/CT) Image Applying to Three-Dimensional Printing Phantom
Lee, Jooyoung (*Chungbuk National University, Songho College*); Park, Hoon-Hee (*377 Gwangmyeong-ro, Seongnam, Shingu College*); Lee, Tae Soo* (*Chungbuk National University*)

16:20-16:22 ThDT3-05.6
Improved Patch-Based Maximum a Posteriori Reconstruction for Positron Emission Tomography
Ren, Xue (*Paichai Univ.*); Lee, Soo-Jin* (*Paichai Univ.*)

ThDT3-06: 16:10-17:10
PET and SPECT Imaging Applications (Poster Session)

16:10-16:12 ThDT3-06.1
Non-Invasive and Direct Measurement of Arterial Radioactivity using Scintillator Detectors
Kim, Bo Kyoung (*Gachon Univ.*); Jeong, Bong Hyuk (*Gachon Univ.*); Kim, Jaeseung (*Gachon Univ.*); Lee, Yongki (*Dongnam health Univ.*); Son, Young Don* (*Gachon Univ.*)

16:12-16:14 ThDT3-06.2
Side-Readout Radiation Detector based on GAPD and LYSO for Hand-Held Radiation Imager
Han, Sookyeong (*Chonnam National University*); Kang, Jihoon* (*Chonnam National University*)

16:14-16:16 Comparison of 18F-FDG PET/CT Standardized Uptake Values Park, Hoon-Hee* (377 Gwangmyeong-ro, Seongnam, Shingoo College); Lee, Jooyoung (Chungbuk National University, Songho College); Lee, Tae Soo (Chungbuk National University)	ThDT3-06.3	16:12-16:14 Development and Verification of a Reference Phantom for Certified Length in Medical Image Kim, Hojae (Yonsei University); Hong, Cheolpyo (Catholic University of Daegu); Teo-Jeon, Shin (Dep. Pediatric dentistry, Seoul National University, School of D); Hee-Joung, Kim (Yonsei University); Cho, Hyo-Min* (KRISs)	ThDT3-09.2
ThDT3-07: 16:10-17:10 X-Ray – Fluoroscopy (Poster Session)		16:14-16:16 An Artifact Reduction Evaluation in INER Prototype Tomosynthesis Shen, Yu-Hsiang* (Inst. of Nuclear Energy Research, Taiwan); Tseng, Fan-Pin (Inst. of Nuclear Energy Research, Taiwan); Lin, Chia-Yu (Inst. of Nuclear Energy Research, Taiwan); Chang, Chia-Hao (Inst. of Nuclear Energy Research, Taiwan); Ni, Yu-Ching (Inst. of Nuclear Energy Research, Taiwan); Tseng, Sheng-Pin (Inst. of Nuclear Energy Research, Taiwan)	
16:10-16:12 Distance-Weighted and Normalized Correlation Coefficient based Algorithm for Tracking Hyoid Bone Kim, Hang-Keun* (Gachon Univ.); Kim, Taejin (Gachon Univ.); Park, Soyun (Gachon Univ.); Cho, Hyeon (Gachon Univ.); Son, Young Don (Gachon Univ.); Moon, Jong Hoon (Gachon Univ.); Cho, Hwi-young (Gachon Univ.)	ThDT3-07.1	16:10-16:12 Determination of the Optimal Projection Angles of Coronary Artery Bifurcation for Stent Placement based on Coronary Computed Tomographic Angiography Lin, Yi-Chen* (Natl. Taiwan Univ.); Wang, Tzung-Dau (Cardiovascular Center and Division of Cardiology); Lee, Wen-Jeng (Dept. of Medical Imaging, Natl. Taiwan Univ. Hospital); Ko, Wei-Chun (Natl. Taiwan Univ. Hospital); Hung, Wei-Hsin (Natl. Taiwan Univ.); Chen, Chung-Ming (Natl. Taiwan Univ.)	
ThDT3-08: 16:10-17:10 X-Ray CT Imaging (Poster Session)		ThDT4-01: 16:10-17:10 Integrated Wearable Systems I (Poster Session) Min Room	
16:10-16:12 Determination of the Optimal Projection Angles of Coronary Artery Bifurcation for Stent Placement based on Coronary Computed Tomographic Angiography Lin, Yi-Chen* (Natl. Taiwan Univ.); Wang, Tzung-Dau (Cardiovascular Center and Division of Cardiology); Lee, Wen-Jeng (Dept. of Medical Imaging, Natl. Taiwan Univ. Hospital); Ko, Wei-Chun (Natl. Taiwan Univ. Hospital); Hung, Wei-Hsin (Natl. Taiwan Univ.); Chen, Chung-Ming (Natl. Taiwan Univ.)	ThDT3-08.1	16:10-16:12 Noninvasive Hemoglobin Measurement using Unmodified Smartphone Camera and White Flash Wang, Edward* (University of Washington); Li, William (University of Washington); Zhu, Junyi (University of Washington); Rana, Rajneil (University of Washington); Patel, Shwetak (University of Washington)	ThDT4-01.1
16:12-16:14 Application of Calcium Subtraction Method to Phantom Image Including Motion Artifact in M-DCT Lee, Jongmin* (Kyungpook National Univ.); Park, YuJin (Kyungpook National Univ.); Kim, Junghun (Kyungpook National Univ.); Park, Jieun (Kyungpook National Univ.)	ThDT3-08.2	16:12-16:14 Development of a Portable Sensorised Handle for the Objective Assessment of the Effectiveness and Concordance of Intervention Plans in Dementia Ma, Jianjia* (Loughborough University); Zecca, Massimiliano (Loughborough University)	ThDT4-01.2
16:14-16:16 A Novel High Precision Measurement Method for Small Airway Wall Thickness in CT Imaging Yang, Zepa (Seoul National University); Jin, Hyeongmin (Seoul National University); Heo, Changyong (Seoul National University); Kim, Jong Hyo* (Seoul National University)	ThDT3-08.3	16:14-16:16 Personalized Cumulative UV Tracking on Mobiles and Wearables Dey, Soumyabrata (Samsung R & D Institute, Bangalore, India); Sahoo, Saswata (Samsung R & D Institute, Bangalore, India); Agrawal, Harshit (Samsung Research Institute Bangalore); Mondal, Arindam (Samsung R&D Institute India Bangalore); Bhowmik, Tanmoy* (Samsung Research Institute); Tiwari, Vijay Narayan (Samsung Research India, Bangalore)	ThDT4-01.3
16:16-16:18 Evaluation of Natural Head Position Reproduction Accuracy of Cone Beam Computed Tomography Image using Three-Dimensional Structured Light Scanner Choi, Min Hyuk (Seoul National Univ.); Lee, Sang Jeong (Seoul National Univ.); Woo, Sang-Yoon (Seoul National Univ.); Yoo, Ji Yong (Seoul National Univ.); Kang, Se Ryong (Seoul National Univ.); Yi, WonJin* (Seoul National Univ Sch of Dentistry)	ThDT3-08.4	16:16-16:18 A Gaussian Process Regression Model for Walking Speed Estimation using a Head-Worn IMU Zihajehzadeh, Shaghayegh* (PhD Student, Simon Fraser University); Tae, Chul-Gyu (Bigmotion Technologies); Park, Edward J. (Simon Fraser University)	ThDT4-01.4
16:18-16:20 Radiomic Analysis of Pulmonary Adenocarcinomas on CT Images Odo, Tsukasa* (Yamaguchi University); Kido, Shoji (Graduate School of Science and Technology for Innovation, Yamagu); Hirano, Yasushi (Yamaguchi University); Hashimoto, Noriaki (Yamaguchi University); Tanaka, Nobuyuki (Saiseikai Yamaguchi General Hospital)	ThDT3-08.5	16:18-16:20 Wearable Bio Signal Monitoring System Applied to Aviation Safety Kim, Sungho (Air Force Academy); Choi, Booyong (Air Force Academy); Cho, Taehwan (Air Force Academy); Lee, Yongkyun (Air Force Academy); Koo, Hyojin (Air Force Academy); Kim, Dongsoo* (Air Force Academy)	ThDT4-01.5
16:20-16:22 Improved Median-Regularized Transmission Reconstruction using Incremental Optimization Transfer Algorithm Jung, Ji Eun (Paichai University and Kumamoto University); Lee, Soo-Jin* (Paichai University)	ThDT3-08.6	ThDT4-02: 16:10-17:10 Wearable Sensing I (Poster Session) Min Room	
ThDT3-09: 16:10-17:10 X-Ray Imaging Applications (Poster Session)		16:10-16:12 A Simple Algorithm for Emotion Recognition, using Physiological Signals of a Smart Watch Pollreisz, David (TU Wien); TaheriNejad, Nima* (TU Wien)	
16:10-16:12 Effect of Detector Energy Resolution on Detection Limit of Gold Nanoparticles during Benchtop X-Ray Fluorescence Computed Tomography (XFCT) Manohar, Nivedh (Georgia Institute of Technology); Reynoso, Francisco (Washington University in St. Louis); Cho, Sang Hyun* (The University of Texas MD Anderson Cancer Center)	ThDT3-09.1	16:12-16:14 A Prospective Study of Examining Physiological Signals for Estimating Occurrence of Nocturnal Enuresis Moon, Junhyung* (Yonsei Univ.); Lee, Sangyeop (Yonsei Univ.); Lee, Taeho (Yonsei Univ.); Kye, Saewon (Yonsei Univ.); Lee, Yong Seung (Yonsei Univ.); Shin, Seung-chul (Yonsei Univ.); Lee, Kyoungwoo (Yonsei Univ.)	ThDT4-02.2

16:14-16:16	ThDT4-02.3	Wearable Internet of Things – From Human Activity Tracking to Clinical Integration Kumari, Poonam (<i>Kyung Hee University</i>); Loópez-Benítez, Miguel (<i>University of Liverpool</i>); Lee, Gyu Myoung (<i>Liverpool John Moores University</i>); Kim, Tae-Seong (<i>Kyung Hee University</i>); Minhas, Atul Singh* (<i>University of Liverpool</i>)	16:16-16:18	ThDT4-03.4	A Novel, Low Cost, Wearable Contact-Based Device for Breathing Frequency Monitoring Cesareo, Ambra* (<i>Dipartimento di Elettronica, Informazione e Bioingegneria, Polit</i>); Gandolfi, Stefano (<i>Dipartimento di Elettronica, Informazione e Bioingegneria, Polit</i>); Pini, Ilaria (<i>Dipartimento di Elettronica, Informazione e Bioingegneria, Polit</i>); Biffi, Emilia (<i>Scientific Institute Eugenio Medea, Bosisio Parini</i>); Reni, Gianluigi (<i>IRCCS</i>); Aliverti, Andrea (<i>Politecnico di Milano</i>)
16:16-16:18	ThDT4-02.4	Reconstructing Physical Activity Monitoring Outcome Measures using an Interval Sampling Approach Amor, James (<i>University of Warwick</i>); James, Christopher* (<i>University of Warwick</i>)	16:18-16:20	ThDT4-02.5	Levels of Activity Identification and Sleep Duration Detection with a Wrist-Worn Accelerometer-Based Device Verma, Vijay Kumar* (<i>Chang Gung University</i>); Lin, Wen-Yen (<i>Chang Gung University</i>); Lee, Ming-Yih (<i>Chang Gung University</i>); Lai, Chao-Sung (<i>Chang Gung University</i>)
16:20-16:22	ThDT4-02.6	A Monitoring System for Walking Rehabilitation after THR or TKR Surgeries Zheng, Qianpeng (<i>Tsinghua Univ.</i>); Chen, Hong* (<i>Tsinghua Univ.</i>)	16:20-16:22	ThDT4-03.6	Patient Cloth with Motion Recognition Sensors based on Flexible Piezoelectric Materials Cha, Youngsu* (<i>Korea Institute of Science and Technology</i>); Nam, Kihyuk (<i>Korea Institute of Science and Technology</i>); Kim, Doik (<i>Korea Institute of Science and Technology</i>)
16:22-16:24	ThDT4-02.7	A Wearable Sensor based Multi-Criteria-Decision-System for Real-Time Seizure Detection Ahmed, Abdullah (<i>National University of Sciences and Technology</i>); Ahmad, Waqas (<i>NUST</i>); Khan, Muhammad Jazib (<i>National University of Sciences and Technology</i>); Siddiqui, Shoaib Ahmed (<i>National University of Sciences and Technology</i>); Cheema, Hammad M.* (<i>School of Electrical Engineering and Computer Science, National</i>)	16:22-16:24	ThDT4-03.7	Towards an IoT-Based Upper Limb Rehabilitation Assessment System Jiang, Yizhou (<i>Fudan Univ.</i>); Qin, Yajie* (<i>Fudan Univ.</i>); Kim, IkHwan (<i>Fudan Univ.</i>); Wang, Yuanyuan (<i>Fudan Univ.</i>)
16:24-16:26	ThDT4-02.8	A Novel Method to Monitor Human Stress States using Ultra-Short-Term ECG Spectral Feature Hwang, Bosun (<i>Seoul National University</i>); Ryu, Ji Woo (<i>Kwangwoon University</i>); Park, Cheolsoo (<i>Imperial College London</i>); Zhang, Byoung-Tak* (<i>Seoul National University</i>)	16:24-16:26	ThDT4-03.8	Experimental Characterization and Analysis of the BITalino Platforms against a Reference Device Batista, Diana* (<i>Instituto Superior Técnico</i>); Plácido da Silva, Hugo (<i>IST - Instituto Superior Técnico</i>); Fred, Ana (<i>IT - Instituto de Telecomunicações</i>)
16:26-16:28	ThDT4-02.9	A Wearable Action Recognition System based on Acceleration and Attitude Angles using Real-Time Detection Algorithm Zhao, Guoru* (<i>Shenzhen Institutes of Advanced Tech. Chinese Academy of Sci</i>); Wang, Bo (<i>Wuhan University of Tech.</i>); Liang, Shengyun (<i>Shenzhen Institutes of Advanced Tech., Chinese Academy of S</i>); Ni, Xie (<i>Core Laboratory, Shenzhen Second People's Hospital, First Affili</i>); Ma, Yingnan (<i>Beijing Research Center of Urban System Engineering</i>); Gao, Xing (<i>Beijing Research Center of Urban System Engineering</i>)	16:26-16:28	ThDT4-03.9	Wearable PPG Sensor based Alertness Scoring System Dey, Jishnu (<i>Samsung R&D Institute India, Bangalore</i>); Bhowmik, Tanmoy* (<i>Samsung Research Institute</i>); Saswata (<i>Samsung R & D Institute, Bangalore, India</i>); Tiwari, Vijay Narayan (<i>Samsung Research India, Bangalore</i>)
ThDT4-03: 16:10-17:10	Min Room	Wearable Systems I (Poster Session)	16:28-16:30	ThDT4-03.10	Impedance Spectroscopy of Tripolar Concentric Ring Electrodes with Ten20 and TD246 Pastes Nasrollahhosseini, Seyed Hadi* (<i>University of Rhode Island</i>); Besio, W. G. (<i>University of Rhode Island</i>); Salazar Herrera, Daniel (<i>University of Rhode Island</i>)
16:10-16:12	ThDT4-03.1	IoT/M2M Wearable-Based Activity-Calorie Monitoring and Analysis for Elders Soraya, Sabrina Ifahdini (<i>National Chiao Tung University</i>); Chiang, Ting-Hui (<i>National Chiao Tung University</i>); Chan, Guo-Jing (<i>National Chiao Tung University</i>); Su, Yi-Juan (<i>National Chiao Tung University</i>); Yi, Chih-Wei (<i>National Chiao Tung University</i>); Tseng, Yu-Chee (<i>National Chiao Tung University</i>); Ching, YuTai* (<i>National Chiao Tung University</i>)	ThDT5-01: 16:10-17:10	Lee Room	Bio-Electric Sensors – Sensing Methods (Poster Session)
16:12-16:14	ThDT4-03.2	High-Density Ear-EEG Kappel, Simon Lind* (<i>Aarhus University, Denmark</i>); Kidmose, Preben (<i>Aarhus University, Denmark</i>)	16:10-16:12	ThDT5-01.1	Bioengineered Enzymatic Electrochemical Glucose Sensor Composed of Well Dispersed Functionalized Multiwall Carbon Nanotubes in Nafion Doped with Polypyrrole Globular Arrays Shrestha, Bishnu* (<i>Chonbuk National Univ.</i>); Shrestha, Sita (<i>Chonbuk National Univ.</i>); Bhattarai, Deval Prasad (<i>Chonbuk National Univ.</i>); Park, Chan Hee (<i>Chonbuk National Univ.</i>); Kim, Cheol Sang (<i>Chonbuk National Univ.</i>)
16:14-16:16	ThDT4-03.3	A Model based Analysis of Optimality of Sit-to-Stand Transition Madhushri, Priyanka (<i>University of Alabama in Huntsville</i>); Jovanov, Emil* (<i>University of Alabama in Huntsville</i>); Milenkovic, Aleksandar (<i>University of Alabama in Huntsville</i>); Shtessel, Yuri (<i>University of Alabama in Huntsville</i>)	16:12-16:14	ThDT5-01.2	A Facile and Reusable Computer Numeric Control-Milled Microfluidic Platform for Colorimetric and Biochemical Analysis Lee, Seung Ho (<i>Kyung Hee Univ.</i>); Kim, Wansun (<i>Kyung Hee Univ.</i>); Ahn, Yong Jin (<i>Kyung Hee Univ.</i>); Park, Hun-Kuk (<i>Kyung Hee Univ.</i>); Choi, Samjin* (<i>Kyung Hee Univ.</i>)
			16:14-16:16	ThDT5-01.3	An Advanced Contact Resistance Compensation Method towards Wearable Bioelectrical Impedance Analyzer with Miniature Electrodes Jung, Myoung Hoon (<i>Samsung Advanced Institute of Tech.</i>); Namkoong, Kak* (<i>Samsung Advanced Institute of Tech., Samsung Electronics Co</i>)

- 16:16-16:18 ThDT5-01.4
Highly Sensitive Self-Powered Glucose Biosensor
 Kulkarni, Tanmay (*University of Maryland Baltimore County*); Slaughter, Gymama* (*University of Maryland Baltimore County*)
- 16:18-16:20 ThDT5-01.5
Optimization of Electrical Conductivity of Thermally-Drawn SU-8/MWCNT Composite Microprobes for Biosensing
 Yang, DaSom (*Yonsei University*); Shin, Hye In (*Yonsei University*); Ryu, WonHyoun* (*Yonsei University*)
- 16:20-16:22 ThDT5-01.6
Comparison of Electrode Materials for Pasteless EEG Recording in the Ear
 Kim, Do Youn (*Interdisciplinary Program, Bioeng., Graduate School, Seoul*); Ku, Yunseo (*Seoul Natl. Univ., Samsung Advanced Inst. of Tech.*); Ahn, J.W. (*Seoul Natl. Univ.*); Sohn, J. (*Seoul Natl. Univ.*); Kim, H.C.* (*Seoul Natl. Univ.*)
- 16:22-16:24 ThDT5-01.7
A Differential Ion-Sensitive Sensor with Wide Dynamic Range
 Lee, Kang-Ho* (*Korea Institute of Machinery & Materials*); Lee, Dongkyu (*Korea Institute of Machinery & Materials*); Yoon, Jongsu (*Korea Institute of Machinery & Materials*); Kwon, Ohwon (*Korea Institute of Machinery & Materials*); Lee, Jaejong (*Korea Institute of Machinery & Materials*)
- 16:24-16:26 ThDT5-01.8
A Rapid Method for Determining the Erythrocyte Sedimentation Rate, Aggregation, Hematocrit and Dielectric Properties of Blood
 Zhanov, Alexander (*Gwangju Institute of Science and Technology (GIST)*); Yang, Sung* (*Gwangju Institute of Science and Technology (GIST)*)
- 16:26-16:28 ThDT5-01.9
Development of a Magnetoencephalography System and Sensor Configuration Analysis for Rats
 Kim, Ji-Eun (*Korea research Inst. of standards and science*); Kim, InSeon (*Korea Research Inst. of Standards and Science*); Kim, Kiwoong* (*Korea Research Inst. of Standards and Science*); Lim, Sanghyun (*Korea Research Inst. of Standards and Science (KRIS) and Un*); Kwon, Hyuk Chan (*Korea Research Inst. of Standards and Science*); Yu, Kwon Kyu (*Korea Research Inst. of Standards and Science*); Lee, Yong Ho (*Korea Research Inst. of Standards and Science*)
- 16:28-16:30 ThDT5-01.10
Interdigitated and Chain-Shaped Electrode for Real-Time Monitoring of Sodium Selenite Cytotoxicity on HEK 293/GFP Cells
 Park, Jinsoo (*Gachon Advanced Institute for Health Science and Technology(GAIH)*); Reddy, Chinnadayala Somasekhar (*Gachon University*); Cho, Sungbo* (*Gachon Univ.*)
- ThDT5-02: 16:10-17:10 Lee Room
Bio-Electric Sensors – Sensor Systems (Poster Session)
- 16:10-16:12 ThDT5-02.1
An Electrochemical Immunosensor for Detection of Pepsin Utilizing Gold/Polypyrrole Nanocorals
 Lee, Doyeon (*Kyung Hee Univ.*); Ahn, Yong Jin (*Kyung Hee Univ.*); Lee, Jaemyeon (*Kyunghee Univ.*); Lee, Young Ju (*Kyung Hee Univ.*); Lee, Gi-Ja* (*Kyung Hee Univ.*)
- 16:12-16:14 ThDT5-02.2
Verification of Novel Electrochemical Detection Method for Aptamer-Based Biosensors
 Yoo, Hyun Ji (*Ewha Womans Univ.*); Ji, Chang-Hyeon (*Ewha Womans Univ.*); Jun, Sang Beom* (*Ewha Womans Univ.*)
- 16:14-16:16 ThDT5-02.3
Development of Assessment Guidelines for Analytical Performance of POCT Type Hemoglobin Analyzer
 Lee, Seung-ro* (*Ministry of Food and Drug Safety*); Min, Hye-kyoung (*Ministry of Food and Drug Safety*); Kim, Bora (*Ministry of Food and Drug Safety*); Kim, Jieun (*Ministry of Food and Drug Safety*); Park, Chang Won (*National Institute of Food and Drug Safety Evaluation, Ministry*)
- 16:16-16:18 ThDT5-02.4
High Resolution Raman 3D Mapping for Nondestructive Analysis of Single Wall Carbon Nanotube Immobilized Transparent Electrodes
 Kim, Joong Hyun* (*Daegu-Gyeongbuk Medical Innovation Foundation*); Chung, Chan Ho (*Daegu-Gyeongbuk Medical Innovation Foundation*); Seo, Hyukjun (*Daegu-Gyeongbuk Medical Innovation Foundation*); Lee, Dong uk (*Daegu-Gyeongbuk Medical Innovation Foundation*)
- 16:18-16:20 ThDT5-02.5
A Novel Blood Pressure Estimation using Pulse Transit Time and Impedance Plethysmography
 Huynh, Huu Toan (*Pukyong National University*); Chung, Wan-Young* (*Pukyong National University*)
- 16:20-16:22 ThDT5-02.6
Surface Charge Dependence of DNA Translocation through Polymer based In-Plane Nanopore
 Jia, Zheng (*Louisiana State Univ.*); Choi, Junseo (*Louisiana State Univ.*); Park, Sunggook* (*Louisiana State Univ.*)
- ThDT5-03: 16:10-17:10 Lee Room
Chemo/Bio-Sensing – Biological Sensors and Systems (Poster Session)
- 16:10-16:12 ThDT5-03.1
Effect of Ph on Successive Ionic Layer Adsorption-Reaction Synthesis for Surface Enhanced Raman Scattering-Functionalized Paper Strip
 Kim, Wansun (*Kyung Hee Univ.*); Ahn, Yong Jin (*Kyung Hee Univ.*); Lee, Seung Ho (*Kyung Hee Univ.*); Park, Hun-Kuk (*Kyung Hee Univ.*); Choi, Samjin* (*Kyung Hee Univ.*)
- 16:12-16:14 ThDT5-03.2
A Sensitive Electrochemical Prohibitin Sensor based on the Three-Dimensional Porous Gold-Foamed Electrode
 Kwon, Hee Jung (*GIST*); Yun, Young-ran (*GIST*); Hong, Sung A (*GIST*); Yang, Sung* (*Gwangju Inst of Science & Tech0 (GIST)*)
- 16:14-16:16 ThDT5-03.3
Development of Ph Electrode for Diagnosis of Gastroesophageal Reflux Disease
 Kim, EungBo (*Hanbat National University*); Kim, SungIl (*Hanbat National University*); Cho, SungHwan (*Hanbat National University*); Joung, YeunHo* (*Hanbat National University*)
- 16:16-16:18 ThDT5-03.4
High Selective Glucose Sensor via Red Blood Cell Membrane and Its Glucose Transporter -1
 Kim, Insu (*Korea Univ.*); Kwon, DoHyung (*Korea Univ.*); Lee, Wonseok (*Yonsei University*); Lee, Sang Won (*Korea University*); Yoon, Dae Sung* (*Korea University*)
- 16:18-16:20 ThDT5-03.5
Harnessing Antibody-Modified Magnetic Nanoparticles for Competitive Assay based Detection of Bisphenol A
 Xue, Xue (*Sungkyunkwan University*); Nundy, Srijita (*Sungkyunkwan University*); Kwon, Oh-Hyep (*Komabiotech*); Choe, Woo-Seok* (*Sungkyunkwan University*)
- 16:20-16:22 ThDT5-03.6
A Paper-Based Colorimetric Detection of Hydrogen Sulfide from Live Cancer Cells
 Lee, Jaemyeon (*Kyunghee Univ.*); Lee, Young Ju (*Kyung Hee Univ.*); Ahn, Yong Jin (*Kyung Hee Univ.*); Choi, Samjin (*Kyung Hee Univ.*); Lee, Gi-Ja* (*Kyung Hee Univ.*)
- 16:22-16:24 ThDT5-03.7
Machine Learning Algorithm-Based Molecular Dynamic Simulation for Understanding the Molecular Mechanism of Amyloid-Related Diseases
 Yoon, Gwonchan (*Texas Tech University*); Lee, Myeongsang (*Korea University*); Na, Sungsoo (*Korea University*); Seo, Sung Eun (*Korea Research Institute of Bioscience & Biotechnology*); Lee, Jiyeon (*KRIBB*); Kwon, Oh Seok (*Korea Research Institute of Bioscience and Biotechnology*); Chong, Jo Woon* (*Texas Tech University*)

ThDT5-04: 16:10-17:10 Lee Room
Chemo/Bio-Sensing – Chemical Sensors and Systems (Poster Session)

16:10-16:12 ThDT5-04.1
Large-Amplitude Fast Square Wave Cyclic Voltammetry (FSWCV) for Differentiation of Neurotransmitters
 Park, CheonHo (*Hanyang University*); Kang, Yumin (*Hanyang University*); Shin, Hojin (*Hanyang University*); Cho, Hyunwoo (*Hanyang University*); Jang, DongPyo* (*Hanyang University*); Kim, In-Young (*Hanyang University*)

16:12-16:14 ThDT5-04.2
An Enzyme-Based Wearable Lactate Sensor Incorporating Complementary Organic Field Effect Transistors for High Sensitivity
 Baek, Sanghoon* (*Pohang University of Science and Technology (POSTECH)*); Kwon, Jimin (*Dept. of Creative IT Engineering, Pohang University of Science*); Sungjune, Jung (*Pohang University of Science & Technology*)

16:14-16:16 ThDT5-04.3
An Electrochemical Methylated DNA Sensor with Ion Concentration Polarization
 Hong, Sung A (*GIST*); Yang, Sung* (*Gwangju Institute of Science and Technology (GIST)*)

16:16-16:18 ThDT5-04.4
Self-Powered Triboelectric Aptasensor for Label-Free Highly Specific Thrombin Detection
 Jung, Yun Kyung* (*Inje University*); Park, Sung Heum (*Pukyong National University*)

16:18-16:20 ThDT5-04.5
Development of Biopsy Needle with Flexible Multi-Modal Physical/Chemical Sensors towards Accurate Needle Positioning
 Park, Jaeho (*Korea Advanced Institute of Science and Technology (KAIST)*); Jeong, Yongrok (*KAIST*); Kim, Kyuyoung (*Korea Advanced Institute of Science and Technology*); Gu, Jimin (*KAIST*); Park, Inkyu* (*Korea Advanced Institute of Science and Technology (KAIST)*)

16:20-16:22 ThDT5-04.6
High-Performance Detection of CRP using Au Nanoparticles in a “ μ -Capillary ELISA”
 Cho, Hyoyoung (*ETRI*); Kim, Wan-joong (*ETRI*); Park, Heekyeong (*ETRI*); Kim, Young-jun* (*ETRI*)

ThDT6-01: 16:10-17:10 Zworykin Room
Biomaterial-Cell Interactions – Biologics (Poster Session)

16:10-16:12 ThDT6-01.1
Matrix Stiffening Promotes Malignancy of Gastric Cancer Cells
 Jang, Minjeong (*KAIST*); Cheong, Jae-Ho (*Yonsei University College of Medicine*); Kim, Pilnam* (*Korea Advanced Institute of Science and Technology*)

16:12-16:14 ThDT6-01.2
Assessment of Invasion Characteristics of GBM Cells in Patient-Derived ECM-Based in Vitro Tumor Model
 Koh, Ilkyoo (*KAIST*); Cha, Junghwa (*KAIST*); Park, Jungseong (*Yonsei University*); Choi, Junjeong (*Yonsei University*); Kang, Seok-Gu (*Yonsei University*); Kim, Pilnam* (*Korea Advanced Institute of Science and Technology*)

16:14-16:16 ThDT6-01.3
Effect of Nanopillar and Nanopit Structures on Osteogenic Differentiation of Mesenchymal Stem Cells
 Yun, Young-Shik (*Yonsei University*); Ji, Seungmuk (*Yonsei Institute of Convergence Technology, Yonsei University*); Kang, Eun-Hye (*Dept. of Plastic & Reconstruction Surgery, College of Medicine*); Yun, In-Sik (*Dept. of Plastic & Reconstruction Surgery, College of Medicine*); Kim, Yong-Oock (*Dept. of Plastic & Reconstruction Surgery, College of Medicine*); Yeo, Jong-Souk* (*Yonsei University*)

16:16-16:18 ThDT6-01.4
Free Thiol-Inducing Microgels to Trap Invading Cancer Cells
 Cha, Junghwa (*KAIST*); Kim, Pilnam* (*Korea Advanced Institute of Science and Technology*)

ThDT6-02: 16:10-17:10 Zworykin Room
Biomaterial-Cell Interactions – Engineered Vascular Tissue (Poster Session)

16:10-16:12 ThDT6-02.1
Lamination-Based Assembly of Hydrogels with Integrated Channels using Nanoparticle Adhesives
 Attalla, Rana* (*McMaster University*); Celine, Ling (*McMaster University*); Selvaganapathy, Ravi (*McMaster University*)

16:12-16:14 ThDT6-02.2
Fabrication of Micro-Channels using Wire-Network Molding (WNM) and Its Evaluation of Micro-Channel Guided Vascularization in Biomimetic Hydrogels
 Jaeyeon, Lee (*College of Medicine, Korea Univ.*); Park, Yongdoo* (*Korea Univ.*); Se-Hwan, Lee (*Division of Mechanical & Automotive Engineering, College of En*); Young-sam, Cho (*Division of Mechanical & Automotive Engineering, College of En*)

16:14-16:16 ThDT6-02.3
In Vitro Study of Apoptotic Macrophages on Endothelial Cells in Mimicking Atherosclerosis Microenvironment
 Kim, Wanho* (*Korea Advanced Institute of Science and Tech.*); Son, Jegoo (*Korea Advanced Institute of Science and Tech.*); Jeon, Jessie (*Massachusetts Institute of Tech.*)

ThDT6-03: 16:10-17:10 Zworykin Room
Biomaterial-Cell Interactions – Functional Biomaterials (Poster Session)

16:10-16:12 ThDT6-03.1
A Multifunctional Bio-Ink for Invasive Neural Interfaces
 Righi, Martina* (*Scuola Superiore Sant'Anna*); Shin, Su (*Harvard Medical School*); Liu, Hua (*Zhejiang University*); Micera, Silvestro (*Scuola Superiore Sant'Anna*); Khademhosseini, Ali (*Harvard-MIT*)

ThDT6-04: 16:10-17:10 Zworykin Room
Biomaterials – Chemical and Electrochemical Sensors (Poster Session)

16:10-16:12 ThDT6-04.1
Analysis of Surface Potential Generated by MoS₂ Field-Effect Transistors for the Detection of Biomolecules using Kelvin Probe Force Microscopy
 Kim, Min-Hyung (*Yonsei University, Dept. of Biomedical Engineering*); Lim, Jongwon (*Yonsei University*); Choi, Seungyeop (*Yonsei University*); Lee, Hyungbeen (*Yonsei University*); Lee, Sang Woo* (*Yonsei University*)

16:12-16:14 ThDT6-04.2
Closed-Type of Pre-Treatment Device for Point-of-Care-Testing of Infectious Disease
 Park, Hyun-ju* (*Sungkyunkwan University*); Jang, Yo Chang (*Samsung Medical Center*); Lee, Min young (*Samsung Medical Center*); Lee, Kyu-Sung (*Samsung Medical Center*)

ThDT6-05: 16:10-17:10 Zworykin Room
Biomaterials – DNA Sensors (Poster Session)

16:10-16:12 ThDT6-05.1
Surface Potential Characterization of DNA-Capped Nanoparticles for Point Mutation Detection
 Lee, Hyungbeen (*Yonsei University*); Park, Insoo (*Yonsei University, Dept. of Biomedical Engineering*); Choi, Seungyeop (*Yonsei University*); Lim, Jongwon (*Yonsei University*); Lee, Wonseok (*Yonsei University*); Yoon, Dae Sung (*Korea University*); Lee, Sang Woo* (*Yonsei University*)

16:12-16:14 ThDT6-05.2
Bioplasmonic Paper for Chromatographic Separation and Sensitive Detection of Multiple PCR Probes
 Kim, yeaji (*Sungkyunkwan University*); Kang, Minhee* (*Samsung Medical Center*); Choi, Dongil (*Samsung Medical Center*)

July 13 Thursday

ThDT6-06: 16:10-17:10 Zworykin Room
Micro- and Nano-Technology (Poster Session)

16:10-16:12 ThDT6-06.1
3D-Sharpener, Microfabricated Tool for Insertion of Flexible Electrode Arrays into Brain
Chen, Supin (*Lawrence Livermore Natl. Lab*); Fan, Jiang Lan* (*Univ. of California, San Francisco*); Chung, Jason E. (*Univ. of California, San Francisco*); Joo, Hannah (*Univ. of California, San Francisco*); Pebbles, Jeanine (*Lawrence Livermore Natl. Lab*); Frank, Loren (*Univ. of California, San Francisco*); Tolosa, Vanessa (*Lawrence Livermore Natl. Lab*)

16:12-16:14 ThDT6-06.2
Applications of Dielectrophoretic Techniques for Simultaneous Analysis from Molecule to Cell Level
Park, Insoo (*Yonsei Univ., Dept. of Biomedical Engineering*); Choi, Seungyeop (*Yonsei Univ.*); Lim, Jongwon (*Yonsei Univ.*); Lee, Sang Woo* (*Yonsei Univ.*)

16:14-16:16 ThDT6-06.3
Controllable Fabrication of Taper-Nanopore Arrays using Anodic Aluminum Oxide (AAO)
Park, Hyung joon (*Korea University*); Lee, Min young (*Korea University*); Lee, Kyu Back* (*Korea University*)

16:16-16:18 ThDT6-06.4
Bioimaging of Mesenchymal Stem Cells using Hyaluronic Acid Conjugated Carbon Dots
Li, Wen-Tyng* (*Chung-Yuan Christian University*)

16:18-16:20 ThDT6-06.5
Temperature Cycling Effect on Amyloid Fibrillation
Lee, Wonseok (*Yonsei University*); Lee, Hyungbeen (*Yonsei University*); Lee, Sang Won (*Korea University*); Choi, Yeseong (*Korea Univ.*); Kim, Insu (*Korea Univ.*); Lee, Gyudo (*Korea University*); Yoon, Dae Sung* (*Korea University*)

16:20-16:22 ThDT6-06.6
A Portable Fluorescence Cell Counter for Evaluating Somatic Cells in Dairy Cows
Lee, Yu Jin (*Kyung Hee Univ.*); Kim, Byeongyeon* (*Kyung Hee Univ.*); Park, Jong Gwan (*Kyunghee Univ.*); You, Dongwon (*Kyunghee Univ.*); Choi, Sung Young (*Kyung Hee Univ.*)

ThDT6-07: 16:10-17:10 Zworykin Room
Nano-Bio Technology Design (Poster Session)

16:10-16:12 ThDT6-07.1
Non-Epigenetic Approach for Modulation of Cell Activity by Mimicking Cell-Substrate Interaction
Park, Jae Seong (*Kyung Hee University*); Lee, EunAh* (*Kyung Hee University*); Choi, Da Heui (*Chung-Ang University*); Hong, Jinkee (*Chung-Ang University*); Oh, Tong In (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*); Park, Jong Kuk (*Korea Institute of Radiological and Medical Sciences*)

16:12-16:14 ThDT6-07.2
Multi-Layer Coating of Mesenchymal Stem Cells using Hyaluronic Acid and Collagen
Lee, EunAh* (*Kyung Hee Univ.*); Jang, Seo Young (*Kyung Hee Univ.*); Park, Jae Seong (*Kyung Hee Univ.*); Choi, Da Heui (*Chung-Ang Univ.*); Hong, Jinkee (*Chung-Ang Univ.*); Oh, Tong In (*Kyunghee Univ.*); Woo, Eung Je (*Kyung Hee Univ.*)

ThDT6-08: 16:10-17:10 Zworykin Room
Biomaterial-Cell Interactions – Stimuli-Sensitive Biomaterials (Poster Session)

16:10-16:12 ThDT6-08.1
Electropolymerized Polydopamine Thin Film Coating Loaded with Bortezomib Adjunct to Hyperthermia Therapy for Therapeutic Nitinol Stent Application
Aguilar, Ludwig Erik* (*Chonbuk National Univ.*); Kim, Minjeong (*Chonbuk National Univ.*); Kim, Ju Yeon (*Chonbuk National Univ.*); Park, Chan Hee (*Chonbuk National Univ.*); Kim, Cheol Sang (*Chonbuk National Univ.*)

ThDT7-01: 16:10-17:10 Herrick Room
Brain-Computer/Machine Interface (Poster Session)

16:10-16:12 ThDT7-01.1
Compare of Lower Limb Movement Recognition Method by EEG and Kinematics
Jiang, Shenglong* (*Tianjin University*); Yi, Weibo (*Tianjin University*); Dong, Kaixian (*Tianjin University*); He, Feng (*Tianjin University*); Zhou, Peng (*Tianjin University*); Qi, Hongzhi (*Tianjin University*); Ming, Dong (*Tianjin University*)

16:12-16:14 ThDT7-01.2
Deep Recurrent Convolutional Network for Classifying Motor Imagery based Brain-Computer Interface
Kim, Hyun Seok (*Seoul National University*); Park, Kwang S.* (*Seoul National University*)

16:14-16:16 ThDT7-01.3
Effects of Soft Drink on Brain Computer Interface
Meng, Jianjun* (*Univ. of Minnesota*); Mundahl, John (*Univ. of Minnesota - Dept. of Biomedical Engineering*); He, Jeffrey (*Mounds View High School*); He, Bin (*Univ. of Minnesota*)

16:16-16:18 ThDT7-01.4
Task Complexity Impact on Brain-Computer Interface Performance
Maaroomashat, Mohammadebrahim (*Shanghai Jiao Tong University, China*); Zhang, Dingguo* (*Shanghai Jiao Tong University*)

16:18-16:20 ThDT7-01.5
Novel System Architecture for Low Complex DWT based Eye Blink Identification for Controlling IoT Environments
Bandaru, Jagadish* (*Indian Institute of Tech. Hyderabad*); M. P. R., Sai Kiran (*Indian Institute of Tech. Hyderabad*); P, Rajalakshmi (*Indian Institute of Tech. Hyderabad*); Ramkrishna, Bharath (*Indian institute of Tech. Hyderabad*)

16:20-16:22 ThDT7-01.6
Classification Performance in Accuracy and Delay for Real-Time fNIRS-Based BCI System
Trakoolwilaiwan, Thanawin (*Daegu Gyeongbuk Institute of Science and Technology*); Kim, Kyungsoo (*Daegu Gyeongbuk Institute of Science and Technology*); Choi, Ji-Woong* (*Daegu Gyeongbuk Institute of Science and Technology*)

16:22-16:24 ThDT7-01.7
Three-Class Motor Imagery EEG Classification for ALS Patients
Huang, Shiuan (*National Taipei University of Technology*); Huang, Yi-De (*National Taipei University of Technology*); Huang, Hao-Chung (*National Taipei University of Technology*); Liu, Yi-Hung* (*National Taipei University of Technology*)

16:24-16:26 ThDT7-01.8
Flickering Action Video Improves Accuracy of Brain Computer Interface (BCI)
Lim, Hyunmi (*Keimyung Univ.*); Ku, Jeonghun* (*Keimyung Univ.*)

16:26-16:28 ThDT7-01.9
EEG-Based Brain-Computer Interface for Real-Time Binary Communication of Patients in Completely Locked-In State
Han, Chang-Hee (*Hanyang University*); Kim, Yong-Wook (*Hanyang University*); Kim, Do Yeon (*Hanyang University*); Im, Chang-Hwan* (*Hanyang University*)

16:28-16:30 ThDT7-01.10
Classification of Selective Attention to Spatially Separated Auditory Stimuli using Near-Infrared Spectroscopy (NIRS)
Min, Jun-Hong (*Chonnam National Univ.*); Han, Chang-Hee (*Hanyang Univ.*); Shim, Miseon (*Hanyang Univ.*); Kim, Yong-Wook (*Hanyang Univ.*); Im, Chang-Hwan (*Hanyang Univ.*); Kim, Do-Won* (*Chonnam National Univ.*)

ThDT7-02: 16:10-17:10 Herrick Room
Neural Stimulation – Deep Brain (Poster Session)

16:10-16:12 ThDT7-02.1
Optimizing of Medial Forebrain Bundle Stimulation Parameters for Operant Conditioning in Rats
Kong, Chanho (*Yonsei Univ.*); Shin, Jaewoo (*Yonsei Univ.*); Koh, Chin Su (*Yonsei Univ.*); Yoon, Min-Sik (*Yonsei Univ.*); Lee, Jihyeon (*Yonsei Univ.*); Lee, Yena (*Ewha Univ.*); Cho, Yoon Kyung (*Ewha Univ.*); Kim, Soonyoung (*Ewha Womans Univ.*); Jung, Hyun Ho (*Yonsei Univ.*); Jun, Sang Beom (*Ewha Womans Univ.*); Chang, Won Seok (*Yonsei Univ.*); Chang, Jin Woo* (*Yonsei Univ.*)

16:12-16:14 ThDT7-02.2
Towards Responsive Deep Brain Stimulation for Treatment of Medically Refractory Freezing of Gait in Parkinson's Disease
Molina, Rene (*University of Florida*); Opri, Enrico (*University of Florida*); Gunduz, Aysegul* (*University of Florida*)

16:14-16:16 ThDT7-02.3
Prolonged High Frequency Stimulation of Afferent Axons Can Suppress Epileptiform Spikes in the Hippocampus
Wang, Zhaoxiang (*Zhejiang University*); Feng, Zhouyan* (*Zhejiang University*); Zhou, Wenjie (*Zhejiang University*); Ma, Weijian (*Zhejiang University*)

16:16-16:18 ThDT7-02.4
Temporally-Varying Stimulation Paradigms Generate Stable Neuronal Responses
Cai, Ziyang (*College of Biomedical Engineering and Instrument Science, Zhejiang*); Feng, Zhouyan* (*Zhejiang University*); Guo, Zheshan (*Zhejiang University*); Qiu, Chen (*Zhejiang University*)

16:18-16:20 ThDT7-02.5
Thalamic DBS Parameter-Specific Modulation of M1 Neurons
Bello, Edward* (*University of Minnesota*); Agnesi, Filippo (*Mayo Clinic*); Xiao, YiZi (*University of Minnesota*); Johnson, Matthew (*University of Minnesota*)

16:20-16:22 ThDT7-02.6
Electrical Stimulation on Amygdala for Animal Locomotion Control via Fear Modulation
Lee, Youjin (*Ewha Womans Univ.*); Lee, Jee Won (*Ewha Womans Univ.*); Cho, Yoon Kyung (*Ewha Univ.*); Kim, Soonyoung (*Ewha Womans Univ.*); Lee, Yena (*Ewha Univ.*); Hwang, Seo Young (*Ewha Womans Univ.*); Yoo, Hyun Ji (*Ewha Womans Univ.*); Jeong, Hee Soo (*Ewha Womans Univ.*); Kong, Chanho (*Yonsei Univ.*); Shin, Jaewoo (*Yonsei Univ.*); Koh, Chin Su (*Yonsei Univ.*); Jung, Hyun Ho (*Yonsei Univ.*); Chang, Jin Woo (*Yonsei Univ.*); Jun, Sang Beom* (*Ewha Womans Univ.*)

16:22-16:24 ThDT7-02.7
High-Frequency Caudate Stimulation Biases Decision-Making in Multi-Armed Bandit Task
Santacruz, Samantha R.* (*University of California, Berkeley*); Carmena, Jose M. (*University of California, Berkeley*)

16:24-16:26 ThDT7-02.8
Low-Intensity Focused Ultrasound (LIFU) for Post-Stroke Motor Rehabilitation with Focal Ischemic Mice Model
Baek, Hongchae (*Korea Institute of Science and Tech.*); Kim, Min-Ju (*Korea Institute of Science and Tech.*); Park, Ki Joo (*Center for Bionics, Biomedical Research Institute, Korea Instititu*); Kim, Hyungmin* (*Korea Institute of Science and Tech.*)

16:26-16:28 ThDT7-02.9
Enhanced Motor Cortex Activity after Behavior Training
Lee, Jee Won (*Ewha Womans University*); Cho, Yoon Kyung (*Ewha University*); Lee, Youjin (*Ewha Womans University*); Kim, Soonyoung (*Ewha Womans University*); Jeong, Hee Soo (*Ewha Womans University*); Kong, Chanho (*Yonsei University*); Shin, Jaewoo (*Yonsei University*); Koh, Chin Su (*Yonsei University*); Jung, Hyun Ho (*Yonsei University*); Chang, Jin Woo (*Yonsei University*); Jun, Sang Beom* (*Ewha Womans University*)

16:28-16:30 ThDT7-02.10
Non-Training based Rat Movement Control using Electrical Stimulation

Koh, Chin Su (*Yonsei University*); Park, Haeyong (*Hallym University*); Yoon, Min-Sik (*Yonsei University*); Shin, Jaewoo (*Yonsei University*); Kong, Chanho (*Yonsei University*); Ahn, Seung-Hee (*Seoul National University*); Chang, Won Seok (*Yonsei University*); Jung, Hyun Ho (*Yonsei University*); Shin, Hyung-Cheul (*Hallym University*); Kim, Sung June (*Seoul National University*); Chang, Jin Woo* (*Yonsei University*)

16:30-16:32 ThDT7-02.11
Rat Behavioral Control with Liquid Crystal Polymer based Electrodes in 3D-Maze

Yoon, Min-Sik (*Yonsei Univ.*); Ahn, Seung-Hee (*Seoul Natl. Univ.*); Koh, Chin Su (*Yonsei Univ.*); Shin, Jaewoo (*Yonsei Univ.*); Kong, Chanho (*Yonsei Univ.*); Lee, Jihyeon (*Yonsei Univ.*); Shin, Soowon (*Seoul Natl. Univ.*); Yun, Seunghyeon (*Seoul Natl. Univ.*); Kim, Chaebin (*Seoul Natl. Univ.*); Chang, Won Seok (*Yonsei Univ.*); Jung, Hyun Ho (*Yonsei Univ.*); Kim, Sung June (*Seoul Natl. Univ.*); Chang, Jin Woo* (*Yonsei Univ.*)

ThDT8-01: Schwan Room
Human Performance III (Poster Session)

16:10-16:12 ThDT8-01.1
Using Cognitive Fit Theory to Evaluate Patient Understanding of Medical Images
Gichoya, Judy* (*Indiana University*); Alarifi, Mohammad (*IUPUI*); Bhaduri, Ria (*Indiana University Purdue University Indianapolis*); Tahir, Bilal (*Indiana University*); Purkayastha, Saptarshi (*Indiana University Purdue University Indianapolis*)

16:12-16:14 ThDT8-01.2
Computing the Variations in the Self-Similar Properties of the Various Gait Intervals in Parkinson Disease Patients
Manjeri Keloth, Sana (*MIT*); Poosapadi Arjunan, Sridhar* (*MIT University*); Kant Kumar, Dinesh (*MIT University*)

16:14-16:16 ThDT8-01.3
CNN based Approach for Activity Recognition using a Wrist-Worn Accelerometer
Panwar, Madhuri (*IIT Hyderabad*); Sri, Ram Dyuthi (*Indian Institute of Technology Hyderabad*); Konkimalla, Chandra Prakash (*Indian Institute of Technology Hyderabad*); Biswas, Dwaipayan (*Univ. of Southampton*); Acharyya, Amit* (*Indian Institute of Technology Hyderabad*); Maharatna, Koushik (*Univ. of Southampton*); Gautam, Arvind Kumar (*IIT Hyderabad*); Naik, Ganesh R. (*Univ. of Technology Sydney*)

16:16-16:18 ThDT8-01.4
The Timing of Theta Phase Synchronization Accords with Vigilant Attention
Wei, Jinwen (*Tianjin University*); Ke, Yufeng (*Tianjin University*); Sun, Chang (*Tianjin University*); An, Xingwei (*Tianjin University*); Qi, Hongzhi (*Tianjin University*); Ming, Dong (*Tianjin University*); Zhou, Peng* (*Tianjin University*)

16:18-16:20 ThDT8-01.5
Role of Multisensory Stimuli in Vigilance Enhancement – A Single Trial Event Related Potential Study
Abbasi, Nida Itrat* (*National Univ. of Singapore*); Bodala, Indu Prasad (*National Univ. of Singapore*); Bezerianos, Anastasios (*National Univ. of Singapore*); Sun, Yu (*National Univ. of Singapore*); Al-Nashash, Hasan (*American Univ. of Sharjah*); Thakor, Nitish (*Johns Hopkins Univ.*)

16:20-16:22 ThDT8-01.6
Automatic Visual Impairment Detection System for Age-Related Eye Diseases through Gaze Analysis
Yow, Ai Ping* (*Institute for Infocomm Research*); Wong, Damon (*Institute for Infocomm Research*); Liu, Huiying (*Institute for Infocomm Research*); Zhu, Hongyuan (*Tan Tock Seng Hospital*); Ong, Jing Wen Ivy (*Tan Tock Seng Hospital*); Laude, Augustinus (*Tan Tock Seng Hospital*); Lim, Tock Han (*Tan Tock Seng Hospital*)

July 13 Thursday

- 16:22-16:24 ThDT8-01.7
Towards Understanding Addiction Factors of Mobile Devices: An Eye Tracking Study on Effect of Screen Size
 Wibirama, Sunu* (*Universitas Gadjah Mada*); Adi Nugroho, Hanung (*Universitas Gadjah Mada*)
- 16:24-16:26 ThDT8-01.8
Effects of Galvanic Skin Response Feedback on User Experience in Gaze-Controlled Gaming: A Pilot Study
 Larradet, Fanny Isabelle* (*Istituto Italiano di tecnologia*); Barresi, Giacinto (*Istituto Italiano di Tecnologia*); Mattos, Leonardo (*IIT - Istituto Italiano di Tecnologia*)
- 16:26-16:28 ThDT8-01.9
Stimulation Time Determination for Lower Limb FES by using Gait Event and a "Delay"
 Bao, Xueliang (*Southeast Southeast University, State Key Lab of Bioelectronics*); Bi, Zhengyang (*Southeast Southeast University, State Key Lab of Bioelectronics*); Lü, Xiaoying (*Southeast University*); Wang, Zhigong* (*Southeast University*)
- 16:28-16:30 ThDT8-01.10
Characterization of the Pierce Two-Node Model under Exercise Load by Parameter Optimization Toward Construction of a Modified Thermal Model for Persons with Spinal Cord Injury
 Takizawa, Kenta* (*Tokyo Institute of Tech., Natl. Rehab. Center*); Suzurikawa, Jun (*Research Institute of Natl. Rehab. Center for Persons*); Higuchi, Yukiharu (*Natl. Rehab. Center for Persons with Disabilities*); Huang, Ming (*Nara Institute of Science and Tech.*); Tamura, Toshiyo (*Waseda Univ.*); Kurabayashi, Daisuke (*Tokyo Institute of Tech.*); Inoue, Takenobu (*Research Institute of Natl. Rehab. Center for Persons*); Ogata, Toru (*Natl. Rehab. Center for Persons with Disabilities*); Takashima, Atsushi (*Natl. Rehab. Center for Persons with Disabilities*)
- 16:30-16:32 ThDT8-01.11
Evaluation of Different Cochlear Implants in Unilateral Hearing Patients during Word Listening Tasks: A Brain Connectivity Study
 Maglione, Anton Giulio (*Univ. of Rome Sapienza*); Cartocci, Giulia (*Univ. of Rome Sapienza*); Modica, Enrica (*Univ. of Rome Sapienza*); Rossi, Dario (*Univ. of Rome Sapienza*); Colosimo, Alfredo (*Univ. of Rome "Sapienza"*); Di Flumeri, Gianluca* (*Univ. of Rome Sapienza*); Malerba, Paolo (*Cochlear*); Babiloni, Fabio (*Univ. of Rome*)
- 16:32-16:34 ThDT8-01.12
Estimation of Joint Position Error
 Agostini, Valentina* (*Politecnico di Torino*); Rosati, Samanta (*Politecnico di Torino*); Balestra, Gabriella (*Politecnico di Torino*); Trucco, Marco (*Presidio San Camillo, Torino*); Visconti, Lorenzo (*Studi Fisioterapici di Montagna, Aosta*); Knaflitz, Marco (*Politecnico di Torino*)
- 16:34-16:36 ThDT8-01.13
Measuring Vigilance Decrement using Computer Vision Assisted Eye Tracking in Dynamic Naturalistic Environments
 Bodala, Indu Prasad* (*National Univ. of Singapore*); Abbasi, Nida Itrat (*National Univ. of Singapore*); Sun, Yu (*National Univ. of Singapore*); Bezerianos, Anastasios (*National Univ. of Singapore*); Al-Nashash, Hasan (*American Univ. of Sharjah*); Thakor, Nitish (*Johns Hopkins Univ.*)
- 16:36-16:38 ThDT8-01.14
Correlation of Reaction Time and EEG Log Bandpower from Dry Frontal Electrodes in a Passive Fatigue Driving Simulation Experiment
 Foong, Ruyi* (*Agency for Science, Technology and Research (A*Star), Nanyang Te*); Ang, Kai Keng (*Institute for Infocomm Research*); Quek, Chai (*Nanyang Technological University*)
- 16:38-16:40 ThDT8-01.15
Differences in Lower Limb Muscle Activation Patterns during Sit to Stand Task for Different Heel Heights
 Naik, Ganesh R* (*Univ. of Tech. Sydney*); Pratihast, Manisha (*Univ. of Tech. Sydney*); Al-Ani, Ahmed (*Univ. of Tech., Sydney*); Chai, Rifai (*Univ. of Tech., Sydney*); Nguyen, Hung T. (*Univ. of Tech., Sydney*); Acharyya, Amit (*Indian Inst. of Tech. Hyderabad*)
- 16:40-16:42 ThDT8-01.16
Learning Classifier to Evaluate Movement Quality in Unassisted Pick-and-Place Exercises for Post-Stroke Patients: A Preliminary Study
 Jung, Hee-Tae* (*Daegu Univ.*); Kim, Hwan (*Daegu Univ.*); Oh Mi Young, Oh Mi Young (*Heeyeon Hospital*); Ryu, Taekyeong (*Heeyeon Hospital*); Kim, Yangsoo (*Heeyeon Hospital*)
- 16:42-16:44 ThDT8-01.17
EEG-Based Emergency Braking Intention Prediction for Brain-Controlled Driving Considering Electrode Falling-Off
 Wang, Huikang (*Beijing Institute of Tech.*); Bi, Luzheng* (*Beijing Institute of Tech.*); Teng, Teng (*Beijing Institute of Tech.*)
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- ThDT8-02: 16:10-17:10 Schwan Room
Neuromuscular Systems II (Poster Session)
- 16:10-16:12 ThDT8-02.1
The Role of Nonmotor Brain Regions during Human Motor Control
 Johnson, Jacob J. (*Indian Institute of Tech. Guwahati*); Breault, Macauley S.* (*Johns Hopkins Univ.*); Sacré, Pierre (*Johns Hopkins Univ.*); Kerr, Matthew (*Johns Hopkins Univ.*); Johnson, Matthew (*Cleveland Clinic*); Bulacio, Juan (*Cleveland Clinic*); Gonzalez-Martinez, Jorge (*Cleveland Clinic*); Sarma, Sridevi V. (*Johns Hopkins Univ.*); Gale, John (*Cleveland Clinic*)
- 16:12-16:14 ThDT8-02.2
Influence of Pre-Processing in the Extraction of Muscle Synergies during Human Locomotion
 Rimini, Daniele (*Politecnico di Torino*); Agostini, Valentina (*Politecnico di Torino*); Rosati, Samanta (*Politecnico di Torino*); Castagneri, Cristina (*Politecnico di Torino*); Balestra, Gabriella (*Politecnico di Torino*); Knaflitz, Marco* (*Politecnico di Torino*)
- 16:14-16:16 ThDT8-02.3
Feature Selection for Bayes Classification of Prolonged Fatigue on Rectus Femoris Muscle
 Jamaluddin, Nurul Fauzani (*Universiti Putra Malaysia*); Siti Anom, Ahmad* (*Universiti Putra Malaysia*)
- 16:16-16:18 ThDT8-02.4
Importance of Muscle Selection for EMG Signal Analysis during Upper Limb Rehabilitation of Stroke Patients
 Costa, Álvaro* (*Brain Science Institute (BSI) BSI-Toyota Collaboration Center (B)*); Itkonen, Matti (*Brain Science Institute (BSI), RIKEN*); Yamasaki, Hiroshi (*Brain Science Institute (BSI) BSI-Toyota Collaboration Center (B)*); Alnajjar, Fady SK (*BTCC, RIKEN*); Shimoda, Shingo (*RIKEN*)
- 16:18-16:20 ThDT8-02.5
Variance Distribution Analysis of Surface EMG Signals based on Marginal Maximum Likelihood Estimation
 Furui, Akira* (*Hiroshima University*); Hayashi, Hideaki (*Hiroshima University*); Kurita, Yuichi (*Hiroshima University*); Tsuji, Toshio (*Hiroshima University*)
- 16:20-16:22 ThDT8-02.6
Influence of Trans-Spinal Magnetic Stimulation in Electrophysiological Recordings for Closed-Loop Rehabilitative Systems
 Insausti-Delgado, Ainhoa* (*Eberhard Karls University of Tübingen*); López-Larraz, Eduardo (*University of Tübingen*); Bibián, Carlos (*University Tübingen*); Nishimura, Yukio (*NIPS*); Birbaumer, Niels (*Eberhard-Karls-University*); Ramos-Murguialday, Ander (*Eberhard Karls University of Tübingen/TECNALIA*)
- 16:22-16:24 ThDT8-02.7
Evaluation of Postural Instability in Stroke Patient during Quiet Standing
 Wang, Wei (*School of Control Science and Engineering, Shandong University*); Li, Ke* (*Shandong University*); Wei, Na (*Dept. of Geriatrics, Qilu Hospital, Shandong University*); Yin, Cuiping (*Dept. of Physical Medicine and Rehabilitation, Qilu Hospital*); Yue, Shouwei (*Dept. of Physical Medicine and Rehabilitation, Qilu Hospital*)

16:24-16:26 ThDT8-02.8
Influence of Light Finger Touch on Postural Stability during Upright Stance with Cold-Induced Plantar Hypoesthesia
 Oshita, Kazushige* (*Kyushu Kyoritsu University*); Yano, Sumio (*Kobe University*)

16:26-16:28 ThDT8-02.9
Entropy of Surface EMG Reflects Object Weight in Grasp-and-Lift Task
 Li, Yuiqi* (*City University of Hong Kong*); Jelfs, Beth (*RMIT University*); Chan, Rosa H. M. (*City University of Hong Kong*)

16:28-16:30 ThDT8-02.10
Muscle Synergy Analysis in Dart Throwing
 Tran, Nguyen Bao* (*Tokyo Univ. of Agriculture and Tech.*); Yano, Shiro (*Tokyo Univ. of Agriculture and Tech.*); Kondo, Toshiyuki (*Tokyo Univ. of Agriculture and Tech.*)

16:30-16:32 ThDT8-02.11
Estimation of Joint Angle based on Surface Electromyogram Signals Recorded at Different Load Levels
 Azab, Ahmed* (*Univ. of Sheffield*); Arvaneh, Mahnaz (*Univ. of Sheffield*); Mihaylova, Lyudmila (*Univ. of Sheffield*)

ThDT9-01: 16:10-17:10 Plonsey Room
Brain Functional Imaging III (Poster Session)

16:10-16:12 ThDT9-01.1
Spatiotemporal Properties of Magnetic Fields Induced by Auditory Speech Sound Imagery and Perception
 Uzawa, Shihomi* (*Kobe Univ.*); Takiguchi, Tetsuya (*Kobe Univ.*); Ariki, Yasuo (*Kobe Univ.*); Nakagawa, Seiji (*Chiba Univ.*)

16:12-16:14 ThDT9-01.2
Prefrontal Cortical Activation while Viewing Urban and Garden Scenes: A Pilot fNIRS Study
 Yu, Juanhong* (*Institute for Infocomm Research, Agency for Science, Technology and*); Ang, Kai Keng (*Institute for Infocomm Research*); Ho, Cyrus SH (*National University Hospital*); Sia, Angelia (*National Parks of Singapore*); Ho, Roger (*National University Hospital*)

16:14-16:16 ThDT9-01.3
Physiological Fluctuations Show Frequency-Specific Networks in fNIRS Signals during Resting State
 Fernandez Rojas, Raul* (*University of Canberra*); Huang, Xu (*University of Canberra*); Hernandez-Juarez, Jesus (*UABJO*); Ou, Keng-Liang (*Taipei Medical University*)

16:16-16:18 ThDT9-01.4
Analysis of Cognitive Fatigue using EEG Parameters
 Sengupta, Anwasha* (*IIT KHARAGPUR*); Tiwari, Abhishek (*IIT KHARAGPUR*); Routray, Aurobinda (*Indian Institute of Technology, Kharagpur, India*)

16:18-16:20 ThDT9-01.5
Cortical Activity Changes as Related to Oral Irritation – An fNIRS Study
 Zeng, Tianjiao (*Rutgers University*); Peru, Deborah (*Colgate Palmolive*); Maloney, Vanda Porter (*Colgate Palmolive*); Najafizadeh, Laleh* (*Rutgers University*)

16:20-16:22 ThDT9-01.6
Correlated Alpha Activity with the Facial Expression Processing Network in a Simultaneous EEG-fMRI Experiment
 Simões, Marco (*Univ. of Coimbra*); Direito, Bruno (*FCTUC, Univ. of Coimbra*); João, Lima (*IBILI, Univ. of Coimbra*); Castelhana, João (*ICNAS, Univ. of Coimbra*); Ferreira, Carlos (*ICNAS, Univ. of Coimbra*); Couceiro, Ricardo* (*Univ. of Coimbra*); de Carvalho, Paulo (*Univ. of Coimbra*); Castelo-Branco, Miguel (*Univ. of Coimbra*)

ThDT9-02: 16:10-17:10 Plonsey Room
Brain Functional Imaging – Connectivity and Information Flow (Poster Session)

16:10-16:12 ThDT9-02.1
Functional Connectomes using Kalman-Filter Beamforming and Phase Locking Value
 Nguyen, Thanh Duc* (*Gwangju Institute of Science and Tech.*); Lee, Boreom (*Gwangju Institute of Science and Tech. (GIST)*)

ThDT9-03: 16:10-17:10 Plonsey Room
Brain Functional Imaging – EEG (Poster Session)

16:10-16:12 ThDT9-03.1
Time-Frequency Analysis of the Electroencephalogram Related to the Skin Conductance Response Evoked by Emotional Events
 Seo, Pukyeong (*Yonsei Univ.*); Choi, Jeong Woo (*Yonsei Univ.*); Kim, Hyun (*Yonsei*); Yeo, Donghoon (*Yonsei Univ.*); Her, Seong Jin (*Yonsei Univ.*); Kim, Kyung Hwan* (*Yonsei Univ.*)

16:12-16:14 ThDT9-03.2
BCI based Word Speller using SSVEP and Electro-Ocular Gram Signals
 Ryu, Jaehwan (*INHA University*); Kim, Deok-Hwan* (*INHA University*); Lee, Miran (*Korea Institute of Science and Tech.*); Youn, Inchan (*Korea Institute of Science and Tech.*)

ThDT9-04: 16:10-17:10 Plonsey Room
Brain Functional Imaging – Evoked potentials (Poster Session)

16:10-16:12 ThDT9-04.1
A Basic Study on Emotion-Related Brain Potentials for Quantitative Emotion Analysis
 Hirakochi, Ren* (*Tokyo City Univ.*); Ishii, Takayuki (*Tokyo City Univ.*); Matsumoto, Kana (*Tokyo City Univ.*); Shimatani, Yuichi (*Tokyo City Univ.*); Kyoso, Masaki (*Tokyo City Univ.*)

ThDT9-05: 16:10-17:10 Plonsey Room
Brain Functional Imaging – Mapping (Poster Session)

16:10-16:12 ThDT9-05.1
Emotion Associated Brain Functional Network Analysis in Human EEG using Graph Measures
 Gonuguntla, Venkateswarlu (*Kyungpook National Univ.*); Shafiq, Ghufan (*Kyungpook National Univ.*); Mallipeddi, Rammohan (*Kyungpook National Univ.*); Veluvolu, Kalyana C.* (*Kyungpook National Univ.*)

16:12-16:14 ThDT9-05.2
A Somatosensory Brain Map Generation System based on Stereotactic Device and tFUS Brain Stimulation
 Kim, Kihyun (*Samsung Electronics*); Jang, Gyeongcheol (*INHA Univ.*); Kim, Taeksoo (*Samsung Electronics*); Lee, Eunjung (*Samsung Electronics*); Jeon, Seung Ryong* (*Yonsei Univ.*)

ThDT9-06: 16:10-17:10 Plonsey Room
Brain Functional Imaging – MEG (Poster Session)

16:10-16:12 ThDT9-06.1
Ostensible Alpha-Band Correlation with Memory Performance Shown during Memory Encoding: An MEG Study
 Yokosawa, Koichi* (*Hokkaido University*); Chitose, Ryota (*Hokkaido University*); Kimura, Keisuke (*Hokkaido University*)

ThDT9-07: 16:10-17:10 Plonsey Room
Brain Physiology and Modeling – Cognition, Memory, Perception (Poster Session)

16:10-16:12 ThDT9-07.1
In Vivo Single Fiber Recording Method for the Temporal Analysis of Texture Stimulation-Evoked Spike Trains from Rat Skin
 Park, Jinoh (*Hanyang University*); Cho, Kyeong Won (*Hanyang Univ.*); Choi, Jeongbong (*Hanyang Univ.*); Park, Kyong Hwan (*Hanyang Univ.*); Yook, Sunhyun (*Hanyang Univ.*); Kim, In-Young (*Hanyang Univ.*); Jung, Sung Jun (*Hanyang Univ.*); Jang, DongPyo* (*Hanyang Univ.*)

ThDT9-08: 16:10-17:10 Plonsey Room
Brain Physiology and Modeling – Neural Dynamics and Computation (Poster Session)

16:10-16:12 ThDT9-08.1
Multiphysics Simulation of Cyclic Voltammetry Neurotransmitter Sensing under Mechanical Motion
Han, Seonhye (*Norfolk State University*); Polanco, Michael (*Old Dominion University*); Bawab, Sebastian (*Old Dominion University*); Yoon, Hargsoon* (*Norfolk State University*)

16:12-16:14 ThDT9-08.2
Neurophysiological Correlates of Emotional Arousal in Healthy Adults
Kim, Hyun (*Yonsei Univ.*); Choi, Jeong Woo (*Yonsei Univ.*); Cha, Kwang Su (*Yonsei Univ.*); Yeo, Donghoon (*Yonsei Univ.*); Seo, Pukyeong (*Yonsei Univ.*); Her, Seong Jin (*Yonsei Univ.*); Kim, Kyung Hwan* (*Yonsei Univ.*)

ThDT9-09: 16:10-17:10 Plonsey Room
Brain Physiology and Modeling – Sensory-Motor (Poster Session)

16:10-16:12 ThDT9-09.1
Amplitude Variation of Somatosensory Evoked Potentials Due to Vibration of Perception Subthreshold Applied to Achilles Tendon in Elderly
Kim, Dong-Wook (*Chonbuk National Univ.*); Kim, Huigyun* (*Chonbuk National Univ.*); Kwak, Kiyoung (*Chonbuk National Univ.*); Kim, Jaeseong (*Chonbuk National Univ.*)

ThDT9-10: 16:10-17:10 Plonsey Room
Neural Signal Processing (Poster Session)

16:10-16:12 ThDT9-10.1
Denoising of Local Field Potentials from Deep Leads Affected by Pneumatic Noise Artifact
Opri, Enrico (*University of Florida*); Cernera, Stephanie (*University of Florida*); Molina, Rene (*University of Florida*); Gunduz, Aysegul* (*University of Florida*)

16:12-16:14 ThDT9-10.2
The Activation of Posterior Cingulate Cortex in Response to Emotional Pictures: An Electroencephalogram Current Source Density Analysis
Yeo, Donghoon (*Yonsei Univ.*); Choi, Jeong Woo (*Yonsei Univ.*); Cha, Kwang Su (*Yonsei Univ.*); Kim, Hyun (*Yonsei Univ.*); Seo, Pukyeong (*Yonsei Univ.*); Her, Seong Jin (*Yonsei Univ.*); Kim, Kyung Hwan* (*Yonsei Univ.*)

16:14-16:16 ThDT9-10.3
Variability Reduction in Cortical Potentials Evoked by Pitch Matched Electroacoustic Stimulation
Heydarzadeh, Mehrdad* (*The University of Texas at Dallas*); Tan, Chin-Tuan (*University of Texas, Dallas*)

16:16-16:18 ThDT9-10.4
Simultaneous Measurements of Cortical Somatosensory and Spinal Cord Evoked Potential Before and After Spinal Cord Injury in Rat
Matsumoto, Kana* (*Tokyo City University*); Hirakochi, Ren (*Tokyo City University*); Ishii, Takayuki (*Tokyo City University*); Kyoso, Masaki (*Tokyo City University*); Shimatani, Yuichi (*Tokyo City University*)

16:18-16:20 ThDT9-10.5
The Automatic Massage Chairs' Effects on Sustained Attention
Lim, Jeong-Hwan* (*Bodyfriend*); Choi, Youra (*Bodyfriend*); Jeon, Chuljin (*Bodyfriend*); Cho, Soo Hyun (*Bodyfriend*)

16:20-16:22 ThDT9-10.6
Individual Identification based on Electroencephalogram (EEG)
Kim, Eun-ji (*Kumoh National Institute of Technology*); Kang, Ye Na (*Kumoh National Institute of Technology*); Kim, Kyoungmin (*Kumoh National Institute of Technology*); Choi, Soo-In (*Kumoh National Institute of Technology*); Hwang, Han-Jeong* (*Kumoh National Institute of Technology*)

16:22-16:24 ThDT9-10.7
Comparison of Synergistic Muscle Activation Extracted from EMG Signals during the Arm Cycling in Different Intensity Levels
Alizadeh Saravi, Leila (*Sejong University*); Han, JiHye (*Sejong University*); Lim, Dohyung* (*Sejong Univ.*)

16:24-16:26 ThDT9-10.8
A Clinical Study on the Automatic Massage Chairs using EEG Analysis
Lim, Jeong-Hwan* (*Bodyfriend*); Jeon, Chuljin (*Bodyfriend*); Cho, Soo Hyun (*Bodyfriend*)

16:26-16:28 ThDT9-10.9
An Artificial Neural Network Model for the Evaluation of Carotid Artery Stenting Prognosis using a National-Wide Database
Cheng, Chun An (*Taipei Medical University*); Chiu, Hung-Wen* (*Taipei Medical University*)

ThDT9-11: 16:10-17:10 Plonsey Room
Sensory Neuroprostheses – Visual (Poster Session)

16:10-16:12 ThDT9-11.1
Influence of Return Electrode Position on Voltage Transient of Electrical Stimulation in Suprachoroidal Retinal Prosthesis
Terasawa, Yasuo* (*Nidek Co., Ltd.*); Nakano, Yukari (*Nidek Co., Ltd.*); Yodogawa, Satoshi (*Nidek Co., Ltd.*); Shodo, Kenzo (*Nidek Co., Ltd.*)

16:12-16:14 ThDT9-11.2
Observation of Temporal Change in Retinal Degeneration of an RCS Rat using Optical Coherence Tomography (OCT)
Nakano, Yukari* (*Nidek Co., Ltd.*); Terasawa, Yasuo (*Nidek Co., Ltd.*)

16:14-16:16 ThDT9-11.3
Retinal Ganglion Cell Responses to Low-Frequency Focused Ultrasound Stimulation
Zhao, Huixia* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Qiu, Weibao (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Qiuju, Jiang (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*)

ThDT10-01: 16:10-17:10 Schmitt Room
Health Informatics – Computer-Aided Decision Making I (Poster Session)

16:10-16:12 ThDT10-01.1
Combination of Static and Temporal Data Analysis to Predict Mortality and Readmission in the Intensive Care
Venugopalan, Janani (*Georgia Institute of Technology*); Chanani, Nikhil (*Emory Univ. School of Medicine*); Maher, Kevin (*Kids Heart*); Wang, May D.* (*Georgia Tech and Emory Univ.*)

16:12-16:14 ThDT10-01.2
Functional Hemispheric Asymmetry in Female Prefrontal Hemodynamics Corresponding to Changes in Auditory Sense during Pregnancy and Child Raising
Kotani, Hiroko (*Tokyo Future Univ.*); Kato, Misa (*Tokyo Future Univ.*); Matsuno, Maka (*Tokyo Future Univ.*); Kuramoto, Kasumi (*Tokyo Future Univ.*); Nakagawa, Hidenori* (*Tokyo Denki Univ.*)

16:14-16:16 ThDT10-01.3
Queue-Based Modelling and Detection of Parameters Involved in Stroke Outcome
Vilic, Adnan* (*Technical Univ. of Denmark*); Petersen, Asger (*Bispebjerg Hospital*); Wienecke, Troels (*Zealand Univ. Hospital, Roskilde*); Kjaer, Troels W. (*Roskilde Univ. Hospital*); Sorensen, Helge B D (*Technical Univ. of Denmark*)

16:16-16:18 ThDT10-01.4
Pattern Discovery and Similarity Assessment for Robust Heart Sound Segmentation
Nunes, Diogo (*Univ. of Coimbra*); de Carvalho, Paulo (*Univ. of Coimbra*); Henriques, Jorge (*Univ. of Coimbra*); Teixeira, César (*Univ. of Coimbra*); Ruano, M. Graça* (*FCT, Univ. of Algarve & CISUC-Univ. of Coimbra*)

- 16:18-16:20 ThDT10-01.5
The Application of Individual Virtual Nostalgic Game Design to the Evaluation of Cognitive Function
 Hou, Chun-Ju (*Southern Taiwan Univ. of Science and Tech.*); Huang, Min-Wei (*National Cheng Kung Univ.*); Zhou, Jia-Ying (*Asia Univ. Dept. of Psychology*); Hsu, Pin Chen (*Southern Taiwan Univ. of Science and Tech.*); Zeng, Jia Hong (*Southern Taiwan Univ. of Science and Tech.*); Chen, Yen-Ting* (*Southern Taiwan Univ. of Science and Tech.*)
- 16:20-16:22 ThDT10-01.6
Correlation of P300 ERPs with Visual Stimuli and its Application to Vigilance Detection
 Samima, Shabnam* (*Indian Institute of Technology Kharagpur*); Sarma, Monalisa (*Indian Institute of Technology Kharagpur*); Samanta, Debasis (*Indian Institute of Technology Kharagpur*)
- 16:22-16:24 ThDT10-01.7
Mobile Concussion Management Application for Amateur Sports
 Fischer, Joshua* (*Stellenbosch Univ.*); Smith, Gerard (*Stellenbosch Univ.*); Rodriguez, Rafael (*Federal Univ. of Paraná*); Afzal, Muhammad Raheel (*Gyeongsang National Univ.*); Van Den Heever, Dawie (*Stellenbosch Univ.*); Viviers, Pierre (*Stellenbosch Univ.*); Viljoen, Jeandre (*Institute of Sport and Exercise Medicine, Division of Orthopaedi*)
- ThDT10-02: 16:10-17:10 Schmitt Room
Health Informatics – Health Data Acquisition, Transmission, Management and Visualization I (Poster Session)
- 16:10-16:12 ThDT10-02.1
Efficient Implementation of Stockwell Transform for Real-Time Embedded Processing of Physiologic Signals
 Holmes, David* (*Mayo Clinic*); Cerqueira Pinto, Samuel (*Instituto Tecnológico de Aeronáutica*); Felton, Christopher (*Mayo Clinic*); Smital, Lukas (*Brno Univ. of Technology, Brno, CZ*); Leinveber, Pavel (*St. Anne's Univ. Hospital*); Jurak, Pavel (*Inst of Scientific Instruments Academy*); Gilbert, Barry (*Mayo Clinic College of Medicine*); Haider, Clifton (*Mayo Clinic*)
- 16:12-16:14 ThDT10-02.2
APEX_SCOPE: A Graphical User Interface for Visualization of Multi-Modal Data in Inter-Disciplinary Studies
 Kanbar, Lara* (*McGill University*); Shalish, Wissam (*McGill University*); Precup, Doina (*McGill University*); Brown, Karen (*McGill University*); Sant'Anna, Guilherme Mendes (*McGill University*); Kearney, Robert Edward (*McGill University*)
- 16:14-16:16 ThDT10-02.3
CTG Analyzer: A Graphical User Interface for Cardiotocography
 Sbrollini, Agnese (*Univ. Politecnica delle Marche*); Agostinelli, Angela (*Polytechnic University of Marche*); Burattini, Luca (*Univ. Politecnica delle Marche*); Moretini, Micaela (*Univ. Politecnica delle Marche*); Di Nardo, Francesco (*Polytechnic University of Marche*); Fioretti, Sandro (*Univ. Politecnica delle Marche*); Burattini, Laura* (*Univ. Politecnica delle Marche*)
- 16:16-16:18 ThDT10-02.4
A Comparative Study of Electronic Stethoscopes for Cardiac Auscultation
 Pinto, Cristiana (*Instituto de Telecomunicações, Faculdade de Ciências da Universi*); Pereira, Daniel (*Faculty of Medicine, University of Porto*); Ferreira-Coimbra, João (*Internal Medicine Dept., Centro Hospitalar de São João*); Português, João (*Serviço de Cardiologia do Hospital Senhora da Oliveira*); Gama, Vasco (*Hospital Santos Silva*); Coimbra, Miguel* (*Instituto de Telecomunicações / Universidade do Porto*)
- ThDT10-03: 16:10-17:10 Schmitt Room
Health Informatics – Information Technologies for Healthcare Delivery and Management I (Poster Session)
- 16:10-16:12 ThDT10-03.1
Symptom-Based Data Preprocessing for the Detection of Disease Outbreak
 Duangchaemkarn, Khanita* (*Chiang Mai Univ.*); Boonchieng, Ekkarat (*Chiang Mai Univ.*); Chaovatur, V. (*Chiang Mai Univ.*); Wiwatanadate, P. (*Faculty of Medicine, Chiang Mai Univ.*)
- 16:12-16:14 ThDT10-03.2
Predictive Modeling to Identify Scheduled Radiology Appointments Resulting in Non-Attendance in a Hospital Setting
 Mieloszyk, Rebecca* (*Philips Healthcare, University of Washington*); Rosenbaum, Joshua (*University of Washington*); Bhargava, Puneet (*University of Washington*); Hall, Christopher (*Philips Healthcare, University of Washington*)
- 16:14-16:16 ThDT10-03.3
New Tele-Diagnostic Model using Volume Sweep Imaging for Rural Areas
 Ferrer, Jose (*Pontificia Univ. Católica del Perú*); Castañeda, Benjamín* (*Pontificia Univ. Católica del Perú*); Chaumont, Thomas (*Medical Innovation & Tech.*); Garra, Gail (*Medical Imaging Ministries of the Americas*); Garra, Katherine (*Medical Imaging Ministries of the Americas*); Stephens, Nicole (*Medical Imaging Ministries of the Americas*); Jacobo, Sylvia (*Medical Imaging Ministries of the Americas*); Waks, Erin (*Medical Imaging Ministries of the Americas*); Miele, Frank (*Medical Imaging Ministries of the Americas*); Stewart, Pilar (*Medical Innovation & Tech.*); Fernandez, Italo (*Medical Innovation & Tech.*); Campos, Maria Fernanda (*Medical Innovation & Tech.*); Trujillo, Leslie (*Medical Innovation & Tech.*); Guerrero, Jorge (*Oncosalud*); Garra, Brian (*Washington DC VA Medical Center and Center for Devices & Radiolo*)
- 16:16-16:18 ThDT10-03.4
Exploratory Multivariate Analysis of Hospital Admissions Data in Conjunction with Workforce Data
 Xie, Yang* (*CSIRO (Commonwealth Scientific and Industrial Research Organisat)*); Good, Norm (*CSIRO Australian e-Health Research Centre*); Khanna, Sankalp (*CSIRO Australian e-Health Research Centre*); Boyle, Justin (*CSIRO*)
- 16:18-16:20 ThDT10-03.5
Design of an Mhealth System for Maternal and Children HIV Care
 Koesoema, Allya Paramita* (*UNSW*); Ariani, Arni (*University of New South Wales*); Irawan, Yoke Saadia (*Institut Teknologi Bandung*); Soegijoko, Soegijardjo (*Dept. of Electrical Engineering, Institut Teknologi Nasiona*)
- 16:20-16:22 ThDT10-03.6
Modelling and Analysis of Four Telemedicine Italian Experiences
 Rosati, Samanta (*Politecnico di Torino*); Zema, Maddalena (*Reply S.p.A.*); Castagneri, Cristina (*Politecnico di Torino*); Marchetti, Fulvio (*Healthy Reply*); Balestra, Gabriella* (*Politecnico di Torino*)
- ThDT10-04: 16:10-17:10 Schmitt Room
Health Informatics – Knowledge Discovery and Management I (Poster Session)
- 16:10-16:12 ThDT10-04.1
Towards Objective and Reproducible Study of Patient-Doctor Interaction: Automatic Text Analysis based VR-CoDES Annotation of Consultation Transcripts
 Charlotte, Birkett (*Univ. of St Andrews*); Arandjelovic, Ognjen* (*Univ. of St Andrews*); Humphris, Gerald (*Univ. of St Andrews*)
- 16:12-16:14 ThDT10-04.2
An Ordinal Classification Approach for CTG Categorization
 Georgoulas, George (*TEI of Epirus*); Karvelis, Petros (*University of Ioannina*); Gavrilis, Dimitris (*University of Patras*); Stylios, Chrysostomos* (*TEI of Epirus*); Nikolakopoulos, George (*Luleå University of Technology*)
- 16:14-16:16 ThDT10-04.3
A Dynamic Decision Support System for Obstetricians based on Fuzzy Cognitive Maps
 Chouliara, Spyridoula (*University of Ioannina.*); Stylios, Chrysostomos* (*Technological Educational Institute of Epirus*); Georgopoulos, Voula (*Technological Educal Inst of Patras*); Stefanos, Theodoros (*Medical School, University of Ioannina*)

- 16:16-16:18 ThDT10-04.4
An Interpretable Data-Driven Approach for Rules Construction: Application to Cardiovascular Risk Assessment
 Mendes, Diana (*Universidade de Coimbra*); Paredes, Simao (*Instituto Politécnico de Coimbra*); Rocha, Teresa (*Inst Superior de Eng de Coimbra*); de Carvalho, Paulo (*University of Coimbra*); Henriques, Jorge* (*University of Coimbra*); Morais, João (*Hospital de Santo André, Leiria*)
- 16:20-16:22 ThDT10-04.6
Classification Models to Predict Vasopressor Administration for Septic Shock in the Emergency Department
 Prasad, Varesh* (*Massachusetts Institute of Tech.*); Lynch, James (*Massachusetts Institute of Tech.*); Pasakarnis, Corey (*Massachusetts General Hospital*); Thorsen, Jill (*Massachusetts General Hospital*); Filbin, Michael (*Massachusetts General Hospital*); Reisner, Andrew (*Massachusetts General Hospital*); Heldt, Thomas (*Massachusetts Institute of Tech.*)
- 16:22-16:24 ThDT10-04.7
Reconciliation of SNOMED CT and Domain Clinical Model for Interoperable Medical Knowledge Creation
 Ali, Taqdir (*Kyung Hee University, South Korea*); Lee, Sungyoung* (*Kyung Hee University*)
- ThDT10-05: 16:10-17:10 Schmitt Room
Health Informatics – Telemedicine I (Poster Session)
- 16:10-16:12 ThDT10-05.1
Design and Development of a Customizable Telemedicine Platform for Improving Access to Healthcare for Underserved Populations
 Goel, Neha* (*Johns Hopkins University*); Alam, Amal Afroz (*Johns Hopkins University*); Eggert, Emily (*Johns Hopkins University*); Acharya, Soumyadipta (*Johns Hopkins University*)
- 16:12-16:14 ThDT10-05.2
Wireless Gyroscope Platform Enabled by a Portable Media Device for Quantifying Wobble Board Therapy
 LeMoyné, Robert* (*Northern Arizona University*); Mastroianni, Timothy (*Independent*)
- 16:14-16:16 ThDT10-05.3
Improving the Accuracy of Existing Camera based Fall Detection Algorithms through Late Fusion
 Baldewijns, Greet (*KU Leuven Campus Geel, AdvISE Technology Lab, Belgium*); Debar, Glen (*Thomas More Kempen*); Mertes, Gert* (*KU Leuven*); Croonenborghs, Tom (*KU Leuven Campus Geel, AdvISE Technology Lab, Belgium*); Vanrumste, Bart (*Katholieke Universiteit Leuven*)
- 16:16-16:18 ThDT10-05.4
An Integrated System for the Monitoring of Therapy and Drug's Side Effects in Lymphoproliferative Disorders
 Vollerò, Luca* (*Università Campus Bio-Medico di Roma*); Annibaldi, Ombretta (*UOC Ematologia, Trapianto di Cellule Staminali*); Schena, Emiliano (*University of Rome Campus Bio-Medico*); Tomarchio, Valeria (*Campus Biomedico University*); Cimino, Giuseppe (*Ospedale Santa Maria Goretti, Latina, Italia*); Cenfra, Natalia (*UOC Ematologia, Ospedale Santa Maria Goretti Latina*); Avvisati, Giuseppe (*UOC Ematologia Trapianto di cellule Staminali, Università Campus*)
- 16:18-16:20 ThDT10-05.5
Real-Time WebRTC-Based Design for a Telepresence Wheelchair
 Ha, Van Kha Ly* (*University of Technology, Sydney*); Chai, Rifai (*University of Technology, Sydney*); Nguyen, Hung T. (*University of Technology, Sydney*)
- ThDT11-01: 16:10-17:10 Greatbatch Room
Modeling Cellular Function and Structure I (Poster Session)
- 16:10-16:12 ThDT11-01.1
Model Evaluation-Based Approaches for Endothelial Function
 Asami, Naoya* (*Aichi Prefectural University*); Yamazaki, Yoichi (*Kwansei Gakuin University*); Kamiyama, Yoshimi (*Aichi Prefectural University*)
- 16:12-16:14 ThDT11-01.2
Tracking of Non-Dividing Cells by using Generalized Voronoi Diagram
 Pengdong, Xiao* (*National Heart Centre Singapore*); Zhong, Liang (*National Heart Centre Singapore*)
- 16:14-16:16 ThDT11-01.3
A Mathematical Model of the Effects of Anoctamin-1 Loss on Intestinal Slow Wave Entrainment
 Qian, Anna (*The University of Auckland*); Means, Shawn (*The University of Auckland*); Cheng, Leo K (*The University of Auckland*); Sneyd, James (*The University of Auckland*); Du, Peng* (*The University of Auckland*)
- 16:16-16:18 ThDT11-01.4
A Computational Model of Intracellular Calcium Oscillations in Urinary Bladder Smooth Muscle Cells
 Gupta, Suranjana* (*IIT Bombay*); Majawadia, Avni (*SGSITS, Indore*); Manchanda, Rohit (*IIT Bombay*)
- 16:18-16:20 ThDT11-01.5
A Computational Study of the Role of Mitochondrial Organization on Cardiac Bioenergetics
 Ghosh, Shouryadiptra (*Univ. of Melbourne*); Crampin, Edmund (*Univ. of Auckland*); Hanssens, Eric (*Univ. of Melbourne*); Rajagopal, Vijayaraghavan* (*Univ. of Melbourne*)
- 16:20-16:22 ThDT11-01.6
Cell Dynamic Morphology Analysis by Deep Convolutional Features
 Li, Heng (*Beijing Institute of Technology*); Liu, Zhiwen* (*Beijing Institute of Technology*); Pang, Fengqian (*Beijing Institute of Technology*); Shi, Yonggang (*Beijing Institute of Technology*)
- ThDT11-02: 16:10-17:10 Greatbatch Room
Modeling Medical Devices, Diseases and Therapies I (Poster Session)
- 16:10-16:12 ThDT11-02.1
A Pharmacokinetic Model of Drug-Drug Interaction between Clopidogrel and Omeprazole at CYP 2C19 in Humans
 Tangamornsuksan, Wimonchat (*Naresuan University*); Thiansupornpong, Pongpak (*Naresuan University*); Morasuk, Thirawut (*Naresuan University*); Lohitnavy, Ornrat (*Center of Excellence for Environmental Health and Toxicology, Na*); Lohitnavy, Manupat* (*Naresuan University*)
- 16:12-16:14 ThDT11-02.2
Improved MicroRNA Biomarkers to Predict Stages in Lung Adenocarcinoma via Clustering of MicroRNA-Target Dysregulations
 Tran, Nhat* (*University of Texas at Arlington*); Gao, Jean (*University of Texas*)
- 16:14-16:16 ThDT11-02.3
Multi-Scale Immunological and Biomechanical Model of Emphysema Progression
 Ceresa, Mario* (*Università Pompeu Fabra*); Olivares, Andy (*University Pompeu Fabra, Barcelona Spain*); Fernández Suelves, Silvia (*University Pompeu Fabra, Barcelona Spain*); Noailly, Jérôme (*University Pompeu Fabra, Barcelona Spain*); Gonzalez Ballester, Miguel Angel (*Università Pompeu Fabra*)
- 16:16-16:18 ThDT11-02.4
A Continuum Model of Electrical Stimulation of Multi-Compartmental Retinal Ganglion Cells
 Alqahtani, Abdulrahman* (*Univ. of New South Wales*); Al Abed, Amr (*Univ. of New South Wales*); Guo, Tianruo (*Univ. of New South Wales*); Lovell, Nigel H. (*Univ. of New South Wales*); Dokos, Socrates (*Univ. of New South Wales*)
- 16:18-16:20 ThDT11-02.5
The Tensile Stress Caused Nonuniform Degradation of a Poly (lactic-Co-Glycolic Acid) Stent – A Finite Element Analysis
 Guo, Meng (*Beihang University*); Chu, Zhaowei (*Beihang University*); Yao, Jie (*Beihang University*); Feng, Wentao (*Beihang University*); Wang, Lizhen (*Beihang University*); Fan, Yubo* (*Beihang University*)

16:20-16:22 ThDT11-02.6
In Silico Investigation of the Effects of Hemolysis on the Hyperspectral Absorbance of Blood in Motion
 Van Leeuwen, Spencer Richard* (*University of Waterloo*); Baranoski, Gladimir Valerio Guimaraes (*University of Waterloo*); Kimmel, Bradley William (*University of Waterloo*)

ThDT11-03: 16:10-17:10 Greatbatch Room
Pharmacokinetics, Systems Biology, and Synthetic Biology I (Poster Session)

16:10-16:12 ThDT11-03.1
A Physiologically-Based Pharmacokinetic Model of Methotrexate Incorporating Hepatic Excretion via Multidrug-Resistance-Associated Protein 2 (Mrp2) in Mice, Rats, Dogs, and Humans
 Lohitnavy, Manupat* (*Naresuan University*); Lu, Yasong (*Dept. of Environmental & Radiological Health Sciences, Colo*); Lohitnavy, Orrnat (*Center of Excellence for Environmental Health and Toxicology, Na*); Yang, Raymond (*Dept. of Environmental & Radiological Health Sciences, Colo*)

16:12-16:14 ThDT11-03.2
Development of a Physiologically based Pharmacokinetic Model of Paraquat
 Lohitnavy, Manupat* (*Naresuan University*); Chitsakhon, Arnon (*Center of Excellence for Environmental Health and Toxicology, Na*); Jomprasert, Kritsada (*Center of Excellence for Environmental Health and Toxicology, Na*); Lohitnavy, Orrnat (*Center of Excellence for Environmental Health and Toxicology, Na*); Reisfeld, Brad (*Colorado State University*)

16:14-16:16 ThDT11-03.3
ActiveMotif: Interactive Motif Discovery with Human Feedback
 Kim, Younghoon* (*Hanyang University*); Lee, Woonghee (*Hanyang University*); Kim, Keonwoo (*Hanyang University*)

16:16-16:18 ThDT11-03.4
An in Silico Method to Predict Net Calcium Transfer during Hemodialysis
 Maheshwari, Vaibhav* (*Renal Research Institute*); Cherif, Alhaji (*Renal Research Institute*); Fuertinger, Doris (*Renal Research Institute*); Schappacher, Gudrun (*University of Graz*); Preciado, Priscila (*Renal Research Institute*); Thijssen, Stephan (*Renal Research Institute*); Bushinsky, David (*University of Rochester Medical Center*); Kotanko, Peter (*Renal Research Institute*)

ThDT11-05: 16:10-17:10 Greatbatch Room
Computational Modeling – Biological Networks (Poster Session)

16:10-16:12 ThDT11-05.1
Network Motifs in the Integrated Transcriptional Regulation and Protein Interaction Networks of Shewanella
 Ding, Dewu (*Southeast Univ.*); Sun, Xiao* (*Southeast Univ.*)

ThDT11-06: 16:10-17:10 Greatbatch Room
Computational Modeling – Structural Bioinformatics (Poster Session)

16:10-16:12 ThDT11-06.1
Estimation of Vascular Peripheral Resistance during FMD Test using a Hemodynamics Simulation Model
 Tsukamoto, Akira* (*Aichi Prefectural University*); Asami, Naoya (*Aichi Prefectural University*); Kamiyama, Yoshimi (*Aichi Prefectural University*)

ThDT11-08: 16:10-17:10 Greatbatch Room
Modeling of Cell, Tissue, and Regenerative Medicine – 2D and 3D Cell Modeling (Poster Session)

16:10-16:12 ThDT11-08.1
A Study on Effects of Intercellular Adhesion on Collective Cell Migration during Re-Epithelialization
 Zhao, Jieliang (*Univ. of Illinois at Chicago*); Cao, Youfang (*Los Alamos National Lab*); Liang, Jie* (*Univ. of Illinois at Chicago*)

ThDT11-09: 16:10-17:10 Greatbatch Room
Models of Medical Devices (Poster Session)

16:10-16:12 ThDT11-09.1
Super-Resolution Photoacoustic Microscopy using a Plasmonic Metal Nanoaperture: A Simulation Study
 Park, Byullee (*POSTECH*); Kim, Chulhong* (*Pohang University of Science and Technology*)

16:12-16:14 ThDT11-09.2
Design of a Tongue Displacement Device for Head and Neck Radiation Therapy
 Na, Chohee (*Sungkyungwan*); Ju, Sanggyu* (*Samsung Medical Center*); Ahn, Yong Chan (*Samsung Medical Center*); Hong, Chae Seon (*Samsung Medical Center*); Oh, Dongryul (*Samsung Medical Center*)

16:14-16:16 ThDT11-09.3
Contact Pressure Distribution Analysis of Ultrasonic Scalpels using Finite Element Method
 Kim, Tae Hyong (*Sungkyunkwan Univ.*); Youn, Su Hyun (*Sungkyunkwan Univ.*); Jung, Hyunwoo (*Sungkyunkwan Univ.*); Lee, Dong Jun (*Sungkyunkwan Univ.*); Mun, Joung Hwan (*Sungkyunkwan Univ.*); Kim, Hyunggun* (*Sungkyunkwan Univ.*)

16:16-16:18 ThDT11-09.4
Reverse Engineering of Medical Device using 3D Scanning and Geomagic Design X
 Choi, Chang Jun* (*Medical Device Development Center, KBIO*); Ahn, Jin Woo (*KBIO*); Kim, Guk Han (*Daesung Maref Co., Ltd.*); Moon, Jin-hee (*Medical Device Development Center of Osong Medical Innovation Fo*)

16:18-16:20 ThDT11-09.5
Heat Transfer Analysis of Electrode with Saline Irrigation for Radiofrequency Cardiac Ablation
 Ahn, Jin Woo* (*KBIO*); Lee, Seung-A (*Osong Medical Innovation Foundation*); Lee, Kang Moo (*KBIO*); Jung, Hachul (*KBIO*); Lee, Sanghun (*Osong Medical Innovation Foundation*); Moon, Jin-hee (*Medical Device Development Center of Osong Medical Innovation Fo*)

ThDT11-10: 16:10-17:10 Greatbatch Room
Models of Organ Physiology (Poster Session)

16:10-16:12 ThDT11-10.1
Numerical Simulations of Optical Coherence Tomography (OCT)-Derived Non-Invasive Fractional Flow Reserve in a Patient-Specific Coronary Region of Interest by using Vessel-Length Method
 Lee, Kyung Eun (*Kangwon National Univ.*); Shin, Sung Woong (*Dept. of Mechanical & Biomedical Engineering, Kangwon Nation*); Shim, Eun Bo* (*Kangwon National Univ.*)

16:12-16:14 ThDT11-10.2
Mechanistic Insight into Electro-Mechanical Responses of Human Failing Ventricle under D172N KCNJ2 Mutation during Reentrant: A Simulation Study
 Heikhmakhtiar, Aulia Khamas (*Kumoh National Institute of Tech.*); Rasyidin, Fakhmi Adi (*Kumoh National Institute of Tech.*); Jeong, Daun (*Kumoh National Institute of Tech.*); Baek, DongGuen (*Kumoh National Institute of Tech.*); Lim, Ki Moo* (*Kumoh National Institute of Tech.*)

ThDT12-01: 16:10-17:10 Geddes Room
Ambulatory Diagnostic and Therapeutic Devices – Ambulatory and ADL Technologies (Poster Session)

16:10-16:12 ThDT12-01.1
Vocal Stereotypy Detection: Initial Step to Communication with Non-Verbal Children with Autism
 Fetzner, John (*University of St. Thomas*); Min, Cheol-Hong* (*University of St. Thomas*)

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ThDT12-02: 16:10-17:10 Geddes Room
Ambulatory Diagnostic Devices – Point of Care Technologies (Poster Session)

16:10-16:12 ThDT12-02.1
An Optical System for Monitoring Urine Components for Home Healthcare – Accuracy Assessment using Urine from Multiple Diabetic Subjects
Suzuki, Ikuto* (*Graduate School of Natural Science & Technology, Kanazawa Univer*); Seino, Kimihiro (*Kanazawa Univ.*); Nogawa, Masamichi (*Kanazawa Univ.*); Naito, Hisashi (*Kanazawa Univ.*); Ikarashi, Akira (*Aino Univ.*); Ogawa, Mitsuhiro (*Teikyo Univ.*); Yamakoshi, Ken-ichi (*Kanazawa Univ.*); Tanaka, Shinobu (*Kanazawa Univ.*)

16:12-16:14 ThDT12-02.2
Portable Fluorescence Reader for Low Cost Detection of Chlamydia Trachomatis and Neisseria Gonorrhoeae
Radhakrishnan, Geethanjali* (*Adiuvo Diagnostics PVT Ltd*); Radhakrishnan, Geethanjali (*Adiuvo Diagnostics PVT Ltd*); Saluja, Daman (*University of Delhi*); Wasnik, Kirti (*DSS Image Tech*); Khandhari, Ajay (*DSS Image Tech*)

16:14-16:16 ThDT12-02.3
Study on a Portable Wireless Device for Hematocrit Level Monitoring
Lee, Dae-Sik* (*ETRI*)

ThDT12-04: 16:10-17:10 Geddes Room
Cardiovascular Assessment and Diagnostic Technologies (Poster Session)

16:10-16:12 ThDT12-04.1
A Visually Assistive Approach for the Diagnosis of Heart Murmurs by using Time-Frequency Transform Techniques
Lin, Hong (*National Taipei Univ. of Technology*); Chen, Hung-En (*National Taipei Univ. of Technology*); Lu, Chih-Cheng* (*National Taipei Univ. of Technology*)

16:12-16:14 ThDT12-04.2
Application of High-Resolution CMOS Flat Panel Detector for Fluoroscopy on Mobile C-Arm System
Cha, Bo Kyung* (*KERI*)

ThDT12-05: 16:10-17:10 Geddes Room
Clinical Engineering (Poster Session)

16:10-16:12 ThDT12-05.1
MCNP6 Neutron Detector Simulation Validation using a Varian True Beam LinAc
Morató, Sergio* (*Inst. for Industrial, Radiophysical & Environmental Safety*); Martinez, Lucia (*ISIRYM*); Juste, Belen (*Polytechnic Univ. of Valencia*); Miró, Rafael (*Polytechnic Univ. of Valencia*); Verdú, Gumersindo (*Polytechnic Univ. of Valencia*)

16:12-16:14 ThDT12-05.2
Development of New Type Tourniquet using EHD Pump as Driving Source
Takei, Yusuke* (*Univ of Tokyo Denki*)

16:14-16:16 ThDT12-05.3
Seizure Prediction and Mechanism Analysis of Generalized Epilepsy based on Heart Rate Variability
Sakane, Fumiya* (*Kyoto Univ.*); Fujiwara, Koichi (*Kyoto Univ.*); Miyajima, Miho (*Tokyo Medical and Dental Univ.*); Suzuki, Yoko (*Tokyo Medical and Dental Univ.*); Yamakawa, Toshitaka (*Kumamoto Univ.*); Kano, Manabu (*Kyoto Univ.*); Maehara, Taketoshi (*Tokyo Medical and Dental Univ.*)

16:16-16:18 ThDT12-05.4
3D-Printed Foldable Indirect Ophthalmoscope for Smartphone
Kim, Geonyoung (*Seoul National Univ.*); An, Jieun (*Seoul National Univ.*); Baek, Changhoon (*Seoul National Univ.*); Seo, Jong Mo* (*Seoul National Univ., School of Engineering*)

ThDT12-06: 16:10-17:10 Geddes Room
Clinical Engineering – Device Alarm, Alert, and Communication Systems (Poster Session)

16:10-16:12 ThDT12-06.1
Detection of Facial Palsy for Stroke Patients using Face Recognition
Nam, Gibaek (*Health-IT Acceleration Center, Yonsei Univ. College of Medi*); Shin, Yeongcheol (*Health-IT Acceleration Center, Yonsei Univ. College of Medi*); Park, Eunjeong (*Cardiovascular Research Institute, Yonsei Univ. College of*); Chang, Hyuk-Jae* (*Dept. of Internal Medicine, Severance Cardiovascular Hospital*)

16:12-16:14 ThDT12-06.2
A Flow Rate Monitor for Intravenous PCA Infusion Systems
Ro, Jung Hoon* (*Pusan National University*)

ThDT12-07: 16:10-17:10 Geddes Room
Clinical Laboratory, Assay and Pathology Technologies (Poster Session)

16:10-16:12 ThDT12-07.1
Development of Oxygen Tension Controllable Microfluidic Cover Device for Commercial Cell Culture Plate
Lee, Seung Yeob (*GIST*); Yang, Sung* (*Gwangju Institute of Science and Technology (GIST)*)

16:12-16:14 ThDT12-07.2
The Efficacy of Non-Invasive Skin Measurement Devices
Yang, Hye Min (*Sungkyunkwan Univ.*); Lee, Jong Hee* (*Samsung Medical Center, Sungkyunkwan Univ. School of Medici*)

16:14-16:16 ThDT12-07.3
3-D Photoacoustic Imaging using Capacitive Micromachined Ultrasonic Transducer (CMUT) 2-D Sparse Array
Kim, Young Hun (*Hanyang University*); Park, Kwan Kyu* (*Hanyang University*)

16:16-16:18 ThDT12-07.4
Encoded Microparticle Array for Protein Capture from Skin Surface
Oh, Dong Yoon* (*Seoul National University*); Song, Sewoo (*Seoul National University*); Kwon, Sunghoon (*Dept. of Electrical and Computer Engineering, Seoul National*)

ThDT12-08: 16:10-17:10 Geddes Room
Diagnostic Devices – Physiological Monitoring (Poster Session)

16:10-16:12 ThDT12-08.1
Microplate-Based Colorimetric Assay for the Detection of Hydrogen Sulfide from Living Cells
Ahn, Yong Jin (*Kyung Hee Univ.*); Lee, Young Ju (*Kyung Hee Univ.*); Lee, Jaemyeon (*Kyunghee Univ.*); Lee, Doyeon (*Kyung Hee Univ.*); Lee, Gi-Ja* (*Kyung Hee Univ.*)

16:12-16:14 ThDT12-08.2
Detection of Scleral Structure with Glass Microneedle Insertion
Park, Seung Hyun (*Yonsei University*); Ryu, Suho (*Yonsei University*); Yun, Jae Hyoung (*Yonsei University*); Joo, Chulmin (*Yonsei University*); Ryu, WonHyoung* (*Yonsei University*)

16:14-16:16 ThDT12-08.3
Development of Respiratory Volume Analyzer using Pressure Change Analysis
U, One Sang (*Kangwon National University*); Kang, Seong Min (*Kangwon National University*); Choi, Seong Wook* (*Kangwon National University*)

16:16-16:18 ThDT12-08.4
Current Trends of Standardization on Medical Devices in Traditional Medicine
Moon, Jinseok* (*Korea Institute of Oriental Medicine*); Choi, Jeong-Hee (*Korea Institute of Oriental Medicine*); Lim, Chang-Sung (*Korea Institute of Oriental Medicine*); Choi, Sun-mi (*Korea Institute of Oriental Medicine*)

16:18-16:20 ThDT12-08.5
Raman Spectral Characteristics under Varying Skin Temperature
 Kim, Soogeun* (*Kyung Hee University*); Shin, Younggwon (*Kyung Hee University*); Byun, Kyung Min (*Kyung Hee University*); Lee, Soo Yeol (*Kyung Hee University*)

ThDT12-09: 16:10-17:10 Geddes Room
FNIR and Near-Infrared Scanning and Assessment (Poster Session)

16:10-16:12 ThDT12-09.1
A Magnetohydrodynamic Study for Magnetic Therapies
 Nakagawa, Hidenori* (*Tokyo Denki University*); Ohuchi, Mikio (*Tokyo Denki University*)

16:12-16:14 ThDT12-09.2
Sensitivity Analysis for Detecting Oxygen Saturation of Deep Veins with Non-Invasive Near Infrared Spectroscopy
 Wang, Chiao-Yi* (*National Taiwan Univ.*); Yu, Ting-Wen (*National Taiwan Univ.*); Sung, Kung-Bin (*National Taiwan Univ.*)

ThDT13-01: 16:10-17:10 Dunn Room
Artificial Organs (Including Heart, Kidney, Liver, Pancreas, Retina) (Poster Session)

16:10-16:12 ThDT13-01.1
Mock System for In-Vitro Test of Wearable Artificial Kidney
 Lim, Hyung Soo (*Seoul National University*); Cho, Woo Sang (*Seoul National University*); Lee, Jung Chan* (*Seoul National University College of Medicine*)

16:12-16:14 ThDT13-01.2
Optical Tissue Phantom Simulating Skin Pigmentation
 Park, Jihoon (*Yonsei Univ.*); Jung, Byungjo* (*Yonsei Univ.*)

ThDT13-03: 16:10-17:10 Dunn Room
Heart and Circulatory Support Devices (Poster Session)

16:10-16:12 ThDT13-03.1
Sensorless Detection of Venous Collapse during Extracorporeal Membrane Oxygenation
 Kim, Hyunsoo (*Seoul National University*); Lee, Jung Chan* (*Seoul National University College of Medicine*); Kim, Hee Chan (*Seoul National University*)

16:12-16:14 ThDT13-03.2
Mechano-Chronotropic Unloading in Acute Myocardial Infarction Markedly Reduces Infarct Size and Prevents the Progression of Heart Failure in the Long-Term
 Sunagawa, Genya* (*Kyushu University*); Saku, Keita (*Kyushu University*); Sakamoto, Takafumi (*Kyushu University*); Kishi, Takuya (*Kyushu University Graduate School of Medical Sciences*); Sunagawa, Kenji (*Kyushu University*)

16:14-16:16 ThDT13-03.3
Preclinical Efficacy Evaluation for the Development of Coronary Drug-Eluting Stents at DGMIF-LAC
 Ryu, Rae-Hyung* (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); An, Sang-Hyun (*Laboratory Animal Center (LAC), Daegu-Gyeongbuk Medical Innovati*); Kim, Jun-Sik (*Laboratory Animal Center (LAC), Daegu-Gyeongbuk Medical Innovati*); Kim, Choong-Yong (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kum, Chang-Hun (*Osstem Cardiotec*)

ThDT13-04: 16:10-17:10 Dunn Room
Image-Guided Devices – Biopsy (Poster Session)

16:10-16:12 ThDT13-04.1
Automatic Classification of Spinal Cord Tumors using Autofluorescence Spectroscopy Analysis
 Zhu, Mingyu (*Tsinghua University*); Chen, Fang (*Dept. of Biomedical Engineering*); Yang, Feng (*Beijing Tsinghua Chang Gung Hospital*); Liao, Hongen* (*Tsinghua University*);

ThDT13-05: 16:10-17:10 Dunn Room
Image-Guided Devices – HIFU (Poster Session)

16:10-16:12 ThDT13-05.1
Basic Study on Vessel Tracking Algorithm using HSV Model in Ultrasonic Superficial Varicose Vein Therapy
 Kim, Ju Young (*Inje Univ.*); Song, Hayoung (*Inje Univ.*); Kim, Seong Cheol (*Inje Univ.*); Noh, Si Cheol (*International Univ. of Korea*); Choi, Heung Ho* (*Inje Univ.*)

ThDT13-06: 16:10-17:10 Dunn Room
Image-Guided Devices – Interstitial Thermal Therapy (Poster Session)

16:10-16:12 ThDT13-06.1
Quantitative Evaluation of Tumor Response to Magnetic Hyperthermia Treatment Combined with Chemotherapy using Magnetic Particle Imaging
 Ohki, Akiko* (*Graduate School of Medicine, Osaka University*); Tanoue, Minoru (*Osaka University*); Kobayashi, Sayumi (*Osaka University*); Murase, Kenya (*Osaka University*)

ThDT13-07: 16:10-17:10 Dunn Room
Image-Guided Devices – MRI-Compatible Instrumentation and Device Management (Poster Session)

16:10-16:12 ThDT13-07.1
Mechanism Design of a Compact 4-DOF Robotic Needle Guide for MRI-Guided Prostate Intervention
 Zhang, Shihao (*University of Central Florida*); Saenz Aldea, Eduardo (*University of Central Florida*); Biswas, Pradipta (*University of Central Florida*); Simms, Leslie Simms (*University of Central Florida*); Singh, Shane (*University of Central Florida*); Ortiz Nieves, Marilu (*University of Central Florida*); Song, Sang-Eun* (*University of Central Florida*)

ThDT13-08: 16:10-17:10 Dunn Room
Image-Guided Devices – RF and Microwave Ablation (Poster Session)

16:10-16:12 ThDT13-08.1
Microwave Ablation Planning and Monitoring using Nanoparticle Enhanced Through-Transmission Ultrasound
 Perlman, Or* (*Technion - Israel Institute of Technology*); Weitz, Iris Sonia (*ORT Braude College*); Azhari, Haim (*Technion - Israel Institute of Technology*)

ThDT13-09: 16:10-17:10 Dunn Room
Muscle Stimulation (Poster Session)

16:10-16:12 ThDT13-09.1
Evaluation of Potential Therapeutic Effects by using Multi-Mechanical Stimulation in Muscle Atrophy
 Hwang, Dong Hyun (*Yonsei Univ.*); Kim, Seo Hyun (*Yonsei University, Dept. of Biomedical Engineering*); Lee, Han A (*Yonsei Univ.*); Kim, HanSung* (*Yonsei Univ.*)

ThDT13-10: 16:10-17:10 Dunn Room
Neural Stimulation (Including Deep Brain Stimulation) (Poster Session)

16:10-16:12 ThDT13-10.1
In Vivo Mapping of Brain Response during Electrical Stimulation using MREIT
 Katoch, Nitish (*Kyung Hee University*); Choi, Bup Kyung (*Kyung Hee University*); Sajib, Saurav Z K (*Kyung Hee University*); Kim, Hyung Joong (*Kyung Hee University*); Kwon, Ohin (*Konkuk University*); Woo, Eung Je* (*Kyung Hee University*)

16:12-16:14 ThDT13-10.2
Deep Brain Stimulation Modulates 200-400Hz Local Field Potentials
 Sinclair, Nicholas Campbell* (*Bionics Institute*); Perera, Thushara (*Bionics Institute*); Fallon, James (*Bionics Institute*); Bulluss, Kristian (*St Vincent's Hospital*); Thevathasan, Wesley (*Bionics Institute*); McDermott, Hugh (*Bionics Institute*)

July 13 Thursday

ThDT14-01: 16:10-17:10 Retinal Imaging (Poster Session)	Schaldach Room	ThDT14-07: 16:10-17:10 Ultrasound Imaging – Other Organs (Poster Session)	Schaldach Room
16:10-16:12 Retinal Vessel Segmentation using Second-Order Image Moments Tiwari, Ashwani Kumar (<i>Wipro</i>); Kanhangad, Vivek* (<i>Indian Inst. of Tech. Indore</i>); Pachori, Ram Bilas (<i>Indian Inst. of Tech. Indore</i>)	ThDT14-01.1	16:10-16:12 A New Synthetic Aperture Technique using Plane Waves: Exact Solution and Experimental Verification Song, Hyunwoo* (<i>Sogang Univ.</i>); Song, Tai-Kyong (<i>Sogang Univ.</i>)	ThDT14-07.1
ThDT14-02: 16:10-17:10 Retinal Vascular Imaging (Poster Session)	Schaldach Room	16:12-16:14 Ultrasound Harmonic Imaging using Narrow-Band Signal Synthesis Lee, Kunkyu* (<i>Sogang Univ.</i>); Bae, Sua (<i>Sogang University</i>); Song, Tai-Kyong (<i>Sogang University</i>)	ThDT14-07.2
16:10-16:12 Improvement of Retinal Vessel Segmentation by Combination of Multiple Segmentation Algorithms Rieger, Steffen* (<i>TU Ilmenau</i>); Baumgarten, Daniel (<i>Ilmenau University of Technology</i>); Dutz, Silvio (<i>Ilmenau University of Technology</i>); Klee, Sascha (<i>Ilmenau University of Technology</i>)	ThDT14-02.1	16:14-16:16 Fermat's Spiral Scanning for 3D Plane Wave Ultrasound Imaging Bae, Sua* (<i>Sogang Univ.</i>); Song, Tai-Kyong (<i>Sogang Univ.</i>)	ThDT14-07.3
ThDT14-03: 16:10-17:10 Ultrasound Imaging – Breast (Poster Session)	Schaldach Room	16:16-16:18 Reconstruct Ultrasonic Muscle Image to Analyze Muscle Density for Sarcopenia Song, Yu-Lin* (<i>Asia University</i>)	ThDT14-07.4
16:10-16:12 A New Modified Homographic Registration Method based on SIFT Algorithm for 3-D Automated Breast Ultrasound System with Dual Wide Field-of-View Scanners Lee, Hojung (<i>Sogang Univ.</i>); Kang, Jinbum (<i>Sogang Univ.</i>); Song, Ilseob (<i>Sogang Univ.</i>); Yoo, Yangmo* (<i>Sogang Univ.</i>)	ThDT14-03.1	ThDT14-08: 16:10-17:10 Ultrasound Imaging – Prenatal (Poster Session)	Schaldach Room
ThDT14-04: 16:10-17:10 Ultrasound Imaging – Doppler (Poster Session)	Schaldach Room	16:10-16:12 A New High Definition Multi-Planar Reconstruction Method with Voxel based Beamforming in 3-D Ultrasound Imaging Kim, Sung Chan (<i>Sogang Univ.</i>); Kang, Jinbum (<i>Sogang Univ.</i>); Song, Ilseob (<i>Sogang Univ.</i>); Yoo, Yangmo* (<i>Sogang Univ.</i>)	ThDT14-08.1
16:10-16:12 A Wide Field of View Microvascular Imaging using a Curved Array Transducer and Diverging Transmit Beams Go, Dooyoung (<i>Sogang University</i>); Kang, Jinbum (<i>Sogang University</i>); Yoo, Yangmo* (<i>Sogang University</i>)	ThDT14-04.1	ThDT14-09: 16:10-17:10 Ultrasound Imaging – Vascular Imaging (Poster Session)	Schaldach Room
ThDT14-05: 16:10-17:10 Ultrasound Imaging – Elastography (Poster Session)	Schaldach Room	16:10-16:12 Characterization of Atherosclerotic Plaques in IVUS Image using Co-Occurrence Matrix and Gabor Filter with Random Forests Huang, Zhijie (<i>Institute of Medical Information, School of Biomedical Engineeri</i>); Wang, Qing* (<i>Southern Medical Univ.</i>)	ThDT14-09.1
16:10-16:12 Ultrasound Image Reconstruction using Compressive Sensing Ni, Pavel (<i>Gwangju Institute of Science and Tech.</i>); Lee, Heung-No* (<i>Gwangju Institute of Science and Tech. (GIST)</i>)	ThDT14-05.1	16:12-16:14 Laser-Induced Thermal Strain Imaging for Lipid Differentiation Choi, Changhoon (<i>Pohang Univ. of Science and Technology</i>); Ahn, Joongho (<i>Pohang Univ. of Science and Technology</i>); Jeon, Seungwan (<i>Pohang Univ. of Science and Technology</i>); Kim, Chulhong* (<i>Pohang Univ. of Science and Technology</i>)	ThDT14-09.2
16:12-16:14 The Feasibility of the SWE with a Transvaginal Transducer for the Evaluation of Uterine Fibroids HIFU Therapy Kim, Heeran* (<i>Sogang Univ.</i>); Bae, Sua (<i>Sogang Univ.</i>); Kim, Pilsu (<i>Sogang Univ.</i>); Kim, Kidong (<i>Seoul National Univ. Bundang Hospital</i>); Jeong, Jiyeoun (<i>Seoul National Univ. Bundang Hospital</i>); Song, Tai-Kyong (<i>Sogang Univ.</i>)	ThDT14-05.2	ThDT14-10: 16:10-17:10 Functional Image Analysis (Poster Session)	Schaldach Room
16:14-16:16 Phase Aberration Correction using Average Sound Speed for SWEI Kim, Heeran* (<i>Sogang Univ.</i>); Bae, Sua (<i>Sogang Univ.</i>); Yoon, Changhan (<i>Inje Univ.</i>); Song, Tai-Kyong (<i>Sogang Univ.</i>)	ThDT14-05.3	16:10-16:12 Altered Resting-State Functional Connectivity in Adolescent Major Depressive Disorder Han, Kiwan* (<i>National Center for Mental Health</i>); Lee, Hyeongrae (<i>National Center for Mental Health</i>); Park, Subin (<i>National Center for Mental Health</i>)	ThDT14-10.1
16:16-16:18 A Multimodal Biomicroscopic System based on High-Frequency Ultrasound Elaostography and Multispectral Imaging Techniques for Tissue Characterization Ex Vivo Kim, Jihun* (<i>DGIST</i>); Kim, Jun-Young (<i>Kyungpook National Univ. Hospital</i>); Seo, Anna (<i>Kyungpook National Univ.</i>); Kim, Eunjoo (<i>Daegu Gyeongbuk Inst. of Science & Tech.</i>); Hwang, Jae Youn (<i>Daegu Gyeongbuk Inst. of Science and Tech.</i>)	ThDT14-05.4	16:12-16:14 Development of a Method for Assessing the Function of Pulmonary Mucociliary Transport using Magnetic Particle Imaging Murase, Kenya* (<i>Osaka University</i>)	ThDT14-10.2
ThDT14-06: 16:10-17:10 Ultrasound Imaging – Interventional (Poster Session)	Schaldach Room	16:14-16:16 Discrimination Analysis of Patients with Major Depressive Disorder using Resting-State Functional Connectivity Lee, Hyeongrae* (<i>Natl. Center for Mental Health</i>); Lee, Dong-Kyun (<i>Natl. Center for Mental Health</i>); Sim, M. (<i>Natl. Center for Mental Health</i>); Lee, J.H. (<i>Natl. Center for Mental Health</i>)	ThDT14-10.3
16:10-16:12 Analysis of X-Ray Induced Acoustic Waves for a New Intratherapy Dosimetry Park, Eunyeong (<i>Pohang Univ. of Science and Tech. (POSTECH)</i>); Kim, Chulhong* (<i>Pohang Univ. of Science and Tech.</i>)	ThDT14-06.1	16:16-16:18 Temporal Functional Network Connectivity Dynamics in Fibromyalgia Patients – An Exploratory fMRI Study Jarrahi, Behnaz* (<i>Stanford Univ.</i>); Martucci, Katherine (<i>Stanford School of Medicine</i>); Nilakantan, Aneesha (<i>Stanford School of Medicine</i>); Mackey, Sean (<i>Stanford Univ. School of Medicine</i>)	ThDT14-10.4

ThDT14-11: 16:10-17:10 Schaldach Room
Image Enhancement (Poster Session)

16:10-16:12 ThDT14-11.1
Improvement of Conductivity Images using Independent Component Analysis for Visualizing Obstructive Sleep Apnea
Ayoub, Ghazal (*Kyunghee University*); Kim, Young Eun (*Kyung Hee University*); Oh, Tong In* (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*)

16:12-16:14 ThDT14-11.2
Directional Two-Dimensional Synthetic Aperture Focusing Technique for Photoacoustic Microscopy
Jeon, Seungwan (*Pohang Univ. of Science and Technology*); Park, Jihoon (*Pohang Univ. of Science and Technology*); Managuli, Ravi (*Hitachi Aloka Medical America, Inc.*); Kim, Chulhong* (*Pohang Univ. of Science and Technology*)

ThDT14-12: 16:10-17:10 Schaldach Room
Image Visualization (Poster Session)

16:10-16:12 ThDT14-12.1
An Automated Tracking System for Quantifying Morphological Dynamics of Golgi Tubules
Yaothak, Jindaporn (*Chung Yuan Christian University*); Lin, Chun-Cheng (*National Chin-Yi University of Technology*); Simpson, Jeremy C. (*University College Dublin*); Tsai, Yuh-Show* (*Chung Yuan Christian University*)

16:12-16:14 ThDT14-12.2
Deformable Body Formulation for Virtual Surgery
Kuo Cheng, Wang (*Univ. of Illinois at Urbana-Champaign*); Kesavadas, Thenkurussi* (*Univ. of Illinois at Urbana-Champaign*)

ThDT15-01: 16:10-17:10 Webster Room
Cardiac Mechanics, Structure and Function – Cardiac Structure from Imaging (Poster Session)

16:10-16:12 ThDT15-01.1
A Virtual Reality Environment for Virtual Heart Modelling
Pengdong, Xiao (*National Heart Centre Singapore*); Zhao, Xiaodan (*National Heart Centre Singapore*); Tan, Ru San (*National Heart Centre*); Wong, Philip (*National Heart Centre Singapore*); Zhong, Liang* (*National Heart Centre Singapore*)

ThDT15-03: 16:10-17:10 Webster Room
Cardiovascular Regulation – Blood Pressure Variability (Poster Session)

16:10-16:12 ThDT15-03.1
Pre-Ejection Period Estimation using Ballistocardiogram and Electrocardiogram Measured on Chest for Continuous Blood Pressure Monitoring
Yang, Seungman (*Seoul National Univ.*); Park, Jonghyun (*Seoul National Univ., Graduate School*); Lee, Joonnyong (*Seoul National Univ.*); Sohn, Jangjay (*Seoul National Univ.*); Yoo, Byeongwook (*Interdisciplinary Program of Bioengineering, Seoul National Univ.*); Lee, Saram (*Seoul National Univ. Hospital*); Kim, Hee Chan* (*Seoul National Univ.*)

ThDT15-04: 16:10-17:10 Webster Room
Cardiovascular Regulation – Heart Rate Variability (Poster Session)

16:10-16:12 ThDT15-04.1
A Study on Heart Rate Variability Related to Internet Game Addiction
Hong, Sung jun (*Hanyang University*); Kim, Dohyun (*Hanyang University*); Park, Jinsick (*Hanyang University*); Lee, Jong-Shill (*Hanyang University*); Kim, In-Young* (*Hanyang University*)

16:12-16:14 ThDT15-04.2
Effects of Exercise Training on Heart Rate Variability in Response to Restraint Stress
Park, Dajeong* (*Korea Institute of Science and Technology*); Park, Sunghee (*Korea Institute of Science and Technology*); Seong, Joon-Kyung (*Korea University*); Youn, Inchan (*Korea Institute of Science and Technology*)

ThDT15-05: 16:10-17:10 Webster Room
Cellular and Molecular Cardiorespiratory Engineering – Cardiovascular Regeneration (Poster Session)

16:10-16:12 ThDT15-05.1
Fibroblast-Derived Matrix-Coated Anti-Inflammatory Scaffold for Renal Tissue Regeneration
Kim, Yun Ah (*Korea Institute of Science and Tech.*); Lih, Eugene (*Korea Institute of Science and Tech.*); Han, Cheol-Min (*Korea Institute of Science and Tech.*); Koh, Won-Gun (*Yonsei Univ.*); Joung, Yoon Ki (*Korea Institute of Science and Tech.*); Han, Dong Keun* (*Korea Institute of Science and Tech.*)

ThDT15-06: 16:10-17:10 Webster Room
Coronary Artery Disease (Poster Session)

16:10-16:12 ThDT15-06.1
A Newly Derived Method which Seems to Replace the Fractional Flow Reserve without Hyperemia and Passage of Wire
Choi, Joon Hyuk* (*Jeju National Univ. Hospital*); Kang, Gwansuk (*Jeju National Univ.*); Choi, Min Joo (*Jeju National Univ.*); Joo, Seung-Jae (*Jeju National Univ. Hospital*)

ThDT15-07: 16:10-17:10 Webster Room
Coronary Blood Flow (Poster Session)

16:10-16:12 ThDT15-07.1
Using Computational Fluid Dynamics to Assess Functional Significance of Tandem Coronary Lesions
Zhang, Jun-Mei (*National Heart Center*); Low, Ris (*National Heart Center Singapore*); Huo, Yunlong (*Purdue University*); Kassab, Ghassan (*Purdue University*); Lim, Soo Teik (*National Heart Centre Singapore*); Tan, Ru San (*National Heart Center*); Zhong, Liang* (*National Heart Centre Singapore*)

ThDT15-08: 16:10-17:10 Webster Room
Vascular Mechanics and Hemodynamics – Arterial Pressure in Cardiovascular Disease (Poster Session)

16:10-16:12 ThDT15-08.1
A Study of LVAD Pressure Waveforms Measured at the Radial Artery using a Mock Circulatory System
Lee, Ju-Yeon* (*Institute of Applied Medical Engineering, Helmholtz Institute*); Jansen-Park, So-Hyun (*Dept. of Cardiovascular Engineering, Institute of Applied*); Lommel, Moritz (*Dept. of Cardiovascular Engineering, Institute of Applied*); Kang, HeeJung (*Daeyomedi Co., Ltd*); Shin, Sang Hoon (*Sangji University Oriental Biomedical Engineering*); Steinseifer, Ulrich (*RWTH Aachen University*)

16:12-16:14 ThDT15-08.2
Model-Based Oscillometric Central Blood Pressure Monitoring
Natarajan, Keerthana (*Michigan State Univ.*); Cheng, Hao-min (*Taipei Veterans General Hospital*); Liu, Jiankun (*Michigan State Univ.*); Gao, Mingwu (*Michigan State Univ.*); Sung, Shih-Hsien (*Taipei Veterans General Hospital*); Chen, Chen-Huan (*National Yang-Ming Univ.*); Hahn, Jin-Oh (*Univ. of Maryland*); Mukkamala, Ramakrishna* (*Michigan State Univ.*)

ThDT15-09: 16:10-17:10 Webster Room
Vascular Mechanics and Hemodynamics – Vascular Disease (Poster Session)

16:10-16:12 ThDT15-09.1
Finite Element Analysis of Self-Expanding Nitinol Stent under Torsion and Shortening Conditions of Superficial Femoral Artery
Zhu, Xiaodong* (*Waseda Univ.*); Umezu, Mitsuo (*Waseda Univ. Graduate School*); Iwasaki, Kiyotaka (*Waseda Univ.*)

16:12-16:14 ThDT15-09.2
Mussel Inspired Self-Expandable Tubular Hydrogel with Shape Memory under NIR for Potential Biomedical Application
Obiweluzor, Francis* (*Chonbuk National University*); Ghavaminejad, Amin (*Chonbuk National University*); Maharjan, Bikendra (*Chonbuk National University*); Kim, Jinwoo (*Chonbuk National University*); Park, Chan Hee (*Chonbuk National University*); Kim, Cheol Sang (*Chonbuk National University*)

ThDT16-01: 16:10-17:10 Rushmer Room
Applied Tissue and Organ Models and Motion Analysis (Poster Session)

16:10-16:12 ThDT16-01.1
Three Dimensional Active Relocation Test for Shoulder Joint Proprioception during Shoulder Flexion with and without a Load
Kong, Juae (*Hoseo University*); Park, Subin (*Hoseo University*); Park, Chanwon (*Hoseo University*); Park, Hyunjung (*Hoseo University*); Hwang, Seonhong* (*Yonsei University*)

ThDT16-02: 16:10-17:10 Rushmer Room
Dynamics in Musculoskeletal Biomechanics (Poster Session)

16:10-16:12 ThDT16-02.1
Evaluation of Standing Balance in Patients with Idiopathic Scoliosis
Yoo, Hakje (*Sungkyunkwan University*); Sim, Taeyong (*Sungkyunkwan University*); Choi, Ahnryul* (*Catholic Kwandong University*); Mun, Joung Hwan (*Sungkyunkwan University*)

16:12-16:14 ThDT16-02.2
Simulation of Muscle Activity during Cycling with Full and Reduced Muscle Strengths of the Leg
Tagawa, Yoshihiko (*Kurume University*); Ogata, Yuta* (*Kurume University*); Yamamoto, Naosuke (*Kurume University*)

16:14-16:16 ThDT16-02.3
Prototype of Bone Conduction Vibration System using Photoacoustic Effect
Wadamori, Naoki* (*Nagaoka University of Technology*)

ThDT16-03: 16:10-17:10 Rushmer Room
Joint Biomechanics (Poster Session)

16:10-16:12 ThDT16-03.1
Effect of a Knee Brace on Knee Position Sense in the Healthy Adults
Ko, Chang-Yong* (*Rehab. Eng. Research Institute*); Yunhee, Chang (*Rehab. Eng. Research Institute*); Bora, Jung (*Rehab. Eng. Research Institute*); Gyoosuk, Kim (*Rehab. Eng. Research Institute*); Jeicheong, Ryu (*Rehab. Eng. Research Institute*)

ThDT16-04: 16:10-17:10 Rushmer Room
Mechanics of Locomotion and Balance (Poster Session)

16:10-16:12 ThDT16-04.1
Characteristics of Balance Ability and Aging with Time Period in Sit-to-Stand Five Times Test by IMU Sensor
Seo, Jeongwoo (*Konkuk Univ.*); Kim, Tae Ho (*Konkuk Univ.*); Cho, Haemi (*Konkuk Univ.*); Tack, Gye-Rae* (*Konkuk Univ.*)

16:12-16:14 ThDT16-04.2
Relationship between Sit-to-Stand Five Times Test and Berg Balance Scale by IMU Sensor
Cho, Haemi (*Konkuk Univ.*); Kim, Tae Ho (*Konkuk University*); Tack, Gye-Rae* (*Konkuk University*)

ThDT16-05: 16:10-17:10 Rushmer Room
Modeling and Simulation in Biomechanics – Orthotics (Poster Session)

16:10-16:12 ThDT16-05.1
Simulation of Counter-Pulsation Control VAD of Arrhythmia Patients using 4-Element Windkessel Model
Kim, Joon Yeong (*Kangwon National University*); Kang, Seong Min (*Kangwon National University*); Choi, Seong Wook* (*Kangwon National University*)

16:12-16:14 ThDT16-05.2
Control of Real-Liver-Model Elasticity using Hydraulic Powered Vein-Like Channel
Saito, Kenjiro (*Teikyo Heisei University*); Kim, Daeyoung (*Teikyo Heisei University*); Kobayashi, Etsuko* (*The University of Tokyo*); Sakuma, Ichiro (*The University of Tokyo*); Asano, Takehide (*Clinical Research Center, National Hospital Organization Chiba-E*)

ThDT16-06: 16:10-17:10 Rushmer Room
Modeling and Simulation in Musculoskeletal Biomechanics (Poster Session)

16:10-16:12 ThDT16-06.1
Simulated Laparoscopic Training and Measurement Systems based on a Low-Cost sEMG and IMU Armband
Bolingot, Harold Jay* (*Ateneo Innovation Center*); Abrajano, Gemalyn (*Ateneo Innovation Center*); Libatique, Nathaniel Joseph (*Ateneo Innovation Center*); Salvaña, Mary Lai (*Ateneo Innovation Center*); Tangonan, Gregory (*Ateneo Innovation Center*); Reyes, Deogracias Alberto (*Center for Advanced Skills, Simulation, and Training Innovation*); Ngeo, Jimson (*Nara Institute of Science and Technology*); Shibata, Tomohiro (*Kyushu Institute of Technology*)

ThDT16-07: 16:10-17:10 Rushmer Room
Multiscale Biomechanics (Poster Session)

16:10-16:12 ThDT16-07.1
Live-Cell Rheometry for Characterizing Medical Conditions
Pokki, Juho* (*Stanford University*); Nabar, Namita (*Stanford University*); Franklin, J. Matthew (*Stanford University*); Merola, Maria Consiglia (*Stanford University*); Fuller, Gerald G. (*Stanford University*)

ThDT16-08: 16:10-17:10 Rushmer Room
New Technologies and Methodologies in Biomechanics (Poster Session)

16:10-16:12 ThDT16-08.1
Gray Anodization of Titanium Alloys in Alkaline Electrolyte
Lee, Suwon (*OSONG Medical Innovation Foundation*); Jung, Tae-Gon (*OSONG Medical Innovation Foundation*); Yang, Jae-Woong (*OSONG Medical Innovation Foundation*); Jeong, Jae-Young (*OSONG Medical Innovation Foundation*); Park, Kwang-Min (*OSONG Medical Innovation Foundation*); Jeong, Yong-Hoon* (*OSONG Medical Innovation Foundation*)

16:12-16:14 ThDT16-08.2
Comparison Study of Elasticity of Swine Liver in Vivo and in Vitro
Kim, Daeyoung (*Teikyo Heisei University*); Kobayashi, Etsuko* (*The University of Tokyo*); Sato, Ryutarou (*Teikyo Heisei University*); Kiguchi, Kazuo (*Kyushu University*); Sakuma, Ichiro (*The University of Tokyo*)

16:14-16:16 ThDT16-08.3
Recognition of Turn during Normal Walking using FSRs
Lee, Chang Min (*Korea Institute of Science and Tech.*); Park, Ji Su (*Korea Institute of Science and Tech.*); Park, Shinsuk (*Dept. of Mechanical Engineering, Korea University*); Kim, Choong Hyun* (*Korea Institute of Science and Tech.*)

ThDT16-09: 16:10-17:10 Rushmer Room
New Technologies and Methodologies in Human Movement Analysis (Poster Session)

16:10-16:12 ThDT16-09.1
Robot-Assistance in Understanding and Education of Tooth Removal: Setup and Preliminary Results
van Riet, Tom Cornelis Theodorus* (*Academic Medical Center, University of Amsterdam*); Kober, Jens (*Delft University of Technology*); Zhang, Xiang (*University of Innsbruck*); Griffioen, Maarten (*TU Delft*); van Twisk, Pietheijn (*Erasmusmc*); de Lange, Jan (*Academic Medical Center, University of Amsterdam*); Babuska, Robert (*University of Technology, Delft*)

16:12-16:14 ThDT16-09.2
Standing Balance Evaluation of the Elderly by Kinect and Wii Balance Board
Kim, Tae Ho (*Konkuk University*); Cho, Haemi (*Konkuk Univ.*); Tack, Gye-Rae* (*Konkuk University*)

ThDT16-10: 16:10-17:10 Rushmer Room
New Technologies and Methodologies in Milli, Micro and Nanorobots (Poster Session)

16:10-16:12 ThDT16-10.1
Electromagnetic Actuated Microrobot Control using Time Delay Estimation with Anti-Windup Scheme
Kim, Junyoung* (*Daegu Gyeongbuk Institute of Science and Tech. (DGIST)*); Choi, Hongsoo (*DGIST*); Kim, Jonghyun (*Daegu Gyeongbuk Institute of Science and Tech. (DGIST)*)

ThDT17-01: 16:10-17:10 Einthoven Hall
Acoustic Signal Analysis I (Poster Session)

16:10-16:12 ThDT17-01.1
Remote Monitoring, Distress Detection by Slightest Invasive Systems: Sound Recognition based on Hierarchical I-Vectors
ROBIN, Maxime* (*UTC, KRG Corporate*); Istrate, Dan (*UTC*); Boudy, Jerome (*IT-Sudparis*)

16:12-16:14 ThDT17-01.2
An Anchored Dynamic Time-Warping for Alignment and Comparison of Swallowing Acoustic Signals
Rosa, Marcelo* (*Universidade Tecnológica Federal do Paraná*); Fugmann, Elmar Allen (*Universidade Federal do Paraná*); Santana, Gisele (*UFPR Hc*); Nunes, Maria Cristina de Alencar (*Federal University of Parana - UFPR*)

16:14-16:16 ThDT17-01.3
Analysis of Phonocardiogram Signals through Proactive Denoising using Novel Self-Discriminant Learner
Puri, Chetanya* (*Research and Innovation, Tata Consultancy Services, India*); Singh, Rituraj (*TATA Consultancy Services*); Bandyopadhyay, Soma (*TATA Consultancy Services*); Ukil, Arijit (*TATA Consultancy Services*); Mukherjee, Ayan (*Tata Consultancy Services*)

16:16-16:18 ThDT17-01.4
A Multichannel Acoustic Approach to Define a Pulmonary Pathology as Combined Pulmonary Fibrosis and Emphysema Syndrome
Santiago-Fuentes, Laura Mercedes (*Univ. Autónoma Metropolitana*); Charleston-Villalobos, Sonia* (*Univ. Autónoma Metropolitana*); Gonzalez-Camarena, Ramon (*Univ. Autónoma Metropolitana*); Mejia Ávila, Mayra (*Instituto Nacional de Enfermedades Respiratorias*); Mateos-Toledo, Heidegger (*National Institute of Respiratory Diseases*); Buendia-Roldan, Ivette (*National Institute of Respiratory Diseases*); Aljama-Corrales, Tomas (*Univ. Autónoma Metropolitana*)

16:18-16:20 ThDT17-01.5
Detection of Explosive Cough Events in Audio Recordings by Internal Sound Analysis
Rocha, Bruno (*Univ. of Coimbra*); Mendes, Luis (*Univ. of Coimbra*); Couceiro, Ricardo (*Univ. of Coimbra*); Henriques, Jorge* (*Univ. of Coimbra*); de Carvalho, Paulo (*Univ. of Coimbra*); Paiva, Rui Pedro (*Univ. of Coimbra*)

ThDT17-02: 16:10-17:10 Einthoven Hall
Physiological Systems Modeling II (Poster Session)

16:10-16:12 ThDT17-02.1
Kernel-Based Adaptive Learning Improves Accuracy of Glucose Predictive Modelling in Type 1 Diabetes: A Proof-of-Concept Study
Georga, Eleni I. (*Univ. of Ioannina*); Principe, Jose (*Univ. of Florida*); Rizos, Evangelos C. (*Dept. of Internal Medicine, Univ. Hospital of Ioannina*); Fotiadis, Dimitrios I.* (*Univ. of Ioannina*)

16:12-16:14 ThDT17-02.2
Suppression of Ventilation Artifacts for Gastrointestinal Slow Wave Recordings
Paskaranandavadi, Niranchan* (*The Univ. of Auckland*); Alighaleh, Saeed (*Auckland Bioengineering Institute, Univ. of Auckland*); Du, Peng (*The Univ. of Auckland*); O'Grady, Gregory (*Univ. of Auckland*); Cheng, Leo K (*The Univ. of Auckland*)

16:14-16:16 ThDT17-02.3
An Adaptive Prediction Method for Signal Fusion
Holland, Alex* (*Edwards LifeSciences*); Asgari, Shadnaz (*California State University, Long Beach*)

16:16-16:18 ThDT17-02.4
Establishing and Validating a New Source Analysis Method using Phase
Chirumamilla, Venkata Chaitanya* (*Johannes Gutenberg University, Dept. of Neurology Mainz*); Gonzalez-Escamilla, Gabriel (*Johannes Gutenberg University*); Kumar, Saurabh (*Max Planck Institute for Human Cognitive and Brain Sciences, Lei*); Longfei, Xiong (*Christian Albrechts University Kiel*); Groppa, Sergiu (*Johannes Gutenberg University*); Muthuraman, Muthuraman (*Johannes Gutenberg University*)

16:18-16:20 ThDT17-02.5
Evaluating the Effectiveness of Different External Cues on Non-Invasive Brain-Computer Interfaces
Pearce, Sarah* (*Univ. of Waterloo*); Boger, Jennifer (*Univ. of Waterloo*); Mrachacz-Kersting, Natalie (*Aalborg Univ.*); Farina, Dario (*Bernstein Center for Computational Neuroscience, Univ. Medic*); Jiang, Ning (*Univ. of Waterloo*)

ThDT17-03: 16:10-17:10 Einthoven Hall
Principal and Independent Component Analysis II (Poster Session)

16:10-16:12 ThDT17-03.1
Cortico-Muscular Coherence Enhancement via Coherent Wavelet Enhanced Independent Component Analysis
Xu, Yuhang* (*King's College London*); McClelland, Verity M. (*King's College London*); Cvetkovic, Zoran (*King's College London*); Mills, Kerry R. (*King's College London*)

16:12-16:14 ThDT17-03.2
Reliable Gradient Search Directions for Kurtosis-Based Deflationary ICA: Application to Physiological Signal Processing
Saleh, Majd (*Univ. de Rennes 1*); Karfoul, Ahmad* (*Univ. de Rennes1*); Kachenoura, Amar (*Univ. de Rennes1 and INSERM*); Senhadji, Lotfi (*Univ. de Rennes 1 and INSERM*); Albera, Laurent (*Univ. de Rennes 1 and INSERM*)

16:14-16:16 ThDT17-03.3
Real-Time Fetal ECG Extraction from Multichannel Abdominal ECG using Compressive Sensing and ICA
Gurve, Dharmendra* (*Ryerson University*); Pant, Jeevan Kumar (*Ryerson University*); Krishnan, Sridhar (*Ryerson University*)

16:16-16:18 ThDT17-03.4
A Reliable Brain-Computer Interface based on SSVEP using Online Recursive Independent Component Analysis
Chen, Chiu-Kuo* (*National Chiao Tung University (NCTU); Bureau of Standards, Metrolog*); Fang, Wai-Chi (*National Chiao Tung University*)

ThDT17-04: 16:10-17:10 Einthoven Hall
Signal Processing in Physiological Systems – Epilepsy I (Poster Session)

16:10-16:12 ThDT17-04.1
Linear Time-Varying Model Characterizes Invasive EEG Signals Generated from Complex Epileptic Networks
Li, Adam* (*Neuromedical Control Systems Lab*); Gunnarsdottir, Kristin (*Johns Hopkins Univ.*); Inati, Sara (*Natl. Inst. of Health*); Zaghoul, Kareem (*Natl. Inst. of Health*); Gale, John (*Cleveland Clinic*); Bulacio, Juan (*Cleveland Clinic*); Gonzalez-Martinez, J. (*Cleveland Clinic*); Sarma, S.V. (*Johns Hopkins Univ.*)

16:12-16:14 ThDT17-04.2
Functional Clustering Approach for the Analysis of Stereo-EEG Activity Patterns in Correspondence of Epileptic Seizures
Coelli, Stefania* (*Dept. of Electronics, Information and Bioengineering*); Maggioni, Eleonora (*Scientific Institute IRCCS E.Medea*); Cerutti, Sergio (*Politecnico di Milano*); Nobili, Lino (*Center for Sleep Medicine at Niguarda Ca' Granda Hospital, Milan*); Rubino, Annalisa (*Centre for Epilepsy Surgery, Niguarda Hospital, Milan, Italy*); Campana, Chiara (*Centre for Epilepsy Surgery, Niguarda Hospital, Milan, Italy*); Bianchi, Anna Maria (*Politecnico di Milano*)

- 16:14-16:16 ThDT17-04.3
Improved Neonatal Seizure Detection using Adaptive Learning
 Ansari, Amir Hossein* (*KU Leuven*); Cherian, Perumpillichira Joseph (*Clinical Neurophysiology, Dept. of Neurology, ErasmusMC, Rot*); Caicedo Dorado, Alexander (*KU Leuven*); De Vos, Maarten (*Univ. of Oxford*); Naulaers, Gunnar (*Univ. Hospitals Leuven*); Van Huffel, Sabine (*KU Leuven*)
- 16:16-16:18 ThDT17-04.4
Epileptic Seizure Detection based on Expected Activity Measurement and Neural Network Classification
 Dhif, Imen* (*UPMC-LIP6*); Hachicha, Khalil (*UPMC*); Pinna, Andrea (*LIP6 UMR 7606, Université Pierre et Marie Curie, CNRS, Paris*); Hochberg, Sylvain (*CIRA*); Mhedhbi, Imen (*UPMC*); Garda, Patrick (*UPMC*)
- ThDT17-05: 16:10-17:10 Einthoven Hall
Signal Processing in Physiological Systems – Sleep I (Poster Session)
- 16:10-16:12 ThDT17-05.1
Respiration Estimation and Apnea Detection using Fuzzy Logic
 Mudvari, Akrit* (*Trinity College*); Ning, Taikang (*Trinity College*)
- 16:12-16:14 ThDT17-05.2
Automatic Picking of Snore Events from Overnight Breath Sound Recordings
 Swarnkar, Vinayak (*University of Queensland*); Abeyratne, Udantha R (*University of Queensland*); Sharan, Roneel V* (*University of Queensland*)
- 16:14-16:16 ThDT17-05.3
Characterizing the NREM/REM Sleep Specific Obstructive Sleep Apnea Severity using Snore Sounds
 Akhter, Shahin* (*Univ. of Queensland*); Abeyratne, Udantha R (*Univ. of Queensland*); Swarnkar, Vinayak (*Univ. of Queensland*)
- 16:16-16:18 ThDT17-05.4
Blood Pressure and Cardiovascular Parameters during Sleep Arousals
 Salari Shahrbabaki, Sobhan* (*MIT University*); Ahmed, Beena (*Texas A&M University at Qatar*); Penzel, Thomas (*Charité Universitätsmedizin Berlin*); Cvetkovic, Dean (*MIT University*)
- ThDT17-06: 16:10-17:10 Einthoven Hall
Signal Processing in Wearable Technology I (Poster Session)
- 16:10-16:12 ThDT17-06.1
Serial Fusion of Eulerian and Lagrangian Approaches for Accurate Heart-Rate Estimation using Face Videos
 Puneet, Gupta* (*Tata Consultancy Services Ltd.*); Bhowmick, Brojeshwar (*Innovation Labs, Tata Consultancy Services Ltd.*); Pal, Arpan (*Tata Consultancy Services*)
- 16:12-16:14 ThDT17-06.2
A Simple Non-Contact Vital Sensing Method using Doppler Sensors Applicable to Multiple Targets
 Kamiya, Yukihiko* (*Aichi Prefectural University*)
- 16:14-16:16 ThDT17-06.3
Automated Analysis of in Meal Eating Behavior using a Commercial Wristband IMU Sensor
 Kyritsis, Konstantinos (*Aristotle University of Thessaloniki*); Tatli, Christina (*Imperial College Business School*); Diou, Christos* (*Aristotle University of Thessaloniki*); Delopoulos, Anastasios (*Aristotle University of Thessaloniki*)
- 16:16-16:18 ThDT17-06.4
Non-Contact Acquisition of Respiration and Heart Rates using Doppler Radar with Time Domain Peak-Detection Algorithm
 Yang, Xiaofeng* (*The University of Electro-Communications*); Sun, Guanghao (*The University of Electro-Communications*); Ishibashi, Koichiro (*The University of Electro-Communications*)
- 16:18-16:20 ThDT17-06.5
Effect of Motion Artifact on Digital Camera based Heart Rate Measurement
 Mohamed Ameen Mashood, Mohamed Abul Hassan* (*UTP*); Malik, Aamir Saeed (*Universiti Teknologi PETRONAS*); Fofi, David (*Univ. Bourgogne Franche-Com*); Saad, Naufal (*Universiti Teknologi PETRONAS*); Meriaudeau, Fabrice (*Universite de Bourgogne*)
- ThDT18-01: 16:10-17:10 Montgomery Hall
Neural Networks and Support Vector Machines II (Poster Session)
- 16:10-16:12 ThDT18-01.1
Classifying Hard and Soft Bone Tissues using Drilling Sounds
 Zakeri, Vahid* (*University of British Columbia*); Hodgson, Antony J. (*University of British Columbia*)
- 16:12-16:14 ThDT18-01.2
Predictive Local Receptive Fields based Respiratory Motion Tracking for Motion-Adaptive Radiotherapy
 Wang, Yubo (*Xidian Univ.*); Tatinati, Sivanagaraja* (*Nanyang Tech. Univ.*); Huang, Liyu (*Xidian Univ.*); Kim, Jeong Hong (*Kyungpook National Univ.*); Shafiq, Ghufan (*Kyungpook National Univ.*); Veluvolu, Kalyana C. (*Kyungpook National Univ.*); Khong, Andy W H (*Nanyang Tech. Univ.*)
- 16:14-16:16 ThDT18-01.3
Motor Imagery EEG Classification with Optimal Subset of Wavelet based Common Spatial Pattern and Kernel Extreme Learning Machine
 Park, Hyeong-jun* (*Gwangju Institute of Science and Tech.*); Kim, Jongin (*Gwangju Institute of Science and Tech.*); BeomJun, Min (*Gwangju Institute of Science and Tech. (GIST)*); Lee, Boreom (*Gwangju Institute of Science and Tech. (GIST)*)
- 16:16-16:18 ThDT18-01.4
Freezing-of-Gait Detection using Temporal, Spatial, and Physiological Features with a Support-Vector-Machine Classifier
 Tahafchi, Parisa* (*Univ. of Florida*); Molina, Rene (*Univ. of Florida*); Roper, Jaimie (*Univ. of Florida*); Sowalsky, Kristen (*Univ. of Florida*); Hass, Chris (*Univ. of Florida*); Gunduz, Aysegul (*Univ. of Florida*); Okun, Michael (*Univ. of Florida*); Judy, Jack (*Univ. of Florida*)
- 16:18-16:20 ThDT18-01.5
Recognition Physical Activities with Optimal Number of Wearable Sensors using Data Mining Algorithms and Deep Belief Network
 Al-fatlawi, Ali H. (*Univ. of Kufa*); Fatlawi, Hayder K. (*Univ. of Kufa*); Ling, Steve* (*Univ. of Technology Sydney*)
- 16:20-16:22 ThDT18-01.6
PCA-MLP SVM Distinction of Salivary Raman Spectra of Dengue Fever Infection
 Mohd Radzol, Afaf Rozan (*Universiti Teknologi MARA*); Lee, Khuan Y.* (*Universiti Teknologi MARA*); Mansor, Wahidah (*Universiti Teknologi MARA*); Wong, Peng Shyan (*Infectious Disease Unit, Pulau Pinang General Hospital*); Looi, Irene (*Head of Dept., Consultant Neurologist, Hospital Seberang Ja*)
- 16:22-16:24 ThDT18-01.7
Classification of Familiarity based on Cross-Correlation Features between EEG and Music
 Kumagai, Yuiko* (*Tokyo Univ. of Agriculture and Technology*); Arvaneh, Mahnaz (*Univ. of Sheffield*); Okawa, Haruki (*Tokyo Univ. of Agriculture and Technology*); Wada, Tomoya (*Tokyo Univ. of Agriculture and Technology*); Tanaka, Toshihisa (*Tokyo Univ. of Agriculture and Technology*)
- 16:24-16:26 ThDT18-01.8
Assessment of Support Vector Machines and Convolutional Neural Networks to Detect Snoring using Emfit Mattress
 Perez-Macias, Jose Maria* (*Tampere University of Technology*); Adavanne, Sharath (*Tampere University of Technology*); Viik, Jari (*Tampere University of Technology*); Vääri, Alpo (*Tampere University of Technology*); Himanen, Sari-Leena (*Irkanmaa Hospital District*); Tenhunen, Mirja (*Dept. of Clinical Neurophysiology, Pirkanmaa Hospital*)

- 16:26-16:28 ThDT18-01.9
Using LSTMs to Learn Physiological Models of Blood Glucose Behavior
 Mirshekarian, Sadeq (*Ohio Univ.*); Bunesco, Razvan* (*Ohio Univ.*); Marling, Cindy (*Ohio Univ.*); Schwartz, Frank (*Ohio Univ.*)
- 16:28-16:30 ThDT18-01.10
Convolutional Neural Network Classifier for Distinguishing Barrett's Esophagus and Neoplasia Endomicroscopy Images
 Hong, Jisu (*Sungkyunkwan Univ.*); Park, Bo-yong (*Sungkyunkwan Univ.*); Park, Hyunjin* (*Sungkyunkwan Univ.*)
- 16:30-16:32 ThDT18-01.11
A Deep Learning Approach to Adherence Detection for Type 2 Diabetics
 Mohebbi, Ali* (*Technical Univ. of Denmark*); Aradóttir, Tinna Björk (*Technical Univ. of Denmark*); Johansen, Alexander Rosenberg (*Technical Univ. of Denmark*); Bengtsson, Henrik (*Novo Nordisk A/S*); Fraccaro, Marco (*Technical Univ. of Denmark*); Morup, Morten (*DTU Compute*)
- 16:32-16:34 ThDT18-01.12
Character Recognition from Trajectory by Recurrent Spiking Neural Networks
 Shen, Jiangrong (*Zhejiang Univ.*); Wang, Yueming* (*Zhejiang Univ.*); Lin, Kang (*Zhejiang Univ.*); Pan, Gang (*Zhejiang Univ.*)
- 16:34-16:36 ThDT18-01.13
Three Drowsiness Categories Assessment by Electroencephalogram in Driving Simulator Environment
 Akbar, Izzat Aulia* (*Kumamoto University*); Rumagit, Arthur Mourits (*Kumamoto University*); Utsunomiya, Mitaku (*Kumamoto University*); Morie, Takamasa (*Kumamoto University*); Igasaki, Tomohiko (*Kumamoto University*)
- ThDT18-02: 16:10-17:10 Montgomery Hall
Time-Frequency and Time-Scale Analysis I (Poster Session)
- 16:10-16:12 ThDT18-02.1
Objective Assessment of Perceived Effort in Listening by Employing EEG Features
 MortezaPouraghdam, Zeinab* (*Saarland University*); Strauss, Daniel J. (*Saarland University, Medical Faculty*); Bernarding, Corinna (*Saarland University Hospital*)
- 16:12-16:14 ThDT18-02.2
Measurement of Human Enamel Mechanical Characteristics with Resonant Ultrasound Spectroscopy
 Feng, Dandan (*Beihang University*); Fan, Fan (*Beihang University*); Wang, Rui (*Beihang University*); Zhang, Qiang (*Beihang University*); Niu, Haijun* (*Beihang University*)
- 16:14-16:16 ThDT18-02.3
Estimation of Pulse Rate from Ambulatory PPG using Ensemble Empirical Mode Decomposition and Adaptive Thresholding
 Pittara, Melpo* (*University of Cyprus*); Theocharides, Theocharis (*University of Cyprus*); Orphanidou, Christina (*University of Cyprus*)
- 16:16-16:18 ThDT18-02.4
Non-Invasive Diagnosis of Non-Alcoholic Fatty Liver Disease (NAFLD) using Ultrasound Image Echogenicity
 Benjamin, Alex (*MIT*); Zubajlo, Rebecca (*MIT*); Thomenius, Kai Erik (*MIT*); Dhyani, Manish (*Massachusetts General Hospital*); Kaliannan, Kanakaraju (*Massachusetts General Hospital - Harvard University*); Samir, Anthony Edward (*Harvard Medical School, Massachusetts General Hospital*); Anthony, Brian W.* (*Massachusetts Institute of Tech.*)
- 16:18-16:20 ThDT18-02.5
Comparison of Electrohysterogram Characteristics during Uterine Contraction and Non-Contraction during Labor
 Liu, Zhihui (*Beijing Univ. of Tech.*); Hao, Dongmei* (*Beijing Univ. of Tech.*); Zhang, Lei (*Beijing Univ. of Tech.*); Liu, Juntao (*Peking Union Medical College Hospital*); Zhou, Xiya (*Peking Union Medical College Hospital*); Yang, Lin (*Beijing Univ. of Tech.*); Yang, Yimin (*Beijing Univ. of Tech.*); Li, Xuwen (*Beijing Univ. of Tech.*); Zhang, Song (*Beijing Univ. of Tech.*); Zheng, Dingchang (*Anglia Ruskin Univ.*)
- 16:20-16:22 ThDT18-02.6
Performance Comparison of Wavelet based Denoising Methods on Discontinuous Adventitious Lung Sounds
 Ulukaya, Sezer* (*Bogazici University / Trakya University*); Serbes, Gorkem (*Yildiz Technical University*); Kahya, Yasemin P. (*Bogazici University*)
- 16:22-16:24 ThDT18-02.7
Analysis of Dynamic Antral Scintigraphy using Empirical Mode Decomposition
 Ngamsirijit, Panasun (*Faculty of Engineering, Chulalongkorn University*); Jarumaneeroj, Pisit (*Chulalongkorn University*); Chaiwatanarat, Tawatchai (*Faculty of Medicine, Chulalongkorn University*); Rakvongthai, Yothin* (*Faculty of Medicine, Chulalongkorn University*)
- 16:24-16:26 ThDT18-02.8
Feature Reconstruction of LFP Signals based on PLSR in the Neural Information Decoding Study
 Dong, Yonghui* (*Zhengzhou University*); Shang, Zhigang (*Zhengzhou University*); Li, Mengmeng (*Zhengzhou University*); Liu, Xinyu (*Zhengzhou University*); Wan, Hong (*Zhengzhou University*)
- 16:26-16:28 ThDT18-02.9
Gender Differences in Dynamic Functional Connectivity based on Resting-State fMRI
 Mao, Nini (*Beijing Normal University*); Zheng, Hongna (*Beijing Normal University*); Long, Zhiying (*Beijing Normal University*); Li, Yao (*College of Information Science and Technology, Beijing Normal Un*); Xia, Wu* (*Beijing Normal University*);
- 16:28-16:30 ThDT18-02.10
Physical Activity Classification using Time-Frequency Signatures of Motion Artifacts in Multi-Channel Electrical Impedance Plethysmographs
 Khan, Hassan Aqeel* (*National University of Sciences & Technology*); Gore, Amit (*GE Global Research*); Ashe, Jeffrey (*GE Global Research*); Chakrabartty, Shantanu (*Washington University in Saint Louis Missouri*)
- 16:32-16:34 ThDT18-02.12
Variation-Based Sparse Source Imaging in Localizing Uterine Activity
 Zahran, Saeed* (*Université de technologie de Compiègne*); Yochum, Maxime (*Université de Rennes 1*); Diab, Ahmad (*Université de technologie de Compiègne - UTC*); Khalil, Mohamad (*Lebanese University, Doctoral Doctoral School for Sciences and Technology.*); Marque, Catherine (*University of technology of compiegne*)
- 16:34-16:36 ThDT18-02.13
Respiratory Sounds Classification using Statistical Biomarker
 Mondal, Ashok (*Dept. of Electronics and Communication Engineering*); Tang, Hong* (*Dept. of Biomedical Engineering, Dalian University of Tech*)
- 16:36-16:38 ThDT18-02.14
Significance of Modified Empirical Mode Decomposition for ECG Denoising
 Singh, Pratik* (*NIT Patna*); Shahnawazuddin, S (*NIT Patna*); Pradhan, Gayadhar (*NIT Patna*)

Friday, 14 July 2017

FrAT1: 08:00-09:30 Roentgen Hall
Signal Pattern Classification – Brain Computer Interface (Oral Session)
Chair: Guan, Cuntai (Nanyang Technological University)

08:00-08:15 FrAT1.1
Evaluation of Filtering Techniques to Extract Movement Intention Information from Low-Frequency EEG Activity
Bibián, Carlos (Univ. Tübingen); López-Larraz, Eduardo* (Univ. of Tübingen); Irastorza-Landa, Nerea (Univ. of Tübingen); Birbaumer, Niels (Eberhard-Karls-Univ.); Ramos-Murguialday, Ander (Eberhard Karls Univ. of Tubingen/TECNALIA)

08:15-08:30 FrAT1.2
Reject Option to Improve Decoding Accuracy for EEG-Motor Imagery based BCI
M, Ganeshkumar (National Univ. of Singapore (NUS)); So, Rosa* (Institute for Infocomm Research); Ang, Kai Keng (Institute for Infocomm Research); Guan, Cuntai (Nanyang Technological Univ.)

08:30-08:45 FrAT1.3
Decoding Complex Imagery Hand Gestures
Mohseni Salehi, Seyed Sadegh* (Northeastern University); Moghadamfalahi, Mohammad (Northeastern University); Quivira, Fernando (Northeastern University); Piers, Alexander (Northeastern University); Nezamfar, Hooman (Northeastern University); Erdogmus, Deniz (Northeastern University)

08:45-09:00 FrAT1.4
Context-Aware Recursive Bayesian Graph Traversal in BCIs
Mohseni Salehi, Seyed Sadegh* (Northeastern Univ.); Moghadamfalahi, Mohammad (Northeastern Univ.); Nezamfar, Hooman (Northeastern Univ.); Haghighi, Marzieh (Northeastern Univ.); Erdogmus, Deniz (Northeastern Univ.)

09:00-09:15 FrAT1.5
Motor Imagery Classification of Upper Limb Movements based on Spectral Domain Features of EEG Patterns
Samuel, Oluwarotimi Williams (Shenzhen Institutes of Advanced Tech.); Li, Xiangxin (Shenzhen Institutes of Advanced Tech., Chinese Academy of Sc); Geng, Yanjuan (Shenzhen Institutes of Advanced Tech.); Fang, Peng (Shenzhen Institutes of Advanced Tech., Chinese Academy of S); Chen, Shixiong (Shenzhen Institutes of Advanced Tech.); Li, Guanglin* (Shenzhen Institutes of Advanced Tech.)

09:15-09:30 FrAT1.6
A Robust Beamforming Approach for Early Detection of Readiness Potential with Application to Brain-Computer Interface Systems
Mahmoodi, Maryam (Tehran Tech. of Medical Sciences); Makki Abadi, Bahador* (Tehran Tech. of Medical Sciences); Khajehpour, Hassan (Tehran Tech. of Medical Sciences); Hairichian, Mohammad Hosein (Medical Sciences/Univ. of Tehran)

FrAT2: 08:00-09:30 Cho Room
Ultrasound Imaging – Elastography I (Oral Session)
Chair: Managuli, Ravi (Hitachi Aloka Medical America, Inc.)
Co-Chair: Yoo, Yangmo (Sogang University)

08:00-08:15 FrAT2.1
ARFI Variance of Acceleration (VoA) for Noninvasive Characterization of Human Carotid Plaques in Vivo
Torres, Gabriela* (Univ. of North Carolina, Chapel Hill and North Carolina S); Czernuszewicz, Tomasz (Univ. of North Carolina, Chapel Hill); Homeister, Jonathon (Univ. of North Carolina, Chapel Hill); Farber, Mark (Univ. of North Carolina, Chapel Hill); Gallippi, Caterina (The Univ. of North Carolina, Chapel Hill)

08:15-08:30 FrAT2.2
The Influence of Hepatic Steatosis on the Evaluation of Fibrosis with Non-Alcoholic Fatty Liver Disease by Acoustic Radiation Force Impulse
Guo, Yanrong (Shenzhen Univ.); Lin, Haoming (Shenzhen Univ.); Zhang, Xin-Yu (Shenzhen Univ.); Wen, H. (Shenzhen Univ.); Chen, S. (Shenzhen Univ.); Chen, X.* (Shenzhen Univ.)

08:30-08:45 FrAT2.3
Application of Compressive Sensing to Portable Ultrasound Elastography
Shin, Bonghun Shin (University of Waterloo); Jeon, Soo (University of Waterloo); Ryu, Jeongwon (Healcerion Inc.); Kwon, Hyock Ju* (University of Waterloo)

08:45-09:00 FrAT2.4
Radiofrequency Ultrasound Data Acquisition with a 640-Element Array Transducer for Strain Imaging: Experimental Results with Phantoms and Biological Tissue Samples
Brusseu, Elisabeth* (CREATIS); Bernard, Adeline (CREATIS); Meynier, Cyril (VERMON); Ferin, Guillaume (VERMON); Nguyen-Dinh, An (VERMON); Basset, Olivier (CREATIS)

09:00-09:15 FrAT2.5
Measurement of Surface Acoustic Waves in High-Frequency Ultrasound: Preliminary Results
Saavedra, Ana Cecilia* (Pontificia Universidad Católica del Perú); Zvietcovich, Fernando (University of Rochester); Lavarello, Roberto (Pontificia Universidad Católica del Perú); Castañeda, Benjamín (Pontificia Universidad Católica del Perú)

09:15-09:30 FrAT2.6
Shear Wave Estimation by using Shear Wave Holography with Normal Vibration: Preliminary Results
Arroyo, Junior* (Pontificia Universidad Católica del Perú); Castañeda, Benjamín (Pontificia Universidad Católica del Perú)

FrAT3: 08:00-09:30 Park Room
MRI Neuroimaging (Oral Session)
Chair: Wang, Yi (Cornell University)
Co-Chair: Wang, Ze (Temple University)

08:00-08:15 FrAT3.1
Central Sulcus Depth and Sulcal Profile Differences between Congenitally Blind and Sighted Individuals
James, Clarissa* (Univ. of Southern California); Lepore, Franco (Univ. of Montreal); Collignon, Olivier (Univ. Catholique de Louvain); Lepore, Natasha (Univ. of Southern California/Children's Hospital Los Ange); Coulon, Olivier (Aix-Marseille Univ.)

08:15-08:30 FrAT3.2
MRI based Objective Ischemic Core-Penumbra Quantification in Adult Clinical Stroke
Vupputuri, Anusha* (Indian Institute of Technology Kharagpur); Ashwal, Stephen (Dept. of Pediatrics, Loma Linda University); Tsao, Bryan (Dept. of Neurology, Loma Linda University); Haddad, Elia (Dept. of Neurology, Loma Linda University); Ghosh, Nirmalya (Indian Institute of Technology Kharagpur)

08:30-08:45 FrAT3.3
Brain Functional Connectivity Alterations in a Rat Model of Excessive Alcohol Drinking: A Resting-State Network Analysis
Pérez-Ramírez, Úrsula (Universitat Politècnica de València); Díaz-Parra, Antonio (Universitat Politècnica de València); Ciccocioppo, Roberto (School of Pharmacy University of Camerino, Camerino, Italy); Canals, Santiago (Instituto de Neurociencias, Consejo Superior de Investigaciones); Moratal, David* (Universitat Politècnica de València)

08:45-09:00 FrAT3.4
Difference of Alzheimer's Disease Sub-Groups using Two Features from Intensity Size Zone Matrix
Lee, Seunghak (Sungkyunkwan Univ.); Park, Hyunjin* (Sungkyunkwan University)

09:00-09:15 FrAT3.5
Early Axonal Damage in Normal Appearing White Matter in Multiple Sclerosis: Novel Insights from Multi-Shell Diffusion MRI
De Santis, Silvia (Univ. Miguel Hernandez de Elche); Granberg, Tobias (Karolinska Institutet); Ouellette, Russell (Dept. of Radiology, Athinoula A. Martinos Center for Biomed); Treaba, Constantina (Dept. of Radiology, Athinoula A. Martinos Center for Biomed); Fan, Qiuyun (Dept. of Radiology, Athinoula A. Martinos Center for Biomed); Herranz, Elena (Athinoula A. Martinos Center for Biomedical Imaging); Mainero, Caterina (Dept. of Radiology, Athinoula A. Martinos Center for Biomed); Toschi, Nicola* (Univ. of Rome "Tor Vergata", Faculty of Medicine)

09:15-09:30	FrAT3.6	Brain Age Estimation from T1-Weighted Images using Effective Local Features Fujimoto, Ryuichi* (<i>Tohoku University</i>); Ito, Koichi (<i>Tohoku University</i>); Wu, Kai (<i>South China University of Technology</i>); Sato, Kazunori (<i>Tohoku University</i>); Taki, Yasuyuki (<i>Tohoku University</i>); Fukuda, Hiroshi (<i>Tohoku Pharmaceutical University</i>); Aoki, Takafumi (<i>Tohoku University</i>)	Zworykin Room
FrAT4: 08:00-09:30	Min Room	Body Sensor Networks – Molecules, Radio, and Machine Learning – I (Invited Session) Chair: Balasingham, Ilango (<i>Oslo University Hospital and Norwegian University of Science and Technology</i>) Co-Chair: Anzai, Daisuke (<i>Nagoya Institute of Technology</i>)	
08:00-08:15	FrAT4.1	Experimental Evaluation of 30 MHz Band Implant Communication using Automatic Equalization Technique Nomura, Kohei* (<i>Nagoya Institute of Technology</i>); Anzai, Daisuke (<i>Nagoya Institute of Technology</i>); Wang, Jianqing (<i>Nagoya Institute of Technology</i>)	
08:15-08:30	FrAT4.2	Development and Experimental Evaluation on Implant UWB-MIMO Transmission Anzai, Daisuke* (<i>Nagoya Institute of Technology</i>); Ohta, Masahiro (<i>Nagoya Institute of Technology</i>); Shimizu, Yuto (<i>Nagoya Institute of Technology</i>); Balasingham, Ilango (<i>Oslo University Hospital and Norwegian University of Science and</i>); Wang, Jianqing (<i>Nagoya Institute of Technology</i>)	
08:30-08:45	FrAT4.3	Wideband Phantoms of Different Body Tissues for Heterogeneous Models in Body Area Networks Castelló-Palacios, Sergio (<i>Univ. Politècnica de Valencia</i>); Garcia-Pardo, Concepcion (<i>Universidad Politécnica de Valencia</i>); Fornes-Leal, Alejandro (<i>Univ. Politècnica de Valencia</i>); Cardona, Narcis (<i>Univ. Politècnica de València</i>); Vallés-Lluch, Ana* (<i>Univ. Politècnica de València</i>)	
08:45-09:00	FrAT4.4	A Wireless Capsule Endoscopy Steering Mechanism using Magnetic Field Platform Alsunaydih, Fahad Nasser* (<i>Monash Univ.</i>); Redouté, Jean-Michel (<i>Monash Univ.</i>); Yuce, Mehmet (<i>Monash Univ.</i>)	
09:00-09:15	FrAT4.5	A Swallowable Sensing Device Platform with Wireless Power Feeding and Chemical Reaction Actuator Nakamura, Ryota* (<i>Kobe University</i>); Izumi, Shintaro (<i>Kobe University</i>); Kawaguchi, Hiroshi (<i>Kobe University</i>); Ohta, Hidetoshi (<i>Sapporo Orthopedics and Cardiovascular Hospital</i>); Yoshimoto, Masahiko (<i>Kobe University</i>)	
FrAT5: 08:00-09:30	Lee Room	Opportunities and Challenges for Wearable Medical Devices (Minisymposium) Chair: Park, Sung-Min (<i>POSTECH</i>) Co-Chair: Namkoong, Kak (<i>Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.</i>)	
08:00-08:15	FrAT5.1	Investigating Acute Skin Barrier Disruption using Reflectance NIR Spectroscopy Shin, Eui Seok* (<i>Samsung Advanced Institute of Technology</i>); Lee, June-Young (<i>Samsung Advanced Institute of Technology</i>); Lee, Seung Jun (<i>Samsung Advanced Institute of Technology</i>)	
08:15-08:30	FrAT5.2	Wearable MINDS: Cuffless Blood Pressure Monitoring Zhang, Yuan-Ting* (<i>The Chinese University of Hong Kong</i>); Ding, Xiao-Rong (<i>The Chinese University of Hong Kong</i>); Yan, Bryan P. (<i>Prince of Wales Hospital, The Chinese University of Hong Kong</i>); Liu, Jing (<i>The Chinese University of Hong Kong</i>); Su, Peng (<i>The Chinese University of Hong Kong</i>); Zhao, Ni (<i>The Chinese University of Hong Kong</i>)	
FrAT6: 08:00-09:30		Single Protein Sensors and Actuators (Invited Session) Chair: Lu, Zuhong (<i>Southeast University</i>) Co-Chair: Chen, Antony (<i>Peking University, College of Engineering</i>)	
08:00-08:15	FrAT6.1	Single Molecule High-Throughput Detection Platform for DNA Sequencing and Protein Machinery He, Jiankui* (<i>South Univ. of Science and Technology of China</i>)	
08:15-08:30	FrAT6.2	Real-Time Monitored Enzyme Catalysis Reaction based on a Solid-State Nanopore Liu, Quanjun* (<i>Southeast Univ.</i>); Tan, ShengWei (<i>Southeast Univ.</i>)	
08:30-08:45	FrAT6.3	Mechanical Allostery of I-Domain-Containing Leukocyte Integrins Mao, Debin (<i>Institute of Mechanics, Chinese Academy of Sciences</i>); Zhang, Xiao (<i>Institute of Mechanics, Chinese Academy of Sciences</i>); Lü, Shouqin* (<i>Institute of Mechanics, Chinese Academy of Sciences</i>); Long, Mian (<i>Institute of Mechanics, Chinese Academy of Sciences</i>)	
08:45-09:00	FrAT6.4	Spatio-Temporal Fluctuations of Single Protein Machine Investigated by Liquid Cell Transmission Electron Microscopy Lu, Zuhong* (<i>Southeast Univ.</i>); Wang, Zunliang (<i>Southeast Univ.</i>); Ge, Qinyu (<i>Southeast Univ.</i>); Tu, Jing (<i>Southeast Univ.</i>)	
09:00-09:15	FrAT6.5	The use of Photoactivated Localization Microscopy-Based Approaches to Decipher the Role of RNA in Retrovirus Assembly at Nanoscale Resolutions in Living Cells Chen, Antony* (<i>Peking University, College of Engineering.</i>)	
FrAT7: 08:00-09:30	Herrick Room	Neurological Disorders I (Oral Session) Chair: Nguyen, Hung T. (<i>University of Technology, Sydney</i>)	
08:00-08:15	FrAT7.1	Detection of Turning Freeze in Parkinson's Disease based on S-Transform Decomposition of EEG Signals Ly, Quynh Tran* (<i>Univ. of Tech. Sydney</i>); Handojoseno, Aluysius Maria Ardi (<i>Univ. of Tech., Sydney</i>); Gilat, Moran (<i>Parkinson's Disease Research Clinic, Brain and Mind Research Ins</i>); Chai, Rifai (<i>Univ. of Tech., Sydney</i>); Ehgoetz Martens, Kaylena (<i>Univ. of Sydney</i>); Georgiades, Matthew (<i>Univ. of Sydney</i>); Naik, Ganesh R (<i>Univ. of Tech. Sydney</i>); Tran, Yvonne (<i>Univ. of Tech., Sydney</i>); Lewis, Simon J.G. (<i>Parkinson's Disease Research Clinic, Brain and Mind Research Ins</i>); Nguyen, Hung T. (<i>Univ. of Tech., Sydney</i>)	
08:15-08:30	FrAT7.2	Detection of Gait Initiation Failure in Parkinson's Disease based on Wavelet Transform and Support Vector Machine Ly, Quynh Tran* (<i>Univ. of Tech. Sydney</i>); Handojoseno, Aluysius Maria Ardi (<i>Univ. of Tech., Sydney</i>); Gilat, Moran (<i>Parkinson's Disease Research Clinic, Brain and Mind Research Ins</i>); Chai, Rifai (<i>Univ. of Tech., Sydney</i>); Ehgoetz Martens, Kaylena (<i>Univ. of Sydney</i>); Georgiades, Matthew (<i>Univ. of Sydney</i>); Naik, Ganesh R (<i>Univ. of Tech. Sydney</i>); Tran, Yvonne (<i>Univ. of Tech., Sydney</i>); Lewis, Simon J.G. (<i>Parkinson's Disease Research Clinic, Brain and Mind Research Ins</i>); Nguyen, Hung T. (<i>Univ. of Tech., Sydney</i>)	
08:30-08:45	FrAT7.3	Posturography Stability Score Generation for Stroke Patient using Kinect: Fuzzy based Approach Mazumder, Oishee* (<i>Tata Consultancy Services</i>); Chakravarty, Kingshuk (<i>Tata Consultancy Services Ltd.</i>); Chatterjee, Debatri (<i>TCS Innovation Lab</i>); Sinha, Aniruddha (<i>Tata Consultancy Services Ltd.</i>); Das, Abhijit (<i>Institute of NeuroSciences Kolkata</i>)	
08:45-09:00	FrAT7.4	Automated Epileptiform Spike Detection via Affinity Propagation-Based Template Matching Thomas, John* (<i>Nanyang Technological University</i>); Jing, Jin (<i>Nanyang Technological University</i>); Dauwels, Justin (<i>NTU</i>); Cash, Sydney (<i>Massachusetts General Hospital</i>); Westover, Brandon (<i>Massachusetts General Hospital</i>)	

09:00-09:15 FrAT7.5
A New Infarction Detection Method based on Heart Rate Variability in Rat Middle Cerebral Artery Occlusion Model
Kodama, Tomonobu (*The Jikei Univ. School of Medicine*); Kamata, Keisuke (*Kyoto Univ.*); Fujiwara, Koichi* (*Kyoto Univ.*); Kano, Manabu (*Kyoto Univ.*); Yamakawa, Toshitaka (*Kumamoto Univ.*); Yuki, Ichiro (*The Jikei Univ. School of Medicine*); Murayama, Yuichi (*Jikei Univ. School of Medicine*)

09:15-09:30 FrAT7.6
Stroke Lesion Location Influences the Decoding of Movement Intention from EEG
López-Larraz, Eduardo* (*Univ. of Tübingen*); Ray, Andreas Markus (*Tuebingen Univ.*); da Cruz Figueiredo, Thiago (*Univ. of Tübingen*); Bibián, Carlos (*Univ. Tübingen*); Birbaumer, Niels (*Eberhard-Karls-Univ.*); Ramos-Murguialday, Ander (*Eberhard Karls Univ. of Tubingen/TECNALIA*)

FrAT8: 08:00-09:30 Schwan Room
Brain Image Analysis I (Oral Session)
Chair: Hu, Qingmao (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*)
Co-Chair: Park, Hyunjin (*Sungkyunkwan University*)

08:00-08:15 FrAT8.1
Automated Subdural Hematoma Segmentation for Traumatic Brain Injured (TBI) Patients
Farzaneh, Negar* (*University of Michigan*); Soroushmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Williamson, Craig (*University of Michigan*); Jiang, Cheng (*University of Michigan*); Srinivasan, Ashok (*University of Michigan*); Bapuraj, Jayapalli Rajiv (*University of Michigan*); Ward, Kevin (*University of Michigan*); Korley, Frederick K (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

08:15-08:30 FrAT8.2
Compartmental Sparse Feature Selection Method for Alzheimer's Disease Identification
Liu, Yan (*University of Chinese Academy of Sciences*); Wang, Ling* (*University of Electronic Science and Technology of China*); Zeng, Xiangzhu (*Peking University Third Hospital, Beijing, China*); Wang, Zheng (*Capital University of Medical Sciences*); Gao, Yajun (*The General Hospital of Petroleum Administration of North China*); Wang, Qiuyue (*The General Hospital of Petroleum Administration of North China*)

08:30-08:45 FrAT8.3
Low Grade Glioma Growth Modeling Considering Chemotherapy and Radiotherapy Effects from Magnetic Resonance Images
Elazab, Ahmed (*Shenzhen Institutes of Advanced Tech.*); Bai, Hongmin (*Dept. of Neurosurgery, Guangzhou General Hospital of Guangz*); Zhang, Xiaodong (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Hu, Qingmao* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*)

08:45-09:00 FrAT8.4
Classification of Low-Grade and High-Grade Glioma using Multi-Modal Image Radiomics Features
Cho, Hwan-ho (*Sungkyunkwan Univ.*); Park, Hyunjin* (*Sungkyunkwan Univ.*)

09:00-09:15 FrAT8.5
Contribution to Speech Development of the Right Anterior Putamen Revealed with Multivariate Tensor-Based Morphometry
Vlasova, Roza* (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Wang, Yalin (*Arizona State Univ.*); Dirks, Holly (*Brown Univ.*); Dean, Douglas (*Univ. of Wisconsin-Madison*); O'Muircheartaigh, Jonathan (*Brown Univ.*); Gonzalez, Sara (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Nguyen, Binh Kien (*CIBORG Lab, Dept. of Radiology, Children's Hospital Los Angeles*); Nelson, Marvin (*Univ. of Southern California and Keck School of Medicine*); Deoni, Sean (*Univ. of Colorado*); Lepore, Natasha (*Univ. of Southern California / Children's Hospital Los Angeles*)

FrAT9: 08:00-09:30 Plonsey Room
Neural Prosthetic Devices usable for Animal and Clinical Studies, in Asian Countries (Minisymposium)
Chair: Hayashida, Yuki (*Osaka University*)
Co-Chair: Kim, Kyung Hwan (*Yonsei University*)

08:00-08:15 FrAT9.1
The Brain Mapping System Design with Closed-Loop Stimulation Capability for Seizure Onset Region Mapping and Control for Epileptic Patients
Cheng, Cheng-Hsiang (*National Chiao Tung University*); Ker, Ming-Dou (*National Chiao Tung University*); Lee, Chen-Yi (*National Chiao Tung University*); Hsin, Yue-Loong (*Chung Shan Medical University*); Liang, Sheng-Fu (*National Cheng Kung University*); Shaw, Fu-Zen (*National Cheng Kung University*); Wu, Chung-Yu* (*National Chiao Tung University*)

08:15-08:30 FrAT9.2
Implantable Optoelectronic Devices for Measurement and Control of Neural Functions
Sasagawa, Kiyotaka* (*Nara Institute of Science and Tech.*); Haruta, Makito (*Nara Institute of Science and Tech.*); Yamaguchi, Takahiro (*Nara Institute of Science and Tech.*); Fujimoto, Koki (*Nara Institute of Science and Tech.*); Sunaga, Yoshinori (*Nara Institute of Science and Tech.*); Ohta, Yasumi (*Nara Institute of Science and Tech.*); Noda, Toshihiko (*Nara Institute of Science and Tech.*); Tokuda, Takashi (*Nara Institute of Science and Tech.*); Ohta, Jun (*Nara Institute of Science and Tech.*)

08:30-08:45 FrAT9.3
Wireless Device System for Multi-Channel Intra-Cortical Microstimulations – Evaluation with Animal Studies in Vivo
Hayashida, Yuki* (*Osaka University*)

08:45-09:00 FrAT9.4
Neural Signal Processing for Closed-Loop Neuromodulation
Kim, Kyung Hwan* (*Yonsei University*)

09:00-09:15 FrAT9.5
A Multi-Channel Neural Recording ASIC Chip for a Fully Implantable Wireless BMI System
Kameda, Seiji* (*Osaka Univ.*); Ando, Hiroshi (*NICT*); Kamata, Takatsugu (*Osaka Univ.*); Imajo, Kaoru (*Nihon Kohden Corp.*); Suzuki, Katsuyoshi (*Nihon Kohden Corp.*); Suzuki, Takafumi (*National Institute of Information and Communications Technology*); Hirata, Masayuki (*Osaka Univ. Medical School*)

09:15-09:30 FrAT9.6
Design of a Novel Epiretinal Microelectrode Array for Improving Retinal Stimulation Spatial Resolution by Computational Modeling
Li, Liming* (*Shanghai Jiao Tong Univ.*); Lyu, Qing (*Shanghai Jiao Tong Univ.*); Chen, Yao (*Shanghai Jiao Tong Univ.*); Chai, Xinyu (*Shanghai Jiao Tong Univ., China*)

FrAT10: 08:00-09:30 Schmitt Room
General and Theoretical Informatics – Machine Learning I (Oral Session)
Chair: Kim, Yongwook Bryce (*Massachusetts Institute of Technology*)
Co-Chair: Ikeda, Kazushi (*Nara Institute of Science and Technology*)

08:00-08:15 FrAT10.1
Collision Frequency Locality-Sensitive Hashing for Prediction of Critical Events
Kim, Yongwook Bryce* (*Massachusetts Institute of Technology*); Hemberg, Erik (*MIT CSAIL*); O'Reilly, Una-May (*Massachusetts Institute of Technology*)

08:15-08:30 FrAT10.2
Optimized Automatic Sleep Stage Classification using the Normalized Mutual Information Feature Selection (NMIFS) Method
Cho, Dongrae* (*Gwangju Institute of Science and Tech.*); Lee, Boreom (*Gwangju Institute of Science and Tech. (GIST)*)

- 08:30-08:45 FrAT10.3
Application of SsVGM to Medical Data – Classification with Novelty Detection
 Yang, Fan (*Nara Institute of Science and Technology*); Soriano, Jaymar (*Nara Institute of Science and Technology*); Kubo, Takatomi* (*Nara Institute of Science and Technology*); Ikeda, Kazushi (*Nara Institute of Science and Technology*)
- 08:45-09:00 FrAT10.4
Ensemble Transfer Learning for Alzheimer's Disease Diagnosis
 Colbaugh, Richard (*Periander Ltd*); Glass, Kristin* (*Periander Ltd*); Gallegos, Gil (*New Mexico Highlands University*)
- 09:00-09:15 FrAT10.5
Learning about Individuals' Health from Aggregate Data
 Colbaugh, Richard (*Periander Ltd*); Glass, Kristin* (*Periander Ltd*)
- 09:15-09:30 FrAT10.6
Comparing Deep Neural Network and Other Machine Learning Algorithms for Stroke Prediction in a Large-Scale Population-Based Electronic Medical Claims Database
 Hung, Chen-Ying (*National Tsing Hua University*); Chen, Wei-Chen (*Dept. of Electrical Engineering, National Tsing Hua University*); Lai, Po-Tsun (*Dept. of Electrical Engineering, National Tsing Hua University*); Lin, Ching-Heng (*Dept. of Medical Research, Taichung Veterans General Hospital*); Lee, Chi-Chun* (*National Tsing Hua University*)
- FrAT11: 08:00-09:30 Greatbatch Room
Cardiovascular Variability (Oral Session)
 Chair: Lee, Boreom (*Gwangju Institute of Science & Tech. (GIST)*)
- 08:00-08:15 FrAT11.1
Evaluating the Association between Cardiac and Peripheral Resistance Arms of the Baroreflex
 Porta, Alberto* (*Universita' degli Studi di Milano*); Bari, Vlasta (*IRCCS Policlinico San Donato*); Ranuzzi, Giovanni (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive*); De Maria, Beatrice (*IRCCS Fondazione Salvatore Maugeri, Milano*); Malacarne, Mara (*Dipartimento di Biotecnologie Mediche e Medicina Traslationale.*); Pagani, Massimo (*Universita' degli studi di Milano*); Lucini, Daniela (*Universita' degli studi di Milano*)
- 08:15-08:30 FrAT11.2
Changes in Heart Rate Variability of Patients with Delirium in Intensive Care Unit
 Oh, Jooyoung* (*Gwangju Institute of Science and Technology*); Cho, Dongrae (*Gwangju Institute of Science and Technology*); Kim, Jongin (*Gwangju Institute of Science and Technology*); Heo, Jaeseok (*Yonsei University*); Park, Jaesub (*Yonsei University*); Na, Se Hee (*Yonsei University*); Shin, Cheung Soo (*Yonsei University*); Kim, Jae-Jin (*Yonsei University*); Park, Jin Young (*Yonsei University*); Lee, Boreom (*Gwangju Institute of Science and Technology (GIST)*)
- 08:30-08:45 FrAT11.3
A Stochastic and Mathematically Integrative Model of the Control of Human Heart Rate
 BuSha, Brett* (*The College of New Jersey*)
- 08:45-09:00 FrAT11.4
Towards the Identification of Subjects Prone to Develop Atrial Fibrillation after Coronary Artery Bypass Graft Surgery via Univariate and Multivariate Complexity Analysis of Heart Period Variability
 Bari, Vlasta* (*IRCCS Policlinico San Donato*); Ranucci, Marco (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive*); De Maria, Beatrice (*IRCCS Fondazione Salvatore Maugeri, Milano*); Ranuzzi, Giovanni (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive*); Pistuddi, Valeria (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive*); Porta, Alberto (*Universita' degli Studi di Milano*)
- 09:00-09:15 FrAT11.5
Respiratory-Gated Auricular Vagal Afferent Nerve Stimulation (RAVANS) Effects on Autonomic Outflow in Hypertension
 Sclocco, Roberta* (*Massachusetts General Hospital, Harvard Medical School*); Garcia, Ronald (*Massachusetts General Hospital*); Gabriel, Aileen (*Brigham and Women's Hospital*); Kettner, Norman (*Logan College of Chiropractic*); Napadow, Vitaly (*Massachusetts General Hospital*); Barbieri, Riccardo (*Politecnico di Milano*)
- 09:15-09:30 FrAT11.6
Multiscale Sample Entropy of Heart Rate and Blood Pressure: Methodological Aspects
 Castiglioni, Paolo* (*Fondazione Don Carlo Gnocchi ONLUS*); Brambilla, Lorenzo (*Fondazione Don Carlo Gnocchi, Parma, Italy*); Bini, Matteo (*Dept. of Clinical and Experimental Medicine*); Coruzzi, Paolo (*Dept. of Clinical and Experimental Medicine*); Faini, Andrea (*Istituto Auxologico Italiano*)
- FrAT14: 08:00-09:30 Schaldach Room
Image Classification I (Oral Session)
- 08:00-08:15 FrAT14.1
CAD for Prostate Cancer Detection based on Multiparametric Data
 Meriaudeau, Fabrice* (*Universite de Bourgogne*); Lemaitre, Guillaume (*LE2I - UMR 6306*); Ratsgoo, Mojdeh (*LE2I - UMR 6306*); Marti, Robert (*University of Girona*)
- 08:15-08:30 FrAT14.2
Detecting Impaired Vision Caused by AMD from Gaze Data
 Liu, Huiying* (*Institute for Infocomm Research*); Xu, Yanwu (*Institute for Infocomm Research*); Wong, Damon (*Institute for Infocomm Research*); Yow, Ai Ping (*Institute for Infocomm Research*); Laude, Augustinus (*Tan Tock Seng Hospital*); Lim, Tock Han (*Tan Tock Seng Hospital*)
- 08:30-08:45 FrAT14.3
Gabor-Based Automatic Spinal Level Identification in Ultrasound
 Ikhshan, Mohammad* (*National University of Singapore*); Tan, Kok Kiong (*National University of Singapore*); Oh, Ting Ting (*KK Women's and Children's Hospital*); Sng, Ban Leong (*KK Women's and Children's Hospital*); Lew, John Paul (*KK Women's and Children's Hospital*)
- 08:45-09:00 FrAT14.4
Image Recognition with Missing-Features based on Gaussian Mixture Model and Graph Constrained Nonnegative Matrix Factorization
 Zhang, Zhuyan (*East China University of Science and Tech.*); Zhu, Hongqing* (*East China University of Science and Tech.*); Tao, Xuan (*East China University of Science and Tech.*)
- 09:00-09:15 FrAT14.5
Gastrointestinal Bleeding Detection in Wireless Capsule Endoscopy Images using Handcrafted and CNN Features
 Jia, Xiao* (*The Chinese University of Hong Kong*); Meng, Max Q.-H. (*The Chinese University of Hong Kong*)
- 09:15-09:30 FrAT14.6
Automated Angiodysplasia Detection from Wireless Capsule Endoscopy
 Noya, Ferran (*Automatic Control Dept., Universitat Politècnica de Catalunya*); Álvarez-González, Marco Antonio (*Endoscopy Unit, Dept. of Digestive Diseases, Hospital del M*); Benitez, Raul* (*Universitat Politècnica de Catalunya*)
- FrAT17: 08:00-09:30 Einthoven Hall
Signal Processing – Cardiovascular Signals (Oral Session)
 Chair: Burattini, Laura (*Università Politecnica delle Marche*)
- 08:00-08:15 FrAT17.1
Intracardiac Electrogram Envelope Detection during Atrial Fibrillation using Fast Orthogonal Search
 Hashemi, Javad* (*Queen's University*); Shariat, Mohammad Hassan (*Queen's University, Kingston, Ontario, Canada*); Redfean, Damian P (*Queen's University*)

- 08:15-08:30 FrAT17.2
Statistical Baseline Assessment in Cardiotocography
 Agostinelli, Angela (*Polytechnic Univ. of Marche*); Braccili, Eleonora (*Univ. Politecnica delle Marche*); Marchegiani, Enrico (*Univ. Politecnica delle Marche*); Rosati, Riccardo (*Univ. Politecnica delle Marche*); Sbrollini, Agnese (*Univ. Politecnica delle Marche*); Burattini, Luca (*Univ. Politecnica delle Marche*); Morettini, Micaela (*Univ. Politecnica delle Marche*); Di Nardo, F. (*Polytechnic Univ. of Marche*); Fioretti, S. (*Univ. Politecnica delle Marche*); Burattini, L.* (*Univ. Politecnica delle Marche*)
- 08:30-08:45 FrAT17.3
Nonlinear Analysis of Heart Rate Variability for the Assessment of Dysphoria
 Greco, Alberto* (*Univ. of Pisa*); Messerotti Benvenuti, Simone (*Univ. of Padova*); Gentili, Claudio (*Univ. of Pisa*); Palomba, Daniela (*Univ. of Padova*); Valenza, Gaetano (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*)
- 08:45-09:00 FrAT17.4
Classification Enhancement for Post-Stroke Dementia using Fuzzy Neighborhood Preserving Analysis with QR-Decomposition
 Al-Qazzaz, Noor* (*UKM*); Md Ali, Sawal Hamid (*National University of Malaysia*); Siti Anom, Ahmad (*Universiti Putra Malaysia*); Escudero, Javier (*University of Edinburgh*)
- 09:00-09:15 FrAT17.5
Attenuation of Vagal Modulation with Aging: Univariate and Bivariate Analysis of HRV
 Costa Oliveira Junior, Evandro* (*University of Brasilia*); Oliveira, Flavia M. G. S. A. (*University of Brasilia*)
- FrAT18: 08:00-09:30 Montgomery Hall
Nonlinear Dynamic Analysis I – Biomedical Signals (Oral Session)
- 08:00-08:15 FrAT18.1
Multiscale Dispersion Entropy for the Regional Analysis of Resting-State Magnetoencephalogram Complexity in Alzheimer's Disease
 Azami, Hamed (*University of Edinburgh*); Kinney-Lang, Eli* (*University of Edinburgh*); Ebied, Ahmed (*University of Edinburgh*); Fernandez, Alberto (*Universidad Complutense de Madrid*); Escudero, Javier (*University of Edinburgh*)
- 08:15-08:30 FrAT18.2
Gait Variability Assessment in Neuro-Degenerative Patients by Measuring Complexity of Independent Sources
 Heydarzadeh, Mehrdad (*The Univ. of Texas at Dallas*); Nourani, Mehrdad (*Univ. of Texas at Dallas*); Tan, Chin-Tuan* (*Univ. of Texas, Dallas*); Ostadabbas, Sarah (*Northeastern Univ.*)
- 08:30-08:45 FrAT18.3
Complexity Analysis of Resting State fMRI Signals in Depressive Patients
 Ho, Pei-Shan (*National Tsing Hua Univ., Hsinchu*); Lin, Chemin (*Keelung Chang Gung Memorial Hospital*); Chen, Guan-Yen (*National Tsing Hua Univ.*); Liu, Ho-Ling (*Univ. of Texas, MD Anderson Cancer Center*); Huang, Chih-Mao (*National Chiao Tung Univ.*); Lee, Tatia Mei-Chun (*The Univ. of Hong Kong*); Lee, Shwu-Hua (*Linkou Chang Gung Memorial Hospital*); Wu, Shun Chi* (*National Tsing Hua Univ.*)
- 08:45-09:00 FrAT18.4
Predicting Learning Dynamics in Multiple-Choice Decision-Making Tasks using a Variational Bayes Technique
 Yousefi, Ali* (*Massachusetts General Hospital and Harvard Medical School*); Kakooee, Reza (*Tarbiat Modares Univ.*); Hamidi Beheshti, Mohammad Taghi (*Tarbiat Modares Univ.*); Dougherty, Darin (*Massachusetts General Hospital*); Eskandar, Emad (*Massachusetts General Hospital*); Widge, Alik (*Massachusetts General Hospital*); Eden, Uri (*Boston Univ.*)
- 09:00-09:15 FrAT18.5
A Closed-Form Unsupervised Geometry-Aware Dimensionality Reduction Method in the Riemannian Manifold of SPD Matrices
 Congedo, Marco* (*CNRS, Univ. Grenoble Alpes*); Rodrigues, Pedro Luiz Coelho (*Escola Politécnica USP*); Bouchard, Florent (*Gipsa-lab, Univ. Grenoble Alpes*); Barachant, Alexandre (*Independent Researcher*); Jutten, Christian (*Univ. of Grenoble*)
- 09:15-09:30 FrAT18.6
Real-Time Physiological Tremor Estimation using Recursive Singular Spectrum Analysis
 Adhikari, Kabita* (*Newcastle Univ.*); Tatinati, Sivanagaraja (*Nanyang Technological Univ.*); Veluvolu, Kalyana C. (*Kyungpook National Univ.*); Chambers, Jonathon A. (*Newcastle Univ.*); Nazarpour, Kianoush (*Newcastle Univ.*)
- FrBT1: 10:50-12:20 Roentgen Hall
Signal Pattern Classification – EEG I (Oral Session)
 Chair: Zhang, Dan (*Tsinghua University*)
- 10:50-11:05 FrBT1.1
Integrating Channel Selection and Feature Selection in a Real Time Epileptic Seizure Detection System
 Wang, Hongda* (*The Chinese University of Hong Kong*); Shi, Weiwei (*Shenzhen University*); Choy, Chiu Sing (*The Chinese University of Hong Kong*)
- 11:05-11:20 FrBT1.2
Evidences of Brain Functional Deficits following Sport-Related Mild Traumatic Brain Injury
 Munia, Tamanna Tabassum Khan (*University of North Dakota*); Haider, Md. Ali (*University of North Dakota*); Fazel-Rezai, Reza* (*University of North Dakota*)
- 11:20-11:35 FrBT1.3
Estimating Unmeasured Invasive EEG Signals using a Reduced-Order Observer
 Gunnarsdottir, Kristin* (*Johns Hopkins University*); Li, Adam (*Neuromedical Control Systems Laboratory*); Bulacio, Juan (*Cleveland Clinic*); Gonzalez-Martinez, Jorge (*Cleveland Clinic*); Sarma, Sridevi V. (*Johns Hopkins University*)
- 11:35-11:50 FrBT1.4
A Mental Fatigue Index based on Regression using Multiband EEG Features with Application in Simulated Driving
 Dimitrakopoulos, Georgios (*Univ. of Patras*); Kakkos, Ioannis (*National Univ. Singapore*); Thakor, Nitish (*Johns Hopkins Univ.*); Bezerianos, Anastasios* (*National Univ. of Singapore*); Sun, Yu (*National Univ. of Singapore*)
- 11:50-12:05 FrBT1.5
Decoding Brain Cognitive Activity across Subjects using Multimodal M/EEG Neuroimaging
 Fatima, Sarwat (*National University of Science and Technology*); Kamboh, Awais Mehmood* (*School of Electrical Engineering and Computer Science, National*)
- 12:05-12:20 FrBT1.6
EEG-Based Approach-Withdrawal Index for the Pleasantness Evaluation during Taste Experience in Realistic Settings
 Di Flumeri, Gianluca* (*Univ. of Rome Sapienza*); Arico, Pietro (*Fondazione Santa Lucia*); Borghini, Gianluca (*Univ. of Rome Sapienza*); Sciaraffa, Nicolina (*Dept. of Computer, Control and Management Engineering*); Maglione, Anton Giulio (*Univ. of Rome Sapienza*); Rossi, Dario (*Univ. of Rome Sapienza*); Modica, Enrica (*Univ. of Rome Sapienza*); Mascarell Llorens, Ignacio (*Dept. of Clinical and Experimental Neuroscience*); Trettel, Arianna (*BrainSigns*); Babiloni, Fabio (*Univ. of Rome*); Colosimo, Alfredo (*Univ. of Rome "Sapienza"*); Herrero Exquerro, Maria Trinidad (*Univ. of Murcia*)
- FrBT2: 10:50-12:20 Cho Room
Innovative Ultrasound Imaging (Oral Session)
 Chair: Lavarello, Roberto (*Pontificia Universidad Catolica del Peru*)
 Co-Chair: Park, Kwan Kyu (*Hanyang University*)
- 10:50-11:05 FrBT2.1
Multimodal Ultrasound Imaging based Diagnosis of Liver Cancers with a Two-Stage Multi-View Learning Framework
 Yiyi, Qian (*Shanghai University*); Shi, Jun* (*Shanghai University*); Zheng, Xiao (*Shanghai University*); Zhang, Qi (*Shanghai University*); Lehang, Guo (*Shanghai Tenth People's Hospital*); Dan, Wang (*Shanghai Tenth People's Hospital*); Huixiong, Xu (*Shanghai Tenth People's Hospital*)

11:05-11:20	FrBT2.2	11:50-12:05	FrBT3.5
Myocardial Elastogram using a Fast Mapping Algorithm Wang, Yinong (<i>Institute of Medical Information, School of Biomedical Engineeri</i>); Song, Xiangfen (<i>Institute of Medical Information, School of Biomedical Engineeri</i>); Huang, Zhijie (<i>Institute of Medical Information, School of Biomedical Engineeri</i>); Wang, Qing* (<i>Southern Medical University,</i>)		A Low Rank Hankel Matrix Reconstruction Method for Ultrafast Magnetic Resonance Spectroscopy Lu, Hengfa (<i>Xiamen Univ.</i>); Zhang, Xinlin (<i>Xiamen Univ.</i>); Qiu, Tianyu (<i>Xiamen Univ.</i>); Yang, Jian (<i>Xiamen Univ.</i>); Guo, Di (<i>Xiamen Univ.</i>); Chen, Z. (<i>Xiamen Univ.</i>); Qu, X.* (<i>Xiamen Univ.</i>)	
11:20-11:35	FrBT2.3	FrBT4: 10:50-12:20 Min Room Body Sensor Networks – Molecules, Radio, and Machine Learning – II (Invited Session) Chair: Balasingham, Ilango (<i>Oslo University Hospital and Norwegian University of Science and Technology</i>) Co-Chair: Sugimachi, Masaru (<i>Natl Cardio Center Research Inst</i>)	
Image-Guided Laparoscopic Pelvic Lymph Node Dissection using Stereo Visual Tracking Free-Hand Laparoscopic Ultrasound Ma, Lei* (<i>School of Bioengineering, The Univ. of Tokyo</i>); Nakamae, Kenta (<i>The Univ. of Tokyo</i>); Wang, Junchen (<i>The Univ. of Tokyo</i>); Kiyomatsu, Hidemichi (<i>The Univ. of Tokyo</i>); Tsukihara, Hiroyuki (<i>The Univ. of Tokyo</i>); Kobayashi, Etsuko (<i>The Univ. of Tokyo</i>); Sakuma, Ichiro (<i>The Univ. of Tokyo</i>)		10:50-11:05	FrBT4.1
11:35-11:50	FrBT2.4	Estimation of Pathlength Travelled by a Capsule Endoscope Bjørnevik, Anders (<i>Kongsberg Seatex</i>); Floor, Pål Anders (<i>NTNU, Gjøvik</i>); Balasingham, Ilango* (<i>Oslo University Hospital and Norwegian University of Science and</i>)	
Tracking Large Anterior Mitral Leaflet Displacements by Incorporating Optical Flow in an Active Contours Framework Sultan, Malik Saad (<i>Univ. of Porto</i>); Martins, Nelson (<i>Enermeter, Sistemas de Medição, Lda & Instituto de Telecom.</i>); Eva, Costa (<i>Enermeter, Sistemas de Medição, Lda, Braga, Portugal</i>); Veiga, Diana (<i>Enermeter, Sistemas de Medição Ida/ Centro Algoritmi, Univ.</i>); Ferreira, Manuel Joao (<i>Univ. of Minho</i>); Sandra, Mattos (<i>Cículo do Coração de Pernambuco, Recife PE, Brazil</i>); Coimbra, Miguel* (<i>Instituto de Telecom/Univ. do Porto</i>)		11:05-11:20	FrBT4.2
11:50-12:05	FrBT2.5	Next Generation Body Area Network for Healthcare Application, SmartBAN Tanaka, Hirokazu* (<i>Hiroshima City University</i>); Hatakeyama, Yasutaka (<i>Hiroshima City University</i>); Komori, Tatsuya (<i>Toshiba Development & Engineering Corporation</i>); Matsukuma, Takeshi (<i>Toshiba Development & Engineering Corporation</i>)	
Automatic Initialization for Active Contour Model in Breast Cancer Detection Utilizing Conventional Ultrasound and Color Doppler Keatmanee, Chadaporn* (<i>Japan Advanced Institute of Science and Technology (JAIST)</i>); Makhanov, Stanislav (<i>Sirinthon International Institute of Technology</i>); Kazunori, Kotani (<i>Japan Advanced Institute of Science and Technology (JAIST)</i>); Lohitvisate, Wanrudee (<i>Dept. of Radiology, Thammasat University</i>); Tongvigitmanee, Saowapak (<i>National Electronics and Computer Technology Center</i>)		11:20-11:35	FrBT4.3
FrBT3: 10:50-12:20 Park Room MRI Image Reconstruction (Oral Session) Chair: Qu, Xiaobo (<i>Xiamen University</i>)		A Multi-Scale Computational Model of Noninvasive Brain Stimulation: Investigation of Activation of Cortical Neurons Seo, Hyeon (<i>Gwangju Institute of Science and Tech.</i>); Schaworonkow, Natalie (<i>Frankfurt Institute for Advanced Studies</i>); Triesch, Jochen (<i>Frankfurt Institute for Advanced Studies</i>); Kim, Hyoung-lhl (<i>Gwangju Institute of Science and Tech.</i>); Jun, Sung Chan* (<i>Gwangju Institute of Science and Tech.</i>)	
10:50-11:05	FrBT3.1	11:35-11:50	FrBT4.4
4D Real-Time Phase-Contrast Flow MRI with Sparse Sampling Sun, Aiqi* (<i>Center for Biomedical Imaging Research, Tsinghua University</i>); Zhao, Bo (<i>Martinos Center for Biomedical Imaging, MGH and Harvard Medical</i>); Li, Rui (<i>Tsinghua University</i>); Yuan, Chun (<i>Tsinghua University, Center of Biomedical Imaging Research; Univ</i>)		Flexible Wearable Sensor Nodes with Solar Energy Harvesting Wu, Taiyang* (<i>Monash Univ.</i>); Arefin, Md S. (<i>Monash Univ.</i>); Redouté, J.-M. (<i>Monash Univ.</i>); Yuce, M. (<i>Monash Univ.</i>)	
11:05-11:20	FrBT3.2	11:50-12:05	FrBT4.5
Fast Dictionary Generation and Searching for Magnetic Resonance Fingerprinting Xie, Jun (<i>Hangzhou Normal University</i>); Jian, Zhang (<i>Hangzhou Normal University</i>); Lyu, Mengye (<i>Hong Kong University</i>); Hui, Edward S. (<i>The University of Hong Kong</i>); Wu, Ed X. (<i>The University of Hong Kong</i>); Wang, Ze* (<i>Temple University</i>)		Comparison of Hand-Craft Feature based SVM and CNN based Deep Learning Framework for Automatic Polyp Classification Shin, Younghak* (<i>NTNU (Norwegian University of Science and Technology)</i>); Balasingham, Ilango (<i>Oslo University Hospital and Norwegian University of Science and</i>)	
11:20-11:35	FrBT3.3	FrBT5: 10:50-12:20 Lee Room Wearable Sensors and Systems I (Oral Session) Chair: Armentano, Ricardo Luis (<i>Republic University</i>)	
Parallel Compressive Sensing in a Hybrid Space: Application in Interventional MRI Vafay Eslahi, Samira* (<i>Texas A&M University</i>); Dhulipala, Pranav Vaidik (<i>Texas A&M University</i>); Shi, Caiyun (<i>Shenzhen Institutes of Advanced Technology, Lauterbur Research C</i>); Xie, Guoxi (<i>Shenzhen Institutes of Advanced Technology, Lauterbur Research C</i>); Ji, Jim Xiuquan (<i>Texas A&M University</i>)		10:50-11:05	FrBT5.1
11:35-11:50	FrBT3.4	A Wearable Autonomous Heart Rate Sensor based on Piezoelectric-Charge-Gated Thin-Film Transistor for Continuous Multi-Point Monitoring Rasheed, Ahmed (<i>Sun Yat-Sen University (SYSU)-Carnegie Mellon University (CMU) J</i>); Iranmanesh, Emad (<i>SYSU-CMU, JIE</i>); Wang, Kai* (<i>Sun Yat-Sen University</i>)	
Simultaneous Multislice Magnetic Resonance Fingerprinting with Low-Rank and Subspace Modeling Zhao, Bo* (<i>MGH/HST Athinoula Martinos Center for Biomedical Imaging, Harvar</i>); Bilgic, Berkin (<i>Martinos Center for Biomedical Imaging</i>); Adalsteinsson, Elfar (<i>MIT/MGH Martinos Center</i>); Griswold, Mark (<i>Case Western Reserve University</i>); Wald, Lawrence L. (<i>A. A. Martinos Center for Biomedical Imaging, Dept. of Radiology</i>); Setsompop, Kawin (<i>Harvard Medical School</i>)		11:05-11:20	FrBT5.2
		Low Group Delay Signal Conditioning for Wearable Central Blood Pressure Monitoring Device Fierro, Germán (<i>Univ. de la Republica</i>); Silveira, Fernando* (<i>Univ. de la Republica</i>); Armentano, Ricardo Luis (<i>Republic Univ.</i>)	
		11:20-11:35	FrBT5.3
		Hemodynamic Sensing of 3D Fingertip Force using PPG Device on Proximal Part Yoshimoto, Shunsuke* (<i>Osaka Univ.</i>); Hinatsu, Shun (<i>Osaka Univ.</i>); Kuroda, Y. (<i>Osaka Univ.</i>); Oshiro, O. (<i>Osaka Univ.</i>)	
		11:35-11:50	FrBT5.4
		Tarsusmeter: Development of a Wearable Device for Ankle Joint Impedance Estimation Hassan, Modar* (<i>Univ. of Tsukuba</i>); Yagi, Keisuke (<i>Univ. of Tsukuba</i>); Hsiao, Kaiwen (<i>Univ. of Tsukuba</i>); Mochiyama, Hiromi (<i>Univ. of Tsukuba</i>); Suzuki, Kenji (<i>Univ. of Tsukuba</i>)	

11:50-12:05	FrBT5.5	Development of a Smartphone-Based Pulse Oximeter with Adaptive SNR/Power Balancing Phelps, Thomas (<i>University of California, San Diego</i>); Jiang, Haowei (<i>University of California San Diego</i>); Hall, Drew* (<i>University of California, San Diego</i>)	11:05-11:20	FrBT7.2	Low-Frequency Bilateral DBS at Subthalamic Nucleus Alters Vocal Responses in Individuals with Parkinson's Disease Niu, Chuanxin M.* (<i>Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.</i>); Pan, Yixin (<i>Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.</i>); Li, Dianyou (<i>Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.</i>)
12:05-12:20	FrBT5.6	Measurement of Heartbeat Intervals in a Sitting Position using Multiple Piezoelectric Sensors with Body Movement Reduction Igasaki, Tomohiko* (<i>Kumamoto Univ.</i>); Shimai, Shogo (<i>Kumamoto Univ.</i>); Kobayashi, Makiko (<i>Kumamoto Univ.</i>)	11:20-11:35	FrBT7.3	Deep Brain Stimulation in China Li, Luming* (<i>Tsinghua University</i>)
FrBT6: 10:50-12:20	Zworykin Room	Microfluidic Systems for Cell Manipulation and Analysis (Invited Session) Chair: Chen, Weiqiang (<i>New York University</i>) Co-Chair: Lam, Raymond H. W. (<i>City University of Hong Kong</i>)	FrBT8: 10:50-12:20	Schwan Room	Brain Networks and Connectivity (Oral Session) Chair: Barbieri, Riccardo (<i>Politecnico di Milano</i>)
10:50-11:05	FrBT6.1	Nanoplasmon Ruler for Visualizing How Cells "Talk" Yang, Wen (<i>Auburn University</i>); Jiacheng, He (<i>Auburn University</i>); Chen, Pengyu* (<i>Auburn University</i>)	10:50-11:05	FrBT8.1	Dynamic Brain Connectivity Estimation using GARCH Models: An Application to Personality Neuroscience Riccelli, Roberta (<i>Laboratory of Neuromotor Physiology, IRCCS Santa Lucia Foundatio</i>); Passamonti, Luca (<i>Univ. of Cambridge</i>); Duggento, Andrea (<i>Univ. of Rome "Tor Vergata"</i>); Guerrisi, Maria (<i>Univ. of Rome "Tor Vergata"</i>); Indovina, Iole (<i>Lab of Neuromotor Physiology, IRCCS Santa Lucia Foundation</i>); Terracciano, Antonio (<i>Dept. of Geriatrics, Florida State Univ. College of Med</i>); Toschi, Nicola* (<i>Univ. of Rome "Tor Vergata", Faculty of Medicine</i>)
11:05-11:20	FrBT6.2	Microfluidic Vascularized Microsystem for Probing Inflammation-Biased Angiogenesis Cui, Xin (<i>New York University</i>); Morales, Renee-Tyler Tan (<i>New York University</i>); Chen, Weiqiang* (<i>New York University</i>)	11:05-11:20	FrBT8.2	Mapping the Full Vascular Network in the Mouse Brain at Submicrometer Resolution Lee, Junseok* (<i>Texas A&M University, Dept. of Computer Science and Eng</i>); An, Wookyung (<i>Texas A&M University</i>); Choe, Yoonsuck (<i>Texas A&M University</i>)
11:20-11:35	FrBT6.3	A Microfluidic Device with Hydrodynamic Trap Arrays for White Blood Cell Counting in Peritoneal Dialysis Solution Hwong, Yuh Jen (<i>National Taiwan University</i>); Huang, Nien-Tsu* (<i>National Taiwan University</i>)	11:20-11:35	FrBT8.3	Dynamic Inter-Network Connectivity in the Human Brain Riccelli, Roberta (<i>Laboratory of Neuromotor Physiology, IRCCS Santa Lucia Foundatio</i>); Passamonti, Luca (<i>University of Cambridge</i>); Duggento, Andrea* (<i>University of Rome "Tor Vergata"</i>); Guerrisi, Maria (<i>University of Rome "Tor Vergata"</i>); Indovina, Iole (<i>Laboratory of Neuromotor Physiology, IRCCS Santa Lucia Foundatio</i>); Toschi, Nicola (<i>University of Rome "Tor Vergata", Faculty of Medicine</i>)
11:35-11:50	FrBT6.4	Microfluidic Eye-Chamber-on-a-Chip for Modeling Oil Emulsification Chan, Yau Kei (<i>The Univ. of Hong Kong, Pokfulam Road, Hong Kong</i>); Shum, Ho Cheung 浩璋* (<i>The Univ. of Hong Kong</i>)	11:35-11:50	FrBT8.4	Resting-State Brain Correlates of Cardiovascular Complexity Valenza, Gaetano (<i>Univ. of Pisa</i>); Duggento, Andrea (<i>Univ. of Rome "Tor Vergata"</i>); Passamonti, Luca (<i>Univ. of Cambridge</i>); Diciotti, Stefano (<i>Alma Mater Studiorum, Univ. of Bologna</i>); Tessa, Carlo (<i>Versilia Hospital, Azienda USL 12 Viareggio</i>); Toschi, Nicola (<i>Univ. of Rome "Tor Vergata", Faculty of Medicine</i>); Barbieri, Riccardo* (<i>Politecnico di Milano</i>)
11:50-12:05	FrBT6.5	Microfluidic Platforms for Single Cell Studies and Analysis: From Simple Devices to Channel-Less Systems Qasaimeh, Mohammad Ameen* (<i>New York Univ. Abu Dhabi</i>)	11:50-12:05	FrBT8.5	Cognitive Control Related Network Analysis a Novel Way to Measure Neuron Fiber Connection of Alzheimer's Disease Zhang, Changle (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>); Chai, Tao (<i>Harbin Institute of Tech.</i>); Mao, Shuai (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>); Gao, Na (<i>Harbin Institute of Tech.</i>); Ma, Heather Ting* (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>)
12:05-12:20	FrBT6.6	A Microfluidic Multiplex Immunoassay Platform for Quantifying Transient Cytokine Secretions of Immune Cells Lam, Raymond H. W.* (<i>City University of Hong Kong</i>); Cui, Xin (<i>New York University</i>); Chen, Weiqiang (<i>New York University</i>)	12:05-12:20	FrBT8.6	Resting-State Brain Correlates of Instantaneous Autonomic Outflow Valenza, Gaetano (<i>Univ. of Pisa</i>); Duggento, Andrea (<i>Univ. of Rome "Tor Vergata"</i>); Passamonti, Luca (<i>Univ. of Cambridge</i>); Diciotti, Stefano (<i>Alma Mater Studiorum, Univ. of Bologna</i>); Tessa, Carlo (<i>Versilia Hospital, Azienda USL 12 Viareggio</i>); Barbieri, Riccardo (<i>Politecnico di Milano</i>); Toschi, Nicola* (<i>Univ. of Rome "Tor Vergata", Faculty of Medicine</i>)
12:05-12:20	FrBT6.7	Towards Massively Parallelized Individual Cell Manipulations for Next Gen Biopharmaceutical Research Jorgolli, Marsela* (<i>Amgen Inc.</i>)	FrBT7: 10:50-12:20	Herrick Room	
FrBT7: 10:50-12:20	Herrick Room	Rehabilitation Technologies for Neurological Disorders using Neuromodulations (Minisymposium) Chair: Lan, Ning (<i>Shanghai Jiao Tong University</i>) Co-Chair: Niu, Chuanxin M. (<i>Ruijin Hospital, School of Medicine, Shanghai Jiao Tong University</i>)			
10:50-11:05	FrBT7.1	Non-Invasive Peripheral Nerve Stimulation for Tremor Suppression in PD Lan, Ning* (<i>Shanghai Jiao Tong Univ.</i>); Hao, Manzhao (<i>School of Biomedical Eng., Shanghai Jiao Tong Univ.</i>); Hu, Zixiang (<i>Med-X Research Inst., School of Biomedical Eng., Shang</i>); Xiao, Qin (<i>Dept. of Neurology & Inst. of Neurology, Ruijin Hospital</i>)			

FrBT9: 10:50-12:20 Plonsey Room
Neural Signal Processing I (Oral Session)
Chair: Li, Haifeng (*Harbin Institute of Technology*)
Co-Chair: Santaniello, Sabato (*University of Connecticut*)

10:50-11:05 FrBT9.1
A Model Study of the Neural Interaction via Mutual Coupling Factor Identification
 Zhang, Qichun (*University of Essex*); Sepulveda, Francisco* (*University of Essex*)

11:05-11:20 FrBT9.2
On Electrophysiological Signal Complexity during Biological Neuronal Network Development and Maturation
 Kapucu, Fikret Emre* (*Tampere Univ. of Technology*); Vornanen, Inkeri (*Tampere Univ. of Technology*); Christophe, Francois (*Tampere Univ. of Technology*); Tanskanen, Jarno M. A. (*Tampere Univ. of Technology*); Johansson, Julia (*Tampere Univ. of Technology*); Mikkonen, Tommi (*Tampere Univ. of Technology*); Hyttinen, Jari (*Tampere Univ. of Technology*)

11:20-11:35 FrBT9.3
Nonmotor Regions Encode Path-Related Information during Movements
 Breault, Macauley S.* (*Johns Hopkins Univ.*); Sacré, Pierre (*Johns Hopkins Univ.*); Johnson, Jacob J. (*Indian Institute of Technology Guwahati*); Kerr, Matthew (*Johns Hopkins Univ.*); Johnson, Matthew (*Cleveland Clinic*); Bulacio, Juan (*Cleveland Clinic*); Gonzalez-Martinez, Jorge (*Cleveland Clinic*); Sarma, Sridevi V. (*Johns Hopkins Univ.*); Gale, John (*Cleveland Clinic*)

11:35-11:50 FrBT9.4
Importance of Vesicle Release Stochasticity in Neuro-Spike Communication
 Ramezani, Hamideh* (*Koc Univ.*); Akan, Ozgur B. (*Koc Univ.*)

11:50-12:05 FrBT9.5
Music-Evoked Emotion Classification using EEG Correlation-Based Information
 Bo, Hongjian (*Harbin Institute of Tech.*); Ma, Lin (*Harbin Institute of Tech.*); Li, Haifeng* (*Harbin Institute of Tech.*)

12:05-12:20 FrBT9.6
Effects of the Temporal Pattern of Subthalamic Deep Brain Stimulation on the Neuronal Complexity in the Globus Pallidus
 Deng, Callie (*Johns Hopkins Univ.*); Sun, Tony (*Los Altos High School*); Zhang, Manning (*Johns Hopkins Univ.*); Gale, John (*Cleveland Clinic*); Montgomery, Erwin (*Univ. of Alabama at Birmingham*); Santaniello, Sabato* (*Univ. of Connecticut*)

FrBT10: 10:50-12:20 Schmitt Room
General and Theoretical Informatics – Deep learning and Big Data to Knowledge (Oral Session)
Chair: Nguyen, Hung T. (*University of Technology, Sydney*)

10:50-11:05 FrBT10.1
A Separated Feature Learning based DBN Structure for Classification of SSMVEP Signals
 Jia, Yaguang (*Xi'an Jiaotong Univ.*); Xie, Jun* (*Xi'an Jiaotong Univ.*); Xu, Guanghua (*Xi'an Jiaotong Univ.*); Li, Min (*School of Mechanical Engineering, Xi'an Jiaotong Univ.*); Zhang, Sicong (*Xi'an Jiaotong Univ.*); Luo, Ailing (*Xi'an Jiaotong Univ.*); Han, Xingliang (*Xi'an Jiaotong Univ.*)

11:05-11:20 FrBT10.2
The Obesity Paradox in ICU Patients
 Pan, Janice* (*The University of Texas at Austin*); Shaffer, Robert (*The University of Texas at Austin*); Sinno, Zeina (*The University of Texas at Austin*); Tyler, Marcus (*The University of Texas at Austin*); Ghosh, Joydeep (*Univ. of Texas at Austin*)

11:20-11:35 FrBT10.3
Automated Embolic Signal Detection using Deep Convolutional Neural Network
 Sombune, Praotasna (*Thammasat Univ.*); Phienphanich, Phongphan (*Thammasat Univ.*); Phuechpanpaisal, Sutanya (*Thammasat Univ.*); Muengtaweepongsa, Sombat (*Thammasat Univ.*); Ruamthanthong, Anuchit (*Phramongkutkloaw Hospital Bangkok*); Tantibundhit, Charturong* (*Thammasat Univ.*)

11:35-11:50 FrBT10.4
A CHF Detection Method based on Deep Learning with RR Intervals
 Chen, Wenhui (*Univ. of Technology Sydney*); Liu, Guan-Zheng (*Shenzhen Institutes of Advanced Technology*); Su, Steven Weidong (*Univ. of Technology, Sydney*); Jiang, Qing (*Sun Yat-sen Univ.*); Nguyen, Hung T.* (*Univ. of Technology, Sydney*)

11:50-12:05 FrBT10.5
DeepDeath: Learning to Predict the Underlying Cause of Death with Big Data
 Hassanzadeh, Hamid* (*Georgia Institute of Technology*); Wang, May D. (*Georgia Tech and Emory University*); Sha, Ying (*Georgia Institute of Technology*)

12:05-12:20 FrBT10.6
Automated Vision-Based Analysis of Levodopa-Induced Dyskinesia with Deep Learning
 Li, Michael Hong Gang (*University of Toronto*); Mestre, Tiago (*Ottawa Hospital Research Institute*); Fox, Susan (*University of Toronto*); Taati, Babak* (*Toronto Rehabilitation Institute and University of Toronto*)

FrBT11: 10:50-12:20 Greatbatch Room
Cardiovascular Simulations (Oral Session)
Chair: Shim, Eun Bo (*Kangwon National University*)
Co-Chair: Chbat, Nicolas W. (*Center of Excellence in Critical Care Innovation*)

10:50-11:05 FrBT11.1
Pilot Study on Vascular Intervention Training based on Blood Flow Effected Guidewire Simulation
 Cai, Jiayin (*School of Biomedical Engineering, Shanghai Jiao Tong University*); Xie, Hongzhi (*Peking Union Medical College Hospital*); Zhang, Shuyang (*Peking Union Medical College Hospital*); Gu, Lixu* (*Shanghai Jiaotong University*)

11:05-11:20 FrBT11.2
Applying Computer Simulation to the Design of Flow-Diversion Treatment for Intracranial Aneurysms
 Zhang, Mingzi* (*Tohoku University*); Li, Yujie (*Tohoku University*); Verrelli, David I. (*Macquarie University*); Chong, Winston (*Interventional Neuroradiology Unit, Dept. of Diagnostic Ima*); Ohta, Makoto (*University of Tohoku*); Qian, Yi (*Macquarie University*)

11:20-11:35 FrBT11.3
A Sensitivity Study on Modelling a Flow-Diverting Stent as a Porous Medium using Computational Fluid Dynamics
 Li, Yujie* (*Tohoku Univ.*); Zhang, Mingzi (*Tohoku Univ.*); Verrelli, David I. (*Macquarie Univ.*); Yang, William (*Mineral Resources, CSIRO*); Chong, Winston (*Interventional Neuroradiology Unit, Dept. of Diagnostic Ima*); Ohta, Makoto (*Univ. of Tohoku*); Qian, Yi (*Macquarie Univ.*)

11:35-11:50 FrBT11.4
An HMM-Based Recognition Framework for Endovascular Manipulations
 Zhou, Xiaohu (*Inst. of Automation, Chinese Academy of Sciences*); Bian, Gui-Bin (*Inst. of Automation, Chinese Academy of Sciences*); Xie, Xiao-Liang (*Chinese Academy of Sciences*); Hou, Zeng-Guang* (*Inst. of Automation, Chinese Academy of Sciences*)

11:50-12:05 FrBT11.5
Effect of Catheter Positions on Hemodynamics and Coil Formation after Coil Embolization
 Fujimura, Soichiro* (*Tokyo Univ. of Science*); Takao, Hiroyuki (*Jikei Univ. School of Medicine*); Suzuki, Takashi (*Tokyo Univ. of Science*); Dahmani, Chiheb (*Technical Univ. of Munich*); Mamori, Hiroya (*Tokyo Univ. of Science*); Fukushima, Naoya (*Tokyo Univ. of Science*); Yamamoto, Makoto (*Tokyo Univ. of Science*); Murayama, Yuichi (*Jikei Univ. School of Medicine*)

12:05-12:20 FrBT11.6
Effects of Septum and Pericardium on Heart-Lung Interactions in a Cardiopulmonary Simulation Model
 Karamolegkos, Nikolaos* (*Columbia University*); Albanese, Antonio (*Philips Research North America*); Chbat, Nicolas W. (*Center of Excellence in Critical Care Innovation*)

July 14 Friday

FrBT14: 10:50-12:20 Schaldach Room
Image Segmentation I (Oral Session)
Chair: Xia, Zeyang (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*)

10:50-11:05 FrBT14.1
Volumetric Analysis of Respiratory Gated Whole Lung and Liver CT Data with Motion-Constrained Graph Cuts Segmentation
Cha, Jung Won* (*Univ. of Louisville*); Farhangi, Mohammad Mehdi (*Univ. of Louisville*); Dunlap, Neal (*Univ. of Louisville, Louisville*); Amini, Amir (*Univ. of Louisville*)

11:05-11:20 FrBT14.2
Development of a Radiobiological Evaluation Tool to Assess the Expected Clinical Impacts of Contouring Accuracy between Manual and Semi-Automated Segmentation Algorithms
Kim, Yusung (*Dept. of Radiation Oncology, The Univ. of Iowa*); Patwardhan, Kaustubh (*The Univ. of Iowa*); Beichel, Reinhard (*The Univ. of Iowa*); Smith, Brian (*Univ. of Iowa*); Mart, Christopher (*Medical Univ. of South Carolina*); Plichta, Kristin (*Univ. of Iowa*); Tangel, Chang (*Case Western Reserve Univ.*); Sonka, Milan (*Univ. of Iowa*); Graham, Michael (*Univ. of Iowa*); Magnotta, Vincent Alfonso (*Univ. of Iowa*); Casavant, Benjamin (*Univ. of Wisconsin-Madison*); Xia, Junyi* (*Univ. of Iowa*); Buatti, John (*Dept. of Radiation Oncology, The Univ. of Iowa*)

11:20-11:35 FrBT14.3
Angled Tooth Segmentation from Computerized Tomography Images
Gan, Yangzhou (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Xia, Zeyang* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Xiong, Jing (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Zhou, Xinwen (*Shanghai Jiao Tong Univ.*); Li, Guanglin (*Shenzhen Institutes of Advanced Tech.*); Zhao, Qunfei (*Shanghai Jiao Tong Univ.*)

11:35-11:50 FrBT14.4
Automatic Measurement of Fetal Nuchal Translucency from Three-Dimensional Ultrasound Data
Nie, Siqing (*Fudan University*); Yu, Jinhua* (*Fudan University*); Chen, Ping (*First Maternity and Infant Hospital*); Wang, Yuanyuan (*Fudan University*); Guo, Yi (*Fudan University*); Zhang, Jianqiu (*Fudan University*)

11:50-12:05 FrBT14.5
Brain Segmentation in MR Images using a Texture-Based Classifier Associated with Mathematical Morphology
Chang, Heng-Hua* (*National Taiwan University*); Hsieh, Chih-Chung (*National Taiwan University*)

12:05-12:20 FrBT14.6
Segmentation of Hyper-Acute Cerebral Infarct based on Random Forest and Sparse Coding from Diffusion Weighted Imaging
Zhang, Xiaodong (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Elazab, Ahmed (*Shenzhen Institutes of Advanced Tech.*); Hu, Qingmao* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*)

FrBT15: 10:50-12:20 Webster Room
Point of Care Technologies (Oral Session)
Chair: Penzel, Thomas (*Charite Universitätsmedizin Berlin*)
Co-Chair: Panescu, Dorin (*Advanced Cardiac Therapeutics*)

10:50-11:05 FrBT15.1
Development of a Gesture and Voice Controlled System for Burn Injury Prevention in Individuals with Disabilities
Swanepoel, Liam (*Stellenbosch Univ.*); Van Den Heever, Dawie* (*Stellenbosch Univ.*); Dellimore, Kiran (*Philips Research*)

11:05-11:20 FrBT15.2
A Novel Mainstream Capnometer System for Endoscopy Delivering Oxygen
Kabumoto, Kenichiro* (*Nihon Koden Corp.*); Takatori, Fumihiko (*Nihon Kohden Corp.*); Inoue, Masayuki (*Nihon Kohden Corp.*)

11:20-11:35 FrBT15.3
A Novel Smartphone Camera-LED Communication for Clinical Signal Transmission in Mhealth-Rehabilitation System
Pradana Rachim, Vega (*Pukyong National Univ.*); An, Jinyoung (*Pukyong National Univ.*); Pham, Ngoc Quan (*Pukyong National Univ.*); Chung, Wan-Young* (*Pukyong National Univ.*)

11:35-11:50 FrBT15.4
Profiling a Multiplex Short Tandem Repeat Loci from Human Urine with use of Low Cost On-Site Technology for Verification of Sample Authenticity
Pires, Nuno M. M. (*University College of Southeast Norway and Institute of Appl*); Dong, Tao* (*University College of Southeast Norway - HSN, TekMar*); Berntzen, Lasse (*Dept. of Business, History and Social Sciences, School of B*); Lønningdal, Torill (*Innovatoriet at Dept. of Research and Internationalisation*)

11:50-12:05 FrBT15.5
Fall Detection using Smart Floor Sensor and Supervised Learning
Minvielle, Ludovic* (*ENS Cachan Univ.*), Tarkett GDL SA (*Company*); Atiq, Mounir (*ENS Cachan Univ.*), Tarkett GDL SA (*Company*); Serra, Renan (*Tarkett GDL SA*); Mougeot, Mathilde (*Université Paris-Diderot*); Vayatis, Nicolas (*Centre de Mathématiques et Leurs Applications, ENS Cachan, CNRS.*)

12:05-12:20 FrBT15.6
Respiration and Heartbeat Monitoring using a Distributed Pulsed MIMO Radar
Walterscheid, Ingo* (*Fraunhofer FHR*); Smith, Graeme E. (*The Ohio State University*)

FrBT16: 10:50-12:20 Rushmer Room
Implementation of Information Technologies for Biomedical Engineering (Minisymposium)
Chair: Kim, Chulhong (*Pohang Univ. of Science and Technology*)
Co-Chair: Horio, Keiichi (*Kyushu Institute of Technology*)

10:50-11:05 FrBT16.1
Imparting Motor-Skills to Humanoid Robots using Bayesian Nonparametric Latent Spaces
Koganti, Nishanth (*Nara Institute of Science and Technology*); Tamei, Tomoya (*Nara Institute of Science and Technology*); Ikeda, Kazushi (*Nara Institute of Science and Technology*); Shibata, Tomohiro* (*Kyushu Institute of Technology*)

11:05-11:20 FrBT16.2
Development of Axillary Pressure Feedback System for Crutch Walking
Wada, Chikamune* (*Kyushu Institute of Technology*); Nagasaki, Takayuki (*Kyushu University of Nursing and Social Welfare*)

11:20-11:35 FrBT16.3
Ensemble Classification for Robustness Improvement in Image-Based Diagnosis Support Systems
Horio, Keiichi* (*Kyushu Institute of Technology*)

11:35-11:50 FrBT16.4
Ocular Vasculature Analysis using Photoacoustic Microscopy and Random Sample Consensus Algorithm
Jeon, Seungwan (*Pohang Univ. of Science and Technology*); Kim, Chulhong* (*Pohang Univ. of Science and Technology*)

FrBT17: 10:50-12:20 Einthoven Hall
Signal Processing – Electromyography (Oral Session)
Chair: Kerkman, Jennifer N. (*Vrije Universiteit Amsterdam*)
Co-Chair: Zhang, Yingchun (*University of Houston*)

10:50-11:05 FrBT17.1
Simulations of High-Density Surface Electromyograms in Dynamic Muscle Contractions
Glaser, Vojko* (*Univ. of Maribor, Faculty of Electrical Engineering and Comp*); Farina, Dario (*Bernstein Center for Computational Neuroscience, Univ. Medic*); Holobar, Ales (*Univ. of Maribor, Faculty of Electrical Engineering and Compu*)

- 11:05-11:20 FrBT17.2
Performance Evaluation of Noise-Assisted Multivariate Empirical Mode Decomposition and Its Application to Multichannel EMG Signals
 Zhang, Yi* (*Univ. of Electronic Science and Technology of China*); Su, Steven Weidong (*Univ. of Technology, Sydney*); Xu, Peng (*Univ of Electr Science and Tech of China*); Yao, Dezhong (*Univ. of Electronic Science and Technology of China*)
- 11:20-11:35 FrBT17.3
Measuring the Interactions between Different Locations in a Muscle to Monitor Localized Muscle Fatigue
 Bingham, Adrian* (*RMIT Univ. Melbourne*); Poosapadi Arjunan, Sridhar (*RMIT Univ.*); Kant Kumar, Dinesh (*RMIT Univ.*)
- 11:35-11:50 FrBT17.4
Analysis of One Repetition during Biceps Curl Exercise among Age-Matched Adult Volunteers using Endurance, Curl Speed and Surface Electromyography Signals
 Marri, Kiran (*Indian Institute of Technology Madras, Chennai*); Maitra, Diptasree (*IIT Madras*); Ramakrishnan, Swaminathan* (*IIT Madras, India*)
- 11:50-12:05 FrBT17.5
Antagonist Thigh-Muscle Activity in 6-to-8-Year-Old Children Assessed by Surface EMG during Walking
 Di Nardo, Francesco* (*Polytechnic University of Marche*); Strazza, Annachiara (*Università Politecnica delle Marche*); Mengarelli, Alessandro (*Università Politecnica delle Marche*); Ercolani, Serena (*Università Politecnica delle Marche*); Burattini, Laura (*Università Politecnica delle Marche*); Fioretti, Sandro (*Università Politecnica delle Marche*)
- FrBT18: 10:50-12:20 Montgomery Hall
Nonlinear Dynamic Analysis II – Cardiovascular Signals (Oral Session)
Chair: Castiglioni, Paolo (*Fondazione Don Carlo Gnocchi ONLUS*)
Co-Chair: Lee, Jong-Ha (*Keimyung University, School of Medicine*)
- 10:50-11:05 FrBT18.1
Characterization of Doctor-Patient Communication using Heartbeat Nonlinear Dynamics: A Preliminary Study using Lagged Poincaré Plots
 Nardelli, Mimma (*Univ. of Pisa*); Del Piccolo, Lidia (*Univ. of Verona*); Danzi, Olivia Purnima (*Univ. of Verona*); Perlini, Cinzia (*Univ. of Verona*); Tedeschi, Federico (*Univ. of Verona*); Greco, Alberto (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*); Valenza, Gaetano* (*Univ. of Pisa*)
- 11:05-11:20 FrBT18.2
Multifractal Multiscale DFA of Cardiovascular Time Series: Differences in Complex Dynamics of Systolic Blood Pressure, Diastolic Blood Pressure and Heart Rate
 Castiglioni, Paolo* (*Fondazione Don Carlo Gnocchi ONLUS*); Lazzeroni, Davide (*Fondazione Don Carlo Gnocchi, Parma, Italy*); Brambilla, Valerio (*Fondazione Don Carlo Gnocchi, Parma, Italy*); Coruzzi, Paolo (*Dept. of Clinical and Experimental Medicine*); Faini, Andrea (*Istituto Auxologico Italiano*)
- 11:20-11:35 FrBT18.3
Cardiovascular and Respiratory Variability during Orthostatic and Mental Stress: A Comparison of Entropy Estimators
 Valente, Martina (*University of Trento*); Javorka, Michal (*Comenius University, Jessenius Faculty of Medicine*); Turianikova, Zuzana (*Dept. of Physiology, Comenius University, Jessenius Faculty*); Czippelova, Barbora (*Dept. of Physiology, Comenius University, Jessenius Faculty*); Krohova, Jana (*Comenius University in Bratislava*); Nollo, Giandomenico (*University of Trento*); Faes, Luca* (*University of Trento*)
- 11:35-11:50 FrBT18.4
Secondary Measures of Regularity from an Entropy Profile in Detecting Arrhythmia
 Udhayakumar, Radhagayathri* (*University of Melbourne*); Karmakar, Chandan (*Deakin University*); Palaniswami, Marimuthu (*The University of Melbourne*)
- 11:50-12:05 FrBT18.5
Multivariate Symbolic Dynamics for Analysis of Respiratory-Cardiovascular Interactions
 Reulecke, Sina (*Univ. Autónoma Metropolitana*); Charleston-Villalobos, Sonia* (*Univ. Autónoma Metropolitana*); Voss, Andreas (*Univ. of Applied Sciences Jena*); Gonzalez-Camarena, Ramon (*Univ. Autónoma Metropolitana*); Gaitan-Gonzalez, Mercedes (*Univ. Autónoma Metropolitana*); Gonzalez-Hermosillo, Jesus Antonio (*Instituto Nacional de Cardiología*); Hernandez-Pacheco, Guadalupe (*Instituto Nacional de Cardiología "Ignacio Chavez"*); Aljama-Corrales, Tomas (*Univ. Autónoma Metropolitana*)
- 12:05-12:20 FrBT18.6
Nonlinear Dynamic Analysis of the Cardiorespiratory System in Patients Undergoing the Weaning Process
 Arizmendi, Carlos (*Univ. Autónoma de Bucaramanga*); Trapero, Jose Ignacio (*Univ. Autónoma de Bucaramanga*); Gonzalez Acevedo, Hernando (*Univ. Autónoma de Bucaramanga*); Forero, Carlos Adolfo (*Univ. Autónoma de Bucaramanga*); Giraldo, Beatriz* (*Universitat Politècnica de Catalunya*)
- FrCT1: 14:20-15:50 Roentgen Hall
Signal Pattern Classification – Cardiovascular Signals I (Oral Session)
Chair: Wu, Shun Chi (*National Tsing Hua University*)
Co-Chair: Kim, Kiwoong (*Korea Research Institute of Standards and Science*)
- 14:20-14:35 FrCT1.1
A Cancelable Biometric Scheme based on Multi-Lead ECGs
 Chen, Peng-Tzu (*National Tsing Hua University*); Wu, Shun Chi* (*National Tsing Hua University*); Hsieh, Jui Hsuan (*National Tsing Hua University*)
- 14:35-14:50 FrCT1.2
Adaptive Fourier Decomposition based R-Peak Detection for Noisy ECG Signals
 Wang, Ze (*Faculty of Science & Tech, Univ. of Macau*); Wong, Chi Man (*Univ. of Macau*); Wan, Feng* (*Univ. of Macau*)
- 14:50-15:05 FrCT1.3
A Robust Automatic Mechanism for Electrocardiogram Interpretation in Telehealthcare
 Ho, Te-Wei* (*National Taiwan University*); Lai, Feipei (*National Taiwan University*)
- 15:05-15:20 FrCT1.4
Designing ECG-Based Physical Unclonable Function for Security of Wearable Devices
 Yin, Shihui* (*Arizona State University*); Bae, ChiSung (*Samsung Advanced Institute of Technology*); Kim, Sang Joon (*Samsung Electronics*); Seo, Jae-sun (*Arizona State University*)
- 15:20-15:35 FrCT1.5
A Body Position Influence on ECG Derived Respiration
 Przystup, Piotr (*Gdansk Univ. of Technology*); Polinski, Artur (*Gdansk Univ. of Technology*); Wtorek, Jerzy* (*Gdansk Univ. of Technology*); Bujnowski, Adam (*Gdansk Univ. of Technology*); Kocejko, Tomasz (*Gdansk Univ. of Technology*)
- 15:35-15:50 FrCT1.6
Analysis of PAM Clustering Accuracy for Cardiac Signals Classification
 kianimajd, Adell (*University of Algarve*); Ruano, M. Graça* (*FCT, University of Algarve & CISUC-University of Coimbra*); de Carvalho, Paulo (*University of Coimbra*); Henriques, Jorge (*University of Coimbra*); Rocha, Teresa (*Inst Superior de Eng de Coimbra*); Ruano, Antonio (*University of Algarve*)
- FrCT2: 14:20-15:50 Cho Room
Recent Advances in Ultrasound Medical Imaging (Invited Session)
Chair: Yoo, Yangmo (*Sogang University*)
Co-Chair: Kim, Hyung Ham (*Pohang Univ. of Science and Tech.*)
- 14:20-14:35 FrCT2.1
Ultrasound and Photoacoustic Multimodality Imaging using Laser-Activated Perfluorocarbon Nanodroplets
 Yoon, Changhan* (*Inje University*)

14:35-14:50	FrCT2.2	14:35-14:50	FrCT4.2
Advances in Ultrasound Imaging: Multi-Modality Fusion Imaging Managuli, Ravi* (<i>Hitachi Aloka Medical America, Inc.</i>)		Percutaneous Auricular Vagus Nerve Stimulation: Assessment of Sensitivity of Neural Activation to Electrode Position Samoudi, Mohammed Amine* (<i>Ghent Univ./iMinds</i>); Kampusch, Stefan (<i>Vienna Univ. of Technology</i>); Tanghe, Emmeric (<i>Ghent Univ.</i>); Szeles, Constantin (<i>Univ. Clinic for Surgery, Vienna General Hospital, Medical</i>); Martens, Luc (<i>iMinds / Ghent Univ.</i>); Kaniusas, Eugenijus (<i>Vienna Univ. of Technology</i>); Joseph, Wout (<i>Ghent Univ.</i>)	
14:50-15:05	FrCT2.3	14:50-15:05	FrCT4.3
Ultrasound-Assisted Photothermal Therapy Chang, Jin Ho* (<i>Sogang University</i>)		Molecular Communications for Cardiomyocytes Lu, Pengfei* (<i>University of Oslo and Oslo University Hospital</i>); Bose, Pritam (<i>University of Oslo and Oslo University Hospital</i>); Albatat, Mohammad (<i>University of Oslo and Oslo University Hospital</i>); Balasingham, Ilango (<i>Oslo University Hospital and Norwegian University of Science and</i>)	
15:05-15:20	FrCT2.4	15:05-15:20	FrCT4.4
A New Three-Dimensional Automated Breast Ultrasound Imaging System for Women with Dense Breast Yoo, Yangmo* (<i>Sogang University</i>)		A Contact-Less Heart Rate Sensor System for Driver Health Monitoring Izumi, Shintaro* (<i>Kobe Univ.</i>); Matsunaga, Daichi (<i>Kobe Univ.</i>); Nakamura, Ryota (<i>Kobe Univ.</i>); Kawaguchi, Hiroshi (<i>Kobe Univ.</i>); Yoshimoto, Masahiko (<i>Kobe Univ.</i>)	
15:20-15:35	FrCT2.5	15:20-15:35	FrCT4.5
Array Transducers for High Definition Ultrasound Imaging Kim, Hyung Ham* (<i>Pohang Univ. of Science and Technology</i>)		Monitoring of Cardiac Diseases by use of a Wearable Sensor Platform with Capacitive ECG Kirchner, Jens* (<i>University of Erlangen-Nuremberg</i>); Fischer, Georg (<i>University of Erlangen-Nuremberg</i>)	
FrCT3: 14:20-15:50 Innovative MRI Method (Oral Session) Park Room		FrCT5: 14:20-15:50 Wearable Sensors and Systems II (Oral Session) Lee Room Chair: Kang, Hongki (<i>KAIST</i>)	
14:20-14:35	FrCT3.1	14:20-14:35	FrCT5.1
White Matter Integrity Correlates with Choline Level in Dorsal Anterior Cingulate Cortex of Obsessive Compulsive Disorder Patients: A Combined DTI-MRS Study Wang, Ruilin (<i>Shanghai Jiao Tong Univ.</i>); Fan, Qing (<i>Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch</i>); Zhang, Zongfeng (<i>Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch</i>); Chen, Yongjun (<i>Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch</i>); Tong, Shanbao (<i>Shanghai Jiao Tong Univ.</i>); Li, Yao* (<i>Shanghai Jiao Tong Univ.</i>)		Inkjet-Printed Gold Nanorods using Biocompatible Polyelectrolyte Layer-by-Layer Coating for Patterned Photothermal Applications Kang, Hongki* (<i>KAIST</i>); Lee, Gu-Haeng (<i>KAIST</i>); Nam, Yoonkey (<i>Korea Advanced Inst. of Science and Technology</i>)	
14:35-14:50	FrCT3.2	14:35-14:50	FrCT5.2
A 3D Model-Based Simulation of Demyelination to Understand Its Effects on Diffusion Tensor Imaging Salan, T.* (<i>Univ. of Memphis</i>); Jacobs, E. (<i>Univ. of Memphis</i>); Reddick, W. (<i>St. Jude Children's Research Hospital</i>)		A System for Finger Tremor Quantification in Patients with Parkinson's Disease Bravo Guaman, Marco Fernando* (<i>Universidad Politécnic Salesiana</i>); Bermeo Maldonado, Alexander Vinicio (<i>Universidad Politécnic Salesiana</i>); Huerta, Mónica (<i>Simon Bolivar University</i>); Llumiguano, Carlos (<i>Universidad San Francisco and Vozandes Hospital</i>); Bermeo, Juan Pablo (<i>Universidad Politécnic Salesian</i>); Clotet, Roger (<i>Simón Bolívar University</i>); Soto, Angel (<i>Universidad Politécnic Salesiana</i>)	
14:50-15:05	FrCT3.3	14:50-15:05	FrCT5.3
Multi-View Collaborative Segmentation for Prostate MRI Images Wang, Xiu Ying (<i>The Univ. of Sydney</i>); Tang, Wensi (<i>Univ. of Sydney</i>); Cui, Hui* (<i>The Univ. of Sydney</i>); Zeng, Shan (<i>Wuhan Polytechnic Univ.</i>); Feng, Dagan (<i>The Univ. of Sydney</i>); Fulham, Michael (<i>Royal Prince Alfred Hospital</i>)		Robust Motion Artefact Resistant Circuit for Calculation of Mean Arterial Pressure from Pulse Transit Time Bhattacharya, Tinish (<i>Indian Institute of Tech. Delhi</i>); Gupta, Anshu* (<i>Indian Institute of Tech. Delhi</i>); Singh, Thoithoi (<i>Indian Institute of Tech. Delhi</i>); Roy, Sitikantha (<i>Indian Institute of Tech. Delhi</i>); Prasad, Anamika (<i>South Dakota State</i>)	
15:05-15:20	FrCT3.4	15:05-15:20	FrCT5.4
A Portable, Low-Cost, 3D-Printed Main Magnetic Field System for Magnetic Imaging Kang, Iksung* (<i>Seoul National University</i>)		A Wearable, EEG-Based Massage Headband for Anxiety Alleviation Nair, Chaitanya Muralidharan* (<i>National Univ. of Singapore</i>)	
15:20-15:35	FrCT3.5	15:20-15:35	FrCT5.5
Accelerated Magnetic Resonance Spectroscopy with Vandermonde Factorization Qu, Xiaobo* (<i>Xiamen Univ.</i>); Ying, Jiayi (<i>Dept. of Electronic Science, Xiamen Univ.</i>); Cai, Jian-Feng (<i>Dept. of Mathematics, Hong Kong Univ. of Science</i>); Chen, Zhong (<i>Xiamen Univ.</i>)		TongueToSpeech (TTS): Wearable Wireless Assistive Device for Augmented Speech Marjanovic, Nicholas* (<i>Univ. of Illinois, Chicago</i>); Piccinini, Giacomo (<i>Univ. of Illinois, Chicago</i>); Kerr, Kevin (<i>Univ. of Illinois-Chicago</i>); Esmailbeigi, H. (<i>Univ. of Illinois, Chicago</i>)	
15:35-15:50	FrCT3.6	15:35-15:50	FrCT5.6
A Novel 3D-Printed Mechanical Actuator using Centrifugal Force for Magnetic Resonance Elastography Neumann, Wiebke* (<i>Heidelberg Univ.</i>); Schad, Lothar R. (<i>Heidelberg Univ.</i>); Zöllner, Frank G. (<i>Heidelberg Univ.</i>)		One Size Fits All Electronics for Insole-Based Activity Monitoring Hegde, Nagaraj (<i>The Univ. of Alabama</i>); Bries, Matthew (<i>The Univ. of Alabama</i>); Melanson, Ed (<i>Univ. of Colorado at Denver</i>); Sazonov, Edward* (<i>Univ. of Alabama</i>)	
FrCT4: 14:20-15:50 Body Sensor Networks – Molecules, Radio, and Machine Learning – III (Invited Session) Min Room Chair: Anzai, Daisuke (<i>Nagoya Institute of Technology</i>) Co-Chair: Sugimachi, Masaru (<i>Natl Cardio Center Research Inst</i>)			
14:20-14:35	FrCT4.1		
An Improved Design of EEG Monitoring System with Dry Electrodes Lee, Seungchan (<i>Gwangju Institute of Science and Technology</i>); Kumar, Anil (<i>Gwangju Institute of Science and Technology</i>); Shin, Younghak (<i>NTNU (Norwegian University of Science and Technology)</i>); Lee, Heung-No* (<i>Gwangju Institute of Science and Technology (GIST)</i>)			

FrCT6: 14:20-15:50 Zworykin Room
Cell and Protein Interaction with External Fields I (Oral Session)

14:20-14:35 FrCT6.1
Electrical Bioimpedance Spectroscopy as Biosensor Technique to Identify Cells Linages and Cell Differentiation Process
 Guerrero Robles, Carla* (*Instituto Politécnico Nacional*); Vázquez Zapién, Gustavo Jesús (*Escuela Médico Militar*); Mata Miranda, Mónica Maribel (*Escuela Médico Militar*); Noriega González, Jesús Emmanuel (*Escuela Médico Militar*); Gonzalez, Cesar (*Universidad del Ejercito y Fuerza Aerea*)

14:35-14:50 FrCT6.2
Finite-Element Modelling and Preliminary Validation of Microneedle-Based Electrodes for Enhanced Tissue Electroporation
 Houlihan, Ruth (*Tyndall Natl. Institute, Univ. College Cork*); Grygoryev, Konstantin (*Tyndall Natl. Institute, Univ. College Cork*); Ning, Zhenfei (*School of Biochemistry & Cell Biology, Univ. College Cork*); Williams, John Michael (*School of Biochemistry & Cell Biology, Univ. College Cork*); Moore, Tom (*School of Biochemistry & Cell Biology, Univ. College Cork*); O'Mahony, Conor* (*Tyndall Natl. Institute, Univ. College Cork*)

14:50-15:05 FrCT6.3
EM Fields Comparison between Planar vs. Solenoidal uMS Coil Designs for Nerve Stimulation
 Bonmassar, Giorgio* (*A. A. Martinos Ctr. for Biomedical Imaging*); Golestanirad, Laleh (*University of Toronto*)

15:05-15:20 FrCT6.4
Design and Construction of a Synthetic E. Coli Protease Inhibitor Detecting Biomachine
 Boonyalekha, Phenbunya (*King Mongkut's Univ. of Tech. Thonburi*); Meechai, Asawin (*King Mongkut's Univ. of Tech. Thonburi*); Waraho-Zhmayev, Dujduan* (*King Mongkut's Univ. of Tech. Thonburi*); Tayapiwatana, Chatchai (*Chiang Mai Univ.*); Kitidee, Kuntida (*Chiang Mai Univ.*)

15:20-15:35 FrCT6.5
Determination of Red Blood Cell Fatigue using Electrodeformation
 Amirouche, Amin* (*Institut des Nanotechnologies de Lyon*); Faivre, Magalie (*Institut des Nanotechnologies de Lyon*); Chateaux, Jean-François (*Université Lyon1 Claude Bernard*); Ferrigno, Rosaria (*Université Claude Bernard Lyon 1*)

15:35-15:50 FrCT6.6
Analysis of Dielectrophoresis based 3D-Focusing in Microfluidic Devices with Planar Electrodes
 Hilal-Alnaqbi, ali (*United Arab Emirates University*); Alazzam, Anas (*Khalifa University*); Dagher, Sawsan (*UAE University*); Mathew, Bobby* (*UAE University*)

15:35-15:50 FrCT6.7
Effect of Laser Diode Light Irradiation on Growth Capability of Human Hair Follicle Dermal Papilla Cells
 Jampa-ngern, Sira (*King Mongkut's University of Technology Thonburi*); Khantachawana, Anak* (*King Mongkut's University of Technology Thonburi*); Viravaidya-Pasuwat, Kwanchanok (*King Mongkut's University of Technology, Thonburi*); Suvanasuthi, Saroj (*Samitivej Sukhumvit Hospital*)

FrCT8: 14:20-15:50 Schwan Room
EEG and Electrical Source Imaging (Oral Session)

14:20-14:35 FrCT8.1
Gamma-Variate Modeling of Indicator Dilution Curves in Electrical Impedance Tomography
 Hentze, Benjamin* (*RWTH Aachen University*); Muders, Thomas (*Dept. of Anaesthesiology and Intensive Care Medicine, Univ.*); Luepschen, Henning (*RWTH Aachen University*); Leonhardt, Steffen (*RWTH Aachen University*); Putensen, Christian (*Dept. of Anaesthesiology and Intensive Care Medicine*); Walter, Marian (*RWTH Aachen University*)

14:35-14:50 FrCT8.2
Localization of Stereoelectroencephalography Signals using a Finite Difference Complete Electrode Model
 Hyde, Damon* (*Boston Children's Hospital and Harvard Medical School*); Tomas-Fernandez, Xavier (*Harvard University*); Stone, Scellig (*Boston Children's Hospital and Harvard Medical School*); Peters, Jurriaan (*Boston Children's Hospital*); Warfield, Simon K. (*Harvard Medical School*)

14:50-15:05 FrCT8.3
ICA on Sensor or Source Data: A Comparison Study in Deriving Resting State Networks from EEG
 Li, Chuang (*University of Oklahoma*); Yuan, Han (*University of Oklahoma*); Urbano, Diamond (*Laureate Institute for Brain Research*); Cha, Yoon-Hee (*Laureate Institute of Brain Research*); Ding, Lei* (*University of Oklahoma*)

15:05-15:20 FrCT8.4
Spatial Regularization based on dMRI to Solve EEG/MEG Inverse Problem
 Belaoucha, Brahim* (*Université Côte d'Azur, Inria*); Papadopoulou, Théodore (*INRIA Sophia-Antipolis*)

15:20-15:35 FrCT8.5
EEG Fluctuations of Wake and Sleep in Mild Cognitive Impairment
 O'Keefe, Johnny (*The Univ. of Oklahoma*); Carlson, Barbara (*The Univ. of Oklahoma*); DeStefano, Lisa (*The Univ. of Oklahoma*); Wenger, Michael (*Univ. of Oklahoma*); Craft, Melissa (*The Univ. of Oklahoma*); Hershey, Linda (*The Univ. of Oklahoma*); Hughes, Jeremy (*The Univ. of Oklahoma*); Wu, Dee (*Univ of Oklahoma Health Sciences*); Ding, Lei (*Univ. of Oklahoma*); Yuan, Han* (*Univ. of Oklahoma*)

15:35-15:50 FrCT8.6
Computation of Surface Laplacian for Tri-Polar Ring Electrodes on High-Density Realistic Geometry Head Model
 Ma, Junwei* (*Univ. of Oklahoma*); Yuan, Han (*Univ. of Oklahoma*); Sunderam, Sridhar (*Univ. of Kentucky*); Besio, W. G. (*Univ. of Rhode Island*); Ding, Lei (*Univ. of Oklahoma*)

FrCT9: 14:20-15:50 Plonsey Room
Neural Signal Processing II (Oral Session)
 Chair: Wheeler, Bruce (*University of Florida*)

14:20-14:35 FrCT9.1
Independent Component Analysis-Based Spatial Filtering Improves Template-Based SSVEP Detection
 Nakanishi, Masaki* (*University of California San Diego*); Wang, Yijun (*Institute of Semiconductors, Chinese Academy of Sciences*); Hsu, Sheng-Hsiou (*University of California, San Diego*); Wang, Yu-Te (*University of California San Diego*); Jung, Tzzy-Ping (*University of California San Diego*)

14:35-14:50 FrCT9.2
Using Monkey Hand Exoskeleton to Explore Finger Passive Joint Movement Response in Primary Motor Cortex
 Qian, Kai* (*Illinois Institute of Technology*); Antonio dos Anjos Jr., Luiz (*Illinois Institute of Chicago*); Balasubramanian, Karthikeyan (*University of Chicago*); Stilson, Kelsey (*The University of Chicago*); Balcer, Carrie Anne (*University of Chicago*); Hatsopoulos, Nicholas (*University of Chicago*); Kamper, Derek (*Rehabilitation Institute of Chicago*)

14:50-15:05 FrCT9.3
Specific CA3 Neurons Decode Neural Information of Dentate Granule Cells Evoked by Paired-Pulse Stimulation in Co-Cultured Networks
 Poli, Daniele (*Univ. of California, Irvine*); DeMarse, Thomas B. (*Univ. of Florida*); Wheeler, Bruce* (*Univ. of Florida*); Brewer, Gregory (*Univ. of California Irvine, Southern Illinois Univ.*)

15:05-15:20 FrCT9.4
Information Transmission in the Primary Visual Cortex of Retinal Degenerated Rats
 Wang, Yi* (*City University of Hong Kong*); Chen, Ke (*University of Electronic Science and Technology of China*); Chan, Leanne LH (*City University of Hong Kong*)

July 14 Friday

15:20-15:35	FrCT9.5	Sparse Coding of ECoG Signals Identifies Interpretable Components for Speech Control in Human Sensorimotor Cortex Bouchard, Kristofer E.* (<i>LBNL</i>); Bujan, Alejandro F (<i>UC Berkeley</i>); Chang, Edward (<i>UCSF</i>); Sommer, Friedrich (<i>University of California Berkeley</i>)	Greatbatch Room
15:35-15:50	FrCT9.6	A New EMG-Based Index towards the Assessment of Elbow Spasticity for Post-Stroke Patients Wang, Lei (<i>Shenzhen Institutes of Advanced Tech. Chinese Academy of Sc</i>); Guo, Xin (<i>Hebei Univ. of Tech.</i>); Fang, Peng (<i>Shenzhen Institutes of Advanced Tech., Chinese Academy of S</i>); Wei, Yue (<i>Shenzhen Institutes of Advanced Tech., Chinese Academy of S</i>); Samuel, Oluwarotimi Williams (<i>Shenzhen Institutes of Advanced Tech.</i>); Huang, Pin-Gao (<i>Chinese Academy of Sciences</i>); Geng, Yanjuan (<i>Shenzhen Institutes of Advanced Tech.</i>); Wang, Hui* (<i>Shenzhen Institutes of Advanced Tech., Chinese Academy of S</i>); Li, Guanglin (<i>Shenzhen Institutes of Advanced Tech.</i>)	
FrCT10: 14:20-15:50	Schmitt Room	General and Theoretical Informatics – Data Mining I (Oral Session) Chair: Fotiadis, Dimitrios I. (<i>University of Ioannina</i>)	
14:20-14:35	FrCT10.1	Gamaid: Greedy CP Tensor Decomposition for Supervised EHR-Based Disease Trajectory Differentiation Henderson, Jette (<i>The University of Texas at Austin</i>); Ho, Joyce C.* (<i>Emory University</i>); Ghosh, Joydeep (<i>Univ of Texas, Austin</i>)	
14:35-14:50	FrCT10.2	A Computational Approach for the Estimation of Heart Failure Patients Status using Saliva Biomarkers Tripoliti, Evanthia (<i>Univ. of Ioannina</i>); Papadopoulos, Theofilos (<i>Unit of Medical Tech. & Intelligent Information Systems</i>); Karanasiou, Georgia (<i>Institute of Molecular Biology & BioTech., FORTH, Ioannina</i>); Kalatzis, Fanis (<i>Dept. of Biomedical Research, Institute of Molecular Biology</i>); Goletsis, Yorgos (<i>Univ. of Ioannina</i>); Bechlioulis, Aris (<i>Michaelidion Cardiac Center, Univ. of Ioannina, & 2nd Dep</i>); Ghimenti, Silvia (<i>Univ. of Pisa</i>); Lomonaco, Tommaso (<i>Univ. of Pisa</i>); Bellagambi, Francesca (<i>Univ. of Pisa</i>); Trivella, Maria G. (<i>Istituto di Fisiologia Clinica-CNR, Pisa</i>); Fuoco, Roger (<i>Univ. of Pisa</i>); Marzilli, Mario (<i>Azienda Ospedaliera-Universitaria Pisana, Cardiothoracic & Vas</i>); Scali, Maria Chiara (<i>Azienda Ospedaliera-Universitaria Pisana, Cardiothoracic & Vas</i>); Naka, Katerina (<i>Univ. of Ioannina</i>); Abdelhamid, Errachid (<i>Univ. de Lyon, Institut de Sciences Analytiques (ISA)</i>); Fotiadis, Dimitrios I.* (<i>Univ. of Ioannina</i>)	
14:50-15:05	FrCT10.3	Exploration of Unsupervised Feature Selection Methods to Predict Chronological Age of Individuals by Utilising CpG Dinucleoties from Whole Blood Sarac, Ferdi (<i>Northumbria University at Newcastle</i>); Seker, Huseyin* (<i>The University of Northumbria at Newcastle</i>); Bouridane, Ahmed (<i>Northumbria University</i>)	
15:05-15:20	FrCT10.4	Wrapper Method for Feature Selection to Classify Cardiac Arrhythmia Mustaqeem, Anam (<i>Univ. of Engineering and Technology, Taxila</i>); Anwar, Syed* (<i>Univ. of Engineering and Technology</i>); Majid, Muhammad (<i>Univ. of Engineering and Technology, Taxila</i>); Khan, Abdul Rashid (<i>POF Hospital, Wah Cantt.</i>)	
15:20-15:35	FrCT10.5	Prediction and Imputation in Irregularly Sampled Clinical Time Series Data using Hierarchical Linear Dynamical Models Sengupta, Abhishek (<i>Walmart Labs India</i>); Ap, Prathosh (<i>Xerox Research Centre India</i>); Shukla, Satya Narayan (<i>University of Massachusetts Amherst</i>); Rajan, Vaibhav (<i>Yen4Ken Software Pvt. Ltd.</i>); Reddy, Chandan K (<i>Virginia Tech</i>); Shukla, Satya Narayan* (<i>University of Massachusetts Amherst</i>)	
15:35-15:50	FrCT10.6	Identifying Frauds and Anomalies in Medicare-B Dataset Seo, Jiwon* (<i>UNIST</i>); Mendelevitch, Ofer (<i>LendUp.com</i>)	
FrCT11: 14:20-15:50		Models of Cardiac Function and Blood Flow (Oral Session)	
14:20-14:35	FrCT11.1	A Computational Model of Myocardial Microcirculation including Interstitial Flow Shimayoshi, Takao* (<i>Kyushu University</i>); Yamamoto, Yuta (<i>Kyoto University</i>); Matsuda, Tetsuya (<i>Kyoto University</i>)	
14:35-14:50	FrCT11.2	PWPSim: A New Simulation Tool of Pulse Wave Propagation in the Human Arterial Tree Xiao, Hanguang (<i>Chongqing University of Technology</i>); Butlin, Mark (<i>Macquarie University</i>); Tan, Isabella (<i>Macquarie University</i>); Avolio, Alberto P* (<i>Macquarie University</i>)	
14:50-15:05	FrCT11.3	Global Sensitivity Analysis for Developing Biological Models: Application to K⁺ Channel Model in Mouse Ventricular Myocytes Du, Dongping* (<i>Texas Tech University</i>); Du, Yuncheng (<i>Clarkson University</i>)	
15:05-15:20	FrCT11.4	A Generic Cardiac Biventricular Fluid-Electromechanics Model Ahmad Bakir, Azam (<i>The Univ. of New South Wales</i>); Al Abed, Amr (<i>Univ. of New South Wales</i>); Lovell, Nigel H. (<i>Univ. of New South Wales</i>); Dokos, Socrates* (<i>Univ. of New South Wales</i>)	
15:20-15:35	FrCT11.5	Effects of Island-Distribution of Mid-Cardiomyocytes on Ventricular Electrical Excitation Associated with the KCNQ1-Linked Short QT Syndrome Luo, Cunjin* (<i>Harbin Institute of Tech., School of Computer Science and T</i>); Wang, Kuanquan (<i>Harbin Institute of Tech.</i>); Zhang, Henggui (<i>Harbin Institute of Tech., School of Computer Science and T</i>); Zhang, Yue (<i>Harbin Engineering Univ.</i>)	
15:35-15:50	FrCT11.6	Hyperthermia Dependence of Cardiac Conduction Velocity in Rat Myocardium: Optical Mapping and Cardiac Near Field Measurements Pollnow, Stefan* (<i>Karlsruhe Institute of Technology</i>); Arnold, Robert (<i>Medical University of Graz, Austria</i>); Werber, Matthias (<i>Karlsruhe Institute of Technology (KIT)</i>); Doessel, Olaf (<i>Karlsruhe Institute of Technology (KIT)</i>); Seemann, Gunnar (<i>University Heart Center Freiburg - Bad Krozingen</i>)	
FrCT13: 14:20-15:50	Dunn Room	Contemporary Diagnostic Devices in Traditional Eastern Medicine: Overview of the Research Activities at KIOM (Minisymposium) Chair: Kim, Jaek U (<i>Korean Institute of Oriental Medicine</i>)	
14:20-14:35	FrCT13.1	Biofield Research and Exogenous Features of Bioelectricity Kim, Jaek U* (<i>Korean Institute of Oriental Medicine</i>); Jun, Min-Ho (<i>KIOM</i>); Bae, Jang-Han (<i>Korea Institute of Oriental Medicine, KAIST</i>); Ku, Boncho (<i>Korea Institute of Oriental Medicine (KIOM)</i>); Kim, Jungyeon (<i>Korea Institute of Oriental Medicine</i>)	
14:35-14:50	FrCT13.2	Development of 3D Asymmetry Analysis System for Human Body Shape Jang, Jun-Su* (<i>Korea Institute of Oriental Medicine</i>)	
14:50-15:05	FrCT13.3	Classification of Upper Respiratory Tract Infection Patients by Tongue Image Analysis Choi, Woosu (<i>Korea Institute of Oriental Medicine</i>); Kim, Keun Ho* (<i>Korea Institute of Oriental Medicine</i>)	
15:05-15:20	FrCT13.4	A Novel Pulse Waveform Analysis System for Radial Artery Pulse Diagnosis in Oriental Medicine Jeon, Youngju* (<i>Korean Institute of Oriental Medicine</i>); Kim, Young-Min (<i>Korea Institute of Oriental Medicine</i>); Kim, Jong Yeol (<i>Korea Institute of Oriental Medicine</i>); Kim, Jaek U (<i>Korean Institute of Oriental Medicine</i>)	

15:20-15:35	FrCT13.5	Development of Phenotype Measurement and Analysis System for Constitution-Specific Treatment Do, Jun-Hyeong* (<i>Korea Institute of Oriental Medicine</i>); Jang, Jun-Su (<i>Korea Institute of Oriental Medicine</i>); Kim, Young-Min (<i>Korea Institute of Oriental Medicine</i>)	15:05-15:20	FrCT15.4	A Novel Platform for Distributed and Remote Real-Time Monitoring of Animal Model Behavior in a Bioterium Manso, A. (<i>Instituto Superior Técnico, Univ. de Lisboa</i>); Martinho, M. (<i>Inst. Superior Técnico, Univ. de Lisboa</i>); Plácido da Silva, H.* (<i>IST - Inst. Superior Técnico</i>); Silvério Cabrita, A. (<i>Coimbra Chemistry Center, Univ. of Coimbra</i>); Banganho, A.F. (<i>Inst. Politécnico de Coimbra, ISEC</i>); Machado, G. (<i>Isec</i>); Macedo, Mi. (<i>IPC - ISEC and LIBPhyS</i>)
15:35-15:50	FrCT13.6	A Study on the Development of the Abdomen Diagnosis Devices based on Korean Medicine for Functional Dyspepsia Kim, Keun Ho* (<i>Korea Institute of Oriental Medicine</i>); Lee, Sanghun (<i>Korea Institute of Oriental Medicine</i>)	15:20-15:35	FrCT15.5	Iquant™ Analyser: A Rapid Quantitative Immunoassay Reader Joseph, Jayaraj* (<i>HTIC, Indian Institute of Tech. Madras</i>); Vasan, Jayaraman Kiruthi (<i>Healthcare Tech. Innovation Center</i>); Shah, Malay Ilesh (<i>Healthcare Tech. Innovation Center (HTIC), Indian Institute</i>); Sivaprakasam, Mohanasankar (<i>Indian Institute of Tech. Madras</i>); Mahajan, Lalit (<i>J Mitra & Co Pvt. Ltd.</i>)
FrCT14: 14:20-15:50	Schaldach Room	Image Rendering and Enhancement (Oral Session) Chair: Lepore, Natasha (<i>University of Southern California / Children's Hospital Los Angeles</i>)	FrCT16: 14:20-15:50	Rushmer Room	Advanced Robotic Surgery based on Deep Tissue Imaging and Haptic Feedback Technology (Minisymposium) Chair: Kim, Chulhong (<i>Pohang Univ. of Science and Technology</i>)
14:20-14:35	FrCT14.1	An Enhanced Hybrid Tracking-Mosaicking Approach for Surgical View Expansion Takada, Chisato* (<i>Chiba Univ.</i>); Affi, Ahmed (<i>Chiba Univ.</i>); Suzuki, Toshiyuki (<i>Chiba Univ.</i>); Nakaguchi, T. (<i>Chiba Univ.</i>)	14:20-14:35	FrCT16.1	Dermoscopy Guided Dark-Field Multi-Functional Optical Coherence Tomography Kwon, Soonjae (<i>POSTECH</i>); Yoon, Yeoreum (<i>POSTECH</i>); Kim, Bumju (<i>POSTECH</i>); Jang, Won Hyuk (<i>POSTECH</i>); Oh, Byungho (<i>Keimyung University, College of Medicine</i>); Chung, Kee Yang (<i>Severance Hospital, Cutaneous Biology Research Institute</i>); Kim, Ki Hean* (<i>POSTECH</i>)
14:35-14:50	FrCT14.2	A Low-Dimensional Representation for Individual Head Geometries Miklody, Daniel* (<i>Technische Universität Berlin</i>); Bagdasarian, Milena Teresa (<i>Technische Universität Berlin, Fraunhofer HHI</i>); Blankertz, Benjamin (<i>Technische Universität Berlin</i>)	14:35-14:50	FrCT16.2	In Vivo Vasculature Imaging with a Clinical Photoacoustic and Ultrasound Imaging System Kim, Jeesu (<i>POSTECH</i>); Park, Eunyeong (<i>Pohang University of Science and Tech. (POSTECH)</i>); Choi, Wonseok (<i>Pohang University of Science and Tech. (POSTECH)</i>); Kim, Chulhong* (<i>Pohang University of Science and Tech.</i>)
14:50-15:05	FrCT14.3	GPU-Based Volume Reconstruction for Freehand 3D Ultrasound Imaging Wen, Tiexiang* (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy</i>); Liu, Lei (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy</i>); Qin, Wenjian (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy</i>); Gu, Jia (<i>Shenzhen Inst of Advanced Technology</i>)	14:50-15:05	FrCT16.3	Reconfigurable DRE Simulator using Augmented Haptics Talhan, Aishwari (<i>Kyung Hee University.</i>); Jeon, Seokhee* (<i>Kyung Hee University</i>)
15:05-15:20	FrCT14.4	BrainWatch Software for Interactive Exploration of Brain Scans in 3D Virtual Reality Systems Taswell, S. Koby (<i>Brain Health Alliance</i>); Veeramacheneni, Teja (<i>Brain Health Alliance</i>); Taswell, Carl* (<i>Brain Health Alliance</i>)	15:05-15:20	FrCT16.4	Dielectro-Optofluidic Lens for Dynamic Focusing of Biomedical Imaging Techniques Kim, Wonkyoung (<i>Pohang University of Science and Tech. (POSTECH)</i>); Park, Sang Min (<i>Pohang University of Science and Tech. (POSTECH)</i>); An, Seonga (<i>Pohang University of Science and Tech. (POSTECH)</i>); Yoo, Jaewon (<i>Pohang University of Science and Tech. (POSTECH)</i>); Kim, Dong Sung* (<i>Pohang University of Science and Tech. (POSTECH)</i>)
15:20-15:35	FrCT14.5	Image Recognition of Triangular Tissue of an Organ Pulled by Forceps in Surgical Working Area for Laparoscope Robot Nakasuji, Hisa* (<i>Osaka Institute of Technology</i>); Naruki, Kazuki (<i>Osaka Institute of Technology</i>); Kawai, Toshikazu (<i>Osaka Institute of Technology</i>); Nishikawa, Atsushi (<i>Shinshu Univ.</i>); Nishizawa, Yuji (<i>Dept. of Gastroenterological Surgery, Faculty of Medicine</i>); Nakamura, Tatsuo (<i>Kyoto Univ.</i>)	FrCT17: 14:20-15:50	Einthoven Hall	Signal Processing – Sleep Analysis (Oral Session)
FrCT15: 14:20-15:50	Webster Room	Medical Technology – Clinical Testing (Oral Session)	14:20-14:35	FrCT17.1	Snore Sound Recognition: On Wavelets and Classifiers from Deep Nets to Kernels Qian, Kun (<i>Technical Univ. of Munich</i>); Janott, Christoph (<i>Technical Univ. of Munich</i>); Jun, Deng (<i>Univ. of Passau</i>); Heiser, Clemens (<i>Technical Univ. of Munich</i>); Hohenhorst, Winfried (<i>Alfried Krupp Krankenhaus</i>); Herzog, Michael (<i>Carl-Thiem-Klinikum Cottbus</i>); Cummins, Nicholas* (<i>Univ. of Passau</i>); Schuller, Bjoern (<i>Univ. of Passau</i>)
14:20-14:35	FrCT15.1	Cardiac Safety Profile for Random Complex Waveforms Pratt, Hugh (<i>CPLSO</i>); Andrews, Chris (<i>Univ. of Queensland</i>); Panescu, Dorin* (<i>Advanced Cardiac Therapeutics</i>); Lake, Blossom (<i>Shrewsbury and Telford Hospital</i>)	14:35-14:50	FrCT17.2	A Bayesian Neural Network Approach to Compare the Spectral Information from Nasal Pressure and Thermistor Airflow in the Automatic Sleep Apnea Severity Estimation Gutierrez, Gonzalo Cesar* (<i>Univ. of Valladolid</i>); de Frutos, Julio (<i>Hospital Univ. Río Hortega de Valladolid</i>); Álvarez, Daniel (<i>Univ. of Valladolid</i>); Vaquerizo-Villar, F. (<i>Biomedical Eng. Group, Univ. of Valladolid</i>); Barroso-García, V. (<i>Biomedical Eng. Group, E.T.S.I. de Telecomunicación, Univ.</i>); Crespo, A. (<i>Hospital Univ. Río Hortega, Valladolid</i>); del Campo, F. (<i>Hospital del Río Hortega, Univ. de Valladolid</i>); Hornero, R. (<i>Univ. of Valladolid</i>)
14:35-14:50	FrCT15.2	Development of Respiratory Function Monitor for Neonates Takatori, Fumihiko* (<i>Nihon Kohden Corp.</i>); Inoue, Shinichiro (<i>Nihon Kohden Corp.</i>); Togo, Satoru (<i>Nihon Kohden Corp.</i>); Yamamori, Shinji (<i>Nihon Kohden Corp.</i>)	14:50-15:05	FrCT15.3	
14:50-15:05	FrCT15.3	Transmission Delay Performance in Telemedicine: A Case Study Wang, Gang* (<i>University of Connecticut</i>); Lin, Shan (<i>Stony Brook University</i>); Mullen-Fortino, Margaret (<i>University of Pennsylvania</i>); Sokolsky, Oleg (<i>University of Pennsylvania</i>); Lee, Insup (<i>University of Pennsylvania</i>)			

14:50-15:05	FrCT17.3	15:20-15:35	FrCT18.5
Estimation of a Priori Probabilities of Sleep Stages: A Cycle-Based Approach Tataraidze, Alexander* (<i>Bauman Moscow State Technical Univ.</i>); Anishchenko, Lesya (<i>BMSTU</i>); Korostovtseva, Lyudmila (<i>Federal North-West Medical Research Centre</i>); Bochkarev, Mikhail (<i>Federal North-West Medical Research Centre</i>); Sviryaev, Yurii (<i>Sleep Lab, Federal Almazov Medical Research Centre</i>); Ivashov, Sergey (<i>Bauman Moscow State Technical Univ.</i>)		Validation of Instantaneous Bispectral High-Frequency Power of Heartbeat Dynamics as a Marker of Cardiac Vagal Activity Valenza, Gaetano (<i>University of Pisa</i>); Greco, Alberto (<i>University of Pisa</i>); Scilingo, Enzo Pasquale (<i>University of Pisa</i>); Barbieri, Riccardo* (<i>Politecnico di Milano</i>)	
15:05-15:20	FrCT17.4	15:35-15:50	FrCT18.6
Comparing Two Insomnia Detection Models of Clinical Diagnostic Techniques Mulafter, Lamana* (<i>Texas A&M Univ. at Qatar</i>); Shahin, Mostafa (<i>Texas A&M Univ. at Qatar</i>); Glos, Martin (<i>Charite- Univ. Berlin</i>); Penzel, Thomas (<i>Charite Univ. Berlin</i>); Ahmed, Beena (<i>Texas A&M Univ. at Qatar</i>)		Spatially Regularized Multifractal Analysis for fMRI Data Ciuciu, Philippe (<i>CEA</i>); Wendt, Herwig* (<i>CNRS, University of Toulouse</i>); Combexelle, Sébastien (<i>IRIT, University of Toulouse</i>); Abry, Patrice (<i>ENS Lyon, CNRS</i>)	
15:20-15:35	FrCT17.5	FrDT1-01: 16:10-17:10	Roentgen Hall
Usefulness of Discrete Wavelet Transform in the Analysis of Oximetry Signals to Assist in Childhood Sleep Apnea-Hypopnea Syndrome Diagnosis Vaquerizo-Villar, Fernando (<i>Biomedical Engineering Group, Univ. of Valladolid</i>); Álvarez, Daniel (<i>Univ. of Valladolid</i>); Gutierrez, Gonzalo Cesar (<i>Univ. of Valladolid</i>); Barroso-García, Verónica (<i>Biomedical Engineering Group, E.T.S.I. de Telecomunicación, Univ.</i>); Kheirandish-Gozal, Leila (<i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i>); Crespo, Andrea (<i>Hospital Univ. Rio Hortega, Valladolid</i>); del Campo, Félix (<i>Hospital del Rio Hortega. Univ. de Valladolid</i>); Gozal, David (<i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i>); Hornero, Roberto* (<i>Univ. of Valladolid</i>)		Neural Networks and Support Vector Machines in Biosignal Processing and Classification (Poster Session)	
15:35-15:50	FrCT17.6	16:10-16:12	FrDT1-01.1
Detecting Obstructive Sleep Apnea in Children by Self-Affine Visualization of Oximetry Garde, A.* (<i>Univ. of Twente</i>); Kheirkhah Dehkordi, P. (<i>Univ. of British Columbia</i>); Petersen, C. (<i>British Columbia Children's Hospital</i>); Ansermino, J.M. (<i>British Columbia's Children's Hospital</i>); Dumont, G. (<i>Univ. of British Columbia</i>)		Comparison of Methods for Motor Imaginary Classification by Neural Network in a Single Channel BCI Iwata, Yuuki* (<i>Waseda Univ.</i>); Ishiyama, Atsushi (<i>Waseda Univ.</i>)	
FrCT18: 14:20-15:50	Montgomery Hall	16:12-16:14	FrDT1-01.2
Biomedical Data Beyond Linear Correlation: Higher Order Statistics and Non-Gaussianity, Non-Linearity and Multifractality (Invited Session) Chair: Yamamoto, Yoshiharu (<i>The University of Tokyo</i>) Co-Chair: Abry, Patrice (<i>ENS Lyon, CNRS</i>)		Individualized Assessment of Cerebral Autoregulation in Patients with Intracranial Stenosis using Machine Learning Qiu, Quanli (<i>Chinese Academy of Sciences, Shenzhen Institutes of Advanced Tec</i>); Zhang, Pandeng (<i>Chinese Academy of Sciences</i>); Liu, Jia* (<i>Chinese Academy of Sciences</i>)	
14:20-14:35	FrCT18.1	16:14-16:16	FrDT1-01.3
Stochastic Quantifiers of Behavioral Dynamics in Psychiatric Disorders Nakamura, Toru* (<i>Osaka University</i>); Yamamoto, Yoshiharu (<i>The University of Tokyo</i>)		Deception Detection Algorithm based on K-PCA and SVM Jang, Yurim (<i>Yonsei Univ.</i>); Hwang, Layoung (<i>Yonsei Univ.</i>); Kim, Heesong (<i>Natl. Forensic Service</i>); Ji, Hyunki (<i>Natl. Forensic Service</i>); Hong, Hyeonggi (<i>Natl. Forensic Service</i>); Kim, Kipyoun (<i>Natl. Forensic Service</i>); Pyo, Chuyun (<i>Natl. Forensic Service</i>); Shin, Taemin* (<i>Yonsei Univ.</i>)	
14:35-14:50	FrCT18.2	16:16-16:18	FrDT1-01.4
Long-Range Amplitude Correlations and Non-Gaussian Behavior of Heart Rate Variability Kiyono, Ken* (<i>Osaka Univ.</i>); Miki, Yuki (<i>Osaka Univ.</i>); Tsujimoto, Yutaka (<i>Graduate School of Engineering Science, Osaka Univ.</i>); Watanabe, Eiichi (<i>Fujita Health Univ.</i>); Hayano, Junichiro (<i>Nagoya City Univ.</i>); Yamamoto, Yoshiharu (<i>The Univ. of Tokyo</i>); Nomura, Taishin (<i>Osaka Univ.</i>)		Detection of Game Craving in Young Individuals with Internet Gaming Addiction using Multiple Biosignals Kim, Hodam (<i>Hanyang University</i>); Ha, Jihyeon (<i>Center for Bionics, Korea Institute of Science and Technology</i>); Park, Wanjoon (<i>KIST</i>); Kim, Laehyun (<i>Korea Institute of Science and Technology</i>); Im, Chang-Hwan* (<i>Hanyang University</i>)	
14:50-15:05	FrCT18.3	FrDT1-02: 16:10-17:10	Roentgen Hall
Feature Selection and Machine Learning based Supervised Classification for Intrapartum Fetal Acidosis Early Detection Abry, Patrice* (<i>ENS Lyon, CNRS</i>); Leonarduzzi, R.F. (<i>Ecole Normale Supérieure de Lyon</i>); Spilka, J. (<i>Czech Tech. Univ. in Prague</i>); Doret, M. (<i>Hospices Civils de Lyon Univ. Lyon I</i>)		Signal Pattern Classification (Poster Session)	
15:05-15:20	FrCT18.4	16:10-16:12	FrDT1-02.1
Multiscale Properties of Instantaneous Parasympathetic Activity in Severe Congestive Heart Failure: A Survivor vs Non-Survivor Study Valenza, Gaetano* (<i>Univ. of Pisa</i>); Wendt, Herwig (<i>CNRS, Univ. of Toulouse</i>); Kiyono, Ken (<i>Osaka Univ.</i>); Hayano, Junichiro (<i>Nagoya City Univ.</i>); Watanabe, Eiichi (<i>Fujita Health Univ.</i>); Yamamoto, Yoshiharu (<i>The Univ. of Tokyo</i>); Abry, Patrice (<i>ENS Lyon, CNRS</i>); Barbieri, R. (<i>Politecnico di Milano</i>)		Attentional Spontaneous EEG Classification using Convolutional Neural Network (CNN) Liew, Siaw-Hong (<i>Universiti Teknikal Malaysia Melaka (UTeM)</i>); Low, Yin Fen* (<i>Universiti Teknikal Malaysia Melaka (UTeM)</i>); Lim, Kim Chuan (<i>UTeM</i>); Choo, Yun-Huoy (<i>Universiti Teknikal Malaysia Melaka (UTeM)</i>)	
		16:12-16:14	FrDT1-02.2
		A Method for Removing Effects of Electrode Impedance Imbalance and Muscle Fatigue on Hand Gesture Electromyogram Signals Jang, Seungwan (<i>Daelim Univ.</i>); Seo, Ahyeon (<i>Daelim Univ.</i>); Yang, Hansol (<i>Daelim Univ.</i>); Lee, Deuk Yong (<i>Daelim Univ.</i>); Yun, Yonghyeon* (<i>Daelim Univ. College</i>)	
		16:14-16:16	FrDT1-02.3
		Pilot Study of Cardiotocography Zhayida, Simayijiang* (<i>Lund University</i>); Åström, Kalle (<i>Lund University</i>); Källén, Karin (<i>Lund University Hospital</i>)	
		16:16-16:18	FrDT1-02.4
		Time-Varying Multivariate Risk-Stratification for Patients with Chronic Heart Failure O'Donnell, Johanna* (<i>Univ. of Oxford</i>); Velardo, Carmelo (<i>Univ. of Oxford</i>); Khorshidi, Reza (<i>Univ. of Oxford</i>); Rahimi, Kazem (<i>Univ. of Oxford</i>); Tarassenko, Lionel (<i>Univ. of Oxford</i>)	

16:18-16:20	FrDT1-02.5	16:40-16:42	FrDT1-02.16
Preliminary Study: Drowsiness Detection using Non-Contact ITO Film Glasses Choi, Sangho (<i>Seoul National University</i>); Lee, Jeongsu (<i>Seoul National University</i>); Hong, Seunghyeok (<i>Seoul National University</i>); Kwon, Hyunbin (<i>Seoul National University</i>); Park, Kwang S.* (<i>Seoul National University</i>)		Heart Rate Estimation from PPG using Dictionary Learning Lee, Kwang Jin (<i>Gwangju Institute of Science and Tech. (GIST)</i>); Park, Chanki (<i>Gwangju Institute of Science and Tech.</i>); Lee, Boreom* (<i>Gwangju Institute of Science and Tech. (GIST)</i>)	
16:20-16:22	FrDT1-02.6	16:42-16:44	FrDT1-02.17
3-Phases of Cough Motor Act Analysis using Accelerometer and Cough Sound Kim, Joo-Young (<i>Hanyang University</i>); So, Soonwon (<i>Hanyang University</i>); Yi, Ji Eun (<i>Biomedical Engineering Dept., University of Hanyang</i>); Kim, In-Young* (<i>Hanyang University</i>)		Conversion of Lip Movements into Speech using Gaussian Mixture Models Ra, Rina* (<i>Graduate School of System Informatics, Kobe University</i>); Aihara, Ryo (<i>Graduate School of System Informatics, Kobe University</i>); Takiguchi, Tetsuya (<i>Kobe University</i>); Ariki, Yasuo (<i>Kobe University</i>)	
16:22-16:24	FrDT1-02.7	16:44-16:46	FrDT1-02.18
ECG Quality Classification based on Similarity between Segments Simultaneously Measured from Different Electrodes Kim, Yoon Jae (<i>Seoul National University</i>); Heo, Jeong (<i>Seoul National University, Interdisciplinary Program for Bioengi</i>); Kim, Myungjoon (<i>Interdisciplinary Program in Bioengineering, Seoul National Univ</i>); Park, Kwang S. (<i>Seoul National University</i>); Kim, Sungwan* (<i>Seoul National University</i>)		Cardiac Risk Assessment based on T-Wave Statistics from Holter ECG Shibui, Toyohito (<i>Hosei Univ. Graduate School</i>); Aihara, Mitsuki (<i>Hosei Univ. Graduate School</i>); Kinukawa, Yoshiki (<i>Hosei Univ. Graduate School</i>); Yana, Kazuo* (<i>Hosei Univ.</i>); Ichikawa, Tomohide (<i>Fujita Health Univ.</i>); Watanabe, Eiichi (<i>Fujita Health Univ.</i>); Yana, Kazuo (<i>Hosei Univ.</i>)	
16:24-16:26	FrDT1-02.8	16:46-16:48	FrDT1-02.19
Multimodal Hand Stereotypies Detection in Rett Syndrome Treatment using Deep Belief Neural Networks O'Leary, Heather* (<i>Boston Children's Hospital</i>); Mayor Torres, Juan Manuel (<i>Boston Children's Hospital</i>); D'Gama, Alissa (<i>Harvard Medical School</i>); Kaufmann, Walter (<i>Greenwood Genetic Center</i>); Sahin, Mustafa (<i>Boston Children's Hospital</i>)		EEG based Emotional State Tracking during Watching Movie Considering Self-Assessment Manikin Terasawa, Naoto* (<i>Nara Institute of Science and Technology</i>); Tanaka, Hiroki (<i>Nara Institute of Science and Technology</i>); Sakriani, Sakti (<i>Nara Institute of Science and Technology</i>); Satoshi, Nakamura (<i>Nara Institute of Science and Technology</i>)	
16:26-16:28	FrDT1-02.9	16:48-16:50	FrDT1-02.20
Vest Type Multiplexed Wearable Device for Cardiac Arrest Detection Ahn, Hyun Jun (<i>Hanyang University</i>); Lee, Hyojin (<i>Biomedical Engineering Dept., University of Hanyang</i>); Lee, Junchang (<i>Hanyang University</i>); Kim, In-Young* (<i>Hanyang University</i>)		Improved Performance of Near-Infrared Spectroscopy Brain-Computer Interface using Combinations of Multi-Distance Source-Detector Separations Shin, Jaeyoung (<i>Hanyang University</i>); Kwon, Jinuk (<i>Hanyang University</i>); Im, Chang-Hwan* (<i>Hanyang University</i>)	
16:28-16:30	FrDT1-02.10	16:50-16:52	FrDT1-02.21
ECG Classification using Deep Learning Huang, Shu-yi (<i>Chung Yuan Christian Univ.</i>); Chao, Yi-Ping (<i>Chang Gung Univ.</i>); Shyu, L.-Y.* (<i>Chung Yuan Christian Univ.</i>)		Classifying Modulation Waveforms of Visual Stimuli via Steady-State Visual Evoked Potentials Tani, Yutaro (<i>Tokyo Univ. of Agriculture and Technology</i>); Morikawa, Naoki (<i>Tokyo Univ. of Agriculture and Technology</i>); Nakanishi, Masaki (<i>Univ. of California San Diego</i>); Suefusa, Kaori (<i>Tokyo Univ. of Agriculture and Technology</i>); Tanaka, Toshihisa* (<i>Tokyo Univ. of Agriculture and Technology</i>)	
16:30-16:32	FrDT1-02.11	16:52-16:54	FrDT1-02.22
Motion Artifact Detection using Cross-Correlation Pattern Analysis of HbO and HbR in fNIRS Signal Lee, Gihyoun (<i>Daegu Gyeongbuk Institute of Science and Tech.</i>); Jin, SangHyeon (<i>DGIST</i>); Lee, Seung Hyun (<i>DGIST</i>); Jinung, An* (<i>Daegu Gyeongbuk Institute of Science & Tech.</i>)		Prediction of Atrial Fibrillation based on Random Forest Classifier Kim, Hyeonggon (<i>Yonsei</i>); Kang, Chang Hoon (<i>Yonsei Univ.</i>); Myoung, Hyoun Seok (<i>Yonsei Univ.</i>); Lee, Seung Hwan (<i>Yonsei Univ.</i>); Lee, Kyoung Joung* (<i>Yonsei Univ.</i>)	
16:32-16:34	FrDT1-02.12	16:54-16:56	FrDT1-02.23
3-D Signature Recognition Method by Orientation Correction of Inertial Sensor Kang, Shinil (<i>Hanyang University</i>); You, Sungmin (<i>Hanyang University</i>); Lee, Jong-Shill (<i>Hanyang University</i>); Kim, In-Young* (<i>Hanyang University</i>)		Cardiac Risk Assessment based on Multiple Indices from Holter ECG Records Sato, Shunsuke (<i>Hosei Univ.</i>); Murakami, Mami (<i>Hosei Univ. Graduate School</i>); Nakamura, Saya (<i>Hosei Univ. Graduate School</i>); Yana, Kazuo* (<i>Hosei Univ.</i>); Ono, Takuya (<i>Nippon Medical School</i>); Yana, Kazuo (<i>Hosei Univ.</i>)	
16:34-16:36	FrDT1-02.13	FrDT2-01: 16:10-17:10	Cho Room
Gait Authentication using 3-Axis Accelerometer: Regardless of the Direction of Gait and Position of the Sensor Lee, SeungJae (<i>Hanyang University</i>); Kang, Shinil (<i>Hanyang University</i>); Lee, Jong-Shill (<i>Hanyang University</i>); Kim, In-Young* (<i>Hanyang University</i>)		Brain Image Analysis (Poster Session)	
16:36-16:38	FrDT1-02.14	16:10-16:12	FrDT2-01.1
3D Space Signature Recognition with EMG Signals Joo, Seongsoo (<i>Hanyang University</i>); Dohyun, Kim (<i>Hanyang University</i>); Lee, Jong-Shill (<i>Hanyang University</i>); Kim, In-Young* (<i>Hanyang University</i>)		Arterial Spin Labeling in ASPECTS-Guided Machine Learning can Predict Clinical Outcome in Acute Ischemic Stroke Patients Ma, Samantha J.* (<i>University of Southern California</i>); Yu, Songlin (<i>Beijing Tiantan Hospital, Capital Medical University</i>); Liebeskind, David S. (<i>University of California, Los Angeles</i>); Yan, Lirong (<i>University of Southern California</i>); Scalzo, Fabien (<i>UCLA</i>); Wang, Danny JJ (<i>University of Southern California</i>)	
16:38-16:40	FrDT1-02.15		
A Method for Signal Leakage Correction of Minimum Variance Beamformer using a Padé Approximation Lim, Sanghyun (<i>Korea Research Institute of Standards and Science (KRISS) and Un</i>); Kim, Kiwoong* (<i>Korea Research Institute of Standards and Science</i>)			

- 16:12-16:14 FrDT2-01.2
MR Volume Registration using Anatomical Reference Organ “Merkmal” for Analysis of the Brain Shift Transformation in the Closed Cranium
Matsuda, Kento (*Kobe Univ.*); Kumamoto, Etsuko* (*Kobe Univ.*); Hayashi, Shigeto (*Hyogo Emergency Medical Center, Kobe Red Cross Hospital*); Nishino, Takashi (*Dept. of Chemical Science & Engineering Faculty of Eng.*); Nakai, Tomoaki (*Dept. of Neurosurgery, Kobe Univ. Graduate School*); Kohmura, Eiji (*Dept. of Neurosurgery, Kobe Univ. Graduate School*)
- 16:14-16:16 FrDT2-01.3
Evaluating the Effect of Alzheimer’s Disease Status on Co-Registration Accuracy of PET and MRI Brain Scans
Veeramacheni, Teja (*Brain Health Alliance*); Taswell, S. Koby (*Brain Health Alliance*); Taswell, Carl* (*Brain Health Alliance*)
- 16:16-16:18 FrDT2-01.4
Expanding Nexus Diristries of Dementia Literature with the NPDS Concept-Validating Search Engine Agent
Bae, Seung-Ho (*Brain Health Alliance*); Craig, Adam (*Brain Health Alliance*); Taswell, Carl* (*Brain Health Alliance*)
- 16:18-16:20 FrDT2-01.5
Quantitative Evaluation of Magnetic Nanoparticle Distribution in Murine Brain using Magnetic Particle Imaging
Inaoka, Yoshimi* (*Graduate School of Medicine, Osaka University*); Hosoi, Rie (*Osaka University*); Murase, Kenya (*Osaka University*); Kimura, Astuomi (*Osaka University*)
- FrDT2-02: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – Contrast-Enhanced Dynamic MRI (Poster Session)
- 16:10-16:12 FrDT2-02.1
DCE-MRI Data Analysis with Simultaneous B1/T1 Estimation
Zhang, Jin (*NYU School of Medicine*); Winters, Kerry (*NYU School of Medicine*); Kim, Gene* (*NYU School of Medicine*)
- FrDT2-03: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – Diffusion Tensor and Diffusion Spectrum Imaging (Poster Session)
- 16:10-16:12 FrDT2-03.1
Correlation Tensor using Resting State fMRI in Corpus Callosum
Byeon, Kyoungseop (*Sungkyunkwan University*); Lee, In Haeng (*Sungkyunkwan University*); Lee, Dong Gyu (*Sungkyunkwan University*); Kim, Jonghoon (*Sung Kyun Kwan University*); Park, Bo-yong (*Sungkyunkwan University*); Park, Hyunjin* (*Sungkyunkwan University*)
- 16:12-16:14 FrDT2-03.2
The Effects of Template and Improved Registration on Tract based Spatial Statistics
Choi, Yong-Ho (*Hanyang Univ.*); Kwon, Hunki (*Dept. of Biomedical Engineering, Hanyang Univ.*); Lee, Jong-Min* (*Hanyang Univ.*); Boahen, Collins Kwadwo (*Hanyang Univ.*)
- 16:14-16:16 FrDT2-03.3
Bias-Free Fractional Anisotropy in Diffusion Tensor Imaging of the Brain using a ROI Approach
Seo, Youngseob* (*Korea Research Institute of Standards & Science (KRISS)*)
- FrDT2-04: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – Image Reconstruction (Poster Session)
- 16:10-16:12 FrDT2-04.1
Accelerating Multi-Contrast MR Imaging with Deep Learning Exploring their Intra-Correlations
Wang, Shanshan (*Shenzhen Institutes of Advanced Tech.*); Zhao, Tao (*Paul C. Lauterbur Research Center for Biomedical Imaging, SIAT.*); Xiao, Taohui (*Paul C. Lauterbur Research Center for Biomedical Imaging, SIAT.*); Tan, Sha (*Paul C. Lauterbur Research Center for Biomedical Imaging, SIAT.*); Ying, Leslie (*State Univ. of New York at Buffalo*); Gan, Yangzhou (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Liang, Dong* (*Shenzhen Institutes of Advanced Tech.*)
- 16:12-16:14 FrDT2-04.2
Comparison of Tolerance to K-Space Mis-Centering: Filtered Back-Projection versus Fast Fourier Transform via Gridding
Lee, JeongTaek* (*Sungkyunkwan University*); Park, Jinil (*Sungkyunkwan University*); Lee, Seung-Kyun (*Sungkyunkwan University*); Park, Jang-Yeon (*Sungkyunkwan University*)
- FrDT2-06: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – MR Neuroimaging (Poster Session)
- 16:10-16:12 FrDT2-06.1
MR-Based Electrical Conductivity Map of Brain Metabolites
Katoch, Nitish (*Kyung Hee University*); Choi, Bup Kyung (*Kyung Hee University*); Sajib, Saurav Z K (*Kyung Hee University*); Kim, Hyung Joong (*Kyung Hee University*); Kwon, Ohin (*Konkuk University*); Woo, Eung Je* (*Kyung Hee University*)
- 16:12-16:14 FrDT2-06.2
Effect of Brain Extraction of Low Resolution Arterial Spin Labeling (ASL) fMRI Images on Realignment and Coregistration
Liao, Justin (*Rochester Institute of Tech.*); Petr, Jan (*Helmholtz-Zentrum Dresden-Rossendorf*); Lazar, Roland M (*Columbia Univ. Medical Center*); Marshall, Randolph S (*Columbia Univ. Medical Center*); Asllani, Iris* (*Rochester Institute of Tech.*)
- 16:14-16:16 FrDT2-06.3
Iterative Patch based Segmentation of MR Images via Dictionary Learning and Label Fusion Algorithm
Hong, Jinwoo (*Hanyang University*); Lee, Jong-Min* (*Hanyang University*); Yoon, Uicheul (*Catholic University of Daegu*)
- 16:16-16:18 FrDT2-06.4
Computer-Aided Diagnosis System for Brain Metastasis using Artificial Neural Network on 3D MRI
Kim, Young Jae (*Gachon Univ.*); Sunwoo, Leonard (*Seoul National Univ. Bundang Hospital*); Choi, Seung Hong (*Seoul National Univ. College of Medicine*); Lee, Seung Hyun (*Kwangwoon Univ.*); Kim, Kwang Gi* (*Gachon Univ.*)
- 16:18-16:20 FrDT2-06.5
The Evaluation of Cortical Thickness Extraction Algorithm Effects on Longitudinal Brain MRI Study
Kim, Bo-Hyun (*Hanyang University*); Lee, Jong-Min* (*Hanyang University*); Cho, Hyangryeong (*Hanyang University*)
- 16:20-16:22 FrDT2-06.6
Quantification of Spatial Variability for Severity of White Matter Hyperintensities
Yang, Jin-Ju (*Hanyang Univ.*); Kim, Hee Jin (*Sungkyunkwan Univ. School of Medicine*); Seo, Sang Won (*Sungkyunkwan Univ. School of Medicine*); Lee, Jong-Min* (*Hanyang Univ.*)
- 16:22-16:24 FrDT2-06.7
Segmentation of Corpus Callosum in Midsagittal using Bayes Risk
Park, Gilsoon (*Hanyang Univ.*); Bang, SungKyu (*Hanyang Univ.*); Lee, J.-M.* (*Hanyang Univ.*); Park, Y.-H. (*Hanyang Univ.*)
- 16:24-16:26 FrDT2-06.8
Geometric Convolutional Neural Network (gCNN) for Analyzing Surface-Based Neuroimaging Data
Seong, Si-Baek (*Yonsei University College of Medicine*); Park, Hae-Jeong* (*Yonsei University*)
- 16:26-16:28 FrDT2-06.9
Accelerated MRI Susceptibility Mapping for Brain Iron Quantification
Miao, Xin* (*Univ. of Southern California*); Guo, Yi (*Univ. of Southern California*); Nayak, Krishna (*Univ. of Southern California*); Wood, John (*Childrens Hospital Los Angeles*)
- FrDT2-07: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – MR Spectroscopy (Poster Session)
- 16:10-16:12 FrDT2-07.1
Analysis of the Feasibility in using the SPICE for Transient CSI Signal
Song, Jae Eun (*Dept. of Electrical and Electronic Engineering, Yonsei Univ*); Kim, Dong-Hyun* (*Yonsei University*)

- 16:12-16:14 FrDT2-07.2
Neurochemical Alterations in the Hippocampus of High-Fat Induced Preclinical Model: in Vivo MR Spectroscopy
 Lim, Song-I* (*The Catholic Univ. of Korea, College of Medicine*)
- 16:14-16:16 FrDT2-07.3
Metabolic Alterations induced by Repeated Exposure to Dizocilpine on the Prefrontal Cortex of Schizophrenic Rat Model: in Vivo Proton Magnetic Resonance Spectroscopy Study
 Yoo, Chi-Hyeon* (*The Catholic University of Korea*)
- 16:16-16:18 FrDT2-07.4
Quantification of Hepatic Acid Metabolism in a Lipogenic Methionine/Choline-Deficient Diet-Fed Animal Model with Spin-Spin Relaxation Time by using in Vivo Magnetic Resonance Spectroscopy
 Song, Kyu-Ho* (*The Catholic Univ. of Korea, College of Medicine*)
- FrDT2-08: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – MRI RF Coil Technology (Poster Session)
- 16:10-16:12 FrDT2-08.1
A 3D Printed Curve-Fitting Mechanism for Animal Array Coil
 Wu, Edzer L.* (*National Taiwan University*); Cheng, Po-Wei (*Taiwan*); Chen, Jyh-Horng (*National Taiwan University*)
- FrDT2-09: 16:10-17:10 Cho Room
Magnetic Resonance Imaging – Pulse Sequence (Poster Session)
- 16:10-16:12 FrDT2-09.1
Velocity Measurement with 4D Phase Contrast MRI According to Scan Parameter in the Vessel Model
 Park, Jieun (*Kyungpook National University*); Kim, Junghun (*Kyungpook National University*); Park, YuJin (*Kyungpook National University*); Hwang, Moon Jung (*GE Healthcare*); Lee, Jongmin* (*Kyungpook National University*)
- FrDT3-01: 16:10-17:10 Park Room
Deformable Image Registration (Poster Session)
- 16:10-16:12 FrDT3-01.1
Following the Diabetic Feet Progress for the Prevention of Ulcers using Optical Image Registration Techniques
 Bosnjak, Antonio* (*Univ. de Carabobo*); Zequera Diaz, Martha Lucia (*Full Professor at Pontificia Univ. Javeriana - Electronics*); Magjarevic, Ratko (*Univ. of Zagreb*); Escalona, Omar Jacinto (*Univ. of Ulster*); Seketa, Goran (*Faculty of electrical engineering and computing, Univ. of Z*)
- FrDT3-02: 16:10-17:10 Park Room
Image Feature Extraction (Poster Session)
- 16:10-16:12 FrDT3-02.1
Classification of Barrett's Esophagus Sub-Classes and Neoplasia using Texture Features of Endomicroscopy Imaging
 Park, Bo-yong (*Sungkyunkwan University*); Won, Ji Hye (*Sungkyunkwan University*); Lee, Seok Young (*Sungkyunkwan University*); Kang, Deuk Cheol (*University*); Kim, Ju Hyung (*Sungkyunkwan University*); Bong, Jisoo (*Sungkyunkwan University, Information and Communication Engineer*); Park, Hyunjin* (*Sungkyunkwan University*)
- 16:12-16:14 FrDT3-02.2
Deep Convolutional Neural Networks for Prostate Cancer Detection in Infrared Spectroscopic Imaging
 Kwak, Jin Tae* (*Sejong University*); Hewitt, Stephen (*National Institutes of Health*); Bhargava, Rohit (*University of Illinois at Urbana-Champaign*)
- 16:14-16:16 FrDT3-02.3
Texture Analysis of Supraspinatus Ultrasound Image for Computer Aided Diagnostic System
 Bag, Byung Eun (*Yonsei Univ.*); Oh, Kyeong Taek (*Yonsei Univ.*); Kwon, JunHwan (*Yonsei Univ.*); Kim, Han Woong (*Yonsei Univ.*); Jang, Wonseuk (*Yonsei Univ.*); Yoo, Sun K.* (*Yonsei Univ. Health System*); Oh, Seung Young (*Yonsei Univ.*)
- 16:16-16:18 FrDT3-02.4
MR Image Analysis of Sagittal Tongue Shape in Patients with Obstructive Sleep Apnea Syndrome (OSAS)
 Mikami, Tsuyoshi* (*Tomakomai College of Tech.*); Yonezawa, Kazuya (*National Hospital Organization Hakodate Hospital*)
- 16:18-16:20 FrDT3-02.5
Automated Lung Cancer Detection on Computed Tomography Images
 Cho, Woo Sang (*Seoul National University*); Lee, Kyoung Jin (*Seoul National University*); Lee, Jung Chan* (*Seoul National University College of Medicine*)
- 16:20-16:22 FrDT3-02.6
Deep Learning based Surgical Tool Tracking in Robot-Assisted Endoscopic Video Images
 Lee, Dongheon (*Seoul National Univ.*); Kong, Hyoun-Joong (*Chungnam National Univ. School of Medicine*); Kwon, Hyungju (*Ewha Womans Univ. Medical Center*); Yi, Jin Wook (*Seoul National Univ. Hospital*); Yu, Hyeong Won (*Seoul National Univ. Bundang Hospital*); Kim, Hyun Soo (*Seoul National Univ. Hospital*); Lee, Kyu Eun (*Seoul National Univ. College of Medicine*); Kim, Hee Chan* (*Seoul National Univ.*)
- FrDT3-03: 16:10-17:10 Park Room
Image Reconstruction – Performance Evaluation (Poster Session)
- 16:10-16:12 FrDT3-03.1
Investigation on Automated Strabismus Evaluation System
 Yoo, Sunyoung (*Seoul National University*); Seo, Jong Mo* (*Seoul National University, School of Engineering*)
- 16:12-16:14 FrDT3-03.2
Integrated Real-Time Processing of Intravascular Ultrasound and Photoacoustic Imaging using Graphics Processing Unit
 Ahn, Joongho (*Pohang Univ. of Science and Technology*); Cho, Seonghee (*Pohang Univ. Science and Technology*); Kim, Kyungmin (*Postech*); Managuli, Ravi (*Hitachi Aloka Medical America, Inc.*); Kim, Yongmin (*Univ. of Washington*); Kim, Chulhong* (*Pohang Univ. of Science and Technology*)
- FrDT3-04: 16:10-17:10 Park Room
Image Reconstruction and Enhancement – Compressive Sensing/Sampling (Poster Session)
- 16:10-16:12 FrDT3-04.1
Accelerated Multidimensional NMR Spectroscopy with Hankel Matrix Nuclear Norm Regularized Tensor Completion
 Ying, Jiaxi (*Dept. of Electronic Science, Xiamen University*); Lu, Hengfa (*Xiamen University*); Wei, Qingtao (*University of Science and Technology of China*); Cai, Jian-Feng (*Dept. of Mathematics, Hong Kong University of Science and T*); Guo, Di (*Xiamen University of Technology*); Wu, Jihui (*University of Science and Technology of China*); Chen, Zhong (*Xiamen University*); Qu, Xiaobo* (*Xiamen University*)
- 16:12-16:14 FrDT3-04.2
Projected Iterative Soft-Thresholding Algorithm for Tight Frames in Compressed Sensing Magnetic Resonance Imaging
 Liu, Yunsong (*Xiamen Univ.*); Zhan, Zhifang (*Xiamen Univ.*); Cai, Jian-Feng (*Dept. of Mathematics, Hong Kong Univ. of Science and T*); Guo, Di (*Xiamen Univ. of Technology*); Chen, Zhong (*Xiamen Univ.*); Qu, Xiaobo* (*Xiamen Univ.*)
- FrDT3-05: 16:10-17:10 Park Room
Image Reconstruction and Enhancement – Image Synthesis (Poster Session)
- 16:10-16:12 FrDT3-05.1
Reconstruction of Projection Data in 3D Rotational X-Ray System using 3D Printing Phantom
 Joo, Huijin (*Daegu-Gyeongbuk Medical Innovation Foundation*); Kim, Yeji (*Daegu-Gyeongbuk Medical Innovation Foundation*); Sohn, Jeong-woo (*Daegu-Gyeongbuk Medical Innovation Foundation*); Oh, Sung Suk* (*Daegu-Gyeongbuk Medical Innovation Foundation*)

FrDT3-06: 16:10-17:10 Image Reconstruction and Enhancement – Tomographic Reconstruction (Poster Session)	Park Room	16:28-16:30 Gradient Vector Flow Field and Fast Marching based Method for Centreline Extraction of Coronary Arteries in Human Patients	FrDT3-07.10
16:10-16:12 Camera-Tracking vs. Image-Based Motion Compensation in a Tomographic Limb Ultrasound System Ranger, Bryan* (<i>Massachusetts Institute of Tech.</i>); Feigin, Micha (<i>Massachusetts Institute of Tech.</i>); Herr, Hugh (<i>MIT</i>); Anthony, Brian W. (<i>Massachusetts Institute of Tech.</i>)	FrDT3-06.1	Cui, Hengfei (<i>Nanyang Tech. Univ.</i>); Wang, Desheng (<i>Inst. of space medico-engineering</i>); Wan, Min (<i>Nanchang Univ.</i>); Zhang, Jun-Mei (<i>Natl. Heart Center</i>); Zhao, Xiaodan (<i>Natl. Heart Centre Singapore</i>); Huang, Weimin (<i>Inst. for Infocomm Research, Agency for Science Tech.</i>); Xiong, Wei (<i>Inst. for Infocomm Research, A-STAR</i>); Zhou, Jiayin (<i>Inst. for Infocomm Research</i>); Lim, Soo Teik (<i>Natl. Heart Centre Singapore</i>); Tan, Ru San (<i>Natl. Heart Center</i>); Tan, Swee Yaw (<i>Natl. Heart Center</i>); Zhong, Liang* (<i>Natl. Heart Centre Singapore</i>)	
FrDT3-07: 16:10-17:10 Image Segmentation (Poster Session)	Park Room	FrDT3-08: 16:10-17:10 Regularized Image Reconstruction (Poster Session)	
16:10-16:12 Deep Learning Application in Blood Vessel Segmentation of Retinal Fundus Images: A Spatial Boosting Model Ngo, Lua (<i>Korea University</i>); Han, Jae-Ho* (<i>Korea University</i>)	FrDT3-07.1	16:10-16:12 An L0 Norm based Non-Convex Sparse MRI Image Reconstruction with Classified Patch-Based Dictionary Training Zhan, Zhifang (<i>Xiamen Univ.</i>); Liu, Yunsong (<i>Xiamen Univ.</i>); Cai, Jian-Feng (<i>Dept. of Mathematics, Hong Kong Univ. of Science and T</i>); Guo, Di (<i>Xiamen Univ. of Technology</i>); Chen, Zhong (<i>Xiamen Univ.</i>); Qu, Xiaobo* (<i>Xiamen Univ.</i>)	FrDT3-08.1
16:12-16:14 Automatic Shape-Constrained Mandible Segmentation and Refinement in Dental Cone-Beam CT Images Kim, Joojin (<i>Seoul Women's University</i>); Lee, Minjin (<i>Seoul Women's University</i>); Hong, Helen* (<i>Seoul Women's University</i>)	FrDT3-07.2	FrDT3-09: 16:10-17:10 Rigid-Body Image Registration (Poster Session)	Park Room
16:14-16:16 Application of Deep Learning in Mammographic Breast Density Ahn, Chul Kyun (<i>Seoul Natl. Univ.</i>); Lee, Jaewon (<i>Seoul Natl. Univ.</i>); Park, Byungjun (<i>Seoul Natl. Univ.</i>); Jeong, Gangwon (<i>Seoul Natl. Univ.</i>); Kim, Jong Hyo* (<i>Seoul Natl. Univ.</i>)	FrDT3-07.3	16:10-16:12 An Extrinsic Calibration Method to Register Multiple Kinect Sensors for Human Body Scanning Cuellar Lopez, Juan Sebastian (<i>Universidad de los Andes</i>); Herrera, Diana Sofia (<i>University of los Andes</i>); Vargas, Paola Mariana (<i>University of los Andes</i>); Sacristán, María Camila (<i>University of los Andes</i>); Oh, Jieun (<i>National Cancer Center</i>); Son, Jaebum* (<i>Universidad de los Andes</i>)	FrDT3-09.1
16:16-16:18 Automatic Detection of Cells in Phase Contrast Microscopy Images Kang, Un gyo (<i>Hanyang Univ.</i>); Kim, Nayeong (<i>Hanyang Univ.</i>); Nam, Hyeong Soo (<i>Hanyang Univ.</i>); Shin, Yujin (<i>Hanyang Univ.</i>); Gweon, B. (<i>Hanyang Univ.</i>); Yoo, H.* (<i>Hanyang Univ.</i>)	FrDT3-07.4	FrDT4-01: 16:10-17:10 Implantable Sensors (Poster Session)	Min Room
16:18-16:20 In-Vivo Estimation of Electrical Conductivity of a Rabbit Eye for Simulating Electric Field Distribution during Ocular Iontophoresis Lee, Sangjun (<i>Hanyang Univ.</i>); Lee, Chany (<i>Hanyang Univ.</i>); Kim, Euijin (<i>Hanyang Univ.</i>); Ko, Song Ah (<i>Seoul National Univ.</i>); Kim, Se Na (<i>Seoul National Univ.</i>); Choy, Young Bin (<i>Seoul National Univ.</i>); Im, Chang-Hwan* (<i>Hanyang Univ.</i>)	FrDT3-07.5	16:10-16:12 Implantable Multi-Area Imaging Device with an Optical Data Transmitter for Brain Function Measurement Hayami, Hajime* (<i>Nara institute of science & tec</i>); Haruta, Makito (<i>Nara Institute of Science & Tech.</i>); Noda, Toshihiko (<i>Nara Institute of Science & Tech.</i>); Sasagawa, Kiyotaka (<i>Nara Institute of Science & Tech.</i>); Tokuda, Takashi (<i>Nara Institute of Science & Tech.</i>); Ohta, Jun (<i>Nara Institute of Science & Tech.</i>)	FrDT4-01.1
16:20-16:22 Segmentation of the Spiculated Lesion and Decomposition of Its Complex Surrounding Structures for Invasive Pulmonary Adenocarcinomas in Thoracic Computed Tomography without Contrast Hsu, Fu-Sheng* (<i>Natl. Taiwan Univ.</i>); Chen, Li Wei (<i>Natl. Taiwan Univ.</i>); Wang, Hao-Jen (<i>Natl. Taiwan Univ.</i>); Yang, Shun-Mao (<i>Natl. Taiwan Univ. Hospital & Natl. Taiwan University</i>); Lin, Mong-Wei (<i>Natl. Taiwan Univ. Hospital & Natl. Taiwan University</i>); Li, Chia-Chen (<i>Natl. Taiwan Univ.</i>); Chen, Chung-Ming (<i>Natl. Taiwan Univ.</i>)	FrDT3-07.6	16:12-16:14 Wireless Power Transmission to Implantable Medical Devices for Gastroesophageal Reflux Disease: Measurement of Transmission Efficiency in a Conducting Liquid Katsuyama, Akiyoshi* (<i>Tokyo University of science</i>); Kaga, Tadashi (<i>Tokyo University of Science</i>); Shiba, Kenji (<i>Tokyo University of Science</i>)	FrDT4-01.2
16:22-16:24 Hierarchical Multi-Organ, Multi-Atlas Segmentation with Multi-Stage Registration and Label Fusion in Abdominal CT Images Kim, Hyeonjin (<i>Seoul Women's University</i>); Hong, Helen* (<i>Seoul Women's University</i>)	FrDT3-07.7	16:14-16:16 Design of Signal Processing Circuit for S-IMEHD with TCBT Kim, Jonghoon (<i>Kyungpook National Univ.</i>); Kong, Hojun (<i>Kyungpook National Univ.</i>); Kim, Myoungnam (<i>Kyungpook National Univ.</i>); Cho, Jin-Ho* (<i>Kyungpook National Univ.</i>)	FrDT4-01.3
16:24-16:26 Detection of Significant Lung Mass in Thoracic PET/CT using Iterative Thresholding with PET-Driven Compensation Jang, Jinwook (<i>Korea Univ.</i>); Kim, Kwangdon (<i>Korea Univ.</i>); Jung, Young-Jun (<i>Korea Univ.</i>); Lee, Hakjae (<i>Korea Univ.</i>); Eo, Jae Seon (<i>Korea Univ. Guro Hospital</i>); Lee, K.* (<i>Korea Univ.</i>)	FrDT3-07.8	16:16-16:18 Design of a Round Beam Plate of Hybrid Acoustic Sensor for use in Implantable Hearing Aids Mun, Hajun (<i>Kyungpook Natl. Univ.</i>); Shin, Dongho (<i>Kyungpook Natl. Univ.</i>); Park, Youngsik (<i>Kyungpook Natl. Univ.</i>); Seong, Kiwoong (<i>Kyungpook Natl. Univ. Hospital</i>); Song, Byung Seop (<i>Daegu Univ.</i>); Cho, Jin-Ho* (<i>Kyungpook Natl. Univ.</i>)	FrDT4-01.4
16:26-16:28 Texture based Segmentation of White Matter Hyper-Intensities in MRI Kadimesetty, Venkata Suryanarayana* (<i>Samsung R&D Institute India, Bangalore</i>); Viswanathan, Srikrishnan (<i>Samsung R&D Institute India, Bangalore</i>); Kwon, Oh-Hun (<i>Samsung Electronics</i>)	FrDT3-07.9	FrDT4-02: 16:10-17:10 Implantable Sensors – Biocompatibility (Poster Session)	Min Room
		16:10-16:12 Highly Sensitive Implantable Transient Dopamine Sensor for Brain Disease Hwang, Suk-Won* (<i>Korea Univ.</i>); Kim, Hyun-Seung (<i>Korea Univ.</i>)	FrDT4-02.1

- 16:12-16:14 FrDT4-02.2
Study on Micro Welding of Glass by Ultrafast Laser for Medical Device Packaging
 Kim, SungIl (*Hanbat Natl. Univ.*); Choi, Jiyeon (*Korea Institute of Machinery and Materials (KIMM)*); Koo, Chiwan (*Hanbat Natl. Univ.*); Kang, YoungHwan (*Hanbat Natl. Univ.*); Kim, EungBo (*Hanbat Natl. Univ.*); Cho, SungHwan (*Hanbat Natl. Univ.*); Joung, YeunHo* (*Hanbat Natl. Univ.*)
- 16:14-16:16 FrDT4-02.3
Bio-Inspired Silicon Nanospikes Fabricated by Metal-Assisted Chemical Etching for Anti-Bacterial, Wearable Systems
 Siu, Vince* (*IBM T.J. Watson Research Center*); Hu, Huan (*IBM T.J. Watson Research Center*); Lu, Minhua (*IBM T.J. Watson Research Center*); Gifford, Stacey (*IBM T.J. Watson Research Center*); Meyer, Pablo (*IBM T.J. Watson Research Center*); Kim, Sung-Cheol (*IBM T.J. Watson Research Center*); Knickerbocker, John (*IBM T.J. Watson Research Center*); Stolovitzky, Gustavo (*IBM T.J. Watson Research Center*)
- FrDT4-03: 16:10-17:10 Min Room
Implantable Systems (Poster Session)
- 16:10-16:12 FrDT4-03.1
Design and Optimization of Resonant Coupling Wireless Power Transfer System for Small Power Implantable Medical Devices
 Ozawa, Yuta* (*Tokyo City University*); Shimatani, Yuichi (*Tokyo City University*); Kyoso, Masaki (*Tokyo City University*); Kiryu, Shogo (*Tokyo City University*)
- FrDT4-04: 16:10-17:10 Min Room
Integrated Sensor Systems (Poster Session)
- 16:10-16:12 FrDT4-04.1
A Multi-Modal Virtual Coach for Behavior Change
 Cruciani, Federico* (*Ulster University*); Nugent, Chris (*University of Ulster*); Cleland, Ian (*University of Ulster*); McCullagh, Paul (*University of Ulster*)
- FrDT4-05: 16:10-17:10 Min Room
Integrated Wearable and Portable Systems (Poster Session)
- 16:10-16:12 FrDT4-05.1
A Wearable Force Regulator for Reducing the Contact Force Effect on Photoplethysmographic Signals
 Sim, Jai Kyoung (*Korea Research Institute of Standards and Science (KRISS)*); Doh, Il* (*Korea Research Institute of Standards and Science (KRISS)*); Kim, Yong Tae (*Korea Research Institute of Standards and Science (KRISS)*)
- 16:12-16:14 FrDT4-05.2
ECG Abnormality Detection within the Wearable Platform
 Song, Ju Hwan (*Samsung Electronics*); Jeong, Jiseung (*Samsung Electronics*); Bak, Changgyu (*Samsung Electronics*); Vasyiltsov, Ihor* (*Samsung Electronics*)
- 16:14-16:16 FrDT4-05.3
In-The-Ear EEG Device for an Effective and Comfortable SSVEP-Based BCI for Communication
 Sohn, Jangjay (*Seoul National Univ.*); Ahn, Joong Woo (*Seoul National Univ.*); Kim, Do Youn (*Interdisciplinary Program, Bioengineering, Graduate School, Seoul*); Kwon, Chiheon (*Seoul National Univ.*); Kwon, Soon Bin (*Seoul National Univ.*); Kim, Hee Chan* (*Seoul National Univ.*)
- 16:16-16:18 FrDT4-05.4
Portable Microbial Fuel Cell (MFC) System using Beverages as Energy Source for Supplying Mobile Healthcare Devices
 Yeo, Jeongjin (*Chonbuk National University*); Jang, Suebin (*Chonbuk National University*); Park, Mingun (*Chonbuk National University*); Jeong, Seoi (*Chonbuk National University*); Yang, Yoonseok* (*Chonbuk National University*)
- 16:18-16:20 FrDT4-05.5
Development of Mobile Body Composition Analyzer using the Single Impedance Measurement IC
 Kim, Tae San (*Kyung Hee University*); Choi, Hyun Tae (*Kyung Hee University*); Jang, Geuk Young (*Dept. of Biomedical Engineering, Graduate School, Kyung Hee*); Oh, Tong In* (*Kyunghee University*); Woo, Eung Je (*Kyung Hee University*)
- 16:22-16:24 FrDT4-05.7
The Optimal Sensor Position to Detect Various Poor Sitting Postures
 Nguyen, Manh Thang (*University of Ulsan*); Dang, Quoc Khanh (*University of Ulsan*); Chee, Youngjoon* (*University of Ulsan*)
- 16:24-16:26 FrDT4-05.8
Design of the Smartphone based Wearable Doppler Device for Continuous Blood Flow Monitoring and Prediction of Abnormalities of Vascular Function in the Carotid Artery
 Park, Junil (*Sogang University*); Kang, Jinbum (*Sogang University*); Song, Ilseob (*Sogang University*); Yoo, Yangmo* (*Sogang University*)
- 16:26-16:28 FrDT4-05.9
Novel System Architecture for Online Gait Analysis
 Bentes, João (*School of Information Technology, Halmstad Univ.*); Khandelwal, Siddhartha* (*Halmstad Univ.*); Carlsson, Hampus (*School of Information Technology, Halmstad Univ.*); Kärman, Marcus (*Halmstad Högskola*); Svensson, Tim (*Halmstad Univ.*); Wickstrom, Nicholas (*Halmstad Univ.*)
- 16:28-16:30 FrDT4-05.10
Platform Prototype for Human Machine Interaction Applications
 Petrov, Vitaliy* (*Immanuel Kant Baltic Federal University*); Bötman, Stepan (*Immanuel Kant Baltic Federal University*); Borchevkin, Danil (*Immanuel Kant Baltic Federal University*)
- FrDT4-06: 16:10-17:10 Min Room
Mechanical Sensors and Systems (Poster Session)
- 16:10-16:12 FrDT4-06.1
Sensitivity of Inertial Sensors to Motor Compensation during a Goal Directed Reaching Task
 Miller, Aaron (*University of Tennessee*); Wade, Eric* (*University of Tennessee*)
- 16:12-16:14 FrDT4-06.2
Development of a Tube Type Strain Sensor to Measure Grasping Power of Infants
 Choi, Ik-kyu* (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*); Chou, Namsun (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*); Lee, Je sang (*Pusan National University Hospital*); Shin, Yong Beom (*Pusan National University Hospital*); Kim, Sohee (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)
- 16:14-16:16 FrDT4-06.3
Personal Identification using Floor Vibration of Walking
 Nakajima, Kazuki* (*University of Toyama*); Sugimoto, Ryosuke (*University of Toyama*); Iikuni, Takahiro (*University of Toyama*); Kim, Juhyon (*University of Toyama*); Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Toda, Kazumasa (*NEC Solution Innovators, Ltd.*); Kawabata, Minoru (*NEC Solution Innovators, Ltd.*); Hagiwara, Mamoru (*Richell Corp.*)
- 16:16-16:18 FrDT4-06.4
Development of a Device for Customized Pleural Pressure Measurement
 Lim, Dongjun (*ASAN Medical Center*); Joo, Segyeong* (*Asan Medical Center, University of Ulsan College of Medicine*)
- 16:18-16:20 FrDT4-06.5
Ultrasonic Tactile Sensor for Stiffness Measurement
 Qian, Yanjun* (*University of Waterloo*); Han, Sang-wook (*SHINHAN University*); Kwon, Hyock Ju (*University of Waterloo*)

FrDT5-01: 16:10-17:10 New Sensing Techniques (Poster Session)	Lee Room	FrDT5-03: 16:10-17:10 Physical Sensors and Sensor Systems – Acoustic Sensors and Systems (Poster Session)	Lee Room
16:10-16:12 Development of a Solid State Sensor to Measure Volumetric Airflow Fourie, Christoffel Johannes Adriaan* (<i>Innovation4life</i>); Steenkamp, Marco (<i>Stellenbosch Univ.</i>); Perold, Wllem Johannes (<i>Stellenbosch Univ.</i>); Fourie, Pieter Rousseau (<i>Stellenbosch Univ.</i>)	FrDT5-01.1	16:10-16:12 FEA Simulation Study on Crosstalk in 1D Ultrasound Array Transducer with Inversion Layer Technique Sung, Jinho (<i>Dongguk University</i>); Park, Chan Yuk (<i>Dongguk University</i>); Kwon, Dasol (<i>Dongguk University</i>); Jeong, Jong Seob* (<i>Dongguk University</i>)	FrDT5-03.1
16:12-16:14 Electrical Biosensing Platform by the Photoconductivity of Plasmonic Nanowire Structures Lee, Jihye (<i>Yonsei University</i>); Kim, Jeong Hyeon (<i>Yonsei University</i>); Yeo, Jong-Souk* (<i>Yonsei University</i>)	FrDT5-01.2	16:12-16:14 A Needle Hydrophone with a Cylindrical PVDF Sensing Element for Measuring a Cylindrically Focusing Acoustic Field Choi, Min Joo* (<i>Jeju National University</i>); Kang, Gwansuk (<i>Jeju National University</i>); Kwon, Ohbin (<i>Jeju National University</i>); Ha, Kanglyeol (<i>Pukyong National University</i>)	FrDT5-03.2
16:14-16:16 Deep Health Eye: The Novel Non-Contact Heart Beat and Blood Pressure Imaging System Kim, Chan-Il (<i>Keimyung University</i>); Kim, Yoon Nyun (<i>Keimyung University</i>); Kim, Seon-Chil (<i>Keimyung University</i>); Lee, Jong-Ha* (<i>Keimyung University, School of Medicine</i>)	FrDT5-01.3	FrDT5-04: 16:10-17:10 Physical Sensors and Sensor Systems – Magnetic Sensors and Systems (Poster Session)	Lee Room
16:16-16:18 Study of a Coil Allocation Method using Magnetic Field Pattern in Transcranial Magnetic Stimulation Odagaki, Masato* (<i>Maebashi Institute of Technology</i>); Seko, Yuta (<i>Maebashi Institute of Tech.</i>); Kikuchi, Yutaka (<i>Institute of Brain and Blood Vessels</i>); Duan, Feng (<i>Nankai Univ.</i>)	FrDT5-01.4	16:10-16:12 Magneto-Nanosensors for Monitoring Protein-Protein Interactions Lee, Jung-Rok* (<i>Stanford Univ.</i>); Wang, Shan (<i>Stanford Univ.</i>)	FrDT5-04.1
16:18-16:20 Pseudo Double-Gate MoS₂ Field-Effect Transistor based Biosensor for Sensitive and Precise Diagnosis Park, Heekyeong (<i>ETRI</i>); Jeong, Seok Hwan (<i>Sungkyunkwan Univ.</i>); Liu, Na (<i>Sungkyunkwan Univ.</i>); Yoo, G. (<i>Soongsil Univ.</i>); Kim, Y.-J. (<i>ETRI</i>); Kim, S.* (<i>Sungkyunkwan Univ.</i>)	FrDT5-01.5	16:12-16:14 Evaluation of Material Characteristics of Textile Proximity Sensor for Medication Adherence Evaluation System Ho, Jong Gab (<i>SoonChunHyang Univ.</i>); Wang, Changwon (<i>Soonchunhyang Univ.</i>); Min, S.D.* (<i>SoonChunHyang Univ.</i>)	FrDT5-04.2
FrDT5-02: 16:10-17:10 Optical and Photonic Sensors and Systems (Poster Session)	Lee Room	FrDT5-05: 16:10-17:10 Physical Sensors and Sensor Systems – Mechanical Sensors and Systems (Poster Session)	Lee Room
16:10-16:12 Fundamental Optoelectronic Properties of Single Crystal Silicon Nanomembranes Shin, Jeong-Woong (<i>KU-KIST Graduate School of Converging Science and Technology, Ko</i>); Lee, Joong Hoon (<i>Korea University</i>); Hwang, Suk-Won* (<i>Korea University</i>)	FrDT5-02.1	16:10-16:12 Design and Implement of a Real-Time Monitoring Body Temperature and Pulse Measurement System Bang, Sangkwang (<i>Kyungpook National University</i>); Wei, Qun (<i>Keimyung University</i>); Park, Hee-Jun (<i>Keimyung University</i>); Lee, Jyung Hyun* (<i>Kyungpook National University</i>)	FrDT5-05.1
16:12-16:14 Combination of Periodic Gold Nanopillar Arrays and Aperiodic Gold Nanorods for Improvement of Surface-Enhanced Raman Spectroscopy Choi, Munsik (<i>Kyung Hee University</i>); Byun, Kyung Min* (<i>Kyung Hee University</i>)	FrDT5-02.2	16:12-16:14 Development of Temperature-Compensated Pressure Sensor for RF Ablation Cancer Therapy Jeong, Yongrok (<i>KAIST</i>); Park, Jaeho (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Kim, Kyuyoung (<i>Korea Advanced Institute of Science and Technology</i>); Gu, Jimin (<i>KAIST</i>); Park, Inkyu* (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>)	FrDT5-05.2
16:14-16:16 Multi-Channel SPR Imaging System based on Digital Micro-Mirror Device and 3D Printing Technique Lee, Jaeyeon (<i>Kyung Hee University</i>); Byun, Kyung Min* (<i>Kyung Hee University</i>)	FrDT5-02.3	16:14-16:16 Detection of Dyskinetic Movements using Inertial Sensors for Patients with Parkinson's Disease Kim, Sang Kyong (<i>Seoul National University</i>); Kim, Hanbyul (<i>Seoul National University</i>); Jeon, Beom S. (<i>Seoul National University</i>); Park, Kwang S.* (<i>Seoul National University</i>)	FrDT5-05.3
16:16-16:18 Proposal of a Method for Reducing Body Movement Artifacts from Photoplethysmographic Signals using Accelerometers Nishikawa, Shigeru* (<i>Meijo University</i>); Mukai, Toshiharu (<i>Meijo University</i>)	FrDT5-02.4	16:16-16:18 Sensitivity Enhancement of a Pressure Sensor using Porous Polyvinylidene Fluoride Structure Jung, Yungwoo (<i>Hanyang University</i>); Choi, Eunsuk (<i>Hanyang University</i>); Sul, Onejae (<i>Hanyang University</i>); Lee, Seung-Beck* (<i>Hanyang University</i>)	FrDT5-05.4
16:18-16:20 Noncontact Blood Distribution Measurement using Spatially-Resolved Spectroscopy Isse, Tatsuyoshi* (<i>Shizuoka University</i>); Niwayama, Masatsugu (<i>Shizuoka University</i>)	FrDT5-02.5	FrDT5-06: 16:10-17:10 Physical Sensors and Sensor Systems – New Sensing Techniques (Poster Session)	Lee Room
16:20-16:22 Improvement of Signal-to-Noise Ratio in Surface Enhanced Raman Spectroscopy using Spread-Spectrum Modulation Lee, Wonkyoung (<i>Electronics and Telecom. Research Institute</i>); Park, Moonseong (<i>KAIST</i>); Kim, Bong Kyu (<i>Electronics and Telecom. Research Institute</i>); Jeong, Ki-Hun* (<i>KAIST</i>)	FrDT5-02.6	16:10-16:12 Construction of Sucking Ability Evaluation System for Infants Nishi, Eri* (<i>Setsunan University</i>); Nagamatsu, Yuiko (<i>Osaka Koseinenkin Hospital</i>); Niikawa, Takuya (<i>Osaka Electro-Communication University</i>)	FrDT5-06.1

16:12-16:14 FrDT5-06.2
HDR Image Synthesis Technique for Active Stereo 3D Endoscope System
 Furukawa, Ryo* (*Hiroshima City Univ.*); Naito, Masahito (*Hiroshima City Univ.*); Miyazaki, Daisuke (*Hiroshima City Univ.*); Baba, Masashi (*Hiroshima City Univ.*); Hiura, Shinsaku (*Hiroshima City Univ.*); Kawasaki, Hiroshi (*Kagoshima Univ.*)

FrDT5-07: 16:10-17:10 Lee Room
Physical Sensors and Sensor Systems – Optical and Photonic Sensors and Systems (Poster Session)

16:10-16:12 FrDT5-07.1
Label-Free Biochips for Accurate Detection of Prostate Cancer: Combination of Biomarkers and Circulating Tumor Cells
 Yang, Hung-Wei* (*National Sun Yat-sen University*)

16:12-16:14 FrDT5-07.2
Internet of Things (IoT) Functional Cardiac Rehabilitation for Coronary Artery Disease
 Wang, Ching-Fu (*National Yang-Ming Univ.*); Chou, Chin (*National Yang-Ming Univ.*); Chou, Yi-Ting (*National Yang-Ming Univ.*); Chen, Pochuan (*National Yang-Ming Univ.*); Chen, Hsu-Yan (*National Yang-Ming Univ.*); Chuang, Hsuan-Ho (*NYMU*); Chen, You-Yin (*National Chiao-Tung Univ.*); Huang, Hsin-Kai* (*Tao-Yuan General Hospital*)

16:14-16:16 FrDT5-07.3
A Time-Resolved NIRS Experiment using a CMOS Lock-In Pixel Image Sensor with Highly Time-Resolving Capability
 Liu, Zhonghui* (*Shizuoka Univ.*); Lioe, Dexing (*Shizuoka Univ.*); Seo, Min-Woong (*Shizuoka Univ.*); Niwayama, Masatsugu (*Shizuoka Univ.*); Hakamata, Masashi (*Shizuoka Univ.*); Kagawa, Keiichiro (*Shizuoka Univ.*); Yasutomi, Keita (*Shizuoka Univ.*); Fukushi, Yasuko (*Hamamatsu Univ. School of Medicine*); Yamamoto, Seiji (*Hamamatsu Univ. School of Medicine*); Kawahito, Shoji (*Shizuoka Univ.*)

16:16-16:18 FrDT5-07.4
A Portable Shiga Toxins (Stx1 and Stx2) Sensing Device
 Kim, Jeongtae (*Hanbat National Univ.*); Park, Jaewon (*Southern Univ. of Science and Technology*); Lee, Mooseung (*Korea Research Institute of Bioscience & Biotechnology (KRIBB)*); Koo, Chiwan* (*Hanbat National Univ.*)

FrDT5-08: 16:10-17:10 Lee Room
Physical Sensors and Sensor Systems – Thermal Sensors and Systems (Poster Session)

16:10-16:12 FrDT5-08.1
Evaluation of the Risk of Radiofrequency Induced-Voltage in Rat Brain Tissue
 Wan, Sen* (*Tsinghua University*); Jiang, Changqing (*Tsinghua University*); Li, Luming (*Tsinghua University*)

16:12-16:14 FrDT5-08.2
Cryoprobe System with Built-In Thermocouple for Cryosurgery
 Tokiwa, Tatsuji* (*Hiroshima City University*); Lev, Zimin (*Graduate School of Information, Production and Systems, Waseda U*); Ishiguro, Hiroshi (*Kyushu Institute of Technology*); Yamakawa, Takeshi (*Fuzzy Logic Systems Institute*)

FrDT6-01: 16:10-17:10 Zworykin Room
BioMEMS/NEMS – Tissue Engineering and Biomaterials (Poster Session)

16:10-16:12 FrDT6-01.1
Establishment of the Brain Cell Culture Platform to Assess the Safety of the Electrical Stimulation in BMI
 Park, Eun Young (*Korea Advanced Institute of Science and Technology*); Eunmin Ko, Eunmin (*KAIST*); Shin, Jennifer Hyunjong* (*KAIST*)

FrDT6-02: 16:10-17:10 Zworykin Room
Cellular Force Transduction – Cell Mechanics (Poster Session)

16:10-16:12 FrDT6-02.1
Development of Cardiac Muscle Differentiation Evaluation Platform
 Jin Hwa Lee, Jin Hwa (*KAIST*); Ung Hyun Ko, Ung Hyun (*KAIST*); Eunmin Ko, Eunmin (*KAIST*); Cho, Youngbin (*KAIST*); Shin, Jennifer Hyunjong* (*KAIST*)

16:12-16:14 FrDT6-02.2
Alteration of Migration Polarity in Vascular Endothelial Cell Depending on the Substrate Stiffness
 Shin, Yujin (*Hanyang University*); Kim, Jin Won (*Korea University Guro Hospital*); Yoo, Hongki (*Hanyang University*); Gweon, Bomi* (*Hanyang University*)

16:14-16:16 FrDT6-02.3
Dcef Induced Alteration of the Physical Forces within the Cell Monolayer
 Cho, Youngbin (*KAIST*); Minjeong Son, Minjeong (*KAIST*); Jeong, Hyuntae (*Korea Advanced Institute of Science and Technology*); Park, Eun Young (*Korea Advanced Institute of Science and Technology*); Ung Hyun Ko, Ung Hyun (*KAIST*); Shin, Jennifer Hyunjong* (*KAIST*)

FrDT6-03: 16:10-17:10 Zworykin Room
Cellular Force Transduction – Cell Motility (Poster Session)

16:10-16:12 FrDT6-03.1
Unbalanced Distribution of Cellular Force in the MDCK Cell Monolayer Expanding under HGF Gradient
 Jang, Hwanseok (*Korea Univ.*); Park, Chan Young (*Harvard T.H. Chan School of Public Health*); Park, Yongdoon* (*Korea Univ.*)

16:12-16:14 FrDT6-03.2
Reduced Impact of Substrate Stiffness by Switching from 2D to 3D Extracellular
 Li, Zeyuan (*Hanyang University*); Yoo, Hongki (*Hanyang University*); Gweon, Bomi* (*Hanyang University*)

FrDT6-04: 16:10-17:10 Zworykin Room
Cellular Force Transduction – Cell Spreading and Adhesion (Poster Session)

16:10-16:12 FrDT6-04.1
Biocompatibility of a Multifunctional Neural Probe Material
 Tyson, Joel (*UMBC*); Slaughter, Gymama (*University of Maryland Baltimore County*)

FrDT6-05: 16:10-17:10 Zworykin Room
Electric Fields – Tissue Regeneration (Poster Session)

16:10-16:12 FrDT6-05.1
Detection of Adipocyte Differentiation under Three-Dimensional Culture Condition using Electrical Impedance Measurement
 Zemmyo, Daiki* (*Keio Univ.*); Miyata, Shogo (*KEIO Univ.*)

FrDT6-06: 16:10-17:10 Zworykin Room
Electromagnetic Field Effects and Cell Membrane (Poster Session)

16:10-16:12 FrDT6-06.1
Response of Synchronized Activity in Cultured Neuronal Network after High-Intensity Power Frequency Magnetic Field Exposure
 Saito, Atsushi* (*Central Research Institute of Electric Power Industry*); Takahashi, Masayuki (*CRIEPI*); Nakasono, Satoshi (*Central Research Institute of Electric Power Industry*); Jimbo, Yasuhiko (*Univ. of Tokyo*)

16:12-16:14 FrDT6-06.2
Changes in Mechanical Properties of Cells by Electrical Fields Treatment
 Han, Se Jik (*Kyung Hee University*); Park, Moon Young (*Kyung Hee University*); Kim, Kyung Sook* (*Kyung Hee University*); Kwon, Sangwoo (*Dongguk University*)

FrDT6-07: 16:10-17:10 Gene and Drug Delivery – Drug/Gene and Carrier Interactions (Poster Session)	Zworykin Room	FrDT6-10: 16:10-17:10 Scaffolds in Tissue Engineering – Carbon-Nanotube (Poster Session)	Zworykin Room
16:10-16:12 Microfluidic High-Content Screening in a C. Elegans Model at Single Animal-Resolution Letizia, Maria Cristina* (<i>EPFL</i>); Cornaglia, Matteo (<i>EPFL</i>); Trouillon, Raphaël (<i>Ecole Polytechnique Fédérale de Lausanne</i>); Gijs, Martin (<i>EPFL</i>)	FrDT6-07.1	16:10-16:12 A Simple and Rapid Fabrication Technique for Complex 3D Microelectrodes for Cell Recording Cools, Jordi* (<i>imec</i>); Copic, Davor (<i>University of Cambridge</i>); Callewaert, Geert (<i>KU Leuven Campus Kortrijk</i>); Braeken, Dries (<i>IMEC</i>); De Volder, Michael (<i>Catholic University of Leuven</i>)	FrDT6-10.1
FrDT6-08: 16:10-17:10 Scaffolds in Tissue Engineering (Poster Session)	Zworykin Room	FrDT6-11: 16:10-17:10 Scaffolds in Tissue Engineering – Patterned 3D (Poster Session)	Zworykin Room
16:10-16:12 Tri Layered Composite Nanofibers Loaded Simvastatin for Bone Tissue Regeneration Awasthi, Ganesh Prasad (<i>Chonbuk Natl. Univ.</i>); Rezk, Abdelrahman* (<i>Chonbuk Natl. Univ.</i>); Rajan Unnithan, Afeesh (<i>Chonbuk Natl. Univ.</i>); Kim, Ju Yeon (<i>Chonbuk Natl. Univ.</i>); Hwang, Jae Hun (<i>Chonbuk Natl. Univ.</i>); Park, Chan Hee (<i>Chonbuk Natl. Univ.</i>); Kim, Cheol Sang (<i>Chonbuk Natl. Univ.</i>)	FrDT6-08.1	16:10-16:12 A Study of the 3D Printed Functional Artificial Blood Vessels Ahn, Chi Bum* (<i>Gachon University</i>); Kim, Seung won (<i>Daegun High School</i>); Hong, Do young (<i>Daegun High School</i>); Son, Kuk Hui (<i>Gachon University</i>); Lee, Jin woo (<i>Gachon University</i>)	FrDT6-11.1
16:12-16:14 Fabrication of Biodegradable, Biocompatible Scaffold using the Bombyx Mori Silk Fibroin for Bone Regeneration Lee, Ji Yeon* (<i>Chonbuk National Univ.</i>); Ko, Sung Won (<i>Chonbuk National Univ.</i>); Lee, Joshua (<i>Chonbuk National Univ.</i>); Lee, Seoyeon (<i>Chonbuk National Univ.</i>); Jang, Serim (<i>Chonbuk National Univ.</i>); Park, Chan Hee (<i>Chonbuk National Univ.</i>); Kim, Cheol Sang (<i>Chonbuk National Univ.</i>)	FrDT6-08.2	FrDT6-13: 16:10-17:10 Stem Cells – Tissue Morphogenesis (Poster Session)	Zworykin Room
16:14-16:16 Biphasic Biocompatible PU/PCL Scaffolds for Small-Diameter Vascular Tissue Engineering Oh, Gayeon (<i>Daelim University College</i>); Noh, Jeong Won (<i>Daelim University College</i>); Yun, Yonghyeon* (<i>Daelim University College</i>); Lee, Deuk Yong (<i>Daelim University</i>)	FrDT6-08.3	16:10-16:12 Differentiation Characteristics of Xiphisternum-Derived Cells Park, Jae Seong (<i>Kyung Hee Univ.</i>); Han, Jeong Eun (<i>Kyung Hee Univ.</i>); Lee, EunAh* (<i>Kyung Hee Univ.</i>); Oh, Tong In (<i>Kyunghee Univ.</i>); Woo, Eung Je (<i>Kyung Hee Univ.</i>)	FrDT6-13.1
16:16-16:18 A Study on Developing Guideline of Performance Evaluation for an Absorbable Internal Hemostat Cho, Eunjeong (<i>Ministry of Food & Drug Safety</i>); Park, Chang Won (<i>Natl. Institute of Food & Drug Safety Evaluation, Ministry</i>); Yoo, Sihyung (<i>Ministry of Food & Drug Safety</i>); Kim, Eunkyo (<i>Medical Devices Research Division</i>); Lee, Jiwon (<i>Ministry of Food & Drug Safety</i>); Na Young, Kwon (<i>Ministry of Food & Drug Safety</i>); Kim, Mi Hye* (<i>Ministry of Food & Drug Safety</i>)	FrDT6-08.4	16:12-16:14 Effect of FGF2-Driven Preconditioning on Differentiation Potentials of Adipose-Derived Stem Cells Lee, EunAh* (<i>Kyung Hee Univ.</i>); Lee, Ji Soo (<i>Kyung Hee Univ.</i>); Kim, Dae-Kwan (<i>Kyung Hee Univ.</i>); Oh, Tong In (<i>Kyunghee Univ.</i>); Woo, Eung Je (<i>Kyung Hee Univ.</i>)	FrDT6-13.2
16:18-16:20 PU/PEG Blend Scaffolds Prepared by Electrospinning for Small-Diameter Vascular Tissue Engineering Seol, Bokyung (<i>Daelim Univ.</i>); Shin, Ji-Yean (<i>Daelim Univ.</i>); Yun, Yonghyeon* (<i>Daelim Univ.</i>); Lee, Deuk Yong (<i>Daelim Univ.</i>); Kim, Bae-Yeon (<i>Univ. of Incheon</i>)	FrDT6-08.5	FrDT7-01: 16:10-17:10 Motor Neuroprostheses – Robotics (Poster Session)	Herrick Room
FrDT6-09: 16:10-17:10 Scaffolds in Tissue Engineering – Biofabrication (Poster Session)	Zworykin Room	16:10-16:12 A Robotic Tool to Mimic the Human Lumbar Flexion and Evaluate the Efficacy of CFRP-Based Orthoses to Prevent Backbone Aches Kato, Yoshitaka* (<i>Kyushu Institute of Tech.</i>); Matsuda, Akira (<i>Kyushu Institute of Tech.</i>); Yoshida, Yuki (<i>Kyushu Institute of Tech.</i>); Wagatsuma, Hiroaki (<i>Kyushu Institute of Tech.</i>)	FrDT7-01.1
16:10-16:12 Biodegradation and Biocompatibility of Poly L-Lactic Acid Implantable Mesh in Rats Yoon, Sang-Don (<i>Sungkyunkwan Univ.</i>); Park, Duk-In (<i>Korea Conformity Lab</i>); Song, Moon-Yong (<i>Korea Conformity Lab</i>); Hur, Su-Gil (<i>Korea Conformity Lab</i>); Kwon, Young-Sam* (<i>Kyungpook National Univ.</i>)	FrDT6-09.1	FrDT7-02: 16:10-17:10 Neural Interfaces – Bioelectric Sensors (Poster Session)	Herrick Room
16:12-16:14 In-Vitro Nasal Mucous Membrane Gland-Like Structure Formation on a Microfluidic Chip Na, Kyuhwan* (<i>Korea University</i>); Kim, Hyunho (<i>Korea University</i>); Jun, Yesl (<i>Korea University</i>); Cho, Youngkyu (<i>Korea University</i>); Chung, Seok (<i>Korea University</i>)	FrDT6-09.2	16:10-16:12 Dopamine Sensor with Gold Nanowires for In-Vitro Study of Dopaminergic Neurons Han, Seonhye (<i>Norfolk State Univ.</i>); Kim, Min Hyuck (<i>Norfolk State Univ.</i>); Freeman, Montrey (<i>Norfolk State Univ.</i>); Koeh, Obadiah (<i>Norfolk State Univ.</i>); Jackson, Guy (<i>Norfolk State Univ.</i>); Yoon, Hargsoon* (<i>Norfolk State Univ.</i>)	FrDT7-02.1
16:14-16:16 A Multi-Nozzle Bioprinting System with Single Rotating Stage for Fabrication of Tubular Construct Choi, Jaesoon* (<i>Asan Institute for Life Sciences, Asan Medical Center</i>); Park, Sanghoon (<i>Asan Medical Center</i>)	FrDT6-09.3	FrDT7-03: 16:10-17:10 Neural Interfaces – Biomaterials (Poster Session)	Herrick Room
		16:10-16:12 A Feasibility Study for Carbon Nanotube Bundle as a Highly Thin and Flexible Cochlear Electrode Array Choi, Gwang Jin* (<i>Seoul Natl. Univ.</i>); Lim, Yoonseob (<i>Korea Institute of Science & Tech.</i>); Gwon, T.M. (<i>Seoul Natl. Univ.</i>); Kim, S.M. (<i>Korea Institute of Science & Tech. Jeonbuk</i>); Jun, S.B. (<i>Ewha Womans Univ.</i>); Kim, S.J. (<i>Seoul Natl. Univ.</i>)	FrDT7-03.1
		FrDT7-04: 16:10-17:10 Neural Interfaces – Body Interfaces (Poster Session)	Herrick Room
		16:10-16:12 Investigation of Frequency Bands Associated with Concentration Choi, Ga-Young (<i>Kumoh National Institute of Technology</i>); Choi, Soo-In (<i>Kumoh National Institute of Technology</i>); Hwang, Han-Jeong* (<i>Kumoh National Institute of Technology</i>)	FrDT7-04.1

16:12-16:14	FrDT7-04.2	16:12-16:14	FrDT7-07.2
Surgical Evaluation of a Full-Body Prosthetic LaRocco, John* (<i>Univ. of Canterbury</i>); Li, Pengwei (<i>Harbin Medical Univ.</i>); Ren, Xiaoping (<i>Loyola Univ. in Chicago</i>)		Microelectrode Modification with Macroporous PEDOT/PSS to Enhance Neuronal Recording and Stimulation Agrawe, Zaid* (<i>University of Auckland</i>); Patel, Nitish (<i>University of Auckland</i>); Montgomery, Johanna (<i>The University of Auckland, Centre for Brain Research</i>); Travas-Sejdic, Jadranka (<i>The University of Auckland</i>); Svirskis, Darren (<i>The University of Auckland, School of Pharmacy</i>)	
16:14-16:16	FrDT7-04.3	16:14-16:16	FrDT7-07.3
Towards a Cortico-Thalamic Responsive Deep Brain Stimulation for an Improved Treatment of Essential Tremor Opri, Enrico (<i>University of Florida</i>); Molina, Rene (<i>University of Florida</i>); Gunduz, Aysegul* (<i>University of Florida</i>)		Customized Multi-Well Microelectrode Array System for Massive Electrical Recordings from Neuronal Cultures Kim, Daejeong (<i>KAIST</i>); Kang, Hongki (<i>KAIST</i>); Nam, Yoonkey* (<i>Korea Advanced Inst. of Science and Technology</i>)	
FrDT7-05: 16:10-17:10	Herrick Room	16:16-16:18	FrDT7-07.4
Neural Interfaces – Cellular (Poster Session)		MEMS Fabrication of Neural Electrode with Microchannel using Photosensitive Polyimide Jung, Woohyun (<i>Korea Institute of Science and Tech.</i>); Park, HyungDal (<i>Korea Institute of Science and Tech.</i>); Choi, Wonsuk (<i>Korea Institute of Science and Tech.</i>); Kim, Ockchul (<i>Univ. of Science and Tech.</i>); Jung, Sunyoung (<i>Korea Institute of Science and Tech.</i>); Chung, Seok (<i>Korea Univ.</i>); Kim, Jinseok* (<i>Korea Institute of Science and Tech</i>)	
16:10-16:12	FrDT7-05.1	16:18-16:20	FrDT7-07.5
The Effect of Cell Culture Passage on the Viability and Differentiation Capacity of Human Stem Cells in Rat Sciatic Nerve Regeneration Du, Jian (<i>University of Maryland School of Medicine</i>); Xu, Cynthia (<i>University of Maryland, School of Medicine</i>); Zhang, Yifan (<i>Johns Hopkins University</i>); Jia, Xiaofeng* (<i>University of Maryland School of Medicine, Johns Hopkins Unvers</i>)		Drug Delivery to Localized Cell with Microbot Manipulated by Light and Magnetic Fields Jang, Minsu (<i>Korea Institute of Science and Technology</i>); Kim, Hyeon (<i>Southern Methodist University</i>); Kim, Ockchul (<i>University of Science and Technology</i>); Um, Soong Ho (<i>Sungkyunkwan University</i>); Kim, MinJun (<i>Drexel University</i>); Kim, Jinseok* (<i>Korea Institute of Science and Tech</i>)	
16:12-16:14	FrDT7-05.2	16:20-16:22	FrDT7-07.6
Low-Level Light Therapy Promotes Trigeminal Ganglion Neuron Sprouting Seonho, Park (<i>Gwangju Institute of Science and Tech.</i>); Chung, Euiheon* (<i>Gwangju Institute of Science and Tech.</i>)		Neural Interface for Regeneration of Nerve and Recovery of Motor Function Choi, Wonsuk (<i>Korea Institute of Science and Tech.</i>); Park, HyungDal (<i>Korea Institute of Science and Tech.</i>); Jung, Sunyoung (<i>Korea Institute of Science and Tech.</i>); Kim, Ockchul (<i>Univ. of Science and Tech.</i>); Jung, Woohyun (<i>Korea Institute of Science and Tech.</i>); Park, Jong Woong (<i>Korea Univ.</i>); Kim, Jinseok* (<i>Korea Institute of Science and Tech</i>)	
FrDT7-06: 16:10-17:10	Herrick Room	FrDT7-08: 16:10-17:10	Herrick Room
Neural Interfaces – Implantable Systems (Poster Session)		Neural Interfaces – Neuromorphic Engineering (Poster Session)	
16:10-16:12	FrDT7-06.1	16:10-16:12	FrDT7-08.1
A Fabrication Method of an Interconnection Cable Integrated with Microfluidic Channels Kang, YooNa* (<i>DGIST (Daegu Gyeongbuk Institute of Science & Technology)</i>); Chou, Namsun (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>); Kim, Sohee (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>)		Event-Based Closed-Loop Bidirectional Neuromorphic Neural Engineering Platform Park, Jongkil* (<i>ETRI</i>); Kim, Yong Hee (<i>ETRI</i>); Jung, Sang-Don (<i>ETRI</i>)	
16:12-16:14	FrDT7-06.2	FrDT7-09: 16:10-17:10	Herrick Room
Polymer Packaging for Integrated Circuitry in Neural Interfaces Yoo, James* (<i>University of Southern California (USC)</i>); Scholten, Kee (<i>University of southern California</i>); Meng, Ellis (<i>University of Southern California</i>)		Neural Interfaces – Tissue-electrode interface (Poster Session)	
16:14-16:16	FrDT7-06.3	16:10-16:12	FrDT7-09.1
A Polymer-Based Intracochlear Electrode Array for Animal Study Min, Kyou Sik* (<i>Seoul National Univ.</i>); Kim, Jinwon (<i>Seoul National Univ.</i>); Kim, Doo Hee (<i>Yonsei Univ.</i>); Gwon, Tae Mok (<i>Seoul National Univ.</i>); Kim, Sung June (<i>Seoul National Univ.</i>); Oh, Seung Ha (<i>Seoul National Univ. of Medicine</i>)		Analysis of the Porous Stimulation Electrode Characteristic using Electrochemical Impedance Spectroscopy in Visual Prostheses Kuwabara, Mariko* (<i>Nara Institute of Science & Technology</i>); Tashiro, Hiroyuki (<i>Kyushu University</i>); Terasawa, Yasuo (<i>Nidek Co., Ltd.</i>); Nakano, Yukari (<i>Nidek Co., Ltd.</i>); Noda, Toshihiko (<i>Nara Institute of Science and Technology</i>); Tokuda, Takashi (<i>Nara Institute of Science and Technology</i>); Ohta, Jun (<i>Nara Institute of Science and Technology</i>)	
16:16-16:18	FrDT7-06.4	FrDT8-01: 16:10-17:10	Schwan Room
An Implantable Neural Stimulation System using Wireless Power Transmission for Freely Moving Animals Kim, Tae-Woo* (<i>SAIHST, Sungkyunkwan Univ.</i>); Park, Eun-Kyoung (<i>Hanyang Univ.</i>); Heo, Man seung (<i>Samsung Medical Center</i>); Cho, Baek Hwan (<i>Samsung Advanced Institute of Technology</i>); Lee, Kyu-Sung (<i>Samsung Medical Center</i>)		Human Performance (Poster Session)	
16:18-16:20	FrDT7-06.5	16:10-16:12	FrDT8-01.1
A Wireless Implantable Neural Interface System for Concurrent Peripheral Nerve Stimulation and Recording Shon, Ahnsei (<i>University of Colorado Boulder</i>); Chu, Jun-Uk* (<i>Korea Institute of Machinery and Materials</i>); Youn, Inchan (<i>Korea Institute of Science and Technology</i>)		Effect of Viewing Medium on Arm Reaching in a 3D Virtual Environment Fan, Mengying (<i>Sun Yat-sen University</i>); Luo, Jie* (<i>Sun Yat-sen University</i>); Song, Rong (<i>Sun Yat-sen University</i>); Li, Le (<i>The First Affiliated Hospital, Sun Yat-sen University</i>)	
FrDT7-07: 16:10-17:10	Herrick Room		
Neural Interfaces – Microelectrode Technology (Poster Session)			
16:10-16:12	FrDT7-07.1		
Characterization of Au Nanoparticles (AuNPs) and PEDOT Plated Tetrodes and Thalamic Neural Signal Detecting in Vivo Lee, Daae (<i>Chungbuk National Univ.</i>); Tran, Bao Tram (<i>Chungbuk National Univ.</i>); Moon, Hyeongcheol (<i>Chungbuk National Univ.</i>); Park, Young Seok* (<i>Chungbuk National Univ.</i>)			

- 16:12-16:14 FrDT8-01.2
A Study on Training Effect of Passive Isokinetic Ankle Movement for the Elderly with Hemiparesis using a Novel 3-D Ankle Movement Trainer
 Cho, Sangwoo (*Natl. Rehabilitation Center Research Institute*); Cho, Ji-Eun (*Natl. Rehabilitation Center*); Lee, Hwiyoung (*Natl. Rehabilitation Center*); Koo, Dohoon (*Natl. Rehabilitation Center*); Shin, Joon-Ho (*Natl. Rehabilitation Center*); Kim, Hogene* (*Natl. Rehabilitation Center*)
- 16:14-16:16 FrDT8-01.3
Simultaneous EEG Recording of Competitive-Type Consumer Game Players
 Yokota, Yusuke* (*National Institute of Information and Communications Technology*); Naruse, Yasushi (*National Institute of Information and Communications Technology*)
- FrDT8-02: 16:10-17:10 Schwan Room
Human Performance – Activities of Daily Living (Poster Session)
- 16:10-16:12 FrDT8-02.1
Cognitive Haptic based Rehabilitation System for Patient-Centric Home Therapy
 Pareek, Shrey (*Univ. of Illinois at Urbana-Champaign*); Chembrammel, Pramod (*Univ. of Illinois at Urbana-Champaign*); Esfahani, Ehsan (*Univ. at Buffalo, SUNY*); Kesavadas, T.* (*Univ. of Illinois at Urbana-Champaign*)
- FrDT8-03: 16:10-17:10 Schwan Room
Human Performance – Cognition (Poster Session)
- 16:10-16:12 FrDT8-03.1
Enhanced Intersubject Correlations of Spontaneous Eyeblinks during Watching Movie
 Shin, Young Seok (*Eulji Univ.*); Kim, Woo Seop (*Eulji Univ.*); Shin, I Su (*Eulji Univ.*); Song, Jung Yong (*Eulji Univ.*); Jung, Duk Young* (*Eulji Univ.*); Dong Pyo, Jang (*Hanyang Univ.*); Kim, In Young (*Hanyang Univ.*); Kim, Ku Ho (*Eulji Univ.*)
- 16:12-16:14 FrDT8-03.2
Neurofeedback Sessions Measurement based on the User's Peak Alpha Frequency
 Peralta-Malvez, Lizbeth* (*Univ. de las Americas Puebla*); Etcheverry, Gibran (*Univ. de las Americas Puebla*)
- FrDT8-04: 16:10-17:10 Schwan Room
Human Performance – Engineering (Poster Session)
- 16:10-16:12 FrDT8-04.1
Balance Control at Standing and Half-Rising Postures using Visual Biofeedback and Weight Support System
 Shiraishi, Ryoichiro* (*Univ. of Tsukuba*); Kawamoto, Hiroaki (*Univ. of Tsukuba*); Sankai, Yoshiyuki (*Univ. of Tsukuba*)
- FrDT8-06: 16:10-17:10 Schwan Room
Human Performance – Gait (Poster Session)
- 16:10-16:12 FrDT8-06.1
Evaluation of the Connection of Walking Training Apparatus for Crutch-Walk Training
 Iioka, Toshimitu* (*Tokyo Denki Univ.*); Inoue, Jun (*Tokyo Denki Univ.*); Hanazaki, Izumi (*Tokyo Denki Univ.*); Kawamura, Kazuya (*Chiba Univ.*); Kijima, Yoshifumi (*Fujimoto Hayasuzu Hospital*); Fujimoto, Toshiro (*Fujimoto Hayasuzu Hospital*)
- 16:12-16:14 FrDT8-06.2
Validation of Gait Detection and Analysis
 Pham, H. Minh* (*Christian-Albrechts-University*); Maetzler, Walter (*Kiel University*); Elshehabi, Morad (*Dept. of Neurology, Christian-Albrecht-University, Kiel*)
- 16:14-16:16 FrDT8-06.3
Verification of Lower Limb Muscle Force by Ankle-Foot Orthosis
 Yamamoto, Masataka* (*Hyogo Prefectural Awaji Medical Center*); Shimatani, Koji (*Prefectural Univ. of Hiroshima*); Hasegawa, Masaki (*Faculty of Health and Welfare, Prefectural Univ. of Hiroshi*); Murata, Takuya (*Hiroshima Univ.*); Kurita, Yuichi (*Hiroshima Univ.*)
- 16:16-16:18 FrDT8-06.4
Changes of Support Moment of Elderly Gait by Achilles Tendons Vibration
 Kim, Dong-Wook (*Chonbuk National Univ.*); Kwak, Kiyoungh* (*Chonbuk National Univ.*); Kim, Huigyun (*Chonbuk National Univ.*); Ko, Seunghun (*Chonbuk National Univ.*)
- 16:18-16:20 FrDT8-06.5
A Study on the Detection of the Ramp Angle during Locomotion Transition
 Jung, Jiuk* (*Korea Institute of Machinery and Materials*)
- 16:20-16:22 FrDT8-06.6
A Gait Analysis System for Neurologic Diseases using Two Ankle-Worn Accelerometers
 Lee, Suhwan (*Soonchunhyang Univ*); Park, Jihwan (*Soonchunhyang Univ.*); Im, Soobin (*Soonchunhyang Univ Bucheon Hospital*); Nam, Yunyoung* (*Soonchunhyang Univ.*)
- FrDT8-07: 16:10-17:10 Schwan Room
Human Performance – Modelling and Prediction (Poster Session)
- 16:10-16:12 FrDT8-07.1
Toward a Simple Estimation of Maximum Joint Moment during Sit to Stand
 Hwang, Seoyoon (*DGIST (Daegu Gyeongbuk Institute of Science and Technology)*); Lee, Yang Soo (*Kyungpook National University Hospital*); Kim, Jonghyun* (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)
- 16:12-16:14 FrDT8-07.2
Simulation of the Effect of Decreased Multifidus Muscle Bulk on Lumbar Kinematics using Force-Dependent Kinematics Analysis
 Ogata, Yuta* (*Kurume University*); Yamamoto, Naosuke (*Kurume University*); Tagawa, Yoshihiko (*Kurume University*); Shiba, Naoto (*Kurume University Hospital*)
- FrDT8-09: 16:10-17:10 Schwan Room
Motor Learning, Neural Control, and Neuromuscular Systems (Poster Session)
- 16:10-16:12 FrDT8-09.1
Variation of Intrinsic and Reflex Contributions to Ankle Stiffness during Time-Varying Contractions
 Golkar, Mahsa* (*McGill Univ*); Sobhani Tehrani, Ehsan (*McGill University*); Kearney, Robert Edward (*McGill University*)
- 16:12-16:14 FrDT8-09.2
Neural Activity Evoked by Sinusoidal Electrical Stimulation in the Reward Neural Circuit of Freely Moving Rats
 Cho, Yoon Kyung (*Ewha Univ.*); Lee, Jee Won (*Ewha Womans Univ.*); Lee, Youjin (*Ewha Womans Univ.*); Kim, Soonyoung (*Ewha Womans Univ.*); Jeong, Hee Soo (*Ewha Womans Univ.*); Kong, Chanho (*Yonsei Univ.*); Shin, Jaewoo (*Yonsei Univ.*); Koh, Chin Su (*Yonsei Univ.*); Jung, Hyun Ho (*Yonsei Univ.*); Chang, Jin Woo (*Yonsei Univ.*); Jun, Sang Beom* (*Ewha Womans Univ.*)
- 16:14-16:16 FrDT8-09.3
Evoked Electromyogram during Eccentric Contraction
 Yamamoto, Naosuke* (*Kurume University*); Tagawa, Yoshihiko (*Kurume University*); Takano, Yoshio (*Teikyo University*)
- 16:16-16:18 FrDT8-09.4
Analysis of Lower Limb Muscles during Obstacle Crossing using Fuzzy Approximate Entropy
 Ma, Chenming (*School of Engineering, Sun Yat-sen Univ.*); Chen, Na (*Dept. of Rehab. Medicine, First Affiliated Hospital*); Song, Rong (*Sun Yat-sen Univ.*); Li, Le* (*The First Affiliated Hospital, Sun Yat-sen Univ.*); Luo, Jie (*Sun Yat-sen Univ.*)

FrDT8-11: 16:10-17:10 Schwan Room
Neurological Disorders – Diagnostic and Evaluation Techniques
(Poster Session)

16:10-16:12 FrDT8-11.1
Abnormal Physiological Network Characteristics in Patients with Idiopathic REM Sleep Behavior Disorder during REM Sleep
Her, Seong Jin (*Yonsei University*); Cha, Kwang Su (*Yonsei University*); Choi, Jeong Woo (*Yonsei University*); Jung, Ki-Young (*Seoul National University College of Medicine*); Kim, Kyung Hwan* (*Yonsei University*)

FrDT8-12: 16:10-17:10 Schwan Room
Neuromuscular Systems – EMG Processing and Applications (Poster Session)

16:10-16:12 FrDT8-12.1
Topology based Data Analysis Determines Subgroups of the Forearm EMG Signal Features
Phinyomark, Angkoon* (*ISI Foundation*); Patania, Alice (*ISI Foundation*); Ibáñez-Marcelo, Esther (*ISI Foundation*); Khushaba, Rami N. (*University of Technology, Sydney (UTS)*); Petri, Giovanni (*ISI Foundation*)

16:12-16:14 FrDT8-12.2
Bilateral Symmetry of Upper Limb Muscle Synergies during Postural Tasks
Zhang, Bin (*Shanghai Jiao Tong University*); Zhang, Dingguo* (*Shanghai Jiao Tong University*)

16:14-16:16 FrDT8-12.3
Development of Hands-Free Pointing Device using Facial Electromyogram
Hori, Junichi* (*Niigata University*)

FrDT8-13: 16:10-17:10 Schwan Room
Neuromuscular Systems – Postural and Balance (Poster Session)

16:10-16:12 FrDT8-13.1
On the Consistency of Postural Responses Influenced by Gaze Change and Auditory Stimulation
Hata, K.* (*Kogakuin Univ.*); Fukuoka, Y. (*Kogakuin Univ.*)

FrDT9-01: 16:10-17:10 Plonsey Room
Motor Neuroprostheses – Neuromuscular Stimulation (Poster Session)

16:10-16:12 FrDT9-01.1
A Neural Network Algorithm for Detection of Heel Strike and Heel Off Events using Inertial Sensors to Trigger a Drop Foot Stimulator
Aqueveque, Pablo* (*University of Concepcion*); Gomez, Britam (*University of Concepcion*); Saavedra, Francisco (*University of Concepcion*); Germany, Enrique I. (*University of Concepcion*)

FrDT9-02: 16:10-17:10 Plonsey Room
Motor Neuroprostheses – Prostheses (Poster Session)

16:10-16:12 FrDT9-02.1
Decoding of Peripheral Nerve Activity to Restore Motor Function in Patients with Upper Limb Amputation
Chu, Jun-Uk* (*Korea Institute of Machinery and Materials*)

FrDT9-03: 16:10-17:10 Plonsey Room
Neural Stimulation (Poster Session)

16:10-16:12 FrDT9-03.1
Effect of Skull and CSF Thicknesses in Multi-Array Tdcs
Im, Cheolki (*Gwangju Institute of Science and Tech.*); Seo, Hyeon (*Gwangju Institute of Science and Tech.*); Jun, Sung Chan* (*Gwangju Institute of Science and Tech.*)

16:12-16:14 FrDT9-03.2
Transcranial Direct Current Stimulation Regulates Saturated Long-Term Potentiation in Visual Cortex of Rats
Koo, Ho (*Wonkwang Univ.*); Kim, Min Sun* (*Wonkwang Univ.*)

16:14-16:16 FrDT9-03.3
Reproduction of the Object Stroking Sense by the Electrical Stimulation

Kitani, Yuki* (*Kindai Univ. Graduate School of Engineering, Mechanical Eng*); Oyama, Nozomi (*Kindai Univ. Faculty of Science and Engineering*); Nochino, Teruaki (*Osaka Univ.*); Okada, Shima (*Faculty of Science and Engineering, Kinki Univ.*); Kosaka, Manabu (*Kindai Univ.*)

16:16-16:18 FrDT9-03.4
A Miniaturized, Implantable Motor Cortex Stimulator System for Neuropathic Pain Rat Model

Ahn, Seung-Hee* (*Seoul National University*); Yun, Seunghyeon (*Seoul National University*); Park, Jeong Hoan (*Seoul National University*); Gwon, Tae Mok (*Seoul National University*); Kim, Chaebin (*Seoul National University*); Shim, Shinyong (*Seoul National University*); Koh, Chin Su (*Yonsei University*); Yoon, Min-Sik (*Yonsei University*); Kong, Chanho (*Yonsei University*); Jung, Hyun Ho (*Yonsei University*); Jun, Sang Beom (*Ewha Womans University*); Chang, Jin Woo (*Yonsei University*); Kim, Sung June (*Seoul National University*)

16:18-16:20 FrDT9-03.5

Retina Stimulation with Low-Frequency Ultrasound in Vivo
Qiuju, Jiang (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Zhao, Huixia (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*); Qiu, Weibao* (*Shenzhen Institutes of Advanced Tech., Chinese Academy of S*)

16:20-16:22 FrDT9-03.6

Neural Spike Trains in Response to Rate-Amplitude-Modulated Pulsatile Electric Stimuli in an Auditory Nerve Fiber Model
Mino, Hiroyuki* (*Kanto Gakuin University*)

16:22-16:24 FrDT9-03.7

Periodic Electric Stimuli Can Enhance the Detection of Subthreshold Signals in a Hippocampal CA1 Neuron Model
Mori, Ryosuke (*Kanto Gakuin Univ.*); Mino, Hiroyuki* (*Kanto Gakuin Univ.*); Durand, D. (*Case Western Reserve Univ.*)

16:24-16:26 FrDT9-03.8

Subject-Specific Numerical Simulation of Low Intensity Focused Ultrasound Fields in the Brain
Pahk, Ki Joo* (*Center for Bionics, Biomedical Research Institute, Korea Institu*); Park, Tae Young (*Sangji University*); Kim, Hyungmin (*Korea Institute of Science and Technology*)

16:26-16:28 FrDT9-03.9

A Multi-Channel Asynchronous Neurostimulator to Mimic Neural Code for Cognitive Prosthesis
Elyahoodayan, Sahar* (*University of Southern California*); Berger, Theodore (*University of Southern California*); Song, Dong (*University of Southern California*)

16:28-16:30 FrDT9-03.10

3D-Printed Low-Intensity Focused Ultrasound (LIFU) Guidance System: An Accuracy Assessment Study
Joe, Haeyoung* (*Korea Institute of Science and Technology(KIST) and Korea Univer*); Pahk, Ki Joo (*Center for Bionics, Biomedical Research Institute, Korea Institu*); Kim, Hyungmin (*Korea Institute of Science and Technology*)

16:30-16:32 FrDT9-03.11

Optical Monitoring Zinc Transmission Evoked by Electrical Stimulation in the Mouse Hippocampus
Kim, Soonyoung (*Ewha Womans University*); Cho, Yoon Kyung (*Ehwa University*); Jeong, Hyesun (*Agency for Defense Development*); Jun, Sang Beom* (*Ewha Womans University*)

16:32-16:34 FrDT9-03.12

Setup for Experiments in Focused Pulsed Ultrasound in Translational Biomedicine
Krizaj, Dejan* (*Univ. of Ljubljana, Faculty of Electrical Engineering*); Gradišek, Miha (*Univ. of Ljubljana, Faculty of Electrical Engineering*); Kolmanič, Kaja (*Univ. of Ljubljana, Faculty of Medicine*); Planinc, Domen (*Univ. of Ljubljana, Faculty of Medicine*); Živin, Marko (*Univ. of Ljubljana, Faculty of Medicine*)

July 14 Friday

FrDT9-04: 16:10-17:10 Neurorehabilitation (Poster Session)	Plonsey Room	16:30-16:32 Clonus Detection using Inertia Sensor for Ankle Joint in Children with Cerebral Palsy Choi, Seoyoung* (<i>Daegu Gyeonbuk Institute of Science & Technology</i>); Kim, Jonghyun (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>)	FrDT9-04.11
16:10-16:12 Perception Frequency and Intensity of the Electrically-Elicited Vibration Ma, Joohyeong (<i>Kyung Hee University</i>); Khang, Gon* (<i>Kyung Hee University</i>); Song, Tongjin (<i>Jungwon University</i>)	FrDT9-04.1	16:32-16:34 Symmetry Assistance Effect for Sit-to-Stand Movement with a Wearable Hip-Assist Robot in Stroke Patients Lee, Hwang-Jae (<i>Samsung Medical Center</i>); Lee, Suhyun (<i>Samsung Medical Center</i>); Kim, Dong-Seok (<i>Sungkyunkwan University</i>); Chang, Won Hyuk (<i>Samsung Medical Center, Sungkyunkwan University School of Medici</i>); Kim, Kyungrock (<i>samsung</i>); Choi, Byung-Ok (<i>Sungkyunkwan University School of Medicine</i>); Ryu, Gyu Ha (<i>Samsung Medical Center</i>); Kim, Yun-Hee* (<i>Samsung Medical Center</i>)	FrDT9-04.12
16:12-16:14 Multi Attitude and Heading Reference System-Based Knee Joint Angle Monitoring for Knee Injury Patients Hur, Sue Jeong (<i>Carnegie Mellon University</i>); Song, Kang-Il* (<i>Korea Institute of Science and Technology</i>); Jeong, Gu An (<i>Korea Institute of Science and Technology</i>); Youn, Inchan (<i>Korea Institute of Science and Technology</i>)	FrDT9-04.2	FrDT10-01: 16:10-17:10 Bioinformatics – Bioinformatics for Health Monitoring (Poster Session)	Schmitt Room
16:14-16:16 A Development of Variable Capacitance Multi-Point Pressure Sensor for Sensing Grip Power Distribution of an Artificial Hand Tsueda, Junya* (<i>Toaki Univ.</i>); Magatani, Kazushige (<i>Tokai Univ.</i>)	FrDT9-04.3	16:10-16:12 Estimation Model for Cardiopulmonary Fitness with a Wearable Sensor in Daily Life Kwon, Soon Bin (<i>Seoul National University</i>); Ahn, Joong Woo (<i>Seoul National University</i>); Kim, Hee Chan* (<i>Seoul National University</i>); Yoon, Hyung-Jin (<i>Seoul National University</i>)	FrDT10-01.1
16:16-16:18 Electromyogram Analysis System for the Electric Prosthetic Forearm Control Ariga, Shoko* (<i>Tokai Univ.</i>); Magatani, Kazushige (<i>Tokai Univ.</i>)	FrDT9-04.4	16:12-16:14 Relation between Severity of Sleep Apnea Syndrome and Mental Healthiness Evaluated from Voice Nakamura, Mitsuteru* (<i>The University of Tokyo</i>); Shinohara, Shuji (<i>The University of Tokyo</i>); Omiya, Yasuhiro (<i>PST Inc.</i>); Hagiwara, Naoki (<i>PST Inc.</i>); Higuchi, Masakazu (<i>The University of Tokyo</i>); Mitsuyoshi, Shunji (<i>Dept. of Verbal Analysis of Pathophysiology Graduate School of M</i>); Danno, Hirotsuke (<i>Minatomirai Medical Clinic</i>); Tanaka, Shun-ichi (<i>Minatomirai Medical Clinic</i>); Tokuno, Shinichi (<i>The University of Tokyo</i>)	FrDT10-01.2
16:18-16:20 Muscle Afferent Activation in Response to Low-Intensity Pulsed Ultrasound Stimulation Han, Sungmin (<i>Korea Institute of Science and Technology</i>); Oh, Sungjin (<i>Korea Institute of Science and Technology</i>); Kim, DongHwee (<i>Korea Institute of Science and Technology</i>); Youn, Inchan* (<i>Korea Institute of Science and Technology</i>)	FrDT9-04.5	FrDT10-03: 16:10-17:10 General and Theoretical Informatics – Algorithms (Poster Session)	Schmitt Room
16:20-16:22 Cortical Activation during Wearable Robot-Assisted Gait in Patients with Chronic Stroke Lee, Suhyun (<i>Samsung Medical Center</i>); Lee, Hwang-Jae (<i>Samsung Medical Center</i>); Kim, Dong-Seok (<i>Sungkyunkwan Univ.</i>); Chang, W.H. (<i>Samsung Medical Center, Sungkyunkwan Univ. School of Medici</i>); Choi, B.-O. (<i>Sungkyunkwan Univ. School of Medicine</i>); Ryu, G.H. (<i>Samsung Medical Center</i>); Kim, Y.-H.* (<i>Samsung Medical Center</i>)	FrDT9-04.6	16:10-16:12 An Analysis of Gait Imbalance with Walking-Induced Fatigue Cho, Wooheyoung (<i>INHA University</i>); Quan, Chenghao (<i>INHA University</i>); Kim, Yeon-Wook (<i>INHA University</i>); Kwon, Jang Woo (<i>INHA University</i>); Lee, Sangmin* (<i>INHA University</i>)	FrDT10-03.1
16:22-16:24 EEG-Based Gait Intention Recognition of Subacute Stroke Patients using Convolutional Neural Network Moon, Jeong Wook (<i>Seoul National University</i>); Choi, Junhyuk (<i>Korea Institute of Science and Tech.</i>); Chong, Eunsuk (<i>Korea Institute of Science and Tech.</i>); Kim, Seung-Jong (<i>Korea Institute of Science and Tech.</i>); Lee, Jong Min (<i>Korea Institute of Science and Tech.</i>); Kim, Hyungmin* (<i>Korea Institute of Science and Tech.</i>)	FrDT9-04.7	16:12-16:14 A Novel Accelerometer-Based Method for Stride Length Estimation Boutaayamou, Mohamed* (<i>University of Liege</i>); Schwartz, Cédric (<i>University of Liège</i>); Denoël, Vincent (<i>University of Liege</i>); Croisier, Jean-Louis (<i>University of Liege</i>); Verly, Jacques (<i>University of Liege</i>); Garraux, Gaëtan (<i>University of Liège</i>); Brûls, Olivier (<i>University of Liege</i>)	FrDT10-03.2
16:24-16:26 A Study on Improvement of Neurological Rehabilitation in the Chemotherapy Rat Model by using Scene Training Yu, Qianhengyuan (<i>Zunyi Medical University</i>); Zhao, Lei (<i>Zunyi Medical University</i>); Wang, Jun (<i>Zunyi Medical University</i>); Wang, Azhen (<i>Zunyi Medical University</i>); Qin, Ling (<i>Zunyi Medical University</i>); Li, Jianping (<i>Zunyi Medical University</i>); Yang, Lin* (<i>Zhuhai Campus, Zunyi Medical University</i>)	FrDT9-04.8	16:14-16:16 Self-Adaptive Multi-Objective Evolutionary Algorithm for Molecular Design Kannas, Christos* (<i>University of Cyprus</i>); Pattichis, Constantinos (<i>University of Cyprus</i>)	FrDT10-03.3
16:26-16:28 Functional Electrical Stimulation (FES) Combined with Game Suppresses Alpha Rhythm in EEG In, Young-Ryeol (<i>Keimyung University</i>); Ku, Jeonghun* (<i>Keimyung University</i>)	FrDT9-04.9	FrDT10-04: 16:10-17:10 General and Theoretical Informatics – Artificial Intelligence (Poster Session)	Schmitt Room
16:28-16:30 Toward a Simple Reaching Movement Training System with Joint Position Estimation for Upper Limb Rehabilitation Hwang, Yeji* (<i>DGIST</i>); Kim, Jonghyun (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>)	FrDT9-04.10	16:10-16:12 Machine Learning Algorithm to Classify Falls using Insole System Cates, Benjamin J. (<i>Sungkyunkwan University</i>); Sim, Taeyong (<i>Sungkyunkwan University</i>); Heo, Hyun Mu (<i>Sungkyunkwan University</i>); Kim, Kisun (<i>Swingbank Co. Ltd.</i>); Youn, Su Hyun (<i>Sungkyunkwan University</i>); Choi, Ahnryul* (<i>Catholic Kwandong University</i>); Mun, Joung Hwan (<i>Sungkyunkwan University</i>)	FrDT10-04.1

16:12-16:14 FrDT10-04.2
Development of the Health Management Platform using Physiological Signals of Musculoskeletal System based on Internet of Things
 Kim, Kyong (*Chunbuk Provincial Univ.*); Kim, Seong-Hyun* (*Chunbuk Provincial College*); Seol, Jeonga (*Chunbuk Provincial Univ.*); Cho, Ju Yeon (*Chunbuk Provincial Univ.*); Kim, Du Beom (*Chunbuk Provincial Univ.*); Kim, Tae Won (*Chunbuk Provincial Univ.*); Kim, Jae Jun (*Chonbuk National Univ. Automobile-parts & Mold Technology I*); Kim, Je-Nam (*CAMTIC Advanced Mechatronics Technology Institute for Commercial*); Chong, Woo-Suk (*CAMTIC Advanced Mechatronics Technology Institute for Commercial*)

FrDT10-05: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Big Data Analytics (Poster Session)

16:10-16:12 FrDT10-05.1
Selecting Diagnostic Parameters based on Pattern Identification of Functional Dyspepsia: Step 1– Literature Review and Expert Consensus Process
 Kim, Keun Ho* (*Korea Institute of Oriental Medicine*); Park, Jeong Hwan (*Korea Institute of Oriental Medicine*); Lee, Sanghun (*Korea Institute of Oriental Medicine*); Kim, Jihye (*Korea Institute of Oriental Medicine*)

FrDT10-06: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Computational Genotyping (Poster Session)

16:10-16:12 FrDT10-06.1
Drug Resistance Classification for Mycobacterium Tuberculosis using Multi-Output Model with Stacked Auto-Encoders
 Yang, Yang* (*Univ. of Oxford*); Clifton, David (*Univ. of Oxford*)

FrDT10-08: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Decision Support Systems (Poster Session)

16:10-16:12 FrDT10-08.1
Definition of a Decision Support System to Support Research on Head and Neck Cancer
 Lopez-Perez, Laura (*Universidad Politécnica de Madrid*); Hernandez, Liss (*Universidad Politécnica de Madrid*); Fico, Giuseppe* (*Technical University of Madrid*); Arredondo, Maria Teresa (*Technical University of Madrid*)

16:12-16:14 FrDT10-08.2
Sleep Apnea Syndrome Screening Algorithm using Support Vector Machine from Heart Rate Variability
 Nakayama, Chikao* (*Kyoto University*); Fujiwara, Koichi (*Kyoto University*); Matsuo, Masahiro (*Shiga University of Medical Science*); Kano, Manabu (*Kyoto University*); Kadotani, Hiroshi (*Shiga University of Medical Science*)

16:14-16:16 FrDT10-08.3
Seven Year Follow-Up of Electrode Impedance in Human Basal Ganglia
 Eisinger, Robert (*University of Florida*); Gunduz, Aysegul* (*University of Florida*)

FrDT10-09: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Machine Learning (Poster Session)

16:10-16:12 FrDT10-09.1
A Study on Automatic OWAS Classification of the Working Postures of a Caregiver
 Omure, Yu* (*Kyushu Institute of Technology*); Izumi, Hiroyuki (*University of Occupational and Environmental Health, Japan*); Shibata, Tomohiro (*Kyushu Institute of Technology*)

FrDT10-10: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Natural Language Processing (Poster Session)

16:10-16:12 FrDT10-10.1
Medical Question Answering Framework to Query Statistical Data
 Akhtar, Usman* (*Kyung Hee University*); Lee, Sungyoung (*Kyung Hee University*)

FrDT10-11: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Ontology (Poster Session)

16:10-16:12 FrDT10-11.1
Study on the Requirements for Designing Elderly-Friendly Health Management System based on Ontology
 Cho, Soo Jin (*Yonsei Univ. Health System*); Park, Hea Jeong (*Yonsei Univ. Health System*); Cho, Song Lee (*Yonsei Univ. Health System*); Lee, Sun-Jae (*Severance Hospital Yonsei Univ.*); Jang, HyeJung (*Yonsei Univ. Health System*); Lee, Sang Eun (*Yonsei Univ. Health System*); Chang, Hyuk-Jae (*Dept. of Internal Medicine, Severance Cardiovascular Hospit*); Han, Taehwa* (*Yonsei Univ. Health System*)

FrDT10-12: 16:10-17:10 Schmitt Room
General and Theoretical Informatics – Predictive Analytics (Poster Session)

16:10-16:12 FrDT10-12.1
Prediction of Glucose Level based on Time Series Analysis for Both Type1 and Type2 Diabetes
 Seo, Won Ju (*Pohang Univ. of Science and Technology*); Lee, Seung-Hyun (*POSTECH*); Kang, Wonok (*Pohang Univ. of Science and Technology (POSTECH)*); Park, Sooyoung (*Dept. of Statistics, Ewha Womans Univ., Seoul, South K*); Jin, Sang-Man (*Samsung Medical Center*); Park, Sung-Min* (*POSTECH*)

FrDT10-13: 16:10-17:10 Schmitt Room
Imaging Informatics – Augmented Reality (Poster Session)

16:10-16:12 FrDT10-13.1
A Framework for Deformation Estimation of Elastic Bodies from Monocular Images
 Nakao, Megumi* (*Kyoto Univ.*); Saito, Akira (*Graduate School of Informatics, Kyoto Univ.*); Matsuda, Tetsuya (*Kyoto Univ.*)

FrDT10-14: 16:10-17:10 Schmitt Room
Imaging Informatics – Image Analysis, Processing and Classification (Poster Session)

16:10-16:12 FrDT10-14.1
A Multimodal Smartphone-Based Skin-Care System for Cosmetic Application: Skin Tone and Skin Hydration Analysis
 Hwang, Minjoo* (*Daegu Gyeongbuk Institute of Science & Technology*); Kim, Sewoong (*Daegu Gyeongbuk Institute of Science & Technology*); Hwang, Jae Youn (*Daegu Gyeongbuk Institute of Science and Technology*)

16:12-16:14 FrDT10-14.2
Regional Detection of Hemorrhagic Transformation using Kernel Spectral Regression and Neural Networks on Multi-Modal MRI for Acute Ischemic Stroke
 Ma, Samantha J.* (*University of Southern California*); Yu, Songlin (*Beijing Tiantan Hospital, Capital Medical University*); Liebeskind, David S. (*University of California, Los Angeles*); Yan, Lirong (*University of Southern California*); Wang, Danny JJ (*University of Southern California*); Scalzo, Fabien (*UCLA*)

FrDT10-15: 16:10-17:10 Schmitt Room
Sensor Informatics – Behavioral Informatics (Poster Session)

16:10-16:12 FrDT10-15.1
A Study on Feature Analysis for Push and Stroke Manipulation of Elastic Objects
 Nakao, Megumi* (*Kyoto Univ.*); Matsuda, Tetsuya (*Kyoto Univ.*)

FrDT10-16: 16:10-17:10 Schmitt Room
Sensor Informatics – Multi-Sensor Data Fusion (Poster Session)

16:10-16:12 FrDT10-16.1
Design of Rule-Based Binary Logic Algorithm for Automated Fugl-Meyer Assessment
Lee, Seunghee* (*Daegu Gyeongbuk Institute of Science & Technology*); Kim, Jonghyun (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)

16:12-16:14 FrDT10-16.2
DEVOUR: Single Gesture Enable Armband based Diet Monitoring
Lee, Junghyo* (*Arizona State Univ.*); Paudyal, Prajwal (*Arizona State Univ.*); Banerjee, Ayan (*Computer Science*); Kim, Minho (*Arizona State Univ.*); Sadeghi, Koosha (*Arizona State Univ.*); Gupta, Sandeep K. S. (*Arizona State Univ.*)

FrDT10-17: 16:10-17:10 Schmitt Room
Sensor Informatics – Physiological Monitoring (Poster Session)

16:10-16:12 FrDT10-17.1
Relationship between Arousal Responses and Differential Rate of Pulse Rate in Young Male Subjects
Fujie, Tatsuro* (*Osaka Electro-Communication University*); Tagawa, Munenori (*Osaka electro-communication University*); Nakamura, Hideo (*Osaka Electro-Communication Univ*)

16:12-16:14 FrDT10-17.2
Personalised Patient Monitoring in Haemodialysis using Hierarchical Gaussian Processes
Zhu, Tingting (*University of Oxford*); Colopy, Glen Wright (*University of Oxford*); Pugh, Christopher (*University of Oxford*); Clifton, David* (*University of Oxford*)

FrDT10-18: 16:10-17:10 Schmitt Room
Sensor Informatics – Sensors and Sensor Systems (Poster Session)

16:10-16:12 FrDT10-18.1
Fatigue Estimation by Combination of the Facial Information and the Heart Rate Variability
Kaeokwunoi, Akkarawat (*Hankyong National University*); Kaewkannate, Kaniythika (*Hankyong National University*); Kim, Soochan* (*Hankyong National University*)

16:12-16:14 FrDT10-18.2
The Novel Wearable Heat and Cool Stamp Sensor for Automatic Body Temperature Regulation
Heo, Dayoung (*Keimyung Univ.*); Khayat, Karima (*Keimyung Univ.*); Kim, Dongyun (*Keimyung Univ.*); Kim, S.-C. (*Keimyung Univ.*); Lee, J.H.* (*Keimyung Univ., School of Medicine*)

FrDT10-19: 16:10-17:10 Schmitt Room
Sensor Informatics – Wearable Systems and Sensors (Poster Session)

16:10-16:12 FrDT10-19.1
Preliminary Study on Fall Type Identification using Waist-Attached IMU Signals
Lee, Jung Keun* (*Hankyong National Univ.*); Son, Jae Ik (*Hankyong National Univ.*); Jeon, Tae Hyeong (*Hankyong National Univ.*); Choi, Mi Jin (*Hankyong National Univ.*)

FrDT11-01: 16:10-17:10 Greatbatch Room
High throughput Data – Sequencing Analysis (Poster Session)

16:10-16:12 FrDT11-01.1
A Method to Detect Small Inversion Candidates of Hemophilia a Patients using Pindel
Nakanishi, Hiroki* (*Kogakuin University*); Inaba, Hiroshi (*Tokyo Medical University*); Fukutake, Katsuyuki (*Tokyo Medical University*); Fukuoka, Yutaka (*Kogakuin University*)

FrDT11-02: 16:10-17:10 Greatbatch Room
High throughput Data – Structured Data Visualization (Poster Session)

16:10-16:12 FrDT11-02.1
Development of Real Time Sign Language Interpretation System using Kinect V2
Sanada, Makoto* (*Ritsumeikan University*); Okada, Shima (*Faculty of Science and Engineering, Kinki University*)

FrDT11-04: 16:10-17:10 Greatbatch Room
Systems Biology and Systems Medicine – Modeling of Biomolecular System Dynamics (Poster Session)

16:10-16:12 FrDT11-04.1
Accurate Flux Fields of Probability Mass in Stochastic Toggle Switch
Terebus, Anna (*Univ. of Illinois at Chicago*); Liu, Chun (*Penn State Univ.*); Liang, Jie* (*Univ. of Illinois at Chicago*)

FrDT11-05: 16:10-17:10 Greatbatch Room
Systems Modeling – Decision Making (Poster Session)

16:10-16:12 FrDT11-05.1
Computer Simulations of Steady Concentration Peritoneal Dialysis
Lee, Kyoung Jin (*Seoul National University*); Lee, Jung Chan* (*Seoul National University College of Medicine*)

FrDT11-06: 16:10-17:10 Greatbatch Room
Translational Biomedical Informatics – Data Processing (Poster Session)

16:10-16:12 FrDT11-06.1
Biomedical Data Mining using Prostate Data in TCGA
Kim, Kyung Ah* (*Chungbuk National University*); Shon, Ho Sun (*Chungbuk National University*); Park, Jea Sung (*Chungbuk National University*); Cha, Eun Jong (*Chungbuk National University*); Kim, Kyoung Ok (*Woosong University*)

16:12-16:14 FrDT11-06.2
A Statistical Integrative Analysis Method for Small Size Expression Data of Micrnas and Genes
Ohki, Takuya (*Kogakuin University*); Umezumi, Tomohiro (*Tokyo Medical University*); Ohyashiki, Junko H. (*Tokyo Medical University*); Fukuoka, Yutaka* (*Kogakuin University*)

FrDT11-07: 16:10-17:10 Greatbatch Room
Image Classification (Poster Session)

16:10-16:12 FrDT11-07.1
Automated Prostate Cancer Detection on Peripheral Zone based on Multi-Parametric Magnetic Resonance Texture Feature Classification
Kim, YoungGi (*Seoul Women's University*); Jung, Julip (*Seoul Women's University*); Hong, Helen* (*Seoul Women's University*); Hwang, Sung Il (*Seoul National University College of Medicine, Dept. of Radio*); Lee, Hak Jong (*Seoul National University College of Medicine, Dept. of Radio*)

16:12-16:14 FrDT11-07.2
Multi-Channel Deep Feature Classification of Angiomyolipoma without Visible Fat and Renal Cell Carcinoma in Abdominal CT Images with Texture Image Patches
Lee, Han Sang (*KAIST*); Hong, Helen* (*Seoul Women's Univ.*); Kim, Junmo (*KAIST*)

16:14-16:16 FrDT11-07.3
Transfer Learning with Deep Residual Networks for Prostate Cancer Detection in Multiparametric Magnetic Resonance Imaging
To, Nguyen Nhat Minh (*Sejong University*); Kim, Jeong Kon (*Asan Medical Center*); Kwak, Jin Tae* (*Sejong University*)

16:16-16:18 FrDT11-07.4

Detection of Masses in Mammography using Convolutional Neural Networks a Preliminary Assessment

Shaharabany, Tal (*Holon Institute of Technology*); Lederman, Dror* (*Holon Institute of Technology*)

16:18-16:20 FrDT11-07.5

Determination of Direction from Colonoscopy Videos using the Horn and Schunck Algorithm and a Patterning Method

Cho, Minwoo (*Interdisciplinary Program in Bioengineering, Graduate School, Se*); Kong, Hyoun-Joong (*Chungnam National Univ. School of Medicine*); Kim, Jee Hyun (*Dept. of Internal Medicine and Liver Research Institute, Se*); Lee, Woo Hyung (*Dept. of Biomedical Engineering, Seoul National Univ.*); Hong, Kyoung Sup (*Dept. of Internal Medicine and Liver Research Institute, Se*); Kim, Sungwan* (*Seoul National Univ.*)

16:20-16:22 FrDT11-07.6

Fine-Tuning Residual Networks for Classifying Prostate Tissue Components

Vu, Quoc Dang (*Sejong University*); Hewitt, Stephen (*National Institutes of Health*); Kwak, Jin Tae* (*Sejong University*)

16:22-16:24 FrDT11-07.7

Melanoma Progression Monitoring

Dhinagar, Nikhil* (*Ohio Univ.*); Celenk, Mehmet (*Ohio Univ.*)

16:24-16:26 FrDT11-07.8

Automatic Detection of Small Bowel Ulcers in WCE using High Diversity Ensemble Learning Strategy

Brandao Lima, Verissimo* (*Universidade do Minho*); Vieira, Pedro Miguel (*Univ. of Minho*); Freitas, Nuno Renato (*Univ. of Minho*); Rolanda Gonçalves, Carla (*ICVS - Univ. of Minho*); Lima, Carlos Manuel Gregorio Santos (*Univ. of Minho*)

16:26-16:28 FrDT11-07.9

Differentiation of Part-Solid Ground-Glass Nodules with Small Solid Component from Pure Ground-Glass Nodules using Quantitative CT Texture Feature Classification

Lee, Seon Young (*Seoul Women's Univ.*); Jung, Julip (*Seoul Women's Univ.*); Hong, Helen* (*Seoul Women's Univ.*)

FrDT12-01: 16:10-17:10 Geddes Room
Ablation (Poster Session)

16:10-16:12 FrDT12-01.1

Cauterization Device with Double-Layered Nozzle using Steam and Suction

Yoshiki, Hitoshi* (*Tokyo Institute of Technology*); Tadano, Kotaro (*Tokyo Institute of Technology*); Kawashima, Kenji (*Tokyo Medical and Dental University*)

16:12-16:14 FrDT12-01.2

Position Adjustment Method of Magnetic Field Supply and Detection Unit for Magnetic Hyperthermia using Ferromagnetic Implant

Tonthat, Loi* (*Akita Univ.*); Aki, Fumitaka (*Akita Univ.*); Saito, Hajime (*AKITA Univ.*); Mitobe, Kazutaka (*AKITA Univ.*)

16:14-16:16 FrDT12-01.3

Soft Tissue Fragmentation by Laser-Generated Focused Ultrasound using a Low-f-Number CNT-PDMS Lens

Heo, Jeongmin (*Sungkyunkwan University*); Sang, Pilgyu (*Sungkyunkwan University*); Joo, Mingyu (*Sungkyunkwan University*); Baac, Hyoung Won* (*Sungkyunkwan University*)

FrDT12-02: 16:10-17:10 Geddes Room
Health Technology – Verification and Validation (Poster Session)

16:10-16:12 FrDT12-02.1

Laryngeal Prominence Movement Measurement with Depth Sensor for Evaluation of Swallowing Function

Sugimoto, Chika* (*Yokohama National University*); Masuyama, Yuto (*Yokohama National University*)

FrDT12-03: 16:10-17:10 Geddes Room
Health Technology Management and Assessment (Poster Session)

16:10-16:12 FrDT12-03.1

Evaluation of in Vitro and in Vivo Biocompatibility of Nitric Oxide Releasing Nanofiber for Continuous Glucose Monitoring Sensor

Lee, Seo Kyung (*Kyung Hee University*); Lee, Young Ju (*Kyung Hee University*); Kim, Yeong-Rim (*Kwangwoon University*); Heo, Min (*Kwangwoon University*); Shin, Jae Ho (*Kwangwoon University*); Lee, Gi-Ja* (*Kyung Hee University*)

16:12-16:14 FrDT12-03.2

The Effect of Combination Treatment with Nitric Oxide and Hydrogen Sulfide on Hypoxia/reoxygenation-Induced Injury

Lee, Young Ju (*Kyung Hee Univ.*); Lee, Gi-Ja* (*Kyung Hee Univ.*)

16:14-16:16 FrDT12-03.3

A Fully-Automated Pure Tone Audiometry System using EOG Induced by Spatially Rotating Sound Stimuli

Kim, Do Yeon (*Hanyang Univ.*); Kwon, Jinuk (*Hanyang Univ.*); Kim, Joo-Young (*Hanyang Univ.*); Kim, In-Young (*Hanyang Univ.*); Im, Chang-Hwan* (*Hanyang Univ.*)

16:16-16:18 FrDT12-03.4

Dosimetric Effect of Carbon Fiber Couch for FFF Beam of Elekta LINAC

Song, William (*Saint Paul Preparatory School*); Ahn, Sohyun* (*Yonsei University*)

16:18-16:20 FrDT12-03.5

Development and Assessment of a Novel Ankle Rehabilitation System for Stroke Survivors

Lee, Beom-Chan* (*University of Houston*); Dae-Hee, Kim (*Korea Institute of Robot and Convergence*); Son, Younsun (*University of Houston*); Kap-Ho, Seo (*Korea Institute of Robot and Convergence*); Sung Ho, Park (*Korea Institute of Robot and Convergence*); Yoo, Dongyul (*University of Houston*); Alberto, Fung (*University of Houston*)

16:20-16:22 FrDT12-03.6

A New Fall-Inducing Technology Platform: Development and Assessment of a Programmable Split-Belt Treadmill

Lee, Beom-Chan* (*University of Houston*); Martin, Bernard (*University of Michigan*); Thrasher, Timothy Adam (*University of Houston*); Layne, Charles (*University of Houston*)

FrDT12-04: 16:10-17:10 Geddes Room
Plethysmography (Poster Session)

16:10-16:12 FrDT12-04.1

Investigation of Photoplethysmography AC Component Variation Before and After Surgery

Seok, HyeonSeok (*Chonnam National University*); Shin, Hangsik* (*Chonnam National University*)

16:12-16:14 FrDT12-04.2

Computer-Aided Detection of Acromegaly using Three Dimensional Stereophotography

Yu, Hsin-Ju* (*National Taiwan Univ.*); Yang, Shih-Hung (*National Taiwan Univ. Hospital*); Tseng, Han-Min (*National Taiwan Univ. Hospital*); Chen, Chung-Ming (*National Taiwan Univ.*); Shih, Shyang-Rong (*National Taiwan Univ.*)

FrDT12-05: 16:10-17:10 Geddes Room
Therapeutic Ultrasound (Poster Session)

16:10-16:12 FrDT12-05.1

Finite Element Method Simulation for Dual Concentric HIFU Transducer to Increase Lesion Size

Kwon, Dasol (*Dongguk University*); Jeong, Jong Seob* (*Dongguk University*)

16:12-16:14 FrDT12-05.2

Fabrication of a Dual-Layer Focal Transducer for Simultaneous Generation of Optical and Piezoelectric Ultrasound

Sang, Pilgyu (*Sungkyunkwan Univ.*); Lee, SeungJin (*Sungkyunkwan Univ.*); Baac, H.W.* (*Sungkyunkwan Univ.*)

July 14 Friday

16:14-16:16	FrDT12-05.3	16:32-16:34	FrDT12-05.12
High-Amplitude Optoacoustic Transmitters Operated with Lower Than 1-MHz Frequency Joo, Mingyu (<i>Sungkyunkwan University</i>); Sang, Pilgyu (<i>Sungkyunkwan University</i>); Lee, SeungJin (<i>Sungkyunkwan University</i>); Baac, Hyoung Won* (<i>Sungkyunkwan University</i>)		Study on Developing Safety and Performance Evaluation Guideline for Extracorporeal Shockwave Lithotripsy System Lee, Chongju* (<i>Ministry of Food and Drug Safety</i>); Koo, Yoonjeong (<i>Ministry of Food and Drug Safety</i>); Kim, Jaeyoung (<i>Ministry of Food and Drug Safety</i>); Choi, Sunghye (<i>Ministry of Food and Drug Safety</i>); Park, Chang Won (<i>National Institute of Food and Drug Safety Evaluation, Ministry</i>)	
16:16-16:18	FrDT12-05.4	FrDT12-07: 16:10-17:10 Geddes Room Ventilators (Poster Session)	
Preliminary Study on Tissue Equivalent Superficial Varicose Vein Phantom for Ultrasonic Therapy Jeong, Yu Rang (<i>Inje Univ.</i>); Kim, Ju Young (<i>Inje Univ.</i>); Kim, Jin Woo (<i>Inje Univ.</i>); Kang, Ha Lim (<i>INJE Univ.</i>); Noh, Si Cheol (<i>International Univ. of Korea</i>); Choi, Heung Ho* (<i>Inje Univ.</i>)		16:10-16:12	FrDT12-07.1
16:18-16:20	FrDT12-05.5	Proposition of Nebulizer by using Venturi Effect Kim, Ji Sung (<i>Seoul National University</i>); Seo, Jong Mo* (<i>Seoul National University, School of Engineering</i>)	
Basic Study for Quantitative Evaluation of Ultrasonic Varicose Veins Treatment using Ultrasonic Doppler Shift Jung, Tae Woong (<i>Inje University</i>); Kim, Ju Young (<i>Inje University</i>); Shin, Kyoungwon (<i>Inje University</i>); Noh, Sumi (<i>Inje University</i>); Noh, Si Cheol (<i>International University of Korea</i>); Choi, Heung Ho* (<i>Inje University</i>)		16:12-16:14	FrDT12-07.2
16:20-16:22	FrDT12-05.6	The Criteria and Methods of Essential Performance of the Medical Oxygen Concentrators According to the Latest International Standard An, Hyoujin* (<i>Korea Testing Certification</i>); Seo, Han-Kyu (<i>Korea Testing Certification</i>); Jeon, Sohye (<i>Korea Testing Certification</i>); Park, Sukang (<i>Korea Testing Certification</i>)	
Inhibitory Effect by High-Frequency Ultrasound with Light Emitting Diode against HeLa Cell Proliferation Park, Kitae (<i>Kumoh National Institute of Tech.</i>); Park, ChulWoo (<i>Kumoh National Institute of Tech.</i>); Ryu, Jae Myung (<i>Kumoh National Institute of Tech., Dept. of Optical Enginee</i>); Choi, Hojong (<i>Kumoh National Institute of Tech.</i>); Choe, Se-woon* (<i>Kumoh National Institute of Tech.</i>)		FrDT13-01: 16:10-17:10 Dunn Room Health Informatics – Behavioral Health Informatics (Poster Session)	
16:22-16:24	FrDT12-05.7	16:10-16:12	FrDT13-01.1
Focal Guidance and Amplitude Enhancement of Laser-Generated Focused Ultrasound by using 3-D Printed Micro-Guide Structures Lee, SeungJin (<i>Sungkyunkwan University</i>); Baac, Hyoung Won* (<i>Sungkyunkwan University</i>)		Types of Emotion and the Perception of Facial Disfigurement Engelmann, Jeffrey (<i>Univ. of Texas MD Anderson Cancer Center</i>); Cho, Joowon* (<i>Univ. of Texas at Austin</i>); Liu, Jun (<i>Univ. of Texas MD Anderson Cancer Center</i>); Weston, June (<i>Univ. of Texas MD Anderson Cancer Center</i>); Bordes, Mary (<i>Univ. of Texas MD Anderson Cancer Center</i>); Vujanovic, Anka (<i>Univ. of Houston</i>); Babcock, Julia (<i>Univ. of Houston</i>); Fingeret, Michelle (<i>Univ. of Texas MD Anderson Cancer Center</i>); Reece, Gregory (<i>Univ. of Texas MD Anderson Cancer Center</i>); Hanson, Summer (<i>Univ. of Texas MD Anderson Cancer Center</i>); Markey, Mia (<i>Univ. of Texas at Austin</i>)	
16:24-16:26	FrDT12-05.8	16:12-16:14	FrDT13-01.2
Gait Analysis in a Rat Crush Model with Focused Ultrasound Treatment Kim, DongHwee (<i>Korea Institute of Science and Tech.</i>); Oh, Sungjin (<i>Korea Institute of Science and Tech.</i>); Ha, Heeseung (<i>Korea Institute of Science and Tech.</i>); Han, Sungmin (<i>Korea Institute of Science and Tech.</i>); Kim, Hyungmin (<i>Korea Institute of Science and Tech.</i>); Park, Jong Woong (<i>Korea University</i>); Youn, Inchan* (<i>Korea Institute of Science and Tech.</i>)		Effects of Breast Volume Change on Breast Cancer Patients' Satisfaction with Breast Reconstruction Outcomes Nicklaus, Krista (<i>The Univ. of Texas at Austin</i>); Cho, Joowon* (<i>The Univ. of Texas at Austin</i>); Cheong, Audrey (<i>The Univ. of Houston</i>); Liu, Jun (<i>The Univ. of Texas MD Anderson Cancer Center</i>); Merchant, Fatima (<i>Univ. of Houston</i>); Fingeret, Michelle (<i>The Univ. of Texas MD Anderson Cancer Center</i>); Reece, Gregory (<i>The Univ. of Texas MD Anderson Cancer Center</i>); Markey, Mia (<i>The Univ. of Texas at Austin</i>)	
16:26-16:28	FrDT12-05.9	16:14-16:16	FrDT13-01.3
Parameters Influencing the Efficacy and Safety of Blood-Brain Barrier Modulation by Low-Intensity Focused Ultrasound Shin, Jaewoo* (<i>Yonsei Univ.</i>); Kong, Chanho (<i>Yonsei Univ.</i>); Lee, Jihyeon (<i>Yonsei Univ.</i>); Koh, Chin Su (<i>Yonsei Univ.</i>); Yoon, Min-Sik (<i>Yonsei Univ.</i>); Na, YoungCheol (<i>Catholic Kwandong Univ. Internationa St Mary's Hospital</i>); Chang, Jin Woo (<i>Yonsei Univ.</i>); Chang, Won Seok (<i>Yonsei Univ.</i>)		Healthy Lifestyle Induction using Fogg Behavior Model Bilal, Hafiz Syed Muhammad* (<i>Kyung Hee University</i>); Lee, Sungyoung (<i>Kyung Hee University</i>)	
16:28-16:30	FrDT12-05.10	16:16-16:18	FrDT13-01.4
Cavitation Bubble Formation Reveals the Focal Geometry of Driving Focusing Shock Wave Field Kang, Gwansuk* (<i>Jeju National University</i>); Huh, Jung Sik (<i>Jeju National University</i>); Choi, Min Joo (<i>Jeju National University</i>)		Variable State Kalman Filter for Ambulatory Estimation of Human Segment Orientation in Magnetically Disturbed Environments Choi, Mi Jin (<i>Hankyong National Univ.</i>); Jeon, Tae Hyeong (<i>Hankyong National Univ.</i>); Lee, Jung Keun* (<i>Hankyong National Univ.</i>)	
16:30-16:32	FrDT12-05.11	FrDT13-02: 16:10-17:10 Dunn Room Health Informatics – Clinical Information Systems (Poster Session)	
An Ultrasonic System with an Attachable Acoustic Lens for Investigation of Opening a Microfluidic Blood-Brain Barrier Model Oh, Min Tack (<i>Korea Institute of Science and Tech.</i>); Kim, Hong Nam (<i>Korea Institute of Science and Tech.</i>); Ko, Han Seok (<i>Korea Univ.</i>); Lee, Seunghyun (<i>Seoul National Univ. Hospital</i>); Kim, Jung Hoon (<i>Seoul National Univ. Hospital</i>); Park, Kwan Kyu (<i>Hanyang Univ.</i>); Lee, Byung Chul* (<i>Korea Institute of Science and Tech.</i>)		16:10-16:12	FrDT13-02.1
		A Web-Based Activity and Care Support System to Integrate Multi-Sensor Data into Daily Clinical Practice Demko, Laszlo* (<i>Balgrist Univ. Hospital</i>); Schneider, Sophie (<i>Univ. Hospital Balgrist</i>); Gassert, Roger (<i>ETH Zurich</i>); Curt, Armin (<i>Spinal Cord Injury Centre, Balgrist Univ. Hospital</i>)	

16:12-16:14 FrDT13-02.2
A Medical Image De-Identifier Bridging a Hospital Information System and Cloud Services
 Kuroda, Tomohiro* (*Kyoto University*); Fujita, Kenichiro (*University of Hyogo*); Yamamoto, Goshiro (*Kyoto University Hospital*); Okamoto, Kazuya (*Kyoto University Hospital*); Yakami, Masahiro (*Kyoto University*); Nishio, Mizuho (*Kyoto University*); Isoda, Hiroyoshi (*Kyoto University*)

FrDT13-03: 16:10-17:10 Dunn Room
Health Informatics – Cloud Computing for Healthcare (Poster Session)

16:10-16:12 FrDT13-03.1
Mining Minds: An Open Source Initiative towards Health and Wellness Platforms
 Amin, Muhammad Bilal* (*Kyung Hee Univ.*); Khan, Wajahat Ali (*Kyung Hee Univ.*); Khattak, Asad Masood (*Kyung Hee Univ.*); Lee, Sungyoung (*Kyung Hee Univ.*)

FrDT13-04: 16:10-17:10 Dunn Room
Health Informatics – Computer-Aided Decision Making (Poster Session)

16:10-16:12 FrDT13-04.1
Development of Survivability Prediction Algorithm with National Trauma Data Bank (NTDB) for Remote Combat Casualty Care
 You, Sungmin (*Hanyang Univ.*); Kim, Dohyun (*Hanyang Univ.*); Lee, Jong-Shill (*Hanyang Univ.*); Park, Hoon Ki (*Hanyang Univ. Hospital*); Kim, In-Young* (*Hanyang Univ.*)

16:12-16:14 FrDT13-04.2
Artificial Intelligence Accurately Detects Lung Diseases
 Topalovic, Marko* (*KU Leuven*); Das, Nilakash (*KU Leuven*); Aerts, Jean-Marie (*KU Leuven*); Troosters, Thierry (*KU Leuven*); Janssens, Wim (*UZ Leuven*)

FrDT13-05: 16:10-17:10 Dunn Room
Health Informatics – Decision Support Methods and Systems (Poster Session)

16:10-16:12 FrDT13-05.1
A Study on CDSS Modeling for Stress Screening using Case-Based Reasoning
 Park, Hea Jeong (*Yonsei Univ. Health System*); Cho, Soo Jin (*Yonsei Univ. Health System*); Cho, Song Lee (*Yonsei Univ. Health System*); Lee, Sang Eun (*Yonsei Univ. Health System*); Chang, Hyuk-Jae (*Dept. of Internal Medicine, Severance Cardiovascular Hospit*); Song, Si Young (*Institute of Gastroenterology, Yonsei Univ. of College of M*); Mun, Se Yeon (*Yonsei Univ. Health System*); Yun, Young Mi (*Yonsei Univ. Health System*); Han, Taehwa* (*Yonsei Univ. Health System*)

16:14-16:16 FrDT13-05.3
Automatic Identification of Diabetes based on Vital Signs and Medical History in Post-Stroke Patients
 Vilic, Adnan* (*Technical University of Denmark*); Sorensen, Helge B D (*Technical University of Denmark*); Wienecke, Troels (*Zealand University Hospital, Roskilde*); Kjaer, Troels W. (*Roskilde University Hospital*)

16:16-16:18 FrDT13-05.4
Context-Aware Dialogue Management Framework for Healthcare
 Razzaq, Muhammad Asif* (*Kyung Hee University*); Lee, Sungyoung (*Kyung Hee University*)

FrDT13-06: 16:10-17:10 Dunn Room
Health Informatics – eHealth (Poster Session)

16:10-16:12 FrDT13-06.1
Deployment of Generic Cross Border Ehealth Services in Cyprus
 Antoniou, Zinonas (*Univ. of Cyprus*); Constantinou, Ioannis (*Univ. of Cyprus*); Neofytou, Marios (*Univ. of Cyprus*); Schiza, Eirini (*Univ. of Cyprus*); Panayides, Andreas (*Univ. of Cyprus*); Pattichis, Constantinos* (*Univ. of Cyprus*); Schizas, Christos (*Univ. of Cyprus*); Giorgitsi, Eleftheria (*DITS, Ministry of Health*); Kalakouti-Kassapi, Monica (*DITS, Ministry of Health*); Yiapatou, E. (*DITS, Ministry of Health*); Kyriakides, M. (*Ministry of Health*)

FrDT13-07: 16:10-17:10 Dunn Room
Health Informatics – Emerging IT for Efficient/Low-Cost Healthcare Delivery (Poster Session)

16:10-16:12 FrDT13-07.1
A Study on Remote Management Process for Management of Automatic Cardioverter Defibrillator (AED)
 Jeon, Sohye* (*Korea Testing Certification*); An, Hyoujin (*Korea Testing Certification*); Nam, Seung Min (*LUCM CO.,Ltd*); Park, Sukang (*Korea Testing Certification*)

FrDT13-08: 16:10-17:10 Dunn Room
Health Informatics – Health Information Systems (Poster Session)

16:10-16:12 FrDT13-08.1
Analysis Muscular Fatigue of Gluteus Maximus According to Maximum Pressure Change in Sitting Position
 Kim, Daechang* (*Dongguk University*)

16:12-16:14 FrDT13-08.2
An ECG-HRV Data Format for Integrated Biosignal Big Data
 Hama, Kengo (*Hosei Univ.*); Shibui, Toyohito (*Hosei Univ. Graduate School*); Kaseda, Yuto (*Hosei Univ.*); Endo, Yudai (*Hosei Univ.*); Wakabayashi, Satoshi (*Hosei Univ.*); Yana, Kazuo* (*Hosei Univ.*); Yana, Kazuo (*Hosei Univ.*)

FrDT13-09: 16:10-17:10 Dunn Room
Health Informatics – Information Technologies for Healthcare Delivery and Management (Poster Session)

16:10-16:12 FrDT13-09.1
Nurse Call as a Sensor of Ward Status Reflecting Both Nurses' and Patients' Behavior
 Mori, Taketoshi* (*The University of Tokyo*); Noguchi, Hiroshi (*The University of Tokyo*); Miyahara, Maki (*The University of Tokyo*); Araki, Daichi (*University of Tokyo*); Kobayashi, K (*The University of Tokyo*); Sanada, Hiromi (*The University of Tokyo*); Murayama, Ryoko (*The University of Tokyo*); Yoshida, Mikako (*The University of Tokyo*); Yamamoto, Chiemi (*The University of Tokyo*); Koyanagi, H (*The University of Tokyo*); Ikegawa, Mitsuhiro (*HealthCare Relations Co., Ltd.*)

FrDT13-10: 16:10-17:10 Dunn Room
Health Informatics – Internet of Things (Poster Session)

16:10-16:12 FrDT13-10.1
Bedside Vital Data Terminal Reducing Nursing Tasks
 Kuroda, Tomohiro* (*Kyoto Univ.*); Hikita, Tomoko (*Kyoto Univ. Hospital*); Fujita, Kenichiro (*Univ. of Hyogo*); Sugiyama, Osamu (*Kyoto Univ.*); Okamoto, Kazuya (*Kyoto Univ. Hospital*)

FrDT13-11: 16:10-17:10 Dunn Room
Health Informatics – Mobile and Wearable Technologies for Elderly (Poster Session)

16:10-16:12 FrDT13-11.1
A Study on the Relationship between Body Fat Percentage and Cardiac Action Potential using Electric Field Analysis
 Onda, Hiroyuki* (*Kinki Univ.*); Sugahara, Kengo (*Kinki Univ.*); Okada, Shima (*Faculty of Science and Engineering, Kinki Univ.*)

FrDT13-12: 16:10-17:10 Dunn Room
Health Informatics – Mobile Health (Poster Session)

16:10-16:12 FrDT13-12.1
Adaptive Video Communications for Real-Time Mhealth Applications
 Antoniou, Zinonas (*University of Cyprus*); Panayides, Andreas* (*University of Cyprus*); Pantziaris, Marios (*The Cyprus Institute of Neurology and Genetics*); Constantinides, Anthony G. (*Imperial College*); Pattichis, Constantinos (*University of Cyprus*); Pattichis, Marios (*University of New Mexico.*)

16:12-16:14 FrDT13-12.2
Remote Diagnosis Leveraging the MPEG-DASH Standard
 Panayides, Andreas* (*University of Cyprus*)

FrDT13-13: 16:10-17:10 Health Informatics – Technology and Services for Home Care (Poster Session)	Dunn Room	16:26-16:28 Comparison of Movement Discrimination Method using Center-of-Gravity Variation Analysis on Bed by the Types of Mattress Araki, Daichi (<i>The University of Tokyo</i>); Noguchi, Hiroshi (<i>The University of Tokyo</i>); Mori, Taketoshi (<i>The University of Tokyo</i>); Sanada, Hiromi (<i>The University of Tokyo</i>); Kawaguchi, Takayasu* (<i>Tokyo University of Information Sciences</i>)	FrDT14-01.9
16:10-16:12 Change of Cognitive Abilities Depending on Color Light Stimulation Kim, Dong-Wook (<i>Chonbuk National University</i>); Lee, Seonjin* (<i>Chonbuk National University</i>)	FrDT13-13.1		
FrDT13-14: 16:10-17:10 Health Informatics – Telehealth (Poster Session)	Dunn Room	16:28-16:30 A Wearable Device for Knee Joint Angle Measurement Kim, Je-Nam (<i>CAMTIC Advanced Mechatronics Tech. Institute for Commercial</i>); Kim, Jae Jun (<i>Chonbuk National Univ. Automobile-parts & Mold Tech. I</i>); Lee, Jung Ho (<i>CAMTIC Advanced Mechatronics Tech. Institute for Commercial</i>); Jo, JongHyun (<i>CAMTIC</i>); Kim, Kyung (<i>CAMTIC Advanced Mechatronics Tech. Institute for Commercial</i>); Kim, Seong-Hyun (<i>Chungbuk Provincial College</i>); Chong, Woo-Suk* (<i>CAMTIC Advanced Mechatronics Tech. Institute for Commercial</i>)	FrDT14-01.10
16:10-16:12 Effects of WebRTC based Tele-Exercise on Fall-Related Risk Factors among the Elderly Kong, Hyoun-Joong (<i>Chungnam National University School of Medicine</i>); Hong, Jeeyoung (<i>Seoul National University</i>); Yoon, Hyung-Jin* (<i>Seoul National University</i>)	FrDT13-14.1		
FrDT14-01: 16:10-17:10 Physiological Monitoring – Instrumentation (Poster Session)	Schaldach Room	16:30-16:32 Cardiopulmonary Coupling Analysis using Non-Contact Bio Signal Monitoring System Park, Jonguk (<i>Yonsei Univ.</i>); Kang, KyuMin (<i>Yonsei Univ.</i>); Urtnasan, Erdenebayar (<i>Yonsei Univ.</i>); Choi, Ho Seon (<i>Daewon Univ. College</i>); Lee, Kyoung Joung* (<i>Yonsei Univ.</i>)	FrDT14-01.11
16:10-16:12 Measuring Deep Muscle Oxygenation using Near-Infrared Spectroscopy for Deformed Tissues by Pinching Matsuki, Yoshihiro* (<i>Shizuoka University</i>); Niwayama, Masatsugu (<i>Shizuoka University</i>)	FrDT14-01.1		
16:12-16:14 Physiological Measurement in Virtual Reality Contents Watching; Photoplethysmograph Embedded in 3D VR Gaming Headset Otsuka, Seiya (<i>Teikyo University</i>); Kurosaki, Kanami (<i>Teikyo University</i>); Ogawa, Mitsuhiro* (<i>Teikyo University</i>)	FrDT14-01.2		
16:14-16:16 Properties of Back-Scattering Spectrum on in Vivo Measurement using NIRS via Interfering Medium Kawahara, Ryoma* (<i>Shizuoka University</i>); Niwayama, Masatsugu (<i>Shizuoka University</i>)	FrDT14-01.3		
16:16-16:18 Detection of Micturition Desire with Monitoring Heart Rates in Elderly Women: Implication of Inactivity in Parasympathetic Nervous System Tomehata, Sumie* (<i>Kanto Gakuin University</i>)	FrDT14-01.4		
16:18-16:20 Non-Invasive Glucose Measurement using Different Optical Properties of Blood in Near Infrared Wavelengths Hasan, Mehedy (<i>Graduate Research Assistant, University of Utah</i>); Kim, Hoon* (<i>University of Utah</i>)	FrDT14-01.5		
16:20-16:22 A Basic Study on Visibility Evaluation using N170 Ishii, Takayuki* (<i>Tokyo City University</i>); Matsumoto, Kana (<i>Tokyo City University</i>); Hirakochi, Ren (<i>Tokyo City University</i>); Kyoso, Masaki (<i>Tokyo City University</i>)	FrDT14-01.6		
16:22-16:24 Comparison of Electrode Technologies for Portable EEG Monitoring O'Sullivan, Mark* (<i>University College Cork</i>); Poveda Pena, Jonatan (<i>Universitat Politècnica de Catalunya</i>); O'Mahony, Conor (<i>Tyndall National Institute, University College Cork</i>); Popovici, Emanuel (<i>University College Cork</i>); Temko, Andriy (<i>University College Cork</i>)	FrDT14-01.7		
16:24-16:26 Development of Real-Time Pulse Measuring Device using Wireless Pressure Sensor Cho, SungHwan (<i>Hanbat National University</i>); Choi, SangDong (<i>Hanbat National University</i>); Cho, BeomKi (<i>Hanbat National University</i>); Kim, SungIl (<i>Hanbat National University</i>); Park, JaeSoon (<i>Hanbat National University</i>); Kim, EungBo (<i>Hanbat National University</i>); Kang, YoungHwan (<i>Hanbat National University</i>); Joung, YeunHo* (<i>Hanbat National University</i>)	FrDT14-01.8		
FrDT14-02: 16:10-17:10 Physiological Monitoring – Modeling and Analysis (Poster Session)	Schaldach Room	16:32-16:34 Unconstrained Measurement of Respiratory and Heart Beat using an Accelerometer Kang, Chang Hoon (<i>Yonsei University</i>); Kim, Hyeonggon (<i>Yonsei</i>); Myoung, Hyoun Seok (<i>Yonsei University</i>); Lee, Kyoung Joung* (<i>Yonsei University</i>)	FrDT14-01.12
		16:34-16:36 Cortical Activity during Stair Walking: A Potable fNIRS Pilot Study Jeong, Seonyun (<i>DGIST</i>); Yang, Seung-Tae (<i>DGIST</i>); Jin, SangHyeon (<i>DGIST</i>); Lee, Gihyoun (<i>Daegu Gyeongbuk Institute of Science and Tech.</i>); Lee, Seung Hyun (<i>DGIST</i>); Jinung, An* (<i>Daegu Gyeongbuk Institute of Science & Tech.</i>)	FrDT14-01.13
		16:36-16:38 Development of Impedance System for Electrosurgical Unit Lee, Duck Hee (<i>Biomedical Engineering Research Center, Asan Medical Center</i>); Song, Seung Joon (<i>Asan Medical Center</i>); Ho, Ye Ji (<i>Asan Medical Center</i>); Kim, Dong Jun (<i>Asan Medical Center</i>); Choi, Jaesoon* (<i>Asan Institute for Life Sciences, Asan Medical Center</i>)	FrDT14-01.14
		16:10-16:12 A Simulation Study for a Batteryless, Wireless Strain Sensor Lee, Kyeong Jae* (<i>Daegu Gyeongbuk Institute of Science and Technology</i>); Chou, Namsun (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>); Kim, Sohee (<i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i>)	FrDT14-02.1
		16:12-16:14 Finding Optimal Position and Shape for Patch-Type ECG Sensor using Artificial neural network Lee, Dongseok (<i>Seoul National University</i>); Kwon, Hyunbin (<i>Seoul National University</i>); Lee, Hong Ji (<i>Seoul National University</i>); Park, Kwang S.* (<i>Seoul National University</i>)	FrDT14-02.2
		16:14-16:16 Determination of Proper Sensor Location to Predict Center of Pressure Trajectories Jung, Hyunwoo (<i>Sungkyunkwan University</i>); Shin, Ki-Young (<i>Korea Electorechnology Research Institute</i>); Mun, Jeffrey S. (<i>Swarthmore College</i>); Lee, Kyungsuk (<i>Rural Development Administration</i>); Chae, Hyeseon (<i>Rural Development Administration</i>); Choi, Ahnryul* (<i>Catholic Kwandong University</i>)	FrDT14-02.3

16:16-16:18 FrDT14-02.4
Smartphone App Development for Mobile Phonopneumography
Jang, Hyun Woo (*Soonchunhyang University*); Reyes, Bersain Alexander (*Universidad Autonoma de San Luis Potosi (UASLP)*); Ha, Sangho* (*Soonchunhyang University*)

16:18-16:20 FrDT14-02.5
Using Data from Connected Scales to Assess the Association between Self-Weighing Frequency and Weight Loss
Helander, Elina (*Tampere Univ. of Tech.*); Chieh, Angela (*Withings part of Nokia*); Roitmann, Eva* (*Withings part of Nokia*)

16:20-16:22 FrDT14-02.6
Pelvic Deformation Estimation based on Analyzing Gait
Wakaiki, Tomohiro* (*Hokkaido University*); Tanaka, Takayuki (*Hokkaido University*); Shimatani, Koji (*Prefectural University of Hiroshima*); Iida, Tadayuki (*Prefectural University of Hiroshima*); Sugiyama, Yoshimi (*Kanmon Medical Center*); Tsuchiya, Yoshio (*Hokkaido University*)

FrDT14-03: 16:10-17:10 Schaldach Room
Physiological Monitoring – Novel Methods (Poster Session)

16:10-16:12 FrDT14-03.1
Upper Arm based Physiological Monitor for Mobile Health
Lee, Alexander* (*University of Hawaii at Manoa*); Gao, Xiaomeng (*University of Hawaii at Manoa*); Xu, Jia (*University of Hawaii at Manoa*); Yamada, Shuhei (*University of Hawaii, Manoa*); Lubecke, Victor (*University of Hawaii Manoa*); Boric-Lubecke, Olga (*University of Hawaii Manoa*)

16:12-16:14 FrDT14-03.2
Feasibility Test of Strip-Type Unconstrained Sleep Monitoring System with Polysomnography
Park, Sooji (*Chonnam National University*); Shin, Hangsik* (*Chonnam National University*)

16:14-16:16 FrDT14-03.3
Estimation of Skin Blood Flow Change in Recumbent Position using Surface-Type Photoplethysmography Sensor
Ogawa, Sayaka* (*Kyoto University*); Fujiwara, Koichi (*Kyoto University*); Yamakawa, Toshitaka (*Kumamoto University*); Kadotani, Hiroshi (*Shiga University of Medical Science*); Matsuo, Masahiro (*Shiga University of Medical Science*); Kano, Manabu (*Kyoto University*)

16:16-16:18 FrDT14-03.4
Unconstrained Foot Photoplethysmogram in Standing State
Hong, Seunghyeok* (*Seoul National University*); Park, Kwang S. (*Seoul National University*)

16:18-16:20 FrDT14-03.5
Identification of Foot Strikes with Cross-Correlation Coefficient Pattern
Zeng, Lujie (*Southeast University*); Mo, Lingfei* (*University of Southeast, China*)

16:20-16:22 FrDT14-03.6
Development of a Skin-Based Optical Biometric Device for Wearable Band Applications
Kim, Haena (*Korea Electronics Tech. Institute*); Kang, Jae-Hwan (*Ulsan National Institute of Science and Tech.*); Hong, Hyuckki (*Korea Electronics Tech. Institute*); Choi, Yeon Shik (*Korea Electronics Tech. Institute*); Jung, Suk Won (*Korea Electronics Tech. Institute*); Kim, Sung-Phil (*Ulsan National Institute of Science and Tech.*); Jo, Young Chang* (*Korea Electronics Tech. Institute*)

FrDT14-04: 16:10-17:10 Schaldach Room
Portable Miniaturized Systems (Poster Session)

16:10-16:12 FrDT14-04.1
Development of the Portable Respiratory Gas Analyzer for Home Healthcare
Seo, HyoChang (*Asan Medical Center*); Joo, Segyeong* (*Asan Medical Center, University of Ulsan College of Medicine*)

FrDT15-01: 16:10-17:10 Webster Room
Empowering Individual Healthcare Decisions through Technology I (Poster Session)

16:10-16:12 FrDT15-01.1
Smart Mobility Solution with Multiple Input Output Interface
Sethi, Aartika* (*IIT Delhi*); Deb, Sujay (*Indraprastha Institute of Information Technology, Delhi*); Ranjan, Prabhat (*TIFAC*); Sardar, Arghya (*TIFAC*)

16:12-16:14 FrDT15-01.2
Simple and Low-Cost Polymer Lens Fabrication using a Pressure-Driven Micro Chamber
Seo, Min-Won (*Seoul National Univ.*); Koo, Kyoin (*Univ. of Ulsan*); Seo, Jong Mo* (*Seoul National Univ., School of Eng.*)

16:14-16:16 FrDT15-01.3
Proposal of Custom Made Wrist Orthoses based on 3D Modelling and 3D Printing
Abreu de Souza, Mauren* (*Federal University of Technology – Paraná (UTFPR)*); Schmitz, Cristiane (*Federal University of Technology – Paraná (UTFPR)*); Marega Pinhel, Marcelo (*UTFPR*); Palma Setti, João (*UTFPR*); Nohama, Percy (*Universidade Tecnológica Federal do Parana*)

FrDT15-03: 16:10-17:10 Webster Room
Empowering Individual Healthcare Decisions through Technology (Poster Session)

16:10-16:12 FrDT15-03.1
Design a Capacitive Sensor of the Liquid Volume Measurement for Smart Cup Development
Kim, Mijung (*Keimyung University*); Wei, Qun* (*Keimyung University*); Park, Hee-Jun (*Keimyung University*)

FrDT15-04: 16:10-17:10 Webster Room
Medical Technology – Clinical Testing/ Clinical Trials (Poster Session)

16:10-16:12 FrDT15-04.1
Enhanced Reality for Post-Operative Analgesia
Hwang, Changho (*Ulsan Univ. Hospital*); Park, Dae Kwon (*Ulsan Univ. Hospital*); Cho, Sung Do (*Ulsan Univ. Hospital*); Choi, Myounghwan (*Univ. of Ulsan*); Lee, Yeasol (*Univ. of Ulsan*); Duong Van, Thuy (*Univ. of Ulsan*); Kim, Changsik (*Univ. of Ulsan*); Phan, Huu Lam (*Biomedical Engineering Dept., Ulsan Univ., Korea*); Nguyen, Trung (*Univ. of Ulsan*); Cheon, Jae Yeong (*Univ. of Ulsan*); Lee, YongKwan (*Univ. of Ulsan*); Park, Hodong (*Ulsan Univ.*); Shin, Daehyeon (*Univ. of Ulsan*); Koo, Kyoin* (*Univ. of Ulsan*)

16:12-16:14 FrDT15-04.2
A Clinical Study Comparing Horizontal Localization Benefits of RIC and CIC Hearing Aids for Sensorineural Hearing Loss Subjects
Kim, Min-Ah (*Sungkyunkwan University*); Lim, Yerin (*Samsung Medical Center*); Cho, Yang-sun* (*Sungkyunkwan University*)

FrDT15-05: 16:10-17:10 Webster Room
Medical Technology – Clinical Workflow Analysis (Poster Session)

16:10-16:12 FrDT15-05.1
Development of a Measuring System for Measuring Carpal Joint Motion using the Actual Reality
Choi, Han-Sol (*Gachon University*); Kim, Young Jae (*Gachon University*); Kim, Kwang Gi* (*Gachon University*); Lee, Sanglim (*Sanggye Paik Hospital, Inje University*); Ha, Jiyun (*Inje University, Sanggye Paik Hospital*)

FrDT15-06: 16:10-17:10 Webster Room
Medical Technology – Design and Development (Poster Session)

16:10-16:12 FrDT15-06.1
Multi-Ultra-Sounds Stimulation Equipment for Medical Home Health Care
Yamashita, Yohachi* (*Kaikai Co. Ltd*); Lee, Ho Yong (*Ceracomp Co. Ltd*); Xue, Genfei (*Zhejiang Jiakang Electronics Co., Ltd*); Ni, Penfei (*Zhejiang Jiakang Electronics Co., Ltd*)

- 16:12-16:14 FrDT15-06.2
Design Exploration for Patient Specific Pedicle Screw
 Khatri, Ravi* (*Indian Institute of Technology Madras*); Varghese, Vicky (*Indian Institute of Technology, Madras*); Saravana Kumar, Gurunathan (*Indian Institute of Technology, Madras*)
- FrDT15-07: 16:10-17:10 Webster Room
Medical Technology – Product Development Process (Poster Session)
- 16:10-16:12 FrDT15-07.1
Measurement of Anatomical Parameters with Lumbar Spine for Vertebral Body Replacement System
 Kwan-Su, Kang (*OSONG Medical Innovation Foundation*); Jeong, Yong-Hoon (*OSONG Medical Innovation Foundation*); Park, Kwang-Min (*OSONG Medical Innovation Foundation*); Lee, Suwon (*OSONG Medical Innovation Foundation*); Yang, Jae-Woong (*OSONG Medical Innovation Foundation*); Jeong, Jae-Young (*OSONG Medical Innovation Foundation*); Jung, Tae-Gon* (*OSONG Medical Innovation Foundation*)
- FrDT15-08: 16:10-17:10 Webster Room
Medical Technology – Safety (Poster Session)
- 16:10-16:12 FrDT15-08.1
Standardization on Computerized Tongue Image Analysis Systems
 Kim, Jihye (*Korea Institute of Oriental Medicine*); Kim, Keun Ho* (*Korea Institute of Oriental Medicine*)
- 16:12-16:14 FrDT15-08.2
A Study on Label Management for Medical Device Characteristics
 Song, Seung Joon (*Asan Medical Center*); Lee, Duck Hee* (*Biomedical Engineering Research Center, Asan Medical Center*); Song, YeEun (*Yonsei University*); Ahn, Chi Bum (*Gachon University*); Lee, Sungho (*Korea University*)
- 16:14-16:16 FrDT15-08.3
Design on Bi-Layers Structure Containing Non-Toxic Materials for Improvement of Performance of Special Radiation Shielding Garments
 Kim, Kyotae (*Dept. of Biomedical Eng., Inje Univ.*); Han, Moojae (*Dept. of Biomedical Eng., Inje Univ.*); Heo, Yeji (*Biomedical Eng., Inje Univ.*); Jun, Jaehoon (*Dept. of Radiological Science, Intl. Univ. of Korea*); Yang, Sungwoo (*Dept. of Radiological Science, Intl. Univ. of Korea*); Kang, Subin (*Dept. of Radiological Science, Intl. Univ. of Korea*); Kang, Sangsik (*Dept. of Radiological Science, Intl. Univ. of Korea*); Park, Jikoon* (*Dept. of Radiological Science, Intl. Univ. of Korea*)
- 16:16-16:18 FrDT15-08.4
Design of Double Layer Shielding Sheet using Eco-Friendly Inorganic Materials
 Kang, Sangsik (*Dept. of Radiological Science, International Univ. of Korea*); Jun, Jaehoon (*Dept. of Radiological Science, International Univ. of Korea*); Yang, Sungwoo (*Dept. of Radiological Science, International Univ. of Korea*); Kang, Subin (*Dept. of Radiological Science, International Univ. of Korea*); Kim, Kyotae (*Dept. of Biomedical Engineering, Inje Univ.*); Choi, Ilhong (*Dept. of Radiological Science, International Univ. of Korea*); Park, Jikoon* (*Dept. of Radiological Science, International Univ. of Korea*)
- 16:18-16:20 FrDT15-08.5
Evaluation of Safety and Performance in Alarm System for Electrosurgical Device
 Choi, Jaesoon* (*Asan Institute for Life Sciences, Asan Medical Center*); Ho, Ye Ji (*Asan Medical Center*); Lee, Duck Hee (*Biomedical Engineering Research Center, Asan Medical Center*); Park, Sanghoon (*Asan Medical Center*); Jo, Kyungmin (*Asan Institute for Life Sciences, Asan Medical Center*); Choi, Bareum (*Asan Institute for Life Sciences, Asan Medical Center*); Park, Sang-Eun (*Biomedical Engineering Research Center, Asan Medical Center*); You, Hyeonseok (*University of Ulsan*); Kim, Dong Jun (*Asan Medical Center*)
- 16:20-16:22 FrDT15-08.6
Evaluation of Safety and Performance in Alarm System for Infusion Pump
 Choi, Jaesoon* (*Asan Institute for Life Sciences, Asan Medical Center*); Ho, Ye Ji (*Asan Medical Center*); Lee, Duck Hee (*Biomedical Engineering Research Center, Asan Medical Center*); Park, Sanghoon (*Asan Medical Center*); Jo, Kyungmin (*Asan Institute for Life Sciences, Asan Medical Center*); Choi, Bareum (*Asan Institute for Life Sciences, Asan Medical Center*); Park, Sang-Eun (*Biomedical Engineering Research Center, Asan Medical Center*); You, Hyeonseok (*Univ. of Ulsan*); Kim, Dong Jun (*Asan Medical Center*)
- 16:22-16:24 FrDT15-08.7
The Safety and Effectiveness of 24-H Intraocular Pressure Monitoring Contact Lens Sensor – Systematic Review
 Hong, Youna (*Samsung Advanced Institute for Health Science & Technology, Sung*); Lee, Seon Heul* (*Gachon University*)
- FrDT15-09: 16:10-17:10 Webster Room
Personalized Medicine (Poster Session)
- 16:10-16:12 FrDT15-09.1
Software Design and Development for Respiratory Analysis System
 Kwon, Jeonghoon (*Asan Medical Center*); Seo, HyoChang (*Asan Medical Center*); Joo, Segyeong* (*Asan Medical Center, University of Ulsan College of Medicine*)
- FrDT15-10: 16:10-17:10 Webster Room
Point of Care – Home-Based Applications (Poster Session)
- 16:10-16:12 FrDT15-10.1
Mobile-Based Evaluation of Latent Tuberculosis Infection
 Safa Naraghi, Safa Kagiso* (*University of Cape Town*); Mutsvangwa, Tinashe Ernest Muzvidzwa (*University of Cape Town*); Rangaka, Molebogeng (*University College London*); Douglas, Tania S (*University of Cape Town*)
- FrDT15-14: 16:10-17:10 Webster Room
Precision Medicine (Poster Session)
- 16:10-16:12 FrDT15-14.1
High-Throughput Single-Cell Isolation by Nanosecond Pulsed Laser for Cancer Genome Analysis
 Kim, Sungsik* (*Interdisciplinary Program for Bioengineering, Seoul Natl. Uni*); Kim, Jinhyun (*Dept. of Electrical and Computer Engineering, Seoul Nationa*); Lee, Amos Chungwon (*Interdisciplinary Program for Bioengineering, Seoul Natl. Uni*); Jung, Yushin (*Dept. of Electrical and Computer Engineering, Seoul Nationa*); Bae, Sangwook (*Interdisciplinary Program for Bioengineering, Seoul Natl. Uni*); Kwon, Sunghoon (*Dept. of Electrical and Computer Engineering, Seoul Nationa*)
- FrDT16-01: 16:10-17:10 Rushmer Room
Smart Textile and Clothes (Poster Session)
- 16:10-16:12 FrDT16-01.1
Wool-PTFE Triboelectric Sensor for Respiratory Rate Detection
 Padasdao, Bryson* (*Univ. of Hawaii at Manoa*); Barit, Dexter James (*Univ. of Hawaii at Manoa*); Hancock, Lyra (*Univ. of Hawaii at Manoa*); Nakamura, Jillian (*Univ. of Hawaii at Manoa*); Boric-Lubecke, Olga (*Univ. of Hawaii Manoa*)
- 16:12-16:14 FrDT16-01.2
A Comparison and Evaluation between Textile Capacitive Proximity Sensor and F-Scan
 Wang, Changwon (*Soonchunhyang Univ.*); Ho, Jong Gab (*SoonChunHyang Univ.*); Kwak, Jaekyung (*Chonnam National Univ.*); Min, Se Dong* (*SoonChunHyang Univ.*)
- 16:14-16:16 FrDT16-01.3
Detachable Electric Button for Wearable Fabrics
 Lee, Kang-Ho* (*Korea Institute of Machinery & Materials*); Cha, Ju Young (*Korea Institute of Machinery & Materials*); Lee, Dongkyu (*Korea Institute of Machinery & Materials*); Kwon, Ohwon (*Korea Institute of Machinery & Materials*); Lee, Yongkoo (*Korea Institute of Machinery & Materials*)

16:16-16:18 FrDT16-01.4
Preliminary Study of ECG-Based Human Authentication using Capacitively Coupled Textile Electrodes on a Bed
 Kim, Jeehoon (*Seoul National University*); Sung, Dongsuk (*Seoul National University*); Lee, Hong Ji (*Seoul National University*); Park, Kwang S.* (*Seoul National University*)

FrDT16-02: 16:10-17:10 Rushmer Room
Wearable Antennas and In-Body Communications (Poster Session)

16:10-16:12 FrDT16-02.1
Real-Time Wireless Respiratory Monitoring using Wearable Inertial Motion Sensor Network
 Gaidhani, Apoorva (*San Diego State Univ.*); Moon, Kee* (*San Diego State University*); Ozturk, Yusuf (*San Diego State University*); Lee, Sung Q (*ETRI*); Youm, Woosub (*ETRI*)

16:12-16:14 FrDT16-02.2
Wireless Information Transmission using Capacitive Coupling while Transmitting Data from the Inside to the Outside of the Human Body: Optimization of Cutoff Frequency in the Receiving Filter Circuit
 Shingo, Kouki* (*Tokyo University of science*); Shiba, Kenji (*Tokyo University of Science*); Hara, Kazuhiro (*KOA Corporation*); Tsuboki, Mitsuo (*KOA Corporation*); Ito, Masakazu (*KOA Corporation*)

FrDT16-03: 16:10-17:10 Rushmer Room
Wearable Body-Compliant, Flexible and Printed Electronics (Poster Session)

16:10-16:12 FrDT16-03.1
Thermoplastically Shaped Wearable Medical Devices
 Plovie, Bart* (*Centre for Microsystems Tech. (imec - Ghent Univ.)*); Bossuyt, Frederick (*TFCG IMEC Ghent*); Vanfleteren, Jan (*IMEC / Ghent Univ.*); Van Put, Steven (*INTEC*); Dunphy, Sheila (*CMST (UGent - imec)*); Vandecasteele, Bjorn (*IMEC*); Dhaenens, Kristof (*CMST (UGent - imec)*)

16:12-16:14 FrDT16-03.2
Advanced Method for Continuous Denoising of Far-Field Arm-ECG Bipolar Lead Data using Empirical Mode Decomposition
 Lynn, William David (*Ulster University*); McEneaney, David (*Craigavon Area Hospital*); Villegas, Ricardo (*Universidad de Carabobo.*); Escalona, Omar Jacinto* (*University of Ulster*)

16:14-16:16 FrDT16-03.3
Quantification of a Wearable Contactless Sensor using an Expansion/Contraction Simulator Rig
 Shabani Varaki, Elham (*Western Sydney University*); Gargiulo, Gaetano (*The MARCS Institute (University of Western Sydney)*); Breen, Paul P* (*Western Sydney University*)

16:16-16:18 FrDT16-03.4
Carbon based Dry Electrode for Wearable Patch Devices
 Jung, Hachul* (*KBIO*); Ahn, Jin Woo (*KBIO*); Lee, Sanghun (*Osong Medical Innovation Foundation*); Moon, Jin-hee (*Medical Device Development Center of Osong Medical Innovation Fo*); Kwon, Dahye (*KBIO*)

16:18-16:20 FrDT16-03.5
Parallel Mechanism using Stretchable Strain Sensor for Lumbar Motion Measurement
 Nakamoto, Hiroyuki* (*Kobe University*); Yamaji, Tokiya (*Kobe University*); Yamamoto, Akio (*Kobe University*); Ootaka, Hideo (*Bando Chemical Industries, LTD*); Bessho, Yusuke (*Bando Chemical Industries, LTD*); Ono, Rei (*Kobe University*)

FrDT16-04: 16:10-17:10 Rushmer Room
Wearable Low Power, Wireless Sensing Methods (Poster Session)

16:10-16:12 FrDT16-04.1
A Wireless, Wearable Sensor System for Symmetry in Gait Analysis
 Marquez, Juan S.* (*Florida International Univ.*); Atri, Roozbeh (*Florida International Univ.*); Bai, Ou (*Florida International Univ.*)

FrDT16-05: 16:10-17:10 Rushmer Room
Wearable Power and On-Body Energy Harvesting (Poster Session)

16:10-16:12 FrDT16-05.1
CMOS-Based Optical Energy Harvesting Circuit for Medical and IoT Devices
 Wuthibenjaphonchai, Nattakarn (*Nara Inst. of Science and Tech.*); Haruta, Makito (*Nara Inst. of Science and Tech.*); Noda, Toshihiko (*Nara Inst. of Science and Tech.*); Sasagawa, Kiyotaka (*Nara Inst. of Science and Tech.*); Tokuda, Takashi* (*Nara Inst. of Science and Tech.*); Sawan, M. (*Polytechnique Montreal*); Ohta, J. (*Nara Inst. of Science and Tech.*)

16:12-16:14 FrDT16-05.2
Wearable Implementation of Human-Powered Energy Harvester for Trickle Charging of Mobile Devices with Minimal Engagement
 Yeo, Jeongjin (*Chonbuk National University*); Yang, Yoonseok* (*Chonbuk National University*)

16:14-16:16 FrDT16-05.3
Respiratory Sensing and Energy Scavenging Improvements with Chest and Abdomen Dual-Band Biosensors
 Padasdao, Bryson* (*Univ. of Hawaii at Manoa*); Shahhaidar, Ehsaneh (*IncubeLabs*); Stickley, Cris (*Univ. of Hawaii at Manoa*); Boric-Lubecke, Olga (*Univ. of Hawaii Manoa*)

FrDT16-06: 16:10-17:10 Rushmer Room
Wearable Sensor Systems – User Centered Design and Applications (Poster Session)

16:10-16:12 FrDT16-06.1
Augmented Reality as a Medical Diagnosis and Surgical Planning Tool
 Chen, Jackie (*Univ. of Illinois- Urbana-Champaign*); Pareek, Shrey (*Univ. of Illinois at Urbana-Champaign*); Chembrammel, Pramod (*Univ. of Illinois at Urbana-Champaign*); Kesavadas, Thenkurussi* (*Univ. of Illinois at Urbana-Champaign*)

16:12-16:14 FrDT16-06.2
Green Light Photoplethysmography in the Ear for Measuring Pulse Rate in Daily Life using an Earphone
 Kusaba, Shihori (*Fukuoka Institute of Tech.*); Fukumoto, Yuto (*Fukuoka Institute of Tech.*); Lee, Jihyoung* (*Fukuoka Institute of Tech.*); Rolfe, Peter (*Oxford BioHorizons Ltd*); Yamakoshi, Takehiro (*Fukuoka Institute of Tech.*)

16:14-16:16 FrDT16-06.3
Wearable EEG V.s. Wristband: Which is More Accurate for Sleep Tracking under Free Living Conditions?
 Liang, Zilu* (*The University of Tokyo*); Chapa Martell, Mario Alberto (*CAC Corporation*)

16:16-16:18 FrDT16-06.4
Data Glove for Sign Language Translation using Conductive Fabric
 Okada, Yuki* (*Kindai University*); Okada, Shima (*Ritsumeikan University*); Ioi, Kiyoshi (*Kindai University*)

16:18-16:20 FrDT16-06.5
Development of Processing System for Visually System based on Auditory Input
 Kim, Junghun (*Kyungpook Natl. Univ.*); Park, Jieun (*Kyungpook Natl. Univ.*); Ji, In Hee (*Deagu*); Won, Chulho (*Univ. of Kyungil*); Park, YuJin (*Kyungpook Natl. Univ.*); Nah, Jaewook (*Jeyun Medical Inc.*); Lee, Jongmin* (*Kyungpook Natl. Univ.*)

16:20-16:22 FrDT16-06.6
Internet of the Body: Wearable Devices and Cognitive Computing for a Personal Medical Advisor
 Straessle, R. (*IBM Research - Zurich*); Gerke, S. (*IBM Research - Zurich*); Brunschweiler, T. (*IBM Research - Zurich*); Temiz, Y. (*IBM Research-Zurich*); Weiss, J. (*IBM Research - Zurich*); Sridhar, A. (*IBM Research - Zurich*); Paredes, S. (*IBM Research - Zurich*); Loertscher, E. (*IBM Research - Zurich*); Ebejer, N. (*IBM Research - Zurich*); Faro, I. (*IBM Watson Research Lab*); van Kessel, T. (*IBM Watson Research Lab*); Meghelli, M. (*IBM Watson Research Lab*); Taubenblatt, M.A. (*IBM Watson Research Lab*); Zafar, S. (*IBM Watson Research Lab*); Libsch, F. (*IBM Watson Research Lab*); Matsumoto, K. (*IBM Research Tokyo*); Michel, B.* (*IBM Research - Zurich*)

16:22-16:24	FrDT16-06.7	A Wearable and Distributed Human Physiological Condition Monitoring System Cheng, Shuo (<i>Harbin Institute of Tech. ShenZhen</i>); Chen, Yang (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>); Ma, Heather Ting* (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>); Li, Jie (<i>Harbin Institute of Tech. Shenzhen Graduate School</i>); Lian, Jiayuan (<i>Harbin Institute of Tech.</i>)	Einthoven Hall Nonlinear Dynamic Analysis – Biomedical Signals (Poster Session)
16:24-16:26	FrDT16-06.8	Surface Electromyogram Measurement E-Textile for the Wearable Periodic Limb Movement Home Monitoring System Eguchi, Kana* (<i>Kyoto Univ.</i>); Nambu, Masayuki (<i>Kyoto Univ. Hospital</i>); Murase, Kimihiko (<i>Kyoto Univ. Hospital</i>); Chin, Kazuo (<i>Univ.</i>); Kuroda, Tomohiro (<i>Kyoto Univ.</i>)	FrDT17-03.1 Pneumo Reduction Device Cho, S.I. (<i>Kyungpook Natl. Univ.</i>); Kim, J. (<i>Kyungpook Natl. Univ.</i>); Park, J. (<i>Kyungpook Natl. Univ.</i>); Park, Y.J. (<i>Kyungpook Natl. Univ.</i>); Lee, J.* (<i>Kyungpook Natl. Univ.</i>)
16:26-16:28	FrDT16-06.9	Unobtrusive Device for Heartbeat Measurement based on Ballistocardiogram Park, Chan-Yong* (<i>My Mobile</i>)	FrDT17-03.2 Quantitative EEG in Mild Cognitive Impairment by AR Spectral and Multi-Scale Entropy Analysis Chai, Xiaoke (<i>Beihang Univ.</i>); Zhang, Zhimin (<i>Beihang Univ.</i>); Cao, Guiming (<i>Beihang Univ.</i>); Lu, YangTing (<i>BUAA</i>); Liu, Guitong (<i>Beihang Univ.</i>); Niu, Haijun* (<i>Beihang Univ.</i>)
16:28-16:30	FrDT16-06.10	Research for Patch Type Wireless Bio-Signal Detecting System Chang, Hojong* (<i>Institute for Information Technology Convergence, KAIST</i>); Kim, Ki-duk (<i>Sun Medical Center</i>); Han, Byunghun (<i>KAIST</i>); Lim, Taeyoon (<i>DooHaine Co., Ltd.</i>); Nam, Hyoung Ho (<i>E-ONE Co., Ltd.</i>); Kim, Hyunduk (<i>KAIST</i>)	FrDT17-05.1 Physiological Systems Modeling – Closed Loop Systems (Poster Session)
16:30-16:32	FrDT16-06.11	Touch-Sensitive Capacitive Smart Glove (TSCS) Marjanovic, N.* (<i>Univ. of Illinois at Chicago</i>); Pandya, S. (<i>Univ. of Illinois at Chicago</i>); Anderson, N. (<i>Univ. of Illinois at Chicago</i>); Esmailbeigi, H. (<i>Univ. of Illinois at Chicago (UIC)</i>)	FrDT17-05.2 Hybrid Design Architecture for Closed-Loop Deep Brain Stimulation on Cognitive-Enhancing Rodent Model Wang, Ching-Fu (<i>National Yang-Ming Univ.</i>); Chou, Yi-Ting (<i>National Yang-Ming Univ.</i>); Chou, Chin (<i>National Yang-Ming Univ.</i>); Li, Ssu-Ju (<i>National Yang-Ming Univ.</i>); Chen, Hsu-Yan (<i>National Yang-Ming Univ.</i>); Lin, Ting-Chun (<i>YMU</i>); Chen, Pochuan (<i>National Yang-Ming Univ.</i>); Lai, Hsin-Yi (<i>Zhejiang Univ.</i>); Chen, You-Yin* (<i>National Chiao-Tung Univ.</i>)
FrDT16-07: 16:10-17:10	Rushmer Room	Wearable Wireless Sensors, Motes and Systems (Poster Session)	FrDT17-05.2 Waveform Control Technique to make Specific Shape of Voltammogram in Fast-Scan Cyclic Voltammetry Kang, Yumin (<i>Hanyang Univ.</i>); Shin, Hojin (<i>Hanyang Univ.</i>); Park, CheonHo (<i>Hanyang Univ.</i>); Cho, Hyunwoo (<i>Hanyang Univ.</i>); Jang, D.P.* (<i>Hanyang Univ.</i>); Kim, I.-Y. (<i>Hanyang Univ.</i>)
16:10-16:12	FrDT16-07.1	Detection of Hemiplegic Gait using 6-Axis Inertial Sensor Lee, Jun Seok (<i>Chonnam Natl. Univ.</i>); Park, Sooji (<i>Chonnam Natl. Univ.</i>); Shin, Hangsik* (<i>Chonnam Natl. Univ.</i>)	FrDT17-06: 16:10-17:10
16:12-16:14	FrDT16-07.2	Posture Reminding Effect using a Wearable Neck Posture Tracker Lee, Jaehyun (<i>University of Ulsan</i>); Dang, Quoc Khanh (<i>University of Ulsan</i>); Chee, Youngjoon* (<i>University of Ulsan</i>)	Einthoven Hall Nonlinear Dynamic Analysis – Deterministic Chaos (Poster Session)
FrDT17-01: 16:10-17:10	Einthoven Hall	Connectivity Measurements (Poster Session)	FrDT17-06: 16:10-17:10
16:10-16:12	FrDT17-01.1	Low Beta (10-20Hz) Coherence within Fronto-Parietal Network during Visual Reaching Task in Non-Human Primates Lee, Jeyeon (<i>Hanyang Univ.</i>); Choi, Hoseok (<i>Hanyang Univ.</i>); Lee, Seho (<i>Hanyang Univ.</i>); Jang, DongPyo* (<i>Hanyang Univ.</i>)	Einthoven Hall Physiological Systems Modeling – Multivariate Signal Processing (Poster Session)
16:12-16:14	FrDT17-01.2	A Human ECoG Study for Fronto-Parietal Preparatory Networks Park, Young Min (<i>Hanyang Univ.</i>); Hwang, Jong Ho (<i>Hanyang Univ.</i>); Kim, Juri (<i>Hanyang Univ.</i>); Park, J. (<i>Hanyang Univ.</i>); Kim, I.-Y. (<i>Hanyang Univ.</i>); Jang, D.P.* (<i>Hanyang Univ.</i>)	FrDT17-07: 16:10-17:10
FrDT17-02: 16:10-17:10	Einthoven Hall	Directionality (Poster Session)	FrDT17-07: 16:10-17:10
16:10-16:12	FrDT17-02.1	Development of a Guidance Catheter Fourie, Christoffel Johannes Adriaan* (<i>Innovation4life</i>); Van Der Merwe, Johan (<i>Stellenbosch Univ.</i>); Van Der Merwe, Tys (<i>Stellenbosch Univ.</i>); Fourie, P.R. (<i>Stellenbosch Univ.</i>)	FrDT17-07.1 Physiological Systems Modeling – Multivariate Signal Processing (Poster Session)
16:12-16:14	FrDT17-02.2	Versatility of a Nonlinear Interdependence Method for Directional Coupling Detection from Spike Trains Malvestio, Irene* (<i>Univ. Pompeu Fabra, Barcelona</i>); Kreuz, Thomas (<i>National Research Council (CNR)</i>); Andrzejak, Ralph (<i>Computational Neuroscience Group, Dept. of Information</i>)	FrDT17-07.2 Modeling Firing Pattern of SA Afferents in Response to Constant Pressure Stimulation Park, Jisung* (<i>Ulsan National Institute of Science and Technology</i>); Jung, Sung Jun (<i>Hanyang University</i>); Kim, Jinsoo (<i>UNIST</i>); Kim, Sung-Phil (<i>Ulsan National Institute of Science and Technology</i>)
FrDT17-08: 16:10-17:10	Einthoven Hall	Physiological Systems Modeling – Signal Processing in Physiological Systems (Poster Session)	FrDT17-07.2 New Ways to Evaluate Neuronal Population Coding using Spike Train Distances Kreuz, Thomas* (<i>National Research Council (CNR)</i>); Satuvuori, Eero (<i>Institute of Complex Systems, CNR</i>); Mulansky, Mario (<i>Institute for complex systems (ISC), National Research Council</i>)
16:10-16:12	FrDT17-08.1	MCA-Based Denosing for In-Vehicle EEG Measurements to Estimate the Driver's Mental Workload Influenced by Distractions Ichiki, Mayu* (<i>Kyushu Institute of Tech.</i>); Singh, Balbir (<i>Kyushu Institute of Tech.</i>); Ai, Guangyi (<i>Neusoft Institute Guangdong</i>); Wagatsuma, Hiroaki (<i>Kyushu Institute of Tech.</i>)	FrDT17-08: 16:10-17:10

- 16:12-16:14 FrDT17-08.2
Constrained Optimization for Synthesizing Pulsating Blood Volume Waveforms from Video Cameras
 Seenamani, Gayathri (*GE Global Research*); Block, Robert (*Univ. of Rochester Medical Center*); Mukkamala, R.* (*Michigan State Univ.*); Mestha, Lalit, K. (*GE Global Research*)
- 16:14-16:16 FrDT17-08.3
A High-Precision Skilled Movement Evaluation by using Curvature Analysis in the Simultaneous Recording of 3D Motion Capture System and Intracranial Video-EEG Monitoring and Stimulation
 Maniamma, Jisha* (*Kyushu Institute of Tech.*); Hagio, Motoharu (*Kyushu Institute of Tech.*); Togo, Masaya (*Kyoto Univ. Grad. School of Medicine*); Shimotake, Akihiro (*Kyoto Univ. Grad. School of Medicine*); Matsumoto, Riki (*Kyoto Univ. Grad. School of Medicine*); Ikeda, Akio (*Kyoto Univ. Grad. School of Medicine*); Wagatsuma, Hiroaki (*Kyushu Institute of Tech.*)
- 16:16-16:18 FrDT17-08.4
Investigation of the Photoplethysmography Waveform According to the Nociceptive Pain
 Yang, Yoon La (*Chonnam National University*); Shin, Hangsik* (*Chonnam National University*)
- 16:18-16:20 FrDT17-08.5
Novel Sleep Indicator of Heart Rate Variability: Power Concentration Index of High-Frequency Component
 Hayano, Junichiro* (*Nagoya City Univ.*); Yuda, Emi (*Nagoya City Univ. Grad. School of Medical Sciences*); Yoshida, Yutaka (*Nagoya City Univ. Grad. School of Medical Sciences*)
- 16:20-16:22 FrDT17-08.6
Estimation of Bladder Fullness from Electrical -Bioimpedance
 Wang, Qian* (*sun yat-sen Univ.*); Konyang, Li (*Sun yat-sen Univ.*)
- 16:22-16:24 FrDT17-08.7
Thigh EMG and Skin Temperature Variation during Increasing-Load Cycling Exercises
 Gelain, Manuela Cristine (*University Tecnological Federal of Parana*); Nogueira-Neto, Guilherme (*Pontificia Universidade Catolica do Parana*); Abreu de Souza, Mauren (*Federal University of Technology – Paraná (UTFPR)*); Nohama, Percy* (*Universidade Tecnologica Federal do Parana*)
- 16:24-16:26 FrDT17-08.8
The Advantage of Topographic Prominence–adapted Filter for the Detection of Short-Latency Spikes of Retinal Ganglion Cells
 Ahn, Jungryul (*Chungbuk Natl. Univ.*); Choi, Myounghwan (*Univ. of Ulsan*); Cha, Seongkwang (*Chungbuk Natl. Univ.*); Kim, Changsik (*Univ. of Ulsan*); Kim, Kwangsoo (*Hanbat Natl. Univ.*); Cho, Dong Il (*Seoul Natl. Univ.*); Koo, Kyoin* (*Univ. of Ulsan*); Goo, Y.S. (*Chungbuk Natl Univ School of Medicine*)
- 16:26-16:28 FrDT17-08.9
Near Infrared Spectrum based Biometric Authentication
 Thangappan, Anandaraj* (*Wipro Limited*); Susha Nair, Aravind (*Wipro Limited*)
- 16:28-16:30 FrDT17-08.10
Using Quantitative Metrics for Comparing Lower Limbs Multibody Dynamics Estimated Action and Measured EMG at Locomotion
 Rodrigues, Carlos M. B.* (*INESCTEC - Tech. & Science Associate Lab.*); Correia, Miguel (*Univ. do Porto, Faculdade de Engenharia*); Abrantes, João M. C. S. (*MovLab - ULHT*); Nadal, Jurandir (*Federal Univ. of Rio de Janeiro*); Rodrigues, Marco Aurélio Benedetti (*Federal Univ. of Pernambuco*)
- FrDT17-09: 16:10-17:10 Einthoven Hall
Physiological Systems Modeling – Signals and Systems (Poster Session)
- 16:10-16:12 FrDT17-09.1
Speech Enhancement Strategy based on Noise Classification and Optimal Noise Estimation Parameters
 Jeon, Yuyong (*INHA Univ.*); Sun Kwon, Kim (*Korea ElectroTech. Research Institute*); Park, Yuongjin (*Korea ElectroTech. Research Institute*); Lee, Sangmin* (*INHA Univ.*)
- 16:12-16:14 FrDT17-09.2
Synthesis of Vocal Jitter
 Jo, Cheolwoo* (*Changwon National University*)
- FrDT18-01: 16:10-17:10 Montgomery Hall
Data Mining and Processing – Pattern Recognition (Poster Session)
- 16:10-16:12 FrDT18-01.1
Early Recognition of Speech Disturbance in a Mobile Stroke Triage System
 Shin, Yeongcheol (*Health-IT Acceleration Center, Yonsei University College of Medi*); Nam, Gibaek (*Health-IT Acceleration Center, Yonsei University College of Medi*); Park, Eunjeong (*Cardiovascular Research Institute, Yonsei University College of*); Nam, Hyosuk (*Dept. of Neurology, Yonsei University College of Medicine*); Chang, Hyuk-Jae* (*Dept. of Internal Medicine, Severance Cardiovascular Hospit*)
- 16:12-16:14 FrDT18-01.2
Extraction of Brain Cortical Activities Related to Auditory Impressions Induced by HVAC Sound using Nonnegative Tensor Factorization
 Yano, Hajime* (*Kobe University*); Takiguchi, Tetsuya (*Kobe University*); Arika, Yasuo (*Kobe University*); Kamiya, Masaru (*Denso Corporation*); Nakagawa, Seiji (*Chiba University*)
- FrDT18-02: 16:10-17:10 Montgomery Hall
Data Mining and Processing in Biosignals (Poster Session)
- 16:10-16:12 FrDT18-02.1
The Design of Outlier Removal Method for Effective Negative Emotion Classification using Bio-Signal
 Lee, JeeEun (*Yonsei Univ.*); Kim, Byeongnam (*Yonsei Univ.*); Jang, Wonseuk (*Yonsei Univ.*); Lim, Hyunjun (*Yonsei Univ.*); Oh, Kyeong Taek (*Yonsei Univ.*); Kwon, JunHwan (*Yonsei Univ.*); Yoo, Sun K.* (*Yonsei Univ. Health System*)
- FrDT18-03: 16:10-17:10 Montgomery Hall
Independent Component Analysis (Poster Session)
- 16:10-16:12 FrDT18-03.1
Independent Component Analysis based Symmetric Signal Leakage Correction for Source Reconstructed MEG Data
 Gohel, Bakul* (*Korea Research Institute of Standards and Science (KRIS)*); Lim, Sanghyun (*Korea Research Institute of Standards and Science (KRIS)* and *Un*); Kim, Kiwoong (*Korea Research Institute of Standards and Science*)
- 16:12-16:14 FrDT18-03.2
Heart Rate Estimation from Facial Videos based on ICA with Reference
 Umematsu, Terumi* (*NEC Corp.*); Tsujikawa, M. (*NEC Corp.*)
- FrDT18-05: 16:10-17:10 Montgomery Hall
Principal Component Analysis (Poster Session)
- 16:10-16:12 FrDT18-05.1
Pupil Diameter Changes Related to Interest Value of Visual Stimuli
 Yoshida, Anna (*Waseda Univ.*); Momose, Keiko* (*Waseda Univ.*)
- 16:12-16:14 FrDT18-05.2
Multi-Stage Singular Spectrum Analysis based Heart Sound Denoising using Wavelet Packet Transform
 Zheng, Yineng (*Chongqing University*); Guo, Xingming* (*Chongqing University*)
- 16:14-16:16 FrDT18-05.3
Feature Extraction of EEG Signals in Concentrated State using ICA
 Kim, Byeongnam (*Yonsei Univ.*); Lee, JeeEun (*Yonsei Univ.*); Lim, Hyunjun (*Yonsei Univ.*); Kim, Sangkyu (*Yonsei Univ.*); Kim, Han Woong (*Yonsei Univ.*); Jang, Wonseuk (*Yonsei Univ.*); Yoo, Sun K.* (*Yonsei Univ. Health System*)

FrDT18-06: 16:10-17:10 Montgomery Hall
Time-Frequency and Time-Scale Analysis – Empirical mode Decomposition in Biosignal Analysis (Poster Session)

16:10-16:12 FrDT18-06.1
Removal of Drift and Blink Artifacts in EEG based on Sparse Morphological Decomposition
Singh, Balbir (*Kyushu Institute of Technology*); Ichiki, Mayu* (*Kyushu Institute of Technology*); Wagatsuma, Hiroaki (*Kyushu Institute of Technology*)

16:12-16:14 FrDT18-06.2
Classification of Ictal Interictal EEG Signals based on Bandwidth Features and their Ratio
Mahapatra, Arindam Gajendra* (*Life science and System Engineering, Kyutech*); Horio, Keiichi (*Kyushu Institute of Tech.*)

16:14-16:16 FrDT18-06.3
Quantitative EEG as a Predictor of Prognosis in First Episode Psychosis
Lee, Tak Hyung (*Dept. of Brain and Cognitive Sciences, Seoul National Univ*); Kim, Minah (*Dept. of Psychiatry, Seoul National University College of M*); Lee, Tae Young (*Dept. of Neuropsychiatry, Seoul National University Hospita*); Kim, Sung Nyun (*Dept. of Psychiatry, Seoul National University College of M*); Kwon, Jun Soo* (*Dept. of Psychiatry, Seoul National University College of M*)

16:16-16:18 FrDT18-06.4
Osteoarthritis Knees Exhibit Smaller Median Frequencies in their Vibroarthrographic Signals
Wang, Jia-Jung* (*I-Shou University*); Zhang, Jia-Fong (*I-Shou University*); Liu, Shing-Hong (*Chaoyang University of Technology, Taichung, Taiwan, ROC*); Yen, Cheng-Yo (*E-Da Hospital*); Hsu, Hsiang-Chen (*I-Shou University*)

FrDT18-07: 16:10-17:10 Montgomery Hall
Time-Frequency and Time-Scale Analysis – Nonstationary Processing (Poster Session)

16:10-16:12 FrDT18-07.1
Study on Subject-Specific Parameters in Sleep Spindle Detection Algorithm
Choi, Jinyoung (*Gwangju Institute of Science and Tech.*); Han, Sangjun (*Gwangju Institute of Science and Tech.*); Kwon, Moonyoung (*Gwangju Institute of Science and Tech.*); Seo, Hyeon (*Gwangju Institute of Science and Tech.*); Jang, Sehyeon (*Gwangju Institute of Science and Tech.*); Jun, Sung Chan* (*Gwangju Institute of Science and Tech.*)

16:12-16:14 FrDT18-07.2
A Comparison of Smartphone Camera-Based Heart Rate Detection Methods
Zaman, Rifat (*Texas Tech University*); Cho, Chae Ho (*Texas Tech University*); Lee, Jiyeon (*KRIBB*); Seo, Sung Eun (*Korea Research Institute of Bioscience & Biotechnology*); Kwon, Oh Seok (*Korea Research Institute of Bioscience and Biotechnology*); Chong, Jo Woon* (*Texas Tech University*)

16:14-16:16 FrDT18-07.3
Acute Mental Stress Response Level Detection using Short-Term Heart Rate Variability Indices
taehyun, kim (*Hanyang University*); You, Sungmin (*Hanyang University*); Lee, Jong-Shill (*Hanyang University*); Kim, In-Young* (*Hanyang University*)

16:16-16:18 FrDT18-07.4
A Novel Motion and Noise Artifact Detection Algorithm for Smartphone PPG Signals
Phan, Tra (*Texas Tech University*); Cho, Chae Ho (*Texas Tech University*); Seo, Sung Eun (*Korea Research Institute of Bioscience & Biotechnology*); Lee, Jiyeon (*Dongduk Women's University*); Kwon, Oh Seok (*Korea Research Institute of Bioscience and Biotechnology*); Kim, Daeik (*Chonnam National University*); Chong, Jo Woon* (*Texas Tech University*)

FrDT18-08: 16:10-17:10 Montgomery Hall
Time-Frequency and Time-Scale Analysis – Time-Frequency Analysis (Poster Session)

16:10-16:12 FrDT18-08.1
Heart Rate Estimation from Compressed Photoplethysmogram
Park, Chanki* (*Gwangju Institute of Science and Tech.*); Lee, Boreom (*Gwangju Institute of Science and Tech. (GIST)*)

16:12-16:14 FrDT18-08.2
Monitoring and Evaluation of Patients' Mechanical Impedance during CPR
Lee, Do Yeon (*kangwon University*); Park, Soo-jin (*Kangwon National University*); Kang, Seong Min (*Kangwon National University*); Choi, Seong Wook* (*Kangwon National University*)

16:14-16:16 FrDT18-08.3
Effect of Low Sampling Rate on the First Derivative of the PPG Waveform
Han, Sangjin (*Chonnam National University*); Shin, Hangsik* (*Chonnam National University*)

16:16-16:18 FrDT18-08.4
Quantitative Sleep EEG Analysis of Stroke Patients
Foldager, Jonathan* (*Technical University of Denmark*); Ponsaing, Laura B. (*Rigshospitalet - Glostrup*); Iversen, Helle K. (*Apoplexy Unit, Dept. of Neurology, Glostrup Hospital, 2600*); Sorensen, Helge B D (*Technical University of Denmark*); Jennum, Poul (*University of Copenhagen, Demnar*)

16:18-16:20 FrDT18-08.5
Proposal of a Method for Extracting Instantaneous Heart Rate from Pressure Time Series Measured from a Person on a Bed
Ogishi, Yudai* (*Meijo Univ.*); Mukai, Toshiharu (*Meijo Univ.*)

16:20-16:22 FrDT18-08.6
State-Space Model based Multitaper Spectral Estimation
Kim, Seong-Eun* (*Massachusetts Institute of Technology*); Behr, Michael (*Google*); Ba, Demba (*MIT*); Brown, Emery N (*MGH-Harvard Medical School-MIT*)

16:22-16:24 FrDT18-08.7
Cumulative Spectral Power for Studying on Seasonal Changes in Radial Pulse
Bae, Jang-Han* (*Korea Institute of Oriental Medicine, KAIST*); Kim, Jaeuk U (*Korean Institute of Oriental Medicine*)

16:24-16:26 FrDT18-08.8
Tracking the Beat in the Brain via Source Power Co-Modulation in the Beta Band
Brandl, Stephanie* (*Berlin Institute of Tech.*); Dähne, Sven (*Technical University of Berlin*); Blankertz, Benjamin (*Technische Universität Berlin*); Müller, Klaus-Robert (*Berlin Institute of Tech.*); Grube, Manon (*Berlin Institute of Tech.*)

16:26-16:28 FrDT18-08.9
Evaluation of EEG Characteristics for Personal Authentication
Kang, Jae-Hwan (*Ulsan National Institute of Science and Technology*); Jo, Young Chang (*Korea Electronics Technology Institute*); Kim, Sung-Phil* (*Ulsan National Institute of Science and Technology*)

FrDT18-09: 16:10-17:10 Montgomery Hall
Time-Frequency and Time-Scale Analysis – Wavelets (Poster Session)

16:10-16:12 FrDT18-09.1
Analysis of the Emotion of Fear using Galvanic Skin Response Signal
Lim, Hyunjun (*Yonsei Univ.*); Oh, Seung Young (*Yonsei Univ.*); Kim, Byeongnam (*Yonsei Univ.*); Lee, JeeEun (*Yonsei Univ.*); Yoo, Sun K.* (*Yonsei Univ. Health System*)

Saturday, 15 July 2017

SaAT1: 08:00-09:30 Roentgen Hall
Data Mining and Processing in Biosignals I (Oral Session)

08:00-08:15 SaAT1.1
A Flexible Method for the Automated Offline-Detection of Artifacts in Multi-Channel Electroencephalogram Recordings
 Waser, Markus* (*Technical Univ. of Denmark*); Garn, Heinrich (*AIT Austrian Institute of Technology GmbH*); Benke, Thomas (*Innsbruck Medical Univ.*); Dal-Bianco, Peter (*Medical Univ. of Vienna*); Ransmayr, Gerhard (*AKH Allgemeines Krankenhaus der Stadt Linz GmbH*); Schmidt, Reinhold (*Graz Medical Univ.*); Jennum, Poul (*Univ. of Copenhagen, Demnar*); Sorensen, Helge B D (*Technical Univ. of Denmark*)

08:15-08:30 SaAT1.2
Elucidating Age-Specific Patterns from Background Electroencephalogram Pediatric Data Sets via PARAFAC
 Kinney-Lang, Eli* (*University of Edinburgh*); Spyrou, Loukianos (*University of Edinburgh*); Ebied, Ahmed (*University of Edinburgh*); Chin, Richard (*The University of Edinburgh*); Escudero, Javier (*University of Edinburgh*)

08:30-08:45 SaAT1.3
Speech Features for Telemonitoring of Parkinson's Disease Symptoms
 Ramezani, Hamideh* (*Koc Univ.*); Khaki, Hossein (*Koc Univ.*); Erzin, Engin (*Koc Univ.*); Akan, Ozgur B. (*Koc Univ.*)

08:45-09:00 SaAT1.4
"You Sound Ill, Take the Day Off": Automatic Recognition of Speech Affected by Upper Respiratory Tract Infection
 Cummins, Nicholas* (*University of Passau*); Schmitt, Maximilian (*University of Passau*); Amiriparian, Shahin (*University of Passau*); Krajewski, Jarek (*University of Wuppertal*); Schuller, Joern (*University of Passau*)

09:00-09:15 SaAT1.5
Linear-Sigmoidal Modelling of Accelerometer Features and Tinetti Score for Automatic Fall Risk Assessment
 Rivolta, Massimo Walter* (*Università degli studi di Milano*); Sassi, Roberto (*Università degli Studi di Milano*)

09:15-09:30 SaAT1.6
Convolutional Neural Network Architecture and Input Volume Matrix Design for ERP Classifications in a Tactile P300 – Based Brain – Computer Interface
 Kodama, Takumi* (*University of Tsukuba*); Makino, Shoji (*University of Tsukuba*)

SaAT2: 08:00-09:30 Cho Room
Frontiers in Wavefront Shaping Techniques (Minisymposium)
Chair: Lai, Puxiang (*Hong Kong Polytechnic University*)

08:00-08:15 SaAT2.1
Fast Digital Optical Phase Conjugation
 Wang, Daifa* (*Tsinghua University*)

08:15-08:30 SaAT2.2
Progress and Challenges of Time Reversal based Wavefront Shaping
 Cheng, Ma* (*Tsinghua University, Beijing, China*)

SaAT3: 08:00-09:30 Park Room
Infrared and Thermal Imaging (Oral Session)
Chair: Czaplík, Michael (*University Hospital RWTH Aachen*)
Co-Chair: Ruminski, Jacek (*Gdansk University of Technology*)

08:00-08:15 SaAT3.1
Estimation of Respiratory Rate from Thermal Videos of Preterm Infants
 Barbosa Pereira, Carina* (*RWTH Aachen Univ.*); Heimann, Konrad (*Univ. Children's Hospital, Dept. of Neonatology, RWTH*); Venema, Boudewijn (*Philips Chair for Medical Information Tech., RWTH Aachen*); Blazek, V. (*Philips Chair for Medical Info. Tech., RWTH Aachen*); Czaplík, M. (*Univ. Hospital RWTH Aachen*); Leonhardt, S. (*RWTH Aachen Univ.*)

08:15-08:30 SaAT3.2
Automated Segmentation of Regions of Interest from Thermal Images of Hands

Gauci, Jean (*University of Malta*); Falzon, Owen* (*University of Malta*); Camilleri, Kenneth Patrick (*University of Malta*); Formosa, Cynthia (*University of Malta*); Gatt, Alfred (*University of Malta*); Mizzi, Stephen (*University of Malta*); Mizzi, Anabelle (*University of Malta*); Cassar, Kevin (*Mater Dei Hospital*); Sturgeon, Cassandra (*University of Malta*); Chockalingam, Nachiappan (*Staffordshire University*)

08:30-08:45 SaAT3.3
Automatic Analysis of the Aggressive Behavior of Laboratory Animals using Thermal Video Processing
 Mazur-Milecka, Magdalena (*Gdańsk University of Technology*); Ruminski, Jacek* (*Gdansk University of Technology*)

08:45-09:00 SaAT3.4
Development of a "Thermal-Associated Pain Index" Score using Infrared-Thermography for Objective Pain Assessment
 Czaplík, Michael* (*Univ. Hospital RWTH Aachen*); Hochhausen, Nadine (*RWTH Aachen Univ., Section Medical Technology at the Depart*); Dohmeier, Henriette (*RWTH Aachen Univ., Section Medical Technology at the Depart*); Barbosa Pereira, Carina (*RWTH Aachen Univ.*); Rossaint, Rolf (*RWTH Aachen Univ., Dept. of Anesthesiology*)

09:00-09:15 SaAT3.5
Comparison of Motion-Based Analysis to Thermal-Based Analysis of Thermal Video in the Extraction of Respiration Patterns
 Bennett, Stephanie Louise* (*Carleton University*); Goubran, Rafik A. (*Carleton University*); Knoefel, Frank-Dietrich (*Bruyere Continuing Care, University of Ottawa, Carleton Universi*)

SaAT5: 08:00-09:30 Lee Room
Integrated Circuits and Systems (Oral Session)
Chair: Pino, Esteban J (*Universidad de Concepcion*)

08:00-08:15 SaAT5.1
A Sub-nj CMOS ECG Classifier for Wireless Smart Sensor
 Chollet, Paul* (*IMT Atlantique Bretagne-Pays de la Loire*); Pallas, Rémi (*Telecom bretagne*); Lahuec, Cyril (*TELECOM Bretagne, France*); Arzel, Matthieu (*TELECOM Bretagne, France*); Seguin, Fabrice (*Institut Mines Telecom Atlantique*)

08:15-08:30 SaAT5.2
A Low Power, Low Noise Programmable Analog Front End (PAFE) for Biopotential Measurements
 Adimulam, Mahesh Kumar* (*Birla Institute of Tech. and Science – Pilani, Hyderabad Ca*); Adimulam, Divya (*EE Dept., Birla Institute of Tech. and Science – Pilani*); K, Tejaswi (*Birla Institute of Tech. and Science – Pilani, Hyderabad Ca*); M B, Srinivas (*EE Dept., Birla Institute of Tech. and Science – Pilani*)

08:30-08:45 SaAT5.3
Improving Efficiency of DC/DC Booster Converters used in Electrical Stimulators
 Aqueveque, Pablo* (*Univ. of Concepcion*); Saavedra, Francisco (*Univ. of Concepcion*); Pino, Esteban J (*Univ. de Concepcion*)

08:45-09:00 SaAT5.4
Wireless Wearable User Interface Cursor-Controller (UIC-C)
 Marjanovic, Nicholas* (*University of Illinois at Chicago*); Kerr, Kevin (*University of Illinois-Chicago*); Aranda, Ricardo (*University of Illinois at Chicago*); Hickey, Richard (*University of Illinois at Chicago*); Esmailbeigi, Hananeh (*University of Illinois at Chicago (UIC)*)

SaAT6: 08:00-09:30 Zworykin Room
Biologically Inspired Regenerative Systems (Invited Session)
Chair: Jabbari, Esmail (*University of South Carolina*)

08:00-08:15 SaAT6.1
Droplet-Based in Vitro Tumor Model of Gastric Cancer Cells
 Kim, Pilnam* (*Korea Advanced Institute of Science and Tech.*)

08:15-08:30	SaAT6.2	08:15-08:30	SaAT9.2
Bioprinting via Visible Light Stereolithography Kim, Keekyoung* (<i>University of British Columbia Okanagan Campus</i>); Wang, Zongjie (<i>University of British Columbia</i>)		Using Treadmill Cross-Tilt Construct for Motor Adaption Post-Stroke Reissman, Megan (<i>University of Dayton</i>); Gordon, Keith (<i>Feinberg School of Medicine, Northwestern University</i>); Dhafer, Yasin* (<i>Northwestern University</i>)	
08:30-08:45	SaAT6.3	08:30-08:45	SaAT9.3
Macrophage Polarization on Cell Sheets Seeded with Devitalized Mesenchymal and Endothelial Progenitor Cells Jabbari, Esmail* (<i>University of South Carolina</i>)		Fall Risk Reduction in Chronic Stroke Survivors: Slip Perturbation Training to Improve Reactive Balance Control Bhatt, Tanvi* (<i>University of Illinois at Chicago</i>); Patel, Prakruti (<i>University of Illinois at Chicago</i>)	
SaAT7: 08:00-09:30	Herrick Room	08:45-09:00	SaAT9.4
Neurorehabilitation I (Oral Session)		Using Robotics to Challenge Walking Post-Stroke: A New Assessment and Intervention Paradigm Brown, David* (<i>UAB</i>)	
08:00-08:15	SaAT7.1	09:00-09:15	SaAT9.5
Feasibility of using the RAPAE Smart Glove in Upper Limb Physical Therapy for Patients after Stroke: A Randomized Controlled Trial Jung, Hee-Tae* (<i>Daegu Univ.</i>); Kim, Hwan (<i>Daegu Univ.</i>); Jeong Jugyeong, Jeong Jugyeong (<i>Heeyeon Hospital</i>); Jeon, Bomim (<i>희연병원 Occupational Therapy</i>); Ryu, Taekyeong (<i>Heeyeon Hospital</i>); Kim, Yangsoo (<i>Heeyeon Hospital</i>)		Post-Stroke Adaptations to Loss of Balance during Gait Sharafi, Bahar* (<i>The Rehabilitation Institute of Chicago</i>); Dhafer, Yasin (<i>Northwestern University</i>)	
08:15-08:30	SaAT7.2	SaAT11: 08:00-09:30	Greatbatch Room
Assessment of Elbow Spasticity with Surface Electromyography and Mechanomyography based on Support Vector Machine Wang, Hui (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>); Wang, Lei (<i>Shenzhen Institutes of Advanced Technology Chinese Academy of Sc</i>); Xiang, Yun (<i>The Sixth People's Hospital of Shenzhen City, Rehabilitation Ins</i>); Zhao, Ning (<i>Rehabilitation Unit, Nanshan District People's Hos</i>); Li, Xiangxin (<i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sc</i>); Chen, Shixiong (<i>Shenzhen Institutes of Advanced Technology</i>); Lin, Chuang (<i>Univ. Medical Center Goettingen, Georg-August Univ.</i>); Li, Guanglin* (<i>Shenzhen Institutes of Advanced Technology</i>)		Computational Models of Cardiac Electrophysiology and Mechanics (Invited Session) Chair: Shim, Eun Bo (<i>Kangwon National University</i>) Co-Chair: Leem, Chae Hun (<i>Univ. of Ulsan College of Medicine</i>)	
08:30-08:45	SaAT7.3	08:00-08:15	SaAT11.1
Accurate Estimation of Joint Motion Trajectories for Rehabilitation using Kinect Sinha, Sanjana* (<i>Innovation Labs, Tata Consultancy Services Ltd.</i>); Bhowmick, Brojeshwar (<i>Innovation Labs, Tata Consultancy Services Ltd.</i>); Sinha, Aniruddha (<i>Tata Consultancy Services Ltd.</i>); Das, Abhijit (<i>Institute of NeuroSciences Kolkata</i>)		In Silico Cardiac Resynchronization Therapy by the Multi-Scale Heart Simulator 'UT-Heart' Sugiura, Seiryō* (<i>University of Tokyo</i>); Okada, Jun-ichi (<i>University of Tokyo</i>); Washio, Takumi (<i>University of Tokyo</i>); Hisada, Toshiaki (<i>University of Tokyo</i>)	
08:45-09:00	SaAT7.4	08:15-08:30	SaAT11.2
Electrical Neurostimulation of a Mammalian Nerve Fibers: A Probabilistic versus Mechanistic Approach Sadashivaiah, Vijay* (<i>Johns Hopkins University</i>); Sacré, Pierre (<i>Johns Hopkins University</i>); Guan, Yun (<i>Johns Hopkins University School of Medicine</i>); Anderson, William S. (<i>Johns Hopkins School of Medicine, Dept. of Neurosurgery</i>); Sarma, Sridevi V. (<i>Johns Hopkins University</i>)		Computational Analysis of the Effect of KCNQ1 G229D Mutation on Cardiac Electromechanical Behaviors using Image-Based FE Heart Model Lim, Ki Moo* (<i>Kumoh National Institute of Technology</i>); Yuniarti, Ana Rahma (<i>Kumoh National Institute of Technology</i>)	
09:00-09:15	SaAT7.5	08:30-08:45	SaAT11.3
Quantification Method of Motor Function Recovery of Fingers by using the Device for Home Rehabilitation Furudate, Yuta* (<i>Future University Hakodate</i>); Yamamoto, Kazuki (<i>Future University Hakodate</i>); Ishida, Yuji (<i>Hokkaido Bunkyo University</i>); Chiba, Kaori (<i>Medical Association Hospital Hakodate</i>); Mikami, Sadayoshi (<i>Future University Hakodate</i>)		Diagnostic Performance and Utility of Non-Invasive Instantaneous Flow Reserve Lee, Kyung Eun (<i>Kangwon National University</i>); Shim, Eun Bo* (<i>Kangwon National University</i>)	
SaAT9: 08:00-09:30	Plonsey Room	08:45-09:00	SaAT11.4
Destabilizing Locomotor Paradigms: Understanding Motor Adaptations Post Stroke (Minisymposium) Chair: Dhafer, Yasin (<i>Northwestern University</i>) Co-Chair: Gordon, Keith (<i>Feinberg School of Medicine, Northwestern University</i>)		Novel Indices for the Risk Prediction of Cardiovascular Disease Leem, Chae Hun* (<i>University of Ulsan College of Medicine</i>)	
08:00-08:15	SaAT9.1	SaAT13: 08:00-09:30	Dunn Room
Movement Amplification Encourages Active Control of Gait Stability Gordon, Keith* (<i>Feinberg School of Medicine, Northwestern University</i>); Wu, Mengnan/Mary (<i>Northwestern University</i>); Brown, Geoffrey (<i>Northwestern University</i>); Woodward, Jane (<i>Rehabilitation Institute of Chicago</i>)		Bioinformatics – Bioinformatics Databases (Oral Session) Chair: Fotiadis, Dimitrios I. (<i>University of Ioannina</i>)	
		08:00-08:15	SaAT13.1
		Identification of Differentially Expressed Genes through a Meta-Analysis Approach for Oral Cancer Classification Kourou, Konstantina (<i>Unit of Biological Applications and Technology, University of Io</i>); Papaloukas, Costas (<i>University of Ioannina</i>); Fotiadis, Dimitrios I.* (<i>University of Ioannina</i>)	
		08:15-08:30	SaAT13.2
		Alignment-Free Sequence Comparison using Joint Frequency and Position Information of K-Words Han, Gyu-Bum (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Chung, Byung Chang (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Cho, Dong-Ho* (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>)	
		08:30-08:45	SaAT13.3
		Privacy-Preserving Chi-Squared Testing for Genome SNP Databases Sei, Yuichi* (<i>University of Electro-Communications</i>); Ohsuga, Akihiko (<i>University of Electro-Communications</i>)	

08:45-09:00 SaAT13.4
MotifMark: Finding Regulatory Motifs in DNA Sequences
Hassanzadeh, Hamid* (*Georgia Institute of Technology*);
Wang, May D. (*Georgia Tech and Emory University*)

09:00-09:15 SaAT13.5
Classification of Various Genomic Sequences based on Distribution of Repeated K-Word
Song, Yong-Joon (*Korea Advanced Institute of Science and Technology (KAIST)*); Cho, Dong-Ho* (*Korea Advanced Institute of Science and Technology (KAIST)*)

09:15-09:30 SaAT13.6
Predicting Rapid Progression of Parkinson's Disease at Baseline Patients Evaluation
Tsiouris, Kostas (*Biomedical Engineering Lab, School of Electrical and Comp*); Rigas, Georgios (*Univ. of Ioannina*); Gatsios, Dimitris (*Univ. of Ioannina*); Antonini, Angelo (*IRCCS Fondazione Ospedale San Camillo, Division of Parkinson's Di*); Konitsiotis, Spiros (*Medical School, Univ. of Ioannina*); Koutsouris, Dimitrios (*Biomedical Engineering Lab, School of Electrical and Comp*); Fotiadis, Dimitrios I.* (*Univ. of Ioannina*)

SaAT14: 08:00-09:30 Schaldach Room
Imaging-Based Biomarkers (Oral Session)
Chair: Park, Hyunjin (*Sungkyunkwan University*)

08:00-08:15 SaAT14.1
Colorimetric Recognition for Urinalysis Dipsticks based on Quadratic Discriminant Analysis
Dong, Kai (*Nanjing University of Science & Technology*); Dong, Tao* (*University College of Southeast Norway - HSN, TekMar*)

08:15-08:30 SaAT14.2
Automatic Detection of Periodontitis using Intra-Oral Images
Tabatabaei Balaei, Asghar* (*Univ. of Sydney*); de Chazal, Philip (*Univ. of Sydney*); Eberhard, Joerg (*Univ. of Sydney*); Ruiz, Kate (*Univ. of Sydney*); Spahr, Axel (*Univ. of Sydney*); Domnisch, Henrik (*Charite Univ., Berlin*)

08:30-08:45 SaAT14.3
Content-Based Retrieval for Lung Nodule Diagnosis using Learned Distance Metric
Wei, Guohui (*Northeastern University*); Ma, He* (*Northeastern University*); Qian, Wei (*Northeastern University*); Jiang, Hongyang (*Sino-Dutch Biomedical and Information Engineering School, Northe*); Zhao, Xinzhuo (*Northeastern University*)

08:45-09:00 SaAT14.4
11C-PIB PET Image Analysis for Alzheimer's Diagnosis using Weighted Voting Ensembles
Wu, Wenjun (*Georgia Institute of Technology*); Venugopalan, Janani (*Georgia Institute of Technology*); Wang, May D.* (*Georgia Tech and Emory University*)

09:00-09:15 SaAT14.5
Touch-Free Reaching Task for Parkinson's Disease Patients: A Motion Sensing Approach
Salimpour, Yousef* (*Johns Hopkins School of Medicine*); Chien, Jui-Hong (*Johns Hopkins Univ.*); Lee, Sangwon (*Johns Hopkins School of Medicine*); Liu, Chang-Chia (*Johns Hopkins Univ.*); Guadix, Sergio (*Johns Hopkins Univ., Univ. of Pennsylvania*); Mills, Kelly (*Johns Hopkins Univ.*); Anderson, William S. (*Johns Hopkins School of Medicine, Dept. of Neurosurgery*)

09:15-09:30 SaAT14.6
Imaging Genetics Approach to Predict Progression of Parkinson's Diseases
Kim, Mansu (*Sungkyunkwan Univ.*); Son, Seong-Jin (*Sungkyunkwan Univ.*); Park, Hyunjin* (*Sungkyunkwan Univ.*)

SaAT16: 08:00-09:30 Rushmer Room
Haptics (Oral Session)

08:00-08:15 SaAT16.1
Development and Control of a Magnetorheological Haptic Device for Robot Assisted Surgery
Shokrollahi, Elnaz* (*Univ. of Toronto*); Goldenberg, Andrew A. (*Univ. of Toronto*); Drake, James (*Univ. of Toronto, CIGITI, Hospital for Sick Children*); Eastwood, Kyle (*Univ. of Toronto*); Kang, Matthew (*Univ. of Toronto*)

08:15-08:30 SaAT16.2
Haptic fMRI: Reliability and Performance of Electromagnetic Haptic Interfaces for Motion and Force Neuroimaging Experiments
Menon, Samir* (*Stanford University*); Zhu, Jack (*Stanford University*); Goyal, Deeksha (*Stanford University*); Khatib, Oussama (*Stanford University*)

08:30-08:45 SaAT16.3
Grasper Integrated Tri-Axial Force Sensor System for Robotic Minimally Invasive Surgery
Dai, Yuan* (*Univ. of California, Los Angeles*); Abiri, Ahmad (*Univ. of California, Los Angeles*); Liu, Siyuan (*Univ. of California Los Angeles*); Paydar, Omeed (*Univ. of California, Los Angeles*); Sohn, Hyunmin (*Univ. of California, Los Angeles*); Dutton, Erik P. (*UCLA*); Grundfest, Warren S. (*UCLA*); Candler, Robert (*Univ. of California, Los Angeles*)

08:45-09:00 SaAT16.4
Three-Axis Force Sensor with Fiber Bragg Grating
Choi, Hyun Do (*SAIT (Samsung Advanced Institute of Tech.)*); Lim, Yo-An (*Samsung Advanced Institute of Tech., Samsung Electronics*); Kim, Jun Hyung* (*Samsung Electronics Co.*)

09:00-09:15 SaAT16.5
Positioning the Endoscope in Laparoscopic Surgery by Foot: Influential Factors on Surgeons' Performance in Virtual Trainer
Abdi, Elahe* (*EPFL*); Bouri, Mohamed (*EPFL*); Burdet, Etienne (*Imperial Collge of Science, Technology and Medicine*); Himidan, Sharifa (*Hospital of SickKids*); Bleuler, Hannes (*EPFL*)

SaAT17: 08:00-09:30 Einthoven Hall
Connectivity Measurements I (Oral Session)
Chair: Semenova, Oksana (*University College Cork*)
Co-Chair: Anzolin, Alessandra (*Univ. of Rome Sapienza, Neuroelectrical Imaging and BCI Lab IRCCS Fondazione Santa Lucia*)

08:00-08:15 SaAT17.1
Estimation of Coherence using the Median is Robust against EEG Artefacts
Dukic, Stefan (*Trinity College Dublin*); Iyer, Parameswaran M. (*Trinity College Dublin*); Mohr, Kieran (*Trinity College Dublin*); Hardiman, Orla (*Trinity College Dublin*); Lalor, Edmund (*Trinity College Dublin*); Nasseroleisami, B.* (*Trinity College Dublin*)

08:15-08:30 SaAT17.2
Brain Connectivity Networks at the Basis of Human Attention Components: An EEG Study
Anzolin, Alessandra* (*Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*); Mattia, Donatella (*Fondazione Santa Lucia IRCCS*); Toppi, Jlenia (*University of Rome "Sapienza"*); Pichiorri, Floriana (*Fondazione Santa Lucia, IRCCS, Rome, Italy*); Riccio, Angela (*Neuroelectrical Imaging and BCI Lab IRCCS Fondazione Santa Lucia*); Astolfi, Laura (*University of Rome Sapienza*)

08:30-08:45 SaAT17.3
Graph Theoretical Analysis of EEG Functional Network during Multi-Workload Flight Simulation Experiment in Virtual Reality Environment
Zhang, Shengqian (*National Univ. of Singapore*); Zhang, Yuan (*National Univ. of Singapore*); Sun, Yu (*National Univ. of Singapore*); Thakor, Nitish (*Johns Hopkins Univ.*); Bezerianos, Anastasios* (*National Univ. of Singapore*)

08:45-09:00	SaAT17.4	How the Workload Impacts on Cognitive Cooperation: A Pilot Study Sciaraffa, Nicolina (<i>Dept. of Computer, Control and Management Engineering, Univ</i>); Borghini, Gianluca (<i>University of Rome Sapienza</i>); Arico, Pietro (<i>Fondazione Santa Lucia</i>); Di Flumeri, Gianluca* (<i>University of Rome Sapienza</i>); Toppi, Jlenia (<i>University of Rome "Sapienza"</i>); Colosimo, Alfredo (<i>University of Rome "Sapienza"</i>); Bezerianos, Anastasios (<i>National University of Singapore</i>); Thakor, Nitish (<i>Johns Hopkins University</i>); Babiloni, Fabio (<i>University of Rome</i>)	SaBT1: 10:50-12:20 Physiological Systems Modeling I (Oral Session) Chair: Fanelli, Andrea (<i>Massachusetts Institute of Technology</i>)	Roentgen Hall
09:00-09:15	SaAT17.5	Community Detection: Comparison among Clustering Algorithms and Application to EEG-Based Brain Networks Puxeddu, Maria Grazia (<i>Sapienza, University of Rome</i>); Petti, Manuela* (<i>Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR</i>); Pichiorri, Floriana (<i>Fondazione Santa Lucia, IRCCS, Rome, Italy</i>); Cincotti, Febo (<i>Sapienza University of Rome</i>); Mattia, Donatella (<i>Fondazione Santa Lucia IRCCS</i>); Astolfi, Laura (<i>University of Rome Sapienza</i>)	10:50-11:05 Detection of Sympathoadrenal Discharge by Parameterisation of Skin Conductance and ECG Measurement Tronstad, Christian* (<i>Oslo University Hospital</i>); Elvebakk, Ole (<i>Oslo University Hospital</i>); Kalvoy, Haavard (<i>Rikshospitalet</i>); Bjørngaas, Marit Ragnhild (<i>St. Olavs Hospital</i>); Martinsen, Ørjan G (<i>University of Oslo</i>)	SaBT1.1
09:15-09:30	SaAT17.6	Modelling Interactions between Blood Pressure and Brain Activity in Preterm Neonates Semenova, Oksana* (<i>Univ. College Cork</i>); Lightbody, Gordon (<i>Univ. College Cork</i>); O'Toole, John M. (<i>Univ. College Cork</i>); Boylan, Geraldine (<i>Univ. College Cork</i>); Dempsey, Eugene (<i>Irish Centre for Fetal and Neonatal Translational Research (INFA)</i>); Temko, Andriy (<i>Univ. College Cork</i>)	11:05-11:20 Regression-Based Noninvasive Estimation of Intracranial Pressure Fanelli, Andrea (<i>Massachusetts Institute of Tech.</i>); Vonberg, Frederick William (<i>Boston Children's Hospital, Harvard University</i>); Jaishankar, Rohan (<i>Massachusetts Institute of Tech.</i>); Imaduddin, Syed (<i>Massachusetts Institute of Tech.</i>); Tasker, Robert (<i>Boston Children's Hospital</i>); Heldt, Thomas* (<i>Massachusetts Institute of Tech.</i>)	SaBT1.2
SaAT18: 08:00-09:30	Montgomery Hall	Time-Frequency and Time-Scale Analysis – Cardiovascular Signals (Oral Session)	11:20-11:35 Correction of Tissue Oxygen Saturations using Arterial Oxygen Levels for Cerebrovascular Autoregulation Analysis Antunes, Andre* (<i>Medtronic</i>); Addison, Paul (<i>Medtronic</i>); Montgomery, Dean (<i>Univ. of Edinburgh</i>); Borg, Ulf (<i>Medtronic</i>)	SaBT1.3
08:00-08:15	SaAT18.1	An Analysis Method for Wearable Electrocardiogram Measurement based on Non-Orthogonal Complex Wavelet Expansion Shimauchi, Suehiro* (<i>NTT Corporation</i>); Eguchi, Kana (<i>NTT Corporation</i>); Takeda, Toki (<i>NTT Service Evolution Laboratories</i>); Aoki, Ryosuke (<i>NTT Corporation</i>)	11:35-11:50 Unsupervised Gait Detection using Biomechanical Restrictions Hotta, Shinji* (<i>Fujitsu Labs Ltd.</i>); Inomata, Akihiro (<i>Fujitsu Japan</i>); Sasamoto, Yuki (<i>Fujitsu Labs Ltd.</i>); Washizawa, Shiho (<i>Fujitsu Labs Ltd.</i>); Caulfield, Brian (<i>UCD</i>)	SaBT1.4
08:15-08:30	SaAT18.2	Smooth Bandpass Empirical Mode Decomposition with Rolling Ball Sifting for Extracting Carotid Bruits and Heart Sounds Huang, Adam* (<i>National Central University</i>); Liu, Min-Yin (<i>National Central University</i>); Lee, Chung-Wei (<i>National Taiwan University Hospital</i>); Liu, Hon-Man (<i>National Taiwan University</i>)	11:50-12:05 Model Selection for the Pulse Decomposition Analysis of Fingertip Photoplethysmograms Tigges, Timo* (<i>Technical University Berlin</i>); Pielmus, Alexandru Gabriel (<i>Technical University Berlin</i>); Klum, Michael (<i>Technical University Berlin</i>); Feldheiser, Aarne (<i>Charité Campus Virchow-Klinikum</i>); Hunsicker, Oliver (<i>Charité Campus Virchow-Klinikum</i>); Orglmeister, Reinhold (<i>Technische Universität Berlin</i>)	SaBT1.5
08:30-08:45	SaAT18.3	Automatic Atrial Fibrillation Detection: A Novel Approach using Discrete Wavelet Transform and Heart Rate Variability Bruun, Iben Hervold* (<i>Technical University of Denmark</i>); Hissabu, Semira M. S. (<i>Technical University of Denmark</i>); Poulsen, Erik S. (<i>Cortrium ApS</i>); Puthusserypady, Sadasivan (<i>Technical University of Denmark</i>)	12:05-12:20 On a Unified Point Process Approach for the Characterization of Bioelectric Discrete Phenomena Yana, Kazuo* (<i>Hosei Univ.</i>); Mino, Hiroyuki (<i>Kanto Gakuin Univ.</i>)	SaBT1.6
08:45-09:00	SaAT18.4	Comparison of Frequency-Based Techniques for Assessment of Baroreceptor Sensitivity and Heart Rate Variability Ramachandran, Harish (<i>Macquarie University</i>); Butlin, Mark (<i>Macquarie University</i>); Quinn, Barry (<i>Macquarie University</i>); Avolio, Alberto P* (<i>Macquarie University</i>); Town, Graham (<i>Macquarie University</i>)	SaBT2: 10:50-12:20 Optical Imaging I (Oral Session) Chair: Chung, Euiheon (<i>Gwangju Institute of Science and Tech.</i>)	Cho Room
09:00-09:15	SaAT18.5	Discrimination of Multiple Stress Levels in Virtual Reality Environments using Heart Rate Variability Ham, Jinsil* (<i>Gwangju Institute of Science and Tech. (GIST)</i>); Cho, Dongrae (<i>Gwangju Institute of Science and Tech.</i>); Oh, Jooyoung (<i>Gwangju Institute of Science and Tech.</i>); Lee, Boreom (<i>Gwangju Institute of Science and Tech. (GIST)</i>)	10:50-11:05 Hemodynamic Response to Optogenetic Stimulation Varied under Different Stimulus Parameters Bo, Bin (<i>Shanghai Jiao Tong University</i>); Li, Wanlu (<i>Shanghai Jiao Tong University</i>); Wang, Yongting (<i>Shanghai Jiao Tong University</i>); Li, Yao* (<i>Shanghai Jiao Tong University</i>); Tong, Shanbao (<i>Shanghai Jiao Tong University</i>)	SaBT2.1
09:15-09:30	SaAT18.6	Contribution of Body Movements on the Heart Rate Variability during High Intensity Running Alikhani, Iman* (<i>University of Oulu</i>); Noponen, Kai (<i>University of Oulu</i>); Seppänen, Tapio (<i>University of Oulu</i>)	11:05-11:20 Phase-Domain Photoacoustics Eliminating Acoustic Detection Variations Duan, Tingyang (<i>Shanghai Tech University</i>); Zhang, Ruochong (<i>Nanyang Technological University</i>); Feng, Xiaohua (<i>Nanyang Technological University</i>); Liu, Siyu (<i>Nanyang Technological University</i>); Ding, Ran (<i>Nanyang Technological University</i>); Zheng, Yuanjin (<i>Nanyang Technological University</i>); Gao, Fei* (<i>Shanghai Tech University</i>)	SaBT2.2
			11:20-11:35 An Iterative Weighted Method based on YALL1 for Cone-Beam X-Ray Luminescence Optical Tomography Imaging: A Phantom Experimental Study Zhao, Lili (<i>Shanghai University</i>); Jiang, Jiehui (<i>Shanghai University</i>); Shu, Yuexia (<i>Shanghai University</i>); Yan, Zhuangzhi (<i>Shanghai University</i>); Liu, Xin* (<i>Shanghai University</i>)	SaBT2.3

11:35-11:50	SaBT2.4	11:05-11:20	SaBT4.2
A Fast Forward Solver of Fluorescence Diffuse Optical Tomography based on the Lattice Boltzmann Method Zhang, Wenqing (<i>Shanghai University</i>); Yan, Zhuangzhi* (<i>Shanghai University</i>); Jiang, Jiehui (<i>Shanghai University</i>)		Monitoring Peripheral Edema of Heart Failure Patients at Home: Device, Algorithm, and Clinic Study Yao, Jianchu* (<i>East Carolina University</i>); Weaver, Elizabeth (<i>East Carolina University</i>); Langley, Brandon (<i>East Carolina University</i>); George, Stephanie (<i>East Carolina University</i>); Hardin, Sonya (<i>East Carolina University</i>)	
11:50-12:05	SaBT2.5	11:20-11:35	SaBT4.3
A Dual-Modality Optical Coherence Tomography and Selective Plane Illumination Microscopy System for Mouse Embryonic Imaging Larin, Kirill* (<i>University of Houston</i>)		A Low-Cost Video-Oculography System for Vestibular Function Testing Park, Jihwan (<i>Soonchunhyang Univ.</i>); Kong, Youngsun (<i>Soonchunhyang Univ.</i>); Nam, Y.* (<i>Soonchunhyang Univ.</i>)	
12:05-12:20	SaBT2.6	11:35-11:50	SaBT4.4
Label-Free Hyperspectral Imaging and Quantification Methods for Surgical Margin Assessment of Tissue Specimens of Cancer Patients Fei, Baowei* (<i>Emory Univ. and Georgia Institute of Technology</i>)		Modified Automatic R-Peak Detection Algorithm for Patients with Epilepsy using a Portable Electrocardiogram Recorder Jeppesen, Jesper* (<i>Aarhus Univ.</i>); Beniczky, Sandor (<i>Danish Epilepsy Centre</i>); Fuglsang-Frederiksen, Anders (<i>Dept. of Neurophysiology, Aarhus Univ. Hospital, 8000</i>); Sidenius, Per (<i>Dept. of Neurology, Aarhus Univ. Hospital</i>); Johansen, Peter (<i>Univ. of Aarhus, Faculty of Science and Technology</i>)	
SaBT3: 10:50-12:20	Park Room	11:50-12:05	SaBT4.5
Histologic Image Analysis (Oral Session) Chair: Song, Cheol (<i>DGIST</i>)		Real-Time Estimation of Eye Gaze from In-Ear Electrodes Favre-Félix, Antoine* (<i>Eriksholm Research Centre</i>); Graversen, Carina (<i>Eriksholm Research Centre</i>); Dau, Torsten (<i>Technical University of Denmark</i>); Lunner, Thomas (<i>Eriksholm Research Centre - part of Oticon</i>)	
10:50-11:05	SaBT3.1	12:05-12:20	SaBT4.6
Multiplexed Immunohistochemistry Image Analysis using Sparse Coding Chang, Young Hwan* (<i>Oregon Health and Science University</i>); Tsujikawa, Takahiro (<i>Oregon Health and Science University</i>); Margolin, Adam (<i>Oregon Health and Science University</i>); Coussens, Lisa M. (<i>Oregon Health and Science University</i>); Gray, Joe (<i>Oregon Health & Science University</i>)		PPG Pulse Direction Determination Algorithm for PPG Waveform Inversion by Wrist Rotation Choi, Changmok* (<i>Samsung Electronics Co., Ltd.</i>); Ko, Byung-Hoon (<i>Samsung Advanced Institute of Technology</i>); Lee, Jongwook (<i>Samsung Electronics</i>); Yoon, Seung Keun (<i>Samsung Advanced Institute of Technology</i>); Kwon, Uikun (<i>Samsung Electronics</i>); Kim, Sang Joon (<i>Samsung Electronics</i>); Kim, Youn Ho (<i>Samsung Advanced Institute of Technology</i>)	
11:05-11:20	SaBT3.2	SaBT5: 10:50-12:20	Lee Room
Histopathological Image Classification with Bilinear Convolutional Neural Networks Chaofeng, Wang (<i>Shanghai Univ.</i>); Shi, Jun* (<i>Shanghai Univ.</i>); Zhang, Qi (<i>Shanghai Univ.</i>); Ying, Shihui (<i>Shanghai Univ.</i>)		Physical Sensors and Sensor Systems I (Oral Session) Chair: Moratal, David (<i>Universitat Politècnica de València</i>)	
11:20-11:35	SaBT3.3	10:50-11:05	SaBT5.1
Angiosome based Time Series Analysis of Deep Tissue Perfusion using Diffuse Speckle Contrast Analysis Yeo, Chaebeom (<i>DGIST</i>); Lee, K. (<i>DGIST</i>); Song, C.* (<i>DGIST</i>)		NFC-Enabled, Tattoo-Like Stretchable Biosensor Manufactured by "Cut-and-Paste" Method Jeong, Hyoyoung (<i>University of Texas at Austin</i>); Ha, Taewoo (<i>The University of Texas at Austin</i>); Kuang, Irene (<i>The University of Texas at Austin</i>); Shen, Linxiao (<i>University of Texas at Austin</i>); Dai, Zhaohe (<i>The University of Texas at Austin</i>); Sun, Nan (<i>University of Texas at Austin</i>); Lu, Nanshu* (<i>University of Texas at Austin</i>)	
11:35-11:50	SaBT3.4	11:05-11:20	SaBT5.2
Human Induced Pluripotent Stem Cell Region Recognition in Microscopy Images using Convolutional Neural Networks Chang, Yuan-Hsiang (<i>Chung Yuan Christian Univ.</i>); Abe, Kuniya (<i>Mammalian Genome Dynamics, RIKEN BioResource Center</i>); Yokota, H. (<i>RIKEN Center for Advanced Photonics</i>); Lin, C.-Y. (<i>Chung Yuan Christian Univ.</i>); Sudo, K. (<i>BioResource Center, RIKEN</i>); Nakamura, Y. (<i>RIKEN BioResource Center</i>); Tsai, M.-D.* (<i>Chung-Yuan Christian Univ.</i>)		Impedimetric Investigation of Dual Electrical Properties of Reduced Graphene-Oxide-Based Biosensors in the Detection of Dopamine Lin, Shu-Ping* (<i>National Chung Hsing Univ.</i>); Ciou, Jhong-Yi (<i>Graduate Institute of Biomedical Engineering, National Chung Hsi</i>); Lai, Tung-Yen (<i>National Nano Device Laboratories</i>); Lin, Tsung-Wu (<i>the Dept. of Chemistry, Tung Hai Univ.</i>)	
11:50-12:05	SaBT3.5	11:20-11:35	SaBT5.3
Analysis of Mitochondrial Shape Dynamics using Large Deformation Diffeomorphic Metric Curve Matching Yang, Huilin (<i>Carnegie Mellon University</i>); Wang, Jing (<i>Carnegie Mellon University</i>); Tang, Haiyun (<i>Carnegie Mellon University</i>); Ba, Qinle (<i>Carnegie Mellon University</i>); Yang, Ge (<i>Carnegie Mellon University</i>); Tang, Xiaoying* (<i>Sun Yat-sen University-Carnegie Mellon University (SYSU-CMU) Joi</i>)		Estimating the Lower Leg Muscle Activity from Distal Biosignals Around the Ankles Isezaki, Takashi* (<i>University of Tsukuba</i>); Watanabe, Tomoki (<i>NTT Corporation</i>); Yamada, Tomohiro (<i>NTT</i>); Kadone, Hideki (<i>University of Tsukuba</i>); Suzuki, Kenji (<i>University of Tsukuba</i>)	
12:05-12:20	SaBT3.6	11:35-11:50	SaBT5.4
Tissue Classification in a Canine Model of Duchenne Muscular Dystrophy using Quantitative MRI Parameters Eresen, Aydin (<i>Texas A&M University</i>); Sharla, Birch (<i>Texas A&M University</i>); McConnell, Stephen (<i>Texas A&M University</i>); Griffin, Jay (<i>Texas A&M University</i>); Kornegay, Joe (<i>Texas A&M University</i>); Ji, Jim Xiuquan* (<i>Texas A&M University</i>)		Tumor Size and Elasticity Estimation using Smartphone-Based Compression-Induced Scope Won, Chang-Hee* (<i>Temple University</i>); Goldstein, Jesse (<i>Temple University</i>); Oleksyuk, Vira (<i>Temple University</i>); Caroline, Dina (<i>Temple University Hospital</i>); Pascarella, Suzanne (<i>Temple University Hospital</i>)	
SaBT4: 10:50-12:20	Min Room		
Physiological Monitoring I (Oral Session)			
10:50-11:05	SaBT4.1		
Effects of Respiration Depth on Human Body Radar Cross Section using 2.4GHz Continuous Wave Radar Lee, Alexander* (<i>Univ. of Hawaii at Manoa</i>); Gao, Xiaomeng (<i>Univ. of Hawaii at Manoa</i>); Xu, Jia (<i>Univ. of Hawaii at Manoa</i>); Boric-Lubecke, Olga (<i>Univ. of Hawaii Manoa</i>)			

- 11:50-12:05 SaBT5.5
Full Factorial Analysis of Variance to Assess Statistical Significance of Laplacian Estimation Accuracy Improvement Due to Novel Variable Inter-Ring Distances Concentric Ring Electrodes
 Makeyev, Oleksandr (*Diné College*); Joe, Cody (*Diné College*); Lee, Colin (*Diné College*); Besio, W. G.* (*Univ. of Rhode Island*)
- 12:05-12:20 SaBT5.6
RATT: RFID Assisted Tracking Tile – Preliminary Results
 Quiñones, Dario Ruben (*Center for Biomaterials and Tissue Engineering, Universitat Poli*); Cuevas, Aarón (*Center for Biomaterials and Tissue Engineering, Universitat Poli*); Cambra, Javier (*Center for Biomaterials and Tissue Engineering, Universitat Poli*); Canals, Santiago (*Instituto de Neurociencias, Consejo Superior de Investigaciones*); Moratal, David* (*Universitat Politècnica de València*)
- SaBT6: 10:50-12:20 Zworykin Room
Bioprinting for Regenerative Medicine Applications (Minisymposium)
 Chair: Sungjune, Jung (*Pohang Univ. of Science and Technology*)
 Co-Chair: Jang, Jinah (*POSTECH*)
- 10:50-11:05 SaBT6.1
Development of a 3D Bio-Printed Construct with a Capillary-Like Network for Liver Tissue Engineering
 Lee, Jin Woo* (*Gachon University*)
- 11:05-11:20 SaBT6.2
3D Integrated Organ Printing Technologies and Its Applications
 Kang, Hyun-Wook* (*Ulsan Natl. Institute of Science and Tech.*)
- 11:20-11:35 SaBT6.3
Reconstruction of Cranio-Maxillofacial Bone Defect using 3D Printing based Patient Specific Implant with Biodegradable Biomaterials in Clinical Cases
 Shim, Jin-Hyung* (*Korea Polytechnic University*); Han, Hyun Ho (*the Dept. of Plastic Surgery, College of Medicine, The Cath*); Lee, Hyungseok (*Dept. of Mechanical Engineering, Pohang University of Scien*); Lee, Jeong-Seok (*Dept. of Mechanical Engineering, Korea Polytechnic Universi*); Yun, Won-Soo (*Dept. of Mechanical Engineering, Korea Polytechnic Universi*); Baek, Chung-Hwan (*Dept. of Otorhinolaryngology-Head and Neck Surgery, Sungkyu*); Rhie, Jong-Won (*the Dept. of Plastic Surgery, College of Medicine, The Cath*); Cho, Dong-Woo (*Dept. of Mechanical Engineering, Pohang University of Scien*)
- 11:35-11:50 SaBT6.4
3D Cell Printing of Microfluidic Channel for Perfusible Blood Vessel
 Park, Ju Young* (*POSTECH*); Ryu, Hyunryul (*Seoul National University*); Lee, Byungjun (*School of Mechanical and Aerospace Engineering, Seoul National U*); Jeon, Noo Li (*Seoul National University*); Cho, Dong-Woo (*Dept. of Mechanical Engineering, Pohang University of Scien*)
- 11:50-12:05 SaBT6.5
3D Bioprinting of Multi-Composition Stem Cell Patch using Tissue-Specific Bioinks
 Jang, Jinah* (*POSTECH*); Kim, Seok-Won (*POSTECH*); Park, Ju Young (*POSTECH*); Kim, Sung Won (*The Catholic Univ. of Korea*); Kwon, Sang-Mo (*Pusan National Univ.*); Park, Hun-Jun (*St. Mary's Hospital, The Catholic Univ. of Korea*); Cho, Dong-Woo (*Dept. of Mechanical Engineering, Pohang Univ. of Scien*)
- SaBT7: 10:50-12:20 Herrick Room
Rehabilitation Robotics and Biomechanics (Oral Session)
 Chair: Patton, James and Ryan, Shirley (*U. Illinois at Chicago (UIC) and Ability Lab (formerly RIC)*)
- 10:50-11:05 SaBT7.1
Analysis of Muscle Activation in Lower Extremity for Static Balance
 Chakravarty, Kingshuk (*Tata Consultancy Services Ltd.*); Chatterjee, Debatri (*TCS Innovation Lab*); Das, Rajat Kumar (*TCS Innovation Lab*); Tripathy, Soumya Ranjan (*TCS Research and Innovation, Tata Consultancy Services Ltd.*); Sinha, Aniruddha* (*Tata Consultancy Services Ltd.*)
- 11:05-11:20 SaBT7.2
A New Robotic Approach to Characterize Mechanical Impedance and Energetic Passivity of the Human Ankle during Standing
 Lee, Hyunglae* (*Arizona State University*); Nalam, Varun (*Arizona State University*)
- 11:20-11:35 SaBT7.3
Design and Control of a 3-DOF Rehabilitation Robot for Forearm and Wrist
 Luo, Lincong (*Institute of Automation, Chinese Academy of Sciences*); Peng, Liang (*Institute of Automation, Chinese Academy of Sciences*); Hou, Zeng-Guang* (*Institute of Automation, Chinese Academy of Sciences*); Wang, Weiqun (*Institute of Automation, Chinese Academy of Sciences*)
- 11:35-11:50 SaBT7.4
Estimation of Tibialis Anterior Muscle Stiffness during the Swing Phase of Walking with Various Footwear
 Uchiyama, Takanori* (*Keio University*); Hori, Yutaka (*Keio University*); Suzuki, Kenta (*Keio University*)
- 11:50-12:05 SaBT7.5
Design of Anisotropic Pneumatic Artificial Muscles and their Applications to Soft Wearable Devices for Text Neck Symptoms
 Kim, Hojoong (*Seoul National University*); Park, Hyuntai (*Seoul National University*); Kim, Jongwoo (*Biorobotics LAB, Seoul National University*); Cho, Kyu-Jin (*Seoul National University*); Park, Yong-Lae* (*Carnegie Mellon University*)
- 12:05-12:20 SaBT7.6
Impact of Actuator Impedance Characteristics on Motor Control of Assisted Hand Movements
 Sandri Heidner, Gustavo (*The Catholic University of America*); Vermillion, Billt (*Catholic University of America*); Lee, Sang Wook* (*Catholic University of America*)
- SaBT8: 10:50-12:20 Schwan Room
Brain Functional Imaging I (Oral Session)
 Chair: Sun, Junfeng (*Shanghai Jiao Tong University*)
- 10:50-11:05 SaBT8.1
Decoding Emotional Valence from Electroencephalographic Rhythmic Activity
 Celikkanat, Hande* (*Univ. of Helsinki*); Moriya, Hiroki (*ATR Cognitive Mechanisms Laboratories*); Ogawa, Takeshi (*ATR Cognitive Mechanisms Laboratories*); Kauppi, Jukka-Pekka (*Univ. of Jyväskylä*); Kawanabe, Motoaki (*ATR Cognitive Mechanisms Laboratories*); Hyvärinen, Aapo (*Univ. of Helsinki*)
- 11:05-11:20 SaBT8.2
Self-Regulation of Primary Motor Cortex Activity with Motor Imagery Induces Functional Connectivity Modulation: A Real-Time fMRI Neurofeedback Study
 Makary, Meena M.* (*Kyung Hee University*); Eun, Seulgi (*Kyung Hee University*); Park, Kyungmo (*Kyung Hee University*)
- 11:20-11:35 SaBT8.3
Identifying the Effects of Microsaccades in Tripolar EEG Signals
 Bellisle, Rachel* (*University of Rhode Island*); Steele, Preston (*CREmedical Corp., Kingston, RI*); Bartels, Rachel (*CREmedical Corp.*); Ding, Lei (*University of Oklahoma*); Sunderam, Sridhar (*University of Kentucky*); Besio, W. G. (*University of Rhode Island*)
- 11:35-11:50 SaBT8.4
Decreased Variability of Dynamic Phase Synchronization in Brain Networks during Hand Movement
 Cheng, Lin (*Shanghai Jiao Tong University*); Zhu, Hong (*Shanghai Jiao Tong University*); Zhu, Yang (*Shanghai Second People's Hospital*); He, Naying (*Shanghai Jiao Tong University*); Yang, Yang (*Shanghai Second People's Hospital*); Ling, Huawei (*Shanghai Jiao Tong University*); Tong, Shanbao (*Shanghai Jiao Tong University*); Fu, Yi (*Rui Jin Hospital, Shanghai Jiao Tong University School of Medici*); Sun, Junfeng* (*Shanghai Jiao Tong University*)

11:50-12:05 SaBT8.5
EEG-Based Biometry using Steady State Visual Evoked Potentials
 Falzon, Owen* (*University of Malta*); Zerafa, Rosanne (*University of Malta*); Camilleri, Tracey (*University of Malta*); Camilleri, Kenneth Patrick (*University of Malta*)

12:05-12:20 SaBT8.6
Passive Functional Mapping Guides Electrical Cortical Stimulation for Efficient Determination of Eloquent Cortex in Epilepsy Patients
 Prueckl, Robert* (*g.tec medical engineering GmbH*); Kapeller, Christoph (*g.tec medical engineering GmbH*); Gruenwald, Johannes (*Johannes Kepler Univ. Linz*); Ogawa, Hiroshi (*Asahikawa Medical Univ.*); Kamada, Kyouzuke (*Asahikawa Medical Univ.*); Korostenskaja, Milena (*Florida Hospital for Children, Comprehensive Pediatric Epilepsy*); Swift, James (*g.tec neurotechnologies USA*); Scharinger, Josef (*Dept. of Computational Perception, Johannes Kepler University*); Cho, Woosang (*Univ. of Tübingen*); Edlinger, Günter (*g.tec medical engineering GmbH*); Guger, Christoph (*g.tec medical engineering GmbH*)

SaBT9: 10:50-12:20 Plonsey Room
Human Performance I (Oral Session)
Chair: Huang, Yufei (*University of Texas at San Antonio*)

10:50-11:05 SaBT9.1
Prediction of Fatigue-Related Driver Performance from EEG Data by Deep Riemannian Model
 Hajinorozi, Mehdi* (*The University of Texas at San Antonio*); Zhang, Jianqiu (Michelle) (*University of Texas at San Antonio, Electrical and Computer Engi*); Huang, Yufei (*University of Texas at San Antonio*)

11:05-11:20 SaBT9.2
Assessment of Auditory Impression of the Coolness and Warmness of Automotive HVAC Noise
 Nakagawa, Seiji* (*Chiba University*); Hotehama, Takuya (*National Institute of Advanced Industrial Science and Technology*); Kamiya, Masaru (*Denso Corporation*)

11:20-11:35 SaBT9.3
Virtual Reality Body Motion Induced Navigational Controllers and their Effects on Simulator Sickness and Pathfinding
 Aldaba, Cassandra* (*University of Manitoba*); White, Paul (*University of Manitoba*); Byagowi, Ahmad (*University of Manitoba*); Moussavi, Zahra (*University of Manitoba*)

11:35-11:50 SaBT9.4
Hedonic Editing and Order Effect in Decision-Making with Neurometric Evaluation
 Babiloni, Fabio* (*University of Rome*); Yang, Wenting (*Dept. of Psychology and Behavioral Science, Zhejiang Univer*); Di Flumeri, Gianluca (*University of Rome Sapienza*)

11:50-12:05 SaBT9.5
Bayesian Multi-Subject Factor Analysis to Predict Microsleeps from EEG Power Spectral Features
 Shoorangiz, Reza* (*University of Canterbury*); Weddell, Stephen J. (*University of Canterbury*); Jones, Richard D. (*New Zealand Brain Research Institute*)

12:05-12:20 SaBT9.6
A System for Accelerometer-Based Gesture Classification using Artificial Neural Networks
 Stephenson, Robert (*University of Technology Sydney*); Naik, Ganesh R (*University of Technology Sydney*); Chai, Rifai* (*University of Technology, Sydney*)

SaBT10: 10:50-12:20 Schmitt Room
Health Informatics – Decision Support Methods and Systems I (Oral Session)
Chair: Nguyen, Hung T. (*University of Technology, Sydney*)

10:50-11:05 SaBT10.1
Stenosis Detection and Quantification on Cardiac CTA using Panoramic MIP of Coronary Arteries
 Chi, Yanling* (*Institute for Infocomm Research*); Huang, Weimin (*Institute for Infocomm Research, Agency for Science Technology a*); Zhou, Jiayin (*Institute for Infocomm Research*); Toe, Kyaw Kyar (*Institute for Infocomm Research, A*STAR*); Zhang, Jun-Mei (*National Heart Center*); Wong, Philip (*National Heart Centre Singapore*); Lim, Soo Teik (*National Heart Centre Singapore*); Tan, Ru San (*National Heart Center*); Zhong, Liang (*National Heart Centre Singapore*)

11:05-11:20 SaBT10.2
Online SVM-Based Personalizing Method for the Drowsiness Detection of Drivers
 Choi, Minh* (*Pohang University of Science and Technology (POSTECH)*); Kim, Sang Woo (*Pohang University of Science and Technology (POSTECH), Dept.*)

11:20-11:35 SaBT10.3
Intuitive and Interpretable Visual Communication of a Complex Statistical Model of Disease Progression and Risk
 Li, Jieyi (*University of St Andrews*); Arandjelovic, Ognjen* (*University of St Andrews*)

11:35-11:50 SaBT10.4
A Non-Exercise based V02max Prediction using FRIEND Dataset with a Neural Network
 Henriques, Jorge* (*Univ. of Coimbra*); de Carvalho, Paulo (*Univ. of Coimbra*); Rocha, Teresa (*Inst Superior de Eng de Coimbra*); Paredes, Simao (*Instituto Politécnico de Coimbra*); Cabiddu, Ramona (*Cardiopulmonary Physiotherapy Lab, Federal Univ. of*); Trimer, Renata (*Cardiopulmonary Physiotherapy Lab, Federal Univ. of*); Mendes, Renata (*Cardiopulmonary Physical Therapy Lab, Dept. of Phys*); Borghi-Silva, Audrey (*Cardiopulmonary Physiotherapy Lab, Federal Univ. of*); Lenny, Kaminsky (*Fisher Institute of Health and Well-Being and Clinical Exercise*); Euan, Ashley (*Division of Cardiovascular Medicine, VA Palo Alto Healthcare Sys*); Arena, Ross (*Univ. of Illinois at Chicago*); Myers, Jonathan (*Dept. of Cardiovascular Medicine, Stanford Univ., Palo*)

11:50-12:05 SaBT10.5
Prediction of Hip Fracture in Post-Menopausal Women using Artificial Neural Network Approach
 Ho-Le, Thao P.* (*University of Technology, Sydney, Australia*); Center, Jackie R (*Garvan Institute of Medical Research*); Eisman, John A. (*Garvan Institute of Medical Research*); Nguyen, Tuan V. (*University of Technology, Sydney, Australia*); Nguyen, Hung T. (*University of Technology, Sydney*)

SaBT11: 10:50-12:20 Greatbatch Room
Whole-Body, Organ, and Tissue Computational Models (Oral Session)
Chair: Dokos, Socrates (*University of New South Wales*)

10:50-11:05 SaBT11.1
Evaluation of Ultrasonic Scattering for Different Cortical Bone Porosities and Excitation Frequencies: A Numerical Study
 Potsika, Vassiliki (*Unit of Medical Tech. and Intelligent Info. Systems*); Grivas, Konstantinos (*Dept. of Mechanical Engineering and Aeronautics, Univ.*); Gortsas, Theodoros (*Dept. of Mechanical Engineering and Aeronautics, Univ.*); Protopappas, Vasilios C. (*Univ. of Patras*); Polyzos, Demosthenes (*Univ. of Patras*); Fotiadis, Dimitrios I.* (*Univ. of Ioannina*)

11:05-11:20 SaBT11.2
A Framework for Simulating Gastric Electrical Propagation in Confocal Microscopy Derived Geometries
 Krohn, Berit (*Univ. of Stuttgart*); Sathar, Shameer (*Univ. of Auckland*); Röhrle, Oliver (*Univ. of Stuttgart*); Vanderwinden, Jean-Marie (*Univ. libre de Bruxelles*); O'Grady, Gregory (*Univ. of Auckland*); Cheng, Leo K* (*The Univ. of Auckland*)

July 15 Saturday

11:20-11:35	SaBT11.3	Anatomical Variations of the Stomach Effects on Electrogastrigraphy Calder, Stefan* (<i>Auckland Bioengineering Institute, Univ. of Auckland</i>); O'Grady, Gregory (<i>Univ. of Auckland</i>); Cheng, Leo K (<i>The Univ. of Auckland</i>); Du, Peng (<i>The Univ. of Auckland</i>)	SaBT13: 10:50-12:20 Dunn Room Bioinformatics – Computational Modeling and Simulations in Biology, Physiology and Medicine I (Oral Session) Chair: Baranoski, Gladimir Valerio Guimaraes (<i>Univ. of Waterloo</i>)
11:35-11:50	SaBT11.4	Image-Based Fluid Dynamics Analysis of Left Ventricle Outflow Tract Pressure Gradient after Deployment Transcatheter Mitral Valve Alharbi, Yousef S* (<i>University of New South Wales, Biomedical Engineering</i>); Lovell, Nigel H. (<i>University of New South Wales</i>); Otton, James (<i>Cardiology Dept., Liverpool Hospital, Sydney</i>); Muller, David (<i>Cardiology Dept., St Vincent's Hospital, Sydney</i>); Al Abed, Amr (<i>University of New South Wales</i>); Dokos, Socrates (<i>University of New South Wales</i>)	10:50-11:05 SaBT13.1 Transient Reduction in Theta Power Caused by Interictal Spikes in Human Temporal Lobe Epilepsy Ge, Manling* (<i>Hebei Univ. of Technology</i>); Guo, Jundan (<i>Hebei Univ. of Technology</i>); Xing, Yangyang (<i>Hebei Univ. of Technology</i>); Feng, Zhiguo (<i>Hebei Univ. of Technology</i>); Lu, Weide (<i>Hebei Univ. of Technology</i>); Ma, Xinxin (<i>Hebei Univ. of Technology</i>); Geng, Yuehua (<i>Hebei Univ. of Technology</i>); Zhang, Xin (<i>Tianjin Polytechnic Univ.</i>)
11:50-12:05	SaBT11.5	The Visible Human Project Male CAD based Computational Phantom and Its use in Bioelectromagnetic Simulations Noetscher, Gregory* (<i>Worcester Polytechnic Institute</i>); Htet, Aung Thu (<i>Worcester Polytechnic Institute</i>); Maino, Nicholas (<i>Worcester Polytechnic Institute</i>); Lacroix, Patrick (<i>wpi</i>)	11:05-11:20 SaBT13.2 On the Detection of Peripheral Cyanosis in Individuals with Distinct Levels of Cutaneous Pigmentation Baranoski, Gladimir Valerio Guimaraes* (<i>University of Waterloo</i>); Van Leeuwen, Spencer Richard (<i>University of Waterloo</i>); Chen, Tenn Francis (<i>University of Waterloo</i>)
SaBT12: 10:50-12:20	Geddes Room	Diagnostic Devices I (Oral Session) Chair: Iordachita, Iulian (<i>Johns Hopkins University</i>)	11:20-11:35 SaBT13.3 A New Alignment Free Genome Comparison Algorithm based on Statistically Estimated Feature Frequency Profile Seo, Hyein (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>); Cho, Dong-Ho* (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>)
10:50-11:05	SaBT12.1	Evaluation of a Laser-Based Sensor for the Diagnosis of Neurological Disorders Tenner, Felix* (<i>Lehrstuhl für Photonische Technologien</i>); Regensburger, Martin (<i>Clinic of Neurology, Friedrich-Alexander-Universität Erlangen-Nürnberg</i>); Schramm, Axel (<i>University Hospital Erlangen</i>); Söhle, Mona (<i>Institute of Photonic Technologies, Friedrich-Alexander-University</i>); Schwarzkopf, Karen (<i>Institute of Photonic Technologies, Friedrich-Alexander-University</i>); Zalevsky, Zeev (<i>Nano Photonics Center at the Institute of Nanotechnology and Adv</i>); Schmidt, Michael (<i>Institute of Photonic Technologies, Friedrich-Alexander-University</i>)	11:35-11:50 SaBT13.4 Using Convolutional Neural Networks to Explore the Microbiome Reiman, Derek (<i>University of Illinois at Chicago</i>); Metwally, Ahmed* (<i>University of Illinois at Chicago</i>); Dai, Yang (<i>University of Illinois at Chicago</i>)
11:05-11:20	SaBT12.2	A Bioimpedance Sensing System for In-Vivo Cancer Tissue Identification: Design and Preliminary Evaluation Carpano Maglioli, Camilla* (<i>Fondazione Istituto Italiano di Tecnologia</i>); Caldwell, Darwin G. (<i>Italian Institute of Technology</i>); Mattos, Leonardo (<i>IIT - Istituto Italiano di Tecnologia</i>)	11:50-12:05 SaBT13.5 Modeling the Effects of Amiodarone on Short QT Syndrome Variant 2 in the Human Ventricles Luo, Cunjin* (<i>Harbin Institute of Technology, School of Computer Science and T</i>); Wang, Kuanquan (<i>Harbin Institute of Technology</i>); Zhang, Henggui (<i>Harbin Institute of Technology, School of Computer Science and T</i>)
11:20-11:35	SaBT12.3	Automatic Characterization of User Errors in Spirometry Luo, Andrew* (<i>Univ. of Washington</i>); Whitmire, Eric (<i>Univ. of Washington</i>); Stout, James (<i>Univ. of Washington</i>); Martenson, Drew (<i>Glendale Adventist Medical Center</i>); Patel, Shwetak (<i>Univ. of Washington</i>)	12:05-12:20 SaBT13.6 Rendering Problem-Oriented CCD for Chronic Diseases Bae, Sungchul* (<i>Kyungpook National University</i>); Kim, Il Kon (<i>Kyungpook National University</i>); Lee, Do-Youn (<i>Kyungpook National University</i>)
11:35-11:50	SaBT12.4	Robot-Assisted Mirroring Exercise as a Physical Therapy for Hemiparesis Rehabilitation Kim, Jihun (<i>Handong Global University</i>); Kim, Jaehyo* (<i>Handong Global University</i>)	SaBT14: 10:50-12:20 Schaldach Room Imaging in Mobile Health (Oral Session) Chair: Karlen, Walter (<i>ETH Zurich</i>)
11:50-12:05	SaBT12.5	PhoneQuant: A Smartphone-Based Quantitative Immunoassay Analyser Shah, Malay Ilesh* (<i>Healthcare Technology Innovation Center (HTIC), Indian Institute</i>); Joseph, Jayaraj (<i>HTIC, Indian Institute of Technology Madras</i>); Sanne, Ujwal Sriharsha (<i>Birla Institute of Technology and Science, Pilani</i>); Sivaprakasam, Mohanasankar (<i>Indian Institute of Technology Madras</i>)	10:50-11:05 SaBT14.1 Automatic Diagnosis of Melanoma using Linear and Nonlinear Features from Digital Image Munia, Tamanna Tabassum Khan (<i>University of North Dakota</i>); Alam, Md Nafiul (<i>University of North Dakota</i>); Neubert, Jeremiah (<i>University of North Dakota</i>); Fazel-Rezai, Reza* (<i>University of North Dakota</i>)
12:05-12:20	SaBT12.6	A New 4-DOF Parallel Robot for MRI-Guided Percutaneous Interventions: Kinematic Analysis Kim, Jin Seob (<i>Johns Hopkins University</i>); Levi, David (<i>Johns Hopkins University</i>); Monfaredi, Reza (<i>Children's National Health System</i>); Cleary, Kevin (<i>Children's National Medical Center</i>); Iordachita, Iulian* (<i>Johns Hopkins University</i>)	11:05-11:20 SaBT14.2 Improving ROI Detection in Photoplethysmographic Imaging with Thermal Cameras Scebba, Gaetano* (<i>ETH Zurich</i>); Dragas, Jelena (<i>ETH Zurich</i>); Hu, Suyi (<i>ETH Zurich</i>); Karlen, Walter (<i>ETH Zurich</i>)
			11:20-11:35 SaBT14.3 Smartphone based Automatic Organ Validation in Ultrasound Video Vaish, Pallavi* (<i>Indian Institute of Tech. Hyderabad</i>); Ramkrishna, Bharath (<i>Indian institute of Tech. Hyderabad</i>); P, Rajalakshmi (<i>Indian Institute of Tech. Hyderabad</i>)

11:35-11:50 SaBT14.4

Considerations of Handheld Breathing Tracking via a Stabilized Eulerian Video Magnification Approach

Alam, Shafaf (*University of Queensland*); Singh, Surya P. N.* (*University of Queensland*); Abeyratne, Udantha R (*University of Queensland*)

11:50-12:05 SaBT14.5

Neurological Activity Monitoring based on Video Inpainting

Schmale, Sebastian* (*University of Bremen*); Seidel, Pascal (*University of Bremen*); Thiermann, Steffen (*University of Bremen*); Paul, Steffen (*University of Bremen*)

12:05-12:20 SaBT14.6

A Study of Color Illumination Effect on the SNR of rPPG Signals

Lin, Yu-Chen* (*National Taiwan University of Science and Technology*); Lin, Yuan-Hsiang (*National Taiwan University of Science and Technology*)

SaBT15: 10:50-12:20 Webster Room

Medical Innovation and Translation (Oral Session)

Chair: Sunagawa, Kenji (*Kyushu University*)

10:50-11:05 SaBT15.1

Audible Capnometric Cues with End-Tidal Carbon Dioxide Improve the Quality of Patient Monitoring

Aoki, Toshiaki* (*Nihon Kohden Corporation*); Inoue, Masayuki (*Nihon Kohden Corporation*); Miyasaka, Kiyoyuki (*St. Luke's International University*)

11:05-11:20 SaBT15.2

DeepPredict: A Deep Predictive Intelligence Platform for Patient Monitoring

Chwyl, Brendan* (*University of Waterloo*); Chung, Audrey Gina (*University of Waterloo*); Shafiee, Mohammad Javad (*University of Waterloo*); Fu, Yongji (*Becton Dickinson Technologies*); Wong, Alexander (*University of Waterloo*)

11:20-11:35 SaBT15.3

Design, Implementation, and Evaluation of a Physiological Closed-Loop Control Device for Medically-Induced Coma

An, Jingzhi* (*MIT*); Purdon, Patrick L (*Massachusetts General Hospital*); Solt, Ken (*Massachusetts General Hospital*); Sims, Nat (*MGH*); Brown, Emery N (*MGH-Harvard Medical School-MIT*); Westover, Brandon (*Massachusetts General Hospital*)

11:35-11:50 SaBT15.4

A Novel Smart Lighting Clinical Testbed

Gleason, Joseph D. (*The University of New Mexico*); Oishi, Meeko* (*University of New Mexico*); Simkulet, Michelle (*Rensselaer Polytechnic Institute*); Arunas, Tuzikas (*Rensselaer Polytechnic Institute*); Brown, Lee (*The University of New Mexico*); Brueck, S. R. J. (*The University of New Mexico*); Karlicek, Robert F. (*Rensselaer Polytechnic Institute*)

11:50-12:05 SaBT15.5

The Challenge of Magnetic Vagal Nerve Stimulation for Myocardial Infarction – Preliminary Clinical Trial

Nishikawa, Takuya* (*Kyushu Univ.*); Saku, Keita (*Kyushu Univ.*); Todaka, Koji (*Kyushu Univ.*); Kuwabara, Yukimitsu (*Kyushu Univ.*); Arai, Shinobu (*Nakamura Gakuen Univ.*); Kishi, Takuya (*Kyushu Univ. Graduate School of Medical Sciences*); Ide, Tomomi (*Kyushu Univ.*); Tsutsui, Hiroyuki (*Kyushu Univ.*); Sunagawa, Kenji (*Kyushu Univ.*)

12:05-12:20 SaBT15.6

Design of a Compact Collimator and 3D Imaging System for a Scanning Beam Low-Energy Intraoperative Radiation Therapy System for Pancreatic Cancer

Wears, Brennan (*University of Iowa*); Mohiuddin, Imran (*University of Iowa*); Flynn, Ryan (*University of Iowa*); Kim, Yusung (*Dept. of Radiation Oncology, The University of Iowa, Iowa C*); Waldron, Timothy (*University of Iowa*); Allen, Bryan (*University of Iowa*); Xia, Junyi* (*University of Iowa*)

SaBT16: 10:50-12:20 Rushmer Room

Surgical Robotics I (Oral Session)

Chair: Wang, Lei (*Shenzhen Institutes of Advanced Technology*)

10:50-11:05 SaBT16.1

Visible Forceps Manipulator with Novel Linkage Bending Mechanism for Neurosurgery

Zhang, Boyu (*Tsinghua University*); Liao, Zhuxiu (*Tsinghua University*); Liao, Hongen* (*Tsinghua University*);

11:05-11:20 SaBT16.2

A Targeted Drug Delivery Platform for Assisting Retinal Surgeons for Treating Age-Related Macular Degeneration (AMD)

Nasser, M. Ali* (*Technische Universitaet Muenchen*); Maier, Mathias (*Klinikum Rechst der isaar, Muenchen*); Lohmann, Chris (*Klinikum Rechst der isaar, Muenchen*)

11:20-11:35 SaBT16.3

Needle Release Mechanism Enabling Multiple Insertions with an Ultrasound-Guided Prostate Brachytherapy Robot

Chen, Shuyang (*Johns Hopkins Univ.*); Gonenc, Berk (*Johns Hopkins Univ.*); Li, Meng (*Johns Hopkins Univ.*); Song, Daniel (*Johns Hopkins Univ.*); Burdette, Everette (*Acoustic MedSystems, Inc.*); lordachita, Iulian (*Johns Hopkins Univ.*); Kazanzides, Peter* (*Johns Hopkins Univ.*)

11:35-11:50 SaBT16.4

A Master-Slave Control System with Workspaces Isomerism for Teleoperation of a Snake Robot

Ren, Lingxue* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Olatunji Mumin, Omisore (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Shipeng, Han (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Wang, Lei (*Shenzhen Institutes of Advanced Technology*)

11:50-12:05 SaBT16.5

Statistical Modeling on Motion Trajectories for Robotic Laparoscopic Surgery

Yang, Tao* (*Institute of Infocomm Research*); Huang, Weimin (*Institute for Infocomm Research, Agency for Science Technology a*); Toe, Kyaw Kyar (*Institute for Infocomm Research, A*STAR*)

SaBT17: 10:50-12:20 Einthoven Hall

Connectivity Measurements – Causality (Oral Session)

Chair: Duggento, Andrea (*University of Rome "Tor Vergata"*)

10:50-11:05 SaBT17.1

Estimating Brain Connectivity when Few Data Points are Available: Perspectives and Limitations

Antonacci, Yuri (*University of Rome Sapienza*); Toppi, Jlenia (*University of Rome "Sapienza"*); Anzolin, Alessandra (*Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*); Caschera, Stefano (*Sapienza University of Rome*); Mattia, Donatella (*Fondazione Santa Lucia IRCCS*); Astolfi, Laura* (*University of Rome Sapienza*)

11:05-11:20 SaBT17.2

Connectome Pattern Alterations with Increment of Mental Fatigue in One-Hour Driving Simulation

Chua, Bing Liang (*National University of Singapore*); Dai, Zhongxiang (*Singapore Institute for Neurotechnology (SINAPSE), Centre for Li*); Bezerianos, Anastasios* (*National University of Singapore*); Thakor, Nitish (*Johns Hopkins University*); Sun, Yu (*National University of Singapore*)

11:20-11:35 SaBT17.3

Transcranial Cerebellar Direct Current Stimulation: Effects on Brain Resting State Oscillatory and Network Activity

Petti, Manuela* (*Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*); Astolfi, Laura (*University of Rome Sapienza*); Masciullo, Marcella (*Fondazione Santa Lucia, Rome, Italy*); Clausi, Silvia (*Fondazione Santa Lucia, Rome, Italy*); Pichiorri, Floriana (*Fondazione Santa Lucia, IRCCS, Rome, Italy*); Cincotti, Febo (*Sapienza University of Rome*); Mattia, Donatella (*Fondazione Santa Lucia IRCCS*); Molinari, Marco (*Fondazione Santa Lucia, Rome, Italy*)

11:35-11:50	SaBT17.4	Asymmetry of Hemispheric Interdependences in the Early Hours following Unilateral Stroke: An Electrophysiological Study in Rats Guo, Xiaoli (<i>Shanghai Jiao Tong University</i>); Wu, Wenqing (<i>Shanghai Jiao Tong University</i>); Tong, Shanbao* (<i>Shanghai Jiao Tong University</i>)	SaCT2: 14:20-15:50 Optical Imaging II (Oral Session)	Cho Room
11:50-12:05	SaBT17.5	Estimating Directed Brain-Brain and Brain-Heart Connectivity through Globally Conditioned Granger Causality Approaches Duggento, Andrea* (<i>Univ. of Rome "Tor Vergata"</i>); Passamonti, Luca (<i>Univ. of Cambridge</i>); Guerrisi, Maria (<i>Univ. of Rome "Tor Vergata"</i>); Valenza, Gaetano (<i>Univ. of Pisa</i>); Barbieri, Riccardo (<i>Politecnico di Milano</i>); Toschi, Nicola (<i>Univ. of Rome "Tor Vergata", Faculty of Medicine</i>)	14:20-14:35	SaCT2.1
12:05-12:20	SaBT17.6	Simultaneous Estimation of the In-Mean and In-Variance Causal Connectomes of the Human Brain Duggento, Andrea* (<i>University of Rome "Tor Vergata"</i>); Passamonti, Luca (<i>University of Cambridge</i>); Guerrisi, Maria (<i>University of Rome "Tor Vergata"</i>); Toschi, Nicola (<i>University of Rome "Tor Vergata", Faculty of Medicine</i>)	Statistical Modeling of OCT Images by Asymmetric Normal Laplace Mixture Model Jorjandi, Sahar (<i>MUI</i>); Rabbani, Hossein* (<i>Isfahan Univ. of Medical Sciences</i>); Kafieh, Rahele (<i>Isfahan University of Medical Sciences</i>); Amini, Zahra (<i>MUI</i>)	
SaBT18: 10:50-12:20	Montgomery Hall	Time-Frequency and Time-Scale Analysis – Neural Signals (Oral Session) Chair: Wang, Yiwen (<i>Hong Kong Univ. of Science and Technology</i>)	14:35-14:50	SaCT2.2
10:50-11:05	SaBT18.1	A Marked Point Process Approach for Identifying Neural Correlates of Tics in Tourette Syndrome Loza, Carlos* (<i>Univ. of Florida</i>); Shute, Jonathan (<i>Univ. of Florida</i>); Principe, Jose (<i>Univ. of Florida</i>); Okun, Michael (<i>Univ. of Florida</i>); Gunduz, Aysegul (<i>Univ. of Florida</i>)	Tooth Cracks Detection and Gingival Sulcus Depth Measurement using Optical Coherence Tomography Kang, Se Ryoung (<i>Seoul National Univ.</i>); Kim, Jun-Min (<i>Seoul Univ.</i>); Yi, WonJin* (<i>Seoul National Univ Sch of Dentistry</i>)	
11:05-11:20	SaBT18.2	Measuring Brain Activation by using Baseline-Normalized Event-Related Spectral Perturbation in Working Memory Task Phukhachee, Tustanah* (<i>King Mongkut's University of Technology Thonburi</i>); Maneewongvatana, Suthathip (<i>King Mongkut's University of Technology Thonburi</i>); Iramina, Keiji (<i>Kyushu University</i>); Angsuwatanakul, Thanate (<i>Kyushu University</i>); Kaewkamnerdpong, Boonserm (<i>Biological Engineering Program, Faculty of Engineering, King Mon</i>)	14:50-15:05	SaCT2.3
11:20-11:35	SaBT18.3	Real-Time Analysis on Ensemble SVM Scores to Reduce P300-Speller Intensification Time Vo, Anh Kha* (<i>University of Technology Sydney</i>); Nguyen, Diep N. (<i>University of Technology Sydney</i>); Ha, Hoang Kha (<i>HoChiMinh City University of Technology</i>); Dutkiewicz, Eryk (<i>University of Technology Sydney</i>)	Smart Data Augmentation for Surgical Tool Detection on the Surgical Tray Alhaji, Hassan* (<i>Inserm</i>); Lamard, Mathieu (<i>Université de Bretagne Occidentale</i>); Cochener, Béatrice (<i>CHU Morvan</i>); Quellec, Gwenole (<i>Inserm</i>)	
11:35-11:50	SaBT18.4	Evaluation of Logarithmic vs. Linear ADCs for Neural Signal Acquisition and Reconstruction Pagin, Matteo* (<i>University of Ulm</i>); Ortmanns, Maurits (<i>University of Ulm</i>)	15:05-15:20	SaCT2.4
11:50-12:05	SaBT18.5	Quality Assessment of 3D Visualizations with Vertical Disparity: An ERP Approach Shahbazi Avarvand, Forooz (<i>Fraunhofer HHI</i>); Bosse, Sebastian (<i>Fraunhofer HHI</i>); Nolte, Guido (<i>Dept. of Neurophysiology, UKE, Hamburg</i>); Wiegand, Thomas (<i>HHI</i>); Samek, Wojciech* (<i>Fraunhofer HHI</i>)	Pyramid Approach for the Reduction of Parallax-Related Artefacts in Optical Recordings of Moving Translucent Volumes Flotho, Philipp* (<i>Systems Neuroscience and Neurotechnology Unit</i>); Romero Santiago, Alejandro E. (<i>Saarland Univ.</i>); Schwerdtfeger, Karsten (<i>Saarland Univ. Hospital</i>); Hülser, Matthias (<i>Saarland Univ. Hospital</i>); Haab, Lars (<i>Saarland Univ. Hospital</i>); Strauss, Daniel J. (<i>Saarland Univ., Medical Faculty</i>)	
12:05-12:20	SaBT18.6	Detecting Abrupt Change in Neuronal Tuning via Adaptive Point Process Estimation Chen, Junjun (<i>Zhejiang University</i>); Xu, Kai (<i>Zhejiang University</i>); Yang, Zaiyue (<i>Zhejiang University</i>); Wang, Yiwen* (<i>Hong Kong University of Science and Technology</i>)	15:20-15:35	SaCT2.5
			Non-Rigid Registration of Fluorescein Angiography and Optical Coherence Tomography via Scanning Laser Ophthalmoscope Imaging Rabbani, Hossein* (<i>Isfahan Univ. of Medical Sciences</i>); Mokhtary, Marzieh (<i>Isfahan University of Medical Sciences</i>); Ghasemi Kamasi, Zeinab (<i>West Virginia University</i>)	
			15:35-15:50	SaCT2.6
			Motion Estimation of Subcellular Structures from Fluorescence Microscopy Images Vallmitjana, Alex (<i>Automatic Control Dept., Universitat Politècnica de Catalunya</i>); Civera-Tregon, Azahara (<i>Neurogenetics and Molecular Medicine, Sant Joan de Deu Research</i>); Hoenicka, Janet (<i>Instituto de Recerca Hospital Sant Joan de Deu, Barcelona</i>); Palau, Francesc (<i>Neurogenetics and Molecular Medicine, Sant Joan de Deu Research</i>); Benitez, Raul* (<i>Universitat Politècnica de Catalunya</i>)	
			SaCT4: 14:20-15:50	Min Room
			Physiological and Behavioral Monitoring (Oral Session)	
			14:20-14:35	SaCT4.1
			A Wearable Textile for Respiratory Monitoring: Feasibility Assessment and Analysis of Sensors Position on System Response Lo Presti, Daniela* (<i>Campus Bio-Medico di Roma University</i>); Massaroni, Carlo (<i>Università Campus Bio-Medico di Roma</i>); Saccomandi, Paola (<i>University Campus Bio-Medico of Rome</i>); Caponero, Michele Arturo (<i>ENEA - Centro Ricerche Frascati</i>); Formica, Domenico (<i>Campus Bio-Medico University</i>); Schena, Emiliano (<i>University of Rome Campus Bio-Medico</i>)	
			14:35-14:50	SaCT4.2
			Electromagnetic Disturbances Rejection with Single Skin Contact in the Context of ECG Measurements with Cooperative Sensors Rapin, Michael* (<i>Swiss Center for Electronics and Microtechnology, CSEM</i>); Ferrario, Damien (<i>CSEM</i>); Haenni, Etienne (<i>CSEM</i>); Wacker, Josias (<i>CSEM</i>); Falhi, Abdessamad (<i>CSEM</i>); Meier, Christophe (<i>CSEM SA</i>); Porchet, Jacques-André (<i>CSEM SA</i>); Chételat, Olivier (<i>CSEM</i>)	

14:50-15:05 SaCT4.3
A Pressure-Sensitive Palatograph for Speech Analysis
 Baldoli, Ilaria (*Scuola Superiore Sant'Anna, the BioRobotics Institute*); Maselli, Martina* (*Scuola Superiore Sant'Anna*); Manti, Mariangela (*Scuola Superiore Sant'Anna, Pisa, Italy*); Surace, Elisabetta (*Scuola Superiore Sant'Anna*); Cianchetti, Matteo (*Scuola Superiore Sant'Anna*); Laschi, Cecilia (*Scuola Superiore Sant'Anna*)

15:05-15:20 SaCT4.4
Continuous Bladder Volume Monitoring System for Wearable Applications
 Shin, Seung-chul* (*Yonsei University*); Moon, Junhyung (*Yonsei University*); Kye, Saewon (*Yonsei University*); Lee, Kyoungwoo (*Yonsei University*); Lee, Yong Seung (*Yonsei University*); Kang, Hong-Goo (*Yonsei University*)

15:20-15:35 SaCT4.5
A Wearable 12-Lead ECG Acquisition System with Fabric Electrodes
 Zhang, Haoshi (*Shenzhen Institutes of Advanced Technology*); Tian, Lan (*Shenzhen Institutes of Advanced Technology, Chinese Academy of*); Lu, Huiyang (*School of Data and Computer Science, Sun Yat-sen University*); Zhou, Ming (*School of Control science and Engineering, Shandong University*); Zou, Haiqing (*Shenzhen Yingda Strong Technology Co.*); Fang, Peng* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of S*); Yao, Fuan (*School of Control Science and Engineering, Shandong University*); Li, Guanglin (*Shenzhen Institutes of Advanced Technology*)

SaCT5: 14:20-15:50 Lee Room
Physical Sensors and Sensor Systems II (Oral Session)

14:20-14:35 SaCT5.1
A Wearable Hand Gesture Recognition Device based on Acoustic Measurements at Wrist
 Siddiqui, Nabeel (*City University of Hong Kong*); Chan, Rosa H. M.* (*City University of Hong Kong*)

14:35-14:50 SaCT5.2
Novel Force-Sensing System for Minimally Invasive Surgical Instruments
 Wee, Justin W.* (*Univ. of Toronto, Hospital for Sick Children, CIGITI*); Gerstle, J. Ted (*Univ. of Toronto, Hospital for Sick Children, CIGITI*); Francis, Peter (*Univ. of Toronto*); Drake, James (*Univ. of Toronto, CIGITI, Hospital for Sick Children*); Looi, Thomas (*CIGITI, Hospital for Sick Children*); Brooks, Robert Joseph (*Hostipal for Sick Children, Univ. of Toronto*); Kang, Matthew (*Univ. of Toronto*); Azzie, Georges (*The Hospital for Sick Children*); Masotti, Leigh (*CIGITI, The Hospital for Sick Children*); Villavicencio, Daniel (*EiE*)

14:50-15:05 SaCT5.3
Office Activity Classification using First-Reflection Ultrasonic Echolocation
 Griffith, Henry* (*Michigan State Univ.*); Biswas, Subir (*Michigan State Univ.*); Hajiaghajani, Faezeh (*Michigan State Univ.*)

15:05-15:20 SaCT5.4
A Wearable Ultrasonic Sensor Network for Analysis of Bilateral Gait Symmetry
 Karalikkadan, Ashhar* (*Nanyang Technological University*); Soh, Cheong Boon (*Nanyang Technological University*); Kong, Keng He (*Tan Tock Seng Hospital*)

15:20-15:35 SaCT5.5
Monitoring Smoking Behaviour using a Wearable Acoustic Sensor
 Torres, Ifigo (*Imperial College London*); Imtiaz, Syed Anas (*Imperial College London*); Peng, Mingxu* (*Imperial College London*); Rodriguez-Villegas, Esther (*Imperial College London*)

SaCT8: 14:20-15:50 Schwan Room
Brain Functional Imaging II (Oral Session)

14:20-14:35 SaCT8.1
Propofol-Induced Sedation Diminishes the Strength of Frontal-Parietal-Occipital EEG Network
 Rathee, Dheera* (*Ulster University*); Cecotti, Hubert (*University of Ulster*); Prasad, Girijesh (*University of Ulster*)

14:35-14:50 SaCT8.2
Single-Trial Detection of Event-Related Fields in MEG from the Presentation of Happy Faces: Results of the Biomag 2016 Data Challenge
 Cecotti, Hubert* (*University of Ulster*); Barachant, Alexandre (*Independent Researcher*); King, Jean Remi (*New York University*); Sanchez Bornot, Jose Migueal (*Ulster University*); Prasad, Girijesh (*University of Ulster*)

14:50-15:05 SaCT8.3
Emergence of Metastable Dynamics in Functional Brain Organization via Spontaneous fMRI Signal and Whole-Brain Computational Modeling
 Lee, Won Hee* (*Icahn School of Medicine at Mount Sinai*); Frangou, Sophia (*Icahn School of Medicine at Mount Sinai*)

15:05-15:20 SaCT8.4
Why Build an Integrated EEG-NIRS? About the Advantages of Hybrid Bio-Acquisition Hardware
 von Lüthmann, Alexander* (*Machine Learning Dept. and Neurotechnology, Technische Univ*); Müller, Klaus-Robert (*Berlin Institute of Technology*)

15:35-15:50 SaCT8.6
Sensorimotor Network Parcellation for Pre-Surgical Patients using Low-Pass Filtered fMRI
 Han, Hao (*Tsinghua University*); Yan, Yuxiang (*Tsinghua University*); Zhou, WenJing (*Tsinghua University*); Hong, Bo* (*Tsinghua University*)

SaCT9: 14:20-15:50 Plonsey Room
Human Performance II (Oral Session)
 Chair: Finley, James (*University of Southern California*)

14:20-14:35 SaCT9.1
An Eye Tracking Index for the Salience Estimation in Visual Stimuli
 Babiloni, Fabio* (*University of Rome*); Cartocci, Giulia (*University of Rome Sapienza*); Modica, Enrica (*University of Rome Sapienza*); Maglione, Anton Giulio (*University of Rome Sapienza*); Di Flumeri, Gianluca (*University of Rome Sapienza*)

14:50-15:05 SaCT9.3
The External Force Associated with Callus Formation under the First Metatarsal Head is Reduced by Wearing Rocker Sole Shoes
 Amemiya, Ayumi* (*Chiba University*); Okonogi, Rena (*Dept. of Nursing Physiology, Graduate School of Nursing, Ch*); Yamakawa, Hiroki (*Nature's Walk Ltd*); Susumu, Kaori (*Dept. of Nursing Physiology, Graduate School of Nursing, Ch*); Jitsuishi, Tatsuya (*Dept. of Nursing Physiology, Graduate School of Nursing, Ch*); Sugawara, Hisayoshi (*Graduate School of Nursing, Chiba University*); L. Tanaka, Yuji (*Dept. of Nursing Physiology, Graduate School of Nursing, Ch*); Komiyama, Masatoshi (*Dept. of Nursing Physiology, Graduate School of Nursing, Ch*); Mori, Taketoshi (*The University of Tokyo*)

15:05-15:20 SaCT9.4
Manipulating the Fidelity of Lower Extremity Visual Feedback to Identify Obstacle Negotiation Strategies in Immersive Virtual Reality
 Kim, Aram* (*Univ. of Southern California*); Zhou, Zixuan (*Univ. of Southern California*); Kretch, Kari (*Univ. of Southern California*); Finley, James (*Univ. of Southern California*)

- 15:20-15:35 SaCT9.5
Prediction of Microsleeps using Pairwise Joint Entropy and Mutual Information between EEG Channels
 Buriro, Abdul Baseer* (*University of Canterbury*); Jones, Richard D. (*New Zealand Brain Research Institute*); Weddell, Stephen J. (*University of Canterbury*)
- 15:35-15:50 SaCT9.6
Ankle-Foot Orthosis using Elastomer-Embedded Flexible Joint
 Abe, Isao* (*Oita University*); Ishiya, Kohei (*Oita University*); Kikuchi, Takehito (*Oita University*); Tanida, Sousuke (*Bukkyo University*); Yasuda, Takashi (*Shiga School of Medical Technology*); Taiki, Oshimoto, Taiki (*Oita University*)
- SaCT10: 14:20-15:50 Schmitt Room
Health Informatics – Mobile Health I (Oral Session)
Chair: Van Gorp, Pieter (*Eindhoven University of Technology*)
- 14:20-14:35 SaCT10.1
A Modified D-Max Method to Estimate Heart Rate at a Ventilatory Threshold during an Incremental Exercise Test
 Jang, Dae-Geun* (*Samsung Advanced Institute of Technology*); Ko, Byung-Hoon (*Samsung Advanced Institute of Technology*); Sunoo, Sub (*Kyung Hee University*); Nam, Sang-Seok (*KyungHee Univ.*); Park, Hun-Young (*Kyunghee University*); Bae, Sang Kon (*Samsung Advanced Inst of Tech*)
- 14:35-14:50 SaCT10.2
Unified Health Gamification can Significantly Improve Well-Being in Corporate Environments
 Shahrestani, Arash (*Eindhoven Univ. of Technology*); Van Gorp, Pieter* (*Eindhoven Univ. of Technology*); Le Blanc, Pascale (*Eindhoven Univ. of Technology*); Greidanus, Fabrizio (*ZuidZorg*); de Groot, Kristel (*GGzE*); Leermakers, Jelle (*Finaps*)
- 14:50-15:05 SaCT10.3
Automatic Diagnosis of Tuberculosis Disease based on Plasmonic ELISA and Color-Based Image Classification
 AbuHassan, Kamal* (*Anglia Ruskin University (Chelmsford Campus)*); Bakhori, Noremylia M. (*Universiti Putra Malaysia*); Kusnin, Norzila (*Universiti Putra Malaysia*); Azmi, Umi Zulaikha Mohd (*Universiti Putra Malaysia*); Hoque Tania, Marzia (*Anglia Ruskin University*); Evans, Benjamin (*University of East Anglia*); Binti Yusof, Nor Azah (*Universiti Putra Malaysia*); Hossain, M Alamgir (*Anglia Ruskin University*)
- 15:05-15:20 SaCT10.4
Novel Features from Autocorrelation and Spectrum to Classify Phonocardiogram Quality
 Das, Deepan* (*TATA Consultancy Svcs.*); Banerjee, Rohan (*Tata Consultancy Svcs. Ltd.*); Dutta Choudhury, Anirban (*Tata Consultancy Svcs. Ltd.*); Bhattacharya, Sakyajit (*TCS Innovation Labs*); Deshpande, Parijat (*TCS*); Pal, Arpan (*Tata Consultancy Svcs.*); Mandana, K M (*Fortis Hospitals, Kolkata*)
- 15:20-15:35 SaCT10.5
Detection of Chewing Motion in the Elderly using a Glasses Mounted Accelerometer in a Real-Life Environment
 Mertes, Gert* (*KU Leuven*); Hallez, Hans (*KU Leuven*); Vanrumste, Bart (*Katholieke Universiteit Leuven*); Croonenborghs, Tom (*KU Leuven Campus Geel, AdvISE Technology Lab, Belgium*)
- SaCT11: 14:20-15:50 Greatbatch Room
TRPM Channels by Multi-Hierarchical Analysis: Measurement and Modeling (Minisymposium)
Chair: Inoue, Ryuji (*Fukuoka University School of Medicine*)
- 14:20-14:35 SaCT11.1
An Energy Efficient Parallelization for Computer Simulation of Electrocardiogram based on TK1 Board
 Qiu, Feng (*Shanghai University*); Shen, Wenfeng (*Shanghai University*); Zhu, Xin* (*The University of Aizu*); Hu, Yaopeng (*Fukuoka University*); Inoue, Ryuji (*Fukuoka University School of Medicine*); Shen, Yanghua (*Shanghai University*)
- 14:35-14:50 SaCT11.2
Numerical Model-Based Investigation on the Role of Transient Receptor Potential Melastatin Subfamily Member 4 (TRPM4) Channel in Cardiac Arrhythmogenicity
 Hu, Yaopeng (*Fukuoka University*); Hiraishi, Keizo (*Dept. of Physiology, School of Medicine, Fukuoka University*); Kurahara, Lin-Hai (*Fukuoka University*); Ichikawa, Jun (*Fukuoka University School of Medicine*); Numata, Tomohiro (*Fukuoka University*); Zhu, Xin (*The University of Aizu*); Inoue, Ryuji* (*Fukuoka University School of Medicine*)
- 14:50-15:05 SaCT11.3
Study on a 2D Cardiac Model Incorporating a TRPM4 Ion Channel
 Shen, Yanghua (*Shanghai University*); Shen, Wenfeng (*Shanghai University*); Zhu, Xin* (*The University of Aizu*); Hu, Yaopeng (*Fukuoka University*); Inoue, Ryuji (*Fukuoka University School of Medicine*); Qiu, Feng (*Shanghai University*)
- 15:05-15:20 SaCT11.4
Enhanced TRPM7 Activity Promotes Endothelial Remodeling in Pulmonary Arterial Hypertension
 Kurahara, Lin-Hai* (*Fukuoka University*); Hiraishi, Keizo (*Dept. of Physiology, School of Medicine, Fukuoka University*); Hu, Yaopeng (*Fukuoka University*); Inoue, Ryuji (*Fukuoka University School of Medicine*)
- 15:20-15:35 SaCT11.5
Modeling and Simulation of PI-Signal Regulated TRPC Channels
 Mori, Masayuki* (*Kyoto University*); Inoue, Ryuji (*Fukuoka University School of Medicine*)
- 15:35-15:50 SaCT11.6
Involvement of Redox-Sensitive TRPM2 Channel in Cardiac Dysfunction Induced by Ischemia-Reperfusion Injury
 Numata, Tomohiro* (*Fukuoka University*); Inoue, Ryuji (*Fukuoka University School of Medicine*)
- SaCT12: 14:20-15:50 Geddes Room
Ablation Technologies (Oral Session)
Chair: Prakash, Punit (*Kansas State University*)
- 14:20-14:35 SaCT12.1
Development of Evaluation Methods for the Approval and Review of Intense Pulsed Light (IPL)
 Lee, Seung-Youl* (*Ministry of Food and Drug Safety*); Ju, Cho-Long (*Ministry of Food and Drug Safety*); Lee, Tae-Hee (*Ministry of Food and Drug Safety*); Na, Hyeon-su (*Ministry of Food and Drug Safety*); Lee, In-Su (*Ministry of Food and Drug Safety*); Park, Chang Won (*National Institute of Food and Drug Safety Evaluation, Ministry*)
- 14:35-14:50 SaCT12.2
Tapered Fiber Optic Applicator for Laser Ablation: Theoretical and Experimental Assessment of Thermal Effects on Ex Vivo Model
 Saccomandi, Paola* (*Univ. Campus Bio-Medico of Rome*); Di Matteo, Francesco Maria (*Univ. Campus Bio-Medico of Rome*); Schena, Emiliano (*Univ. of Rome Campus Bio-Medico*); Quero, Giuseppe (*IHU-Strasbourg*); Massaroni, Carlo (*Università Campus Bio-Medico di Roma*); Giurazza, Francesco (*Università Campus Bio-Medico di Roma*); Costamagna, Guido (*Unit of Digestive Endoscopy, Università Cattolica del Sacro Cuor*); Silvestri, Sergio (*Università Campus Bio-Medico di Roma*)
- 14:50-15:05 SaCT12.3
Effects of Nd:YAG Laser for the Controlled and Localized Treatment of Early Gastrointestinal Tumors: Preliminary in Vivo Study
 Saccomandi, Paola* (*University Campus Bio-Medico of Rome*); Quero, Giuseppe (*IHU-Strasbourg*); Costamagna, Guido (*Unit of Digestive Endoscopy, Università Cattolica del Sacro Cuor*); Diana, Michele (*IRCAD: Research Institute against Cancer of Digestive System, St*); Marescaux, Jacques (*IRCAD*)

15:05-15:20	SaCT12.4	Surface Modifications of Human Tooth using Nd: YAG Laser for Dental Applications Mohamad Suhaimi, Fatanah* (<i>Advanced Medical and Dental Institute, University Sains Malaysia</i>); Zainol Alam, Nurzarifha (<i>University Sains Malaysia</i>); Mat Ariffin, Suriani (<i>University Sains Malaysia</i>); Abd Razak, Nurul Atiqah (<i>Advanced Medical and Dental Institute, University Sains Malaysia</i>); Abdul Razab, Mohammad Khairul Azhar (<i>University Malaysia Kelantan</i>)	SaCT18: 14:20-15:50 Time-Frequency and Time-Scale Analysis – Acoustic Signals (Oral Session) Chair: Datta, Shreyasi (<i>Tata Consultancy Services</i>)	Montgomery Hall
15:20-15:35	SaCT12.5	A Novel Sensor for Measuring Temperature Profile during the Thermoablation Bujnowski, Adam (<i>Gdansk University of Technology</i>); Wtorek, Jerzy* (<i>Gdansk University of Technology</i>)	14:20-14:35 Feature Extraction Techniques for Low-Power Ambulatory Wheeze Detection Wearables Acharya, Jyotibdha* (<i>Nanyang Technological University</i>); Basu, Arindam (<i>Nanyang Technological University</i>); Ser, Wee (<i>Nanyang Technological University</i>)	SaCT18.1
15:35-15:50	SaCT12.6	Preliminary Study on Low Intensity Focused Ultrasound System for Neuromodulation Lee, Ju Hyung (<i>Yonsei Univ.</i>); Hong, Hyun Ki (<i>Catholic Kwandong Univ. International St. Mary's Hospital</i>); Song, Byeong-Wook (<i>EIT/LOFUS R&D Center, Institute for Integrative Medicine, Cathol</i>); Jung, Yu jin (<i>EIT/LOFUS R&D Center, Institute for Integrative Medicine, Colleg</i>); Na, YoungCheol (<i>Catholic Kwandong Univ. Internationa St Mary's Hospital</i>); Kim, Nam Hyun (<i>Yonsei Univ.</i>); Kim, Bong-Soo* (<i>Catholic Kwandong Univ.</i>)	14:35-14:50 Cough Sound Analysis for Diagnosing Croup in Pediatric Patients using Biologically Inspired Features Sharan, Roneel V* (<i>University of Queensland</i>); Abeyratne, Udantha R (<i>University of Queensland</i>); Swarnkar, Vinayak (<i>University of Queensland</i>)	SaCT18.2
SaCT13: 14:20-15:50	Dunn Room	Sensor Informatics – Physiological Monitoring I (Oral Session) Chair: Baranoski, Gladimir Valerio Guimaraes (<i>Univ. of Waterloo</i>)	14:50-15:05 A Robust Dataset-Agnostic Heart Disease Classifier from Phonocardiogram Banerjee, Rohan (<i>Tata Consultancy Services Ltd.</i>); Dutta Choudhury, Anirban* (<i>Tata Consultancy Services Ltd.</i>); Deshpande, Parijat (<i>TCS</i>); Bhattacharya, Sakyajit (<i>TCS Innovation Labs</i>); Pal, Arpan (<i>Tata Consultancy Services</i>); Mandana, K M (<i>Fortis Hospitals, Kolkata</i>)	SaCT18.3
14:20-14:35	SaCT13.1	Differential Effects of Physical and Psychological Stressors on Electrodermal Activity A S, Anusha* (<i>IITM</i>); J., Jose (<i>HTIC</i>); Sp, Preejith (<i>Healthcare Technology Innovation Center - IITMadras</i>); Joseph, Jayaraj (<i>HTIC, Indian Institute of Technology Madras</i>); Sivaprakasam, Mohanasankar (<i>Indian Institute of Technology Madras</i>)	15:05-15:20 Identification of Chronic Heart Failure using Linear and Nonlinear Analysis of Heart Sound Zheng, Yineng (<i>Chongqing University</i>); Guo, Xingming* (<i>Chongqing University</i>)	SaCT18.4
14:35-14:50	SaCT13.2	An Autonomous Medical Monitoring System: Validation on Arrhythmia Detection Lemkaddem, Alia* (<i>CSEM</i>); Proença, Martin (<i>Swiss Center for Electronics and Microtechnology (CSEM)</i>); Delgado-Gonzalo, Ricard (<i>CSEM</i>); Renevey, Philippe (<i>CSEM</i>); Oei, Ing (<i>Airbus Defence and Space GmbH</i>); Montano, Giuseppe (<i>Airbus Defence and Space Limited</i>); Martinez-Heras, Jose Antonio (<i>European Space Operations Centre (ESOC)</i>); Donati, Alessandro (<i>European Space Operations Centre (ESOC)</i>); Bertschi, Mattia (<i>CSEM</i>); Lemay, Mathieu (<i>CSEM</i>)	15:20-15:35 Evaluating the use of Neural Networks and Acoustic Measurements to Identify Laryngeal Pathologies Sodré, Bruno (<i>UTFPR</i>); Rosa, Marcelo* (<i>Universidade Tecnológica Federal do Paraná</i>); Dassie-Leite, Ana Paula (<i>Universidade Estadual do Centro-Oeste - UNICENTRO</i>)	SaCT18.5
14:50-15:05	SaCT13.3	Virtual Proprioception for Eccentric Training LeMoyné, Robert* (<i>Northern Arizona University</i>); Mastroianni, Timothy (<i>Independent</i>)	15:35-15:50 Automated Lung Sound Analysis for Detecting Pulmonary Abnormalities Datta, Shreyasi* (<i>Tata Consultancy Services</i>); Dutta Choudhury, Anirban (<i>Tata Consultancy Services Ltd.</i>); Deshpande, Parijat (<i>TCS</i>); Bhattacharya, Sakyajit (<i>TCS Innovation Labs</i>); Pal, Arpan (<i>Tata Consultancy Services</i>)	SaCT18.6
15:05-15:20	SaCT13.4	Motion-Oriented Noisy Physiological Signal Refining using Embedded Sensing Platforms Park, JaeYeon (<i>Ajou Univ.</i>); Nam, Woojin (<i>Ajou Univ.</i>); Kim, Tae Young (<i>Ajou Univ. School of Medicine</i>); Lee, Sukhoon (<i>Ajou Univ. School of Medicine</i>); Yoon, Dukyong (<i>Ajou Univ. School of Medicine</i>); Ko, JeongGil* (<i>Ajou Univ.</i>)		
15:20-15:35	SaCT13.5	Detection of Generalized Tonic-Clonic Seizures using Short Length Accelerometry Signal Kusmakar, Shitanshu* (<i>The Univ. of Melbourne</i>); Karmakar, Chandan (<i>Deakin Univ.</i>); Yan, Bernard (<i>The Royal Melbourne Hospital</i>); O'Brien, Terence (<i>The Royal Melbourne Hospital</i>); Muthuganapathy, Ramanathan (<i>Indian Institute of Technology Madras</i>); Palaniswami, Marimuthu (<i>The Univ. of Melbourne</i>)		
15:35-15:50	SaCT13.6	Three-Wavelength Method for the Optical Differentiation of Methemoglobin and Sulphemoglobin in Oxygenated Blood Van Leeuwen, Spencer Richard* (<i>University of Waterloo</i>); Baranoski, Gladimir Valerio Guimaraes (<i>University of Waterloo</i>); Kimmel, Bradley William (<i>University of Waterloo</i>)		

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Abiri, Ahmad	SaAT16.3	111		ThDT5-02.1	52
Abraham, Lawrence	WeCT5-01.3	14		ThDT5-03.1	52
Abrajano, Gemalyn	ThDT16-06.1	66		ThDT5-03.6	52
Abrantes, João M. C. S.	WeCT1-01.6	8		ThDT12-08.1	62
	FrDT17-08.10	107	Ai, Guangyi	FrDT17-08.1	106
Abreu de Souza, Mauren	FrDT15-01.3	103	Ai, Weiwei	ThBT13.4	41
	FrDT17-08.7	107	Aihara, Mitsuki	ThDT1-02.18	85
Abry, Patrice	ThBT17.2	42	Aihara, Ryo	FrDT1-02.17	85
	FrCT18.1	CC	Airaksinen, Juhani	ThAT5.1	33
	FrCT18.3	84	Ajaz, Aqsa	WeBT16.1	8
	FrCT18.4	84	Akan, Ozgur B.	FrBT9.4	77
	FrCT18.6	84		SaAT1.3	109
AbuHassan, Kamal	SaCT10.3	120	Akbar, Izzat Aulia	ThDT18-01.13	69
Achancaray, David	WeCT8-02.9	19	Akcakaya, Mehmet	WeCT14-01.4	27
Acharya, Jyotibdha	SaCT18.1	121	Akhtar, Usman	FrDT10-10.1	97
Acharya, Soumyadipta	ThDT10-05.1	60	Akhter, Shahin	ThDT17-05.3	68
Acharyya, Amit	WeCT7-01.15	17	Aki, Fumitaka	FrDT12-01.2	99
	ThDT8-01.3	55	Akiyama, Mihoko	ThBT4.3	38
	ThDT8-01.15	56	Al Abed, Amr	ThDT11-02.4	60
Acharyya, Swati Ghosh	WeCT7-01.15	17		FrCT11.4	82
Acostupa, Juan José	WeCT7-02.1	17		SaBT11.4	116
	WeCT7-06.1	18	Al Farawn, Ali	ThCT18.3	46
Acuña, Kevin José	WeCT8-02.9	19		ThCT18.4	46
Adalsteinsson, Elfar	FrBT3.4	75	Alacreu, Elena	ThBT3.5	38
Adams, Matthew T	WeAT2.3	1	AlAdem, Kenana	ThAT13.5	36
Adavanne, Sharath	ThDT18-01.8	68	Alam, Amal Afroz	ThDT10-05.1	60
Addison, Paul	WeCT4-03.3	13	Alam, Md Nafiul	ThDT4-03.5	51
	SaBT1.3	112		SaBT14.1	116
Adhikari, Kabita	FrAT18.6	74	Alam, Shafaf	SaBT14.4	117
Adi Nugroho, Hanung	ThAT14.6	37	Alangari, Haitham M.	ThCT17.1	45
	ThDT8-01.7	56	Al-Ani, Ahmed	ThDT8-01.15	56
Adimulam, Divya	SaAT5.2	109	Al-Antari, Mugahed A.	WeCT2-02.7	11
Adimulam, Mahesh Kumar	SaAT5.2	109		WeCT10-02.9	22
Aelen, Paul	WeCT12-03.3	26	Alarifi, Mohammad	ThDT8-01.1	55
Aerts, Jean-Marie	FrDT13-04.2	101	Alasaarela, Esko	WeCT1-03.5	9
Afifi, Ahmed	FrCT14.1	83	Alazzam, Anas	FrCT6.6	81
Afifi, Shereen	WeBT12.1	7	Albanese, Antonio	WeAT15.2	4
Afzal, Muhammad Raheel	ThDT10-01.7	59		FrBT11.6	77
Agnesi, Filippo	ThDT7-02.5	55	Albatat, Mohammad	FrCT4.3	80
Agostinelli, Angela	ThDT10-02.3	59	Albera, Laurent	ThDT17-03.2	67
	FrAT17.2	74	Alberto, Fung	FrDT12-03.5	99
Agostini, Valentina	WeAT8.3	2	Aldaba, Cassandra	SaBT9.3	115
	ThDT8-01.12	56	Al-Diri, Bashir	WeBT16.2	8
	ThDT8-02.2	56	Alemaryeen, Ala	WeCT5-03.1	15
Agrawal, Anurag	ThBT11.3	40	Alexander, Frank	ThAT6.6	34
Agrawal, Harshit	ThDT4-01.3	50	Al-fatlawi, Ali H.	ThDT18-01.5	68
Aguilár, Ludwig Erik	ThDT6-08.1	54	Al-Gharabli, Samer	WeCT8-02.6	19
Ahmad Bakir, Azam	FrCT11.4	82	Alhajj, Hassan	ThBT14.6	41
Ahmad, Muhammad Zubair	WeCT10-02.4	22		SaCT2.3	118
Ahmad, Rushda Basir	WeCT8-03.2	19	Alharbi, Yousef S	SaBT11.4	116
Ahmad, Waqas	ThDT4-02.7	51	Ali, Aziah	WeBT16.3	8
Ahmaniemi, Teemu	WeBT11.2	6	Ali, M. Tanseer	ThBT13.5	41
	WeBT11.3	6	Ali, Taqdir	ThDT10-04.7	60
Ahmed, Abdullah	ThDT4-02.7	51	Aliahmad, Behzad	WeBT16.1	8
				WeCT12-03.5	26
			Alighaleh, Saeed	ThCT13.4	45
				ThDT17-02.2	67

Alikhani, Iman	SaAT18.6	112	Ansermino, J. Mark	FrCT17.6	84
Aliverti, Andrea	WeCT12-02.8	25	Antensteiner, Martin	ThBT6.2	39
	ThDT4-03.4	51		ThBT6.5	39
Alizadeh Saravi, Leila	ThDT9-10.7	58	Anthony, Brian W.	ThCT11.5	44
Aljama-Corrales, Tomas	ThDT17-01.4	67		ThDT18-02.4	69
	FrBT18.5	79		FrDT3-06.1	88
Alkhairy, Samiya	WeAT15.3	4	Antiga, Luca	WeBT16.2	8
Allen, Bryan	SaBT15.6	117	Antonacci, Yuri	SaBT17.1	117
Allen, Nathan	ThBT13.4	41	Antonelli, Marco	WeCT5-01.4	14
Al-Masni, Mohammed A.	WeCT2-02.7	11	Antonini, Angelo	SaAT13.6	111
	WeCT10-02.9	22	Antonio dos Anjos Jr., Luiz	FrCT9.2	81
Almeida, Vania	ThCT18.5	46	Antoniou, Zinonas	FrDT13-06.1	101
Almekkawy, Mohamed	WeCT12-04.3	26		FrDT13-12.1	101
Alnajjar, Fady SK	ThDT8-02.4	56	Antunes, Andre	SaBT1.3	112
Al-Nashash, Hasan	ThDT8-01.5	55	Antunes, Manual	WeCT11-01.4	23
	ThDT8-01.13	56	Anwar, Syed	ThBT14.5	41
Al-nuaimi, Ali H. Hussein	ThDT1-04.7	47		FrCT10.4	82
Alqahtani, Abdulrahman	ThDT11-02.4	60	Anzai, Daisuke	FRAT4.1	CC
Alqarni, Hanan	WeCT12-04.3	26		FRAT4.1	71
Al-Qazzaz, Noor	FrAT17.4	74		FRAT4.2	71
Alrezj, Osamah	ThAT18.3	37		FRCT4.1	C
Alshebeili, Saleh	ThAT18.3	37	Anzai, Hitomi	WeCT11-04.3	24
Alsunaydih, Fahad Nasser	FrAT4.4	71	Anzolin, Alessandra	SaAT17.1	CC
Álvarez, Daniel	FrCT17.2	83		SaAT17.2	111
	FrCT17.5	84		SaBT17.1	117
Álvarez-González, Marco Antonio	FrAT14.6	73	Aoki, Ryosuke	WeCT11-03.1	23
Amemiya, Ayumi	SaCT9.3	119		SaAT18.1	112
Amin, Muhammad Bilal	FrDT13-03.1	101	Aoki, Takafumi	FrAT3.6	71
Amini, Amir	FrBT14.1	78	Aoki, Toshiaki	SaBT15.1	117
Amini, Zahra	SaCT2.1	118	Ap, Prathosh	FrCT10.5	82
Amiri, Pouya	WeAT8.6	2	Aqrawe, Zaid	FrDT7-07.2	93
Amiriparian, Shahin	SaAT1.4	109	Aqueveque, Pablo	WeCT16-08.4	31
Amirouche, Amin	FrCT6.5	81		FrDT9-01.1	95
Amor, James	ThDT4-02.4	51		SaAT5.3	109
Amsuess, Sebastian	WeCT1-01.8	9	Aradóttir, Tinna Björk	ThDT18-01.11	69
An, Dong	WeCT3-03.1	12	Arai, Shinobu	SaBT15.5	117
An, Hyoujin	FrDT12-07.2	100	Araki, Daichi	FrDT13-09.1	101
	FrDT13-07.1	101		FrDT14-01.9	102
An, Jieun	ThDT12-05.4	62	Araki, Teppei	ThAT4.6	33
An, Jingzhi	SaBT15.3	117		ThBT4.3	38
An, Jinyoung	FrBT15.3	78	Arana, Estanislao	WeCT2-01.1	10
An, Sang-Hyun	ThDT13-03.3	63		ThBT3.5	38
An, Seonga	FrCT16.4	83	Aranda, Ricardo	SaAT5.4	109
An, Wookyung	FrBT8.2	76	Arandjelovic, Ognjen	WeCT2-02.8	11
An, Xingwei	WeCT8-02.4	19		ThDT10-04.1	59
	WeCT8-02.5	19		SaBT10.3	115
	ThDT8-01.4	55	Arbeitman, Claudia	WeBT11.6	7
An, Yang	WeCT12-01.5	25	Ardiyanto, Igi	ThAT14.6	37
Anders, Jens	WeCT9-01.8	20	Arefin, Md Shamsul	FrBT4.4	75
Andersen, Rasmus Sten	ThBT18.3	42	Arena, Ross	SaBT10.4	115
Anderson, Nickolas	FrDT16-06.11	106	Arens, Michael	ThBT7.6	39
Anderson, William S.	WeCT9-02.2	20	Argha, Ahmadreza	WeCT11-03.2	24
	SaAT7.4	110		WeCT15-01.2	29
	SaAT14.5	111	Argyros, Antonis	WeBT16.6	8
Ando, Hiroshi	FrAT9.5	72	Ariani, Arni	ThDT10-03.5	59
Andolfatto, Gary	WeBT15.3	8	Arico, Pietro	FrBT1.6	74
Andres, Maldonado-Jacobi	WeCT5-03.3	15		SaAT17.4	112
Andreu-Perez, Javier	WeCT8-02.9	19	Ariga, Shoko	FrDT9-04.4	96
Andrews, Chris	FrCT15.1	83	Ariki, Yasuo	ThDT9-01.1	57
Andrikos, Ioannis	WeAT10.6	3		FrDT1-02.17	85
	WeCT2-02.11	11		FrDT18-01.2	107
Andrzejak, Ralph	FrDT17-02.2	106	Arizmendi, Carlos	FrBT18.6	79
Ang, Kai Keng	WeCT1-02.1	9	Armentano, Ricardo Luis	WeBT11.6	7
	ThBT8.3	39		ThBT5.2	38
	ThBT8.4	40		FrBT5.1	C
	ThDT8-01.14	56		FrBT5.2	75
	ThDT9-01.2	57	Armitstead, Jeffrey Peter	WeCT15-02.1	29
	FrAT1.2	70		ThCT15.1	45
Ang, Wei Tech	WeAT12.1	3	Armstrong, Don	ThAT10.1	35
	WeCT5-02.1	14	Arnold, Robert	FrCT11.6	82
Angeli, Timothy Robert	WeCT4-04.3	14	Aroudi, Ali	WeCT1-04.6	10
	ThCT13.4	45	Arredondo, María Teresa	FrDT10-08.1	97
Angelone, Leonardo M.	WeCT14-01.6	27	Arroyo, Junior	FrAT2.6	70
	ThAT12.1	36	Arun, Indu	ThDT2-05.1	48
Angsuwatanakul, Thanate	SaBT18.2	118	Arunas, Tuzikas	SaBT15.4	117
Anh Le, Tuan	WeCT6-01.1	15	Arvaneh, Mahnaz	WeCT8-02.10	19
Anishchenko, Lesya	WeCT10-03.8	23		WeCT8-02.12	19
	FrCT17.3	84		ThDT8-02.11	57
Annibali, Ombretta	ThDT10-05.4	60		ThDT18-01.7	68
Ansari, Amir Hossein	ThDT17-04.3	68	Aryal, Susmita	WeCT13-08.1	27
Ansari, Sardar	ThCT18.6	46	Arzel, Matthieu	SaAT5.1	109

Asami, Naoya	ThDT11-01.1	60	Bae, Sang Kon	SaCT10.1	120
	ThDT11-06.1	61	Bae, Sangwook	FrDT15-14.1	104
Asano, Eishi	ThDT3-05.1	49	Bae, Seungbin	ThDT3-05.3	49
Asano, Takehide	ThDT16-05.2	66	Bae, Seung-Ho	FrDT2-01.4	86
Asgari, Shadnaz	ThDT17-02.3	67	Bae, Sua	ThDT14-05.2	64
Ashby, Darren	WeAT12.6	3		ThDT14-05.3	64
Ashe, Jeffrey	ThDT18-02.10	69		ThDT14-07.2	64
Ashouri, Hazar	ThBT11.5	40		ThDT14-07.3	64
Ashraf, Ahmed	WeCT10-01.2	21	Bae, Sungchul	SaBT13.6	116
Ashwal, Stephen	FrAT3.2	70	Baek, Changhoon	WeCT7-01.7	17
Asllani, Iris	FrDT2-06.2	86		WeCT9-01.9	20
Asman, Priscella	ThAT17.5	37		WeCT10-02.3	22
Asplund, Maria	WeCT9-01.1	20		ThDT12-05.4	62
Astolfi, Laura	WeCT2-01.14	10	Baek, Chung-Hwan	SaBT6.3	114
	ThBT1.1	C	Baek, DongGuen	ThDT11-10.2	61
	ThBT1.5	38	Baek, Hongchae	ThDT7-02.8	55
	SaAT17.2	111	Baek, Jin-Young	ThCT10.2	44
	SaAT17.5	112	Baek, Sanghoon	ThDT5-04.2	53
	SaBT17.1	117	Bag, Byung Eun	FrDT3-02.3	87
	SaBT17.3	117	Bagdasarian, Milena Teresa	FrCT14.2	83
Åström, Kalle	FrDT1-02.3	84	Bahloul, Mohamed A.	WeCT15-07.1	29
Athanasios, Lambros	WeCT2-02.11	11	Bahney, Chelsea	ThAT13.3	36
Athreya, Arjun	ThAT10.1	35	Bahoor, Kenneth	WeCT2-02.5	11
Atiq, Mounir	FrBT15.5	78	Bai, Hongmin	FrAT8.3	72
Atkinson, Jeffrey	WeCT11-01.2	23	Bai, Huiping	WeCT2-02.2	11
Atri, Roozbeh	WeCT1-01.4	8	Bai, Jingfeng	WeAT2.2	1
	FrDT16-04.1	105	Bai, Ou	WeCT1-01.4	8
Attalla, Rana	ThDT6-02.1	53		FrDT16-04.1	105
Attia, Itzhak Z.	ThCT5.1	42	Baik, Jin Woo	ThDT2-01.6	47
Aubert, Xavier	WeAT11.5	3	Bailon, Raquel	ThDT1-04.2	47
Augat, Peter	WeAT7.5	2		ThDT1-04.9	47
	WeAT7.6	2	Bajcsy, Ruzena	ThBT7.2	39
Avery, James	WeCT2-01.10	10	Bajelan, Soheil	WeCT7-01.16	17
Avivi-Arber, Limor	WeCT2-02.9	11	Bak, Changgyu	FrDT4-05.2	89
Avolio, Alberto P	WeBT11.1	C	Bakhori, Noremylia M.	SaCT10.3	120
	WeBT11.4	6	Balaji, Advait	WeCT8-02.11	19
	ThBT11.4	40	Balashab Patil, Ravindra	ThAT10.3	35
	FrCT11.2	82	Balasingham, Ilango	FrAT4.1	C
	SaAT18.4	112		FrAT4.2	71
Avvisati, Giuseppe	ThDT10-05.4	60		FrBT4.1	C
Awasthi, Ganesh Prasad	FrDT6-08.1	92		FrBT4.1	75
Awawdeh, Shatha Fawzi	WeCT2-02.1	11		FrBT4.5	75
Ayaz, Aymen	WeCT10-02.4	22		FrCT4.3	80
Ayoub, Ghazal	ThDT14-11.1	65	Balasubramanian, Karthikeyan	FrCT9.2	81
Ayusawa, Ko	ThAT7.5	34	Balbinot, Alexandre	WeCT1-01.3	8
Azab, Ahmed	ThDT8-02.11	57		WeCT4-02.1	13
Azami, Hamed	FrAT18.1	74		ThBT18.5	42
Azhari, Haim	ThDT13-08.1	63	Balcer, Carrie Anne	FrCT9.2	81
Azhim, Azran	ThCT6.3	43	Baldazzi, Giulia	WeCT8-03.4	19
	ThCT6.5	43	Baldewijns, Greet	ThDT10-05.3	60
Azimi, Vahid	WeCT3-03.4	12	Baldoli, Ilaria	WeCT7-01.1	16
Aziz, Omar	ThCT10.6	44		SaCT4.3	119
Azizi, Shahla	WeCT9-03.5	21	Balestra, Gabriella	WeAT8.3	2
Azmi, Umi Zulaikha Mohd	SaCT10.3	120		WeCT10-01.5	22
Azzie, Georges	SaCT5.2	119		ThDT8-01.12	56

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Ba, Demba	FrDT18-08.6	108	Balouria, Anuradha	WeCT7-01.15	17
Ba, Qinle	SaBT3.5	113	Bandaru, Jagadish	ThDT7-01.5	54
Baac, Hyoung Won	WeCT6-04.5	16	Bandyopadhyay, Soma	ThDT17-01.3	67
	FrDT12-01.3	99	Banerjee, Ayan	WeCT4-04.6	14
	FrDT12-05.2	99		FrDT10-16.2	98
	FrDT12-05.3	100	Banerjee, Rohan	SaCT10.4	120
	FrDT12-05.7	100		SaCT18.3	121
Baba, Kazutomo	ThAT6.5	34	Banerjee, Soumava	WeBT14.3	7
Baba, Masashi	FrDT5-06.2	91	Banerjee, Tanvi	WeCT10-01.6	22
Babcock, Julia	FrDT13-01.1	100	Bang, Sangkwang	FrDT5-05.1	90
Babiloni, Fabio	ThDT8-01.11	56	Bang, Seokyoung	WeCT6-05.6	16
	FrBT1.6	74	Bang, SungKyu	FrDT2-06.7	86
	SaAT17.4	112	Banganho, António Francisco	FrCT15.4	83
	SaBT9.4	115	Banister, Ron	WeCT4-04.5	14
	SaCT9.1	119	Banks, Garrett	WeCT8-01.2	18
Babuska, Robert	ThDT16-09.1	66	Bao, Xueliang	ThDT8-01.9	56
Bachiller, Alejandro	ThDT1-02.4	46	Bao, Yong	WeCT8-04.1	20
Bacis, Marco	WeCT10-02.8	22	Bapuraj, Jayapalli Rajiv	FrAT8.1	72
Bae, ChiSung	FrCT1.4	79	Bär, Karl-Jürgen	ThDT1-02.2	46
Bae, Jaekeon	ThDT3-05.3	49	Barabino, Gianluca	WeCT8-03.4	19
Bae, Jang-Han	FrCT13.1	82		ThBT9.1	40
	FrDT18-08.7	108	Barachant, Alexandre	FrAT18.5	74
				SaCT8.2	119
			Baragli, Paolo	WeCT11-03.4	24

Baranoski, Gladimir Valerio Guimaraes	WeAT10.5	3	Berger-Wolf, Tanya	WeCT14-01.9	27
	ThDT11-02.6	61	Bergmans, Johannes Wilhelmus Maria	WeAT11.5	3
	SaBT13.1	C	Bergquist, Filip	WeAT12.2	3
	SaBT13.2	116	Bergstrom, Nancy	ThDT1-04.3	47
	SaCT13.1	C	Bermeo Maldonado, Alexander Vinicio	FrCT5.2	80
	SaCT13.6	121	Bermeo, Juan Pablo	FrCT5.2	80
Barbaro, Massimo	ThBT9.1	40	Bernard, Adeline	FrAT2.4	70
Barbi, Egidio	WeBT15.3	8	Bernard, Gordon	WeCT10-01.1	21
Barbieri, Riccardo	ThAT1.1	32	Bernarding, Corinna	ThDT18-02.1	69
	ThAT17.1	C	Bertzen, Lasse	FrBT15.4	78
	ThAT17.3	37	Bertão, Ana	WeBT4.4	5
	FrAT11.5	73	Bertemes-filho, Pedro	WeAT16.1	C
	FrBT8.1	C		WeAT16.4	4
	FrBT8.4	76		WeAT16.5	4
	FrBT8.6	76	Bertschi, Mattia	WeAT12.6	3
	FrCT18.4	84		ThAT17.4	37
	FrCT18.5	84		ThBT5.6	39
	SaBT17.5	118		ThCT11.2	44
Barbosa Pereira, Carina	SaAT3.1	109		SaCT13.2	121
	SaAT3.4	109	Besio, W. G.	WeCT5-03.4	15
Bari, Vlasta	FrAT11.1	73		ThDT4-03.10	51
	FrAT11.4	73		FrCT8.6	81
Barit, Dexter James	FrDT16-01.1	104		SaBT5.5	114
Barla, Annalisa	ThAT10.4	35		SaBT8.3	114
Barresi, Giacinto	ThDT8-01.8	56	Bessho, Yusuke	FrDT16-03.5	105
Barriga-Rivera, Alejandro	WeCT9-04.2	21	Beuing, Oliver	WeCT15-07.3	30
Barrios, Rémi	ThDT1-03.1	46	Bezerianos, Anastasios	ThDT8-01.5	55
Barros, Helena	WeCT2-01.3	10		ThDT8-01.13	56
Barroso-García, Verónica	FrCT17.2	83		FrBT1.4	74
	FrCT17.5	84		SaAT17.3	111
Bartels, Alan	WeCT13-07.1	27		SaAT17.4	112
Bartels, Rachel	SaBT8.3	114		SaBT17.2	117
Bashar, Khayrul	WeCT3-01.2	11	Bhaduri, Ria	ThDT8-01.1	55
Basset, Olivier	FrAT2.4	70	Bhandari, Babin	WeCT5-04.1	15
Basu, Arindam	SaCT18.1	121	Bhargava, Puneet	ThDT10-03.2	59
Batchu, Sandeep	WeCT4-04.5	14	Bhargava, Rohit	FrDT3-02.2	87
Bates, Declan Gerard	WeAT15.1	4	Bhat, Harsha	WeCT10-02.6	22
	WeAT15.4	4	Bhatt, Tanvi	SaAT9.3	110
	WeBT15.1	8	Bhattacharya, Sakyajit	SaCT10.4	120
	WeCT15-01.1	29		SaCT18.3	121
Baths, Veeky	WeCT8-02.11	19		SaCT18.6	121
Batista, Diana	ThDT4-03.8	51	Bhattacharya, Tinish	FrCT5.3	80
Bauer, Siegfried	WeAT7.5	2	Bhattarai, Deval Prasad	ThDT5-01.1	51
Baumgarten, Daniel	ThDT14-02.1	64	Bhowmick, Brojeshwar	ThDT17-06.1	68
Baumgartner, Werner	WeCT1-01.8	9		SaAT7.3	110
Bausch, Gerold	WeCT1-03.7	9	Bhowmik, Tanmoy	WeAT11.3	3
Bawab, Sebastian	ThDT9-08.1	58		ThDT4-01.3	50
Bawazir, Sarah	ThAT13.5	36		ThDT4-03.9	51
Bayes-Genis, Antoni	WeCT11-03.7	24	Bi, Fanya	WeCT8-01.3	18
Bechlioulis, Aris	FrCT10.2	82	Bi, Luzheng	ThDT8-01.17	56
Beckmann, Nils	WeBT11.1	6	Bi, Zhengyang	WeBT8.3	6
Begg, Rezaul	WeCT7-01.16	17		WeCT4-02.3	13
Behr, Michael	FrDT18-08.6	108		ThDT8-01.9	56
Beichel, Reinhard	FrBT14.2	78	Bian, Gui-Bin	FrBT11.4	77
Belaoucha, Brahim	FrCT8.4	81	Bianchi, Anna Maria	ThDT17-04.2	67
Bellagambi, Francesca	FrCT10.2	82	Bianchi, Matteo	WeCT1-01.5	8
Bellani, Giacomo	ThDT1-01.2	46		WeCT11-03.5	24
Bellisle, Rachel	SaBT8.3	114	Bibián, Carlos	ThDT8-02.6	56
Bello, Edward	ThDT7-02.5	55		FrAT1.1	70
Ben Jebara, Sofia	WeCT1-01.2	8		FrAT7.6	72
Benaissa, Mohammed	ThAT18.3	37	Bicchi, Antonio	WeCT1-01.5	8
Bendahan, David	WeBT14.2	7		WeCT11-03.5	24
Bengtsson, Henrik	ThDT18-01.11	69	Bieritz, Shelby	WeCT11-08.1	24
Beniczky, Sandor	SaBT4.4	113	Biffi, Emilia	ThDT4-03.4	51
Benitez, Raul	ThDT2-04.1	48	Bilal, Hafiz Syed Muhammad	FrDT13-01.3	100
	FrAT14.6	73	Bilgic, Berkin	FrBT3.4	75
	SaCT2.6	118	Bingham, Adrian	FrBT17.3	79
Benjamin, Alex	ThDT18-02.4	69	Bini, Matteo	FrAT11.6	73
Benke, Thomas	SaAT1.1	109	Binti Yusof, Nor Azah	SaCT10.3	120
Bennet, Devasier	WeCT6-05.8	16	Birbaumer, Niels	ThAT8.6	35
Bennett, Stephanie Louise	WeCT14-01.1	27		ThDT8-02.6	56
	SaAT3.5	109		FrAT1.1	70
Benninger, Franz	ThAT1.5	33		FrAT7.6	72
Bentes, João	FrDT4-05.9	89	Bisoni, Lorenzo	ThBT9.1	40
Bentler, Christian	WeCT9-01.6	20	Biswas, Dwaipayan	ThDT8-01.3	55
BeomJun, Min	ThDT18-01.3	68	Biswas, Pradipta	ThDT13-07.1	63
Berg, Philipp	WeCT11-04.2	24	Biswas, Satarupa	WeCT9-01.12	20
	WeCT15-07.3	30	Biswas, Subir	WeCT5-04.3	15
Berger, Theodore	WeCT8-03.5	19		SaCT5.3	119
	ThAT13.1	36	Björgaas, Marit Ragnhild	SaBT1.1	112
	FrDT9-03.9	95	Bjørnevik, Anders	FrBT4.1	75

Bjorninen, Toni	ThAT13.4	36	Brandao Lima, Verissimo	WeCT3-02.7	12
Blanco-Almazán, Dolores	WeCT15-02.3	29		FrDT11-07.8	99
	WeCT15-02.4	29	Brandl, Stephanie	WeAT1.4	1
	WeCT15-02.6	29		FrDT18-08.8	108
	ThBT15.2	41	Brantley, Justin	ThBT8.1	39
Blankertz, Benjamin	FrCT14.2	83	Braun, Fabian	ThBT5.6	39
	FrDT18-08.8	108		ThCT11.2	44
Blazek, Vladimir	SaAT3.1	109	Brave, Michael	ThCT13.2	45
Bleuler, Hannes	SaAT16.5	111		ThCT13.5	45
Block, Robert	FrDT17-08.2	107		ThCT13.6	45
Bo, Bin	SaBT2.1	112	Bravo Guamán, Marco Fernando	FrCT5.2	80
Bo, Hongjian	FrBT9.5	77	Brazdil, Milan	WeCT1-02.2	9
Boahen, Collins Kwadwo	FrDT2-03.2	86	Breakspear, Michael	ThAT1.7	33
Boccardo, Mario	WeCT10-01.5	22	Breault, Macauley S.	ThDT8-02.1	56
Bochkarev, Mikhail	FrCT17.3	84		FrBT9.3	77
Bodala, Indu Prasad	ThDT8-01.5	55	Breen, Paul	ThCT13.1	44
	ThDT8-01.13	56	Breen, Paul P	FrDT16-03.3	105
Bodensteiner, Christoph	ThBT7.6	39	Brennan, Kieran	WeBT13.3	7
Boehler, Christian	WeCT9-01.1	20	Brewer, Gregory	FrCT9.3	81
Boemke, Nane	WeCT7-01.12	17	Bries, Matthew	FrCT5.6	80
Bogdanov, Gene	ThCT12.6	44	Brochard, Sylvain	ThAT7.6	34
Boger, Jennifer	ThDT17-02.5	67	Brooks, Dana	ThAT12.4	36
Bolea, Juan	ThDT1-04.9	47	Brooks, Robert Joseph	SaCT5.2	119
Bolingot, Harold Jay	ThDT16-06.1	66	Brown, David	SaAT9.4	110
Bologna, Marco	WeCT3-01.5	12	Brown, Emery N	WeCT3-02.1	12
Bolz, Mathias	ThDT1-02.2	46		FrDT18-08.6	108
Bomzon, Ze'ev	ThAT12.5	36		SaBT15.3	117
	ThCT12.3	44	Brown, Geoffrey	WeAT8.5	2
Bong, Jihye	ThCT5.1	42		SaAT9.1	110
Bong, Jisoo	FrDT3-02.1	87	Brown, James	ThCT12.1	44
Boninger, Michael	WeAT9.3	2	Brown, Karen	ThBT17.4	42
Bonmassar, Giorgio	FrCT6.3	81		ThDT10-02.2	59
Boonchieng, Ekkarat	ThDT10-03.1	59	Brown, Lee	SaBT15.4	117
Boonstra, Tjeerd W.	WeBT12.5	7	Brück, Rainer	ThDT3-05.2	49
	ThAT1.7	33	Brueck, S. R. J.	SaBT15.4	117
Boonyalekha, Phenbunya	FrCT6.4	81	Brüls, Olivier	FrDT10-03.2	96
Bora, Jung	ThDT16-03.1	66	Brunner, Clemens	ThDT3-03.1	49
Borchevkin, Danil	FrDT4-05.10	89	Brunschwiler, Thomas	FrDT16-06.6	105
Bordes, Mary	FrDT13-01.1	100	Brunton, Emma Kate	WeAT9.2	2
Borg, Ulf	SaBT1.3	112	Brusseau, Elisabeth	FrAT2.4	70
Borges, Maira	ThBT4.6	38	Bruun, Iben Hervold	SaAT18.3	112
Borghini, Gianluca	FrBT1.6	74	Buana, Ratna Lestari Budiani	ThAT14.6	37
	SaAT17.4	112	Buatti, John	FrBT14.2	78
Borghi-Silva, Audrey	SaBT10.4	115	Buccino, Alessio Paolo	WeCT8-01.5	18
Borhan, Ali	ThBT6.2	39	Buendia-Roldan, Ivette	ThDT17-01.4	67
Boric-Lubecke, Olga	FrDT14-03.1	103	Bugaev, Aleksandr	WeCT10-03.8	23
	FrDT16-01.1	104	Buist, Martin Lindsay	WeCT15-10.1	30
	FrDT16-05.3	105	Buizza, Roberto	WeAT15.2	4
	SaBT4.1	113		WeAT15.3	4
Borisoff, Jaimie F.	ThBT7.3	39	Bujan, Alejandro F	FrCT9.5	82
Bornat, Yannick	ThBT13.3	41	Bujnowski, Adam	FrCT1.5	79
Borotikar, Bhushan	ThAT7.3	34		SaCT12.5	121
	ThAT7.6	34	Bulacio, Juan	ThDT8-02.1	56
	ThBT3.1	38		ThDT17-04.1	67
Bose, Pritam	FrCT4.3	80		FrBT1.3	74
Boser, Bernhard	WeBT9.2	6		FrBT9.3	77
Bosnjak, Antonio	ThBT4.6	38	Bulluss, Kristian	ThDT13-10.2	63
	FrDT3-01.1	87	Bunescu, Razvan	ThDT18-01.9	69
Bosse, Sebastian	SaBT18.5	118	Bunyak, Filiz	WeCT2-02.9	11
Bossuyt, Frederick	FrDT16-03.1	105	Burattini, Laura	ThDT10-02.3	59
Botman, Stepan	FrDT4-05.10	89		FrAT17.1	C
Bottema, Murk Jan	WeAT14.3	4		FrAT17.2	74
Bouchard, Florent	FrAT18.5	74		FrBT17.5	79
Bouchard, Kristofer E.	FrCT9.5	82	Burattini, Luca	ThDT10-02.3	59
Boudali, A. Mounir	ThBT7.1	39		FrAT17.2	74
Boudier, Thomas	ThBT14.2	41	Burdet, Etienne	SaAT16.5	111
Boudy, Jerome	ThDT17-01.1	67	Burdette, Everette	SaBT16.3	117
Boulanger, Pierre	WeBT14.4	7	Burdin, Valerie	ThAT7.3	34
	ThDT1-03.3	46		ThAT7.6	34
Bouri, Mohamed	SaAT16.5	111	Burdin, Valérie	ThBT3.1	38
Bouridane, Ahmed	FrCT10.3	82	Buriro, Abdul Baseer	SaCT9.5	120
Boussé, Martijn	WeCT1-03.2	9	Burnham, Ken	WeAT4.4	1
Boutaayamou, Mohamed	FrDT10-03.2	96	Burns, Martin	WeBT8.5	6
Bovio, Dario	WeCT12-02.8	25	BuSha, Brett	FrAT11.3	73
Boyd, Rochelle	WeBT11.4	6	Bushinsky, David	ThDT11-03.4	61
Boylan, Geraldine	SaAT17.6	112	Butlin, Mark	WeBT11.4	6
Boyle, Justin	ThDT10-03.4	59		ThBT11.4	40
Braccli, Eleonora	FrAT17.2	74		FrCT11.2	82
Braeken, Dries	FrDT6-10.1	92		SaAT18.4	112
Brambilla, Lorenzo	FrAT11.6	73	Butner, Joseph	WeAT10.4	3
Brambilla, Valerio	FrBT18.2	79	Buxi, Dilpreet	WeCT4-01.1	13

Byagowi, Ahmad	SaBT9.3	115
Byeon, Kyoungseop	FrDT2-03.1	86
Byun, Kyung Min	ThDT12-08.5	63
	FrDT5-02.2	90
	FrDT5-02.3	90

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C A, Valliappan	WeCT8-02.11	19
Cabiddu, Ramona	SaBT10.4	115
Cabrera-Bean, Margarita	ThDT1-03.5	47
Caccia, Martina	WeCT10-03.5	23
Cai, Jian-Feng	FrCT3.5	80
	FrDT3-04.1	87
	FrDT3-04.2	87
	FrDT3-08.1	88
Cai, Jiayin	FrBT11.1	77
Cai, Lintao	WeAT13.1	C
	WeAT13.2	4
Cai, Xinxia	WeAT4.5	1
	WeCT9-02.6	21
Cai, Xu	WeCT9-01.13	20
Cai, Yun-Peng	WeCT10-01.3	22
Cai, Ziyang	ThDT7-02.4	55
Caicedo Dorado, Alexander	ThBT17.1	42
	ThDT17-04.3	68
Calder, Stefan	SaBT11.3	116
Caldwell, Darwin G.	SaBT12.2	116
Calivà, Francesco	WeBT16.2	8
Calix, Ricardo	WeCT10-01.1	21
Callewaert, Geert	FrDT6-10.1	92
Cámara, Miguel Ángel	WeCT15-02.4	29
	WeCT15-02.6	29
	ThBT15.2	41
Cambra, Javier	SaBT5.6	114
Camilleri, Kenneth Patrick	ThCT8.1	43
	SaAT3.2	109
	SaBT8.5	115
Camilleri, Tracey	ThCT8.1	43
	SaBT8.5	115
Caminal, Pere	WeCT11-03.7	24
Campana, Chiara	ThDT17-04.2	67
Campos Trinidad, Maykol Jiampiers	WeCT7-02.1	17
	WeCT7-06.1	18
Campos, Maria Fernanda	ThDT10-03.3	59
Canals, Santiago	WeCT1-02.4	9
	WeCT2-01.11	10
	WeCT12-01.4	25
	FrAT3.3	70
	SaBT5.6	114
Candler, Robert	SaAT16.3	111
Candra, Henry	WeCT1-04.1	9
	WeCT1-04.7	10
Cano, Mónica	WeCT1-02.3	9
	ThDT1-02.4	46
Cao, Chunyan	WeCT2-01.5	10
Cao, Guiming	FrDT17-03.2	106
Cao, Kai	WeCT11-03.2	24
	ThCT10.4	44
Cao, Xiaopeng	WeBT8.3	6
Cao, Yong	WeCT8-02.5	19
Cao, Youfang	ThDT11-08.1	61
Cao, Zhe	WeCT12-01.1	25
Capillonch Juan, Miguel	WeBT9.4	6
Capoferri, Donald	WeCT2-02.5	11
Caponero, Michele Arturo	WeCT5-04.8	15
	SaCT4.1	118
Caras, John	ThBT10.3	40
Carassiti, Massimiliano	WeCT4-04.4	14
Carboni, Caterina	WeCT8-03.4	19
	ThBT9.1	40
Cardelino, Juan	WeBT11.6	7
Cardona, Narcis	FrAT4.3	71
Carek, Andrew	ThBT11.5	40
Carey, Carole C.	ThBT5.1	C
Carlson, Barbara	FrCT8.5	81
Carlsson, Hampus	FrDT4-05.9	89
Carmena, Jose M.	ThDT7-02.7	55
Caroline, Dina	SaBT5.4	113

Carpano Maglioli, Camilla	WeCT12-02.8	25
	SaBT12.2	116
Carranza, Erick	WeCT8-02.9	19
Carrard, Apolline	ThAT17.4	37
Cartocci, Giulia	ThDT8-01.11	56
	SaCT9.1	119
Casavant, Benjamin	FrBT14.2	78
Caschera, Stefano	WeCT2-01.14	10
	SaBT17.1	117
Cash, Sydney	FrAT7.4	71
Cassar, Kevin	SaAT3.2	109
Castagneri, Cristina	WeAT8.3	2
	WeCT10-01.5	22
	ThDT8-02.2	56
	ThDT10-03.6	59
Castañeda, Benjamín	ThDT10-03.3	59
	FrAT2.5	70
	FrAT2.6	70
Castelhano, João	ThDT9-01.6	57
Castelli, Jonathan	ThBT13.3	41
Castelló-Palacios, Sergio	FrAT4.3	71
Castelo-Branco, Miguel	ThDT9-01.6	57
Castiglioni, Paolo	FrAT11.6	73
	FrBT18.1	C
	FrBT18.2	79
Castillo Escario, Yolanda	WeCT15-02.6	29
Castillo, Yolanda	WeCT15-02.3	29
	WeCT15-02.4	29
	ThBT15.2	41
Castro, Emanuela	WeCT7-01.1	16
	WeCT7-01.2	17
Cates, Benjamin J.	FrDT10-04.1	96
Caulfield, Brian	SaBT1.4	112
Cauwenberghs, Gert	WeCT8-01.5	18
Cavallo, Filippo	WeCT7-01.1	16
	WeCT7-01.2	17
Cavinato, Lara	WeCT10-02.8	22
Cavusculu, Melih Ege	WeCT3-01.9	12
Cayir, Sercan	WeCT3-01.3	11
Cebulla, Alexander	WeAT12.5	3
Cecchi, Francesca	WeCT7-01.1	16
	WeCT7-01.2	17
Cecotti, Hubert	WeCT7-01.4	17
	ThBT18.1	42
	SaCT8.1	119
	SaCT8.2	119
Celenk, Mehmet	FrDT11-07.7	99
Celikkanat, Hande	SaBT8.1	114
Celine, Ling	ThDT6-02.1	53
Celler, Branko George	WeCT11-03.2	24
	WeCT15-01.2	29
Gene, Vinicius H.	WeCT1-01.3	8
	WeCT4-02.1	13
	ThBT18.5	42
Cenfra, Natalia	ThDT10-05.4	60
Center, Jackie R	SaBT10.5	115
Ceresa, Mario	ThDT11-02.3	60
Cerina, Luca	ThAT17.3	37
Certera, Stephanie	ThDT9-10.1	58
Cerqueira Pinto, Samuel	ThDT10-02.1	59
Cerrolaza, Juan J.	WeBT2.7	5
	WeBT2.8	5
Cerutti, Sergio	ThDT17-04.2	67
Cesareo, Ambra	WeCT10-03.5	23
	ThDT4-03.4	51
Ceschin, Rafeal	WeBT2.3	5
Cha, Bo Kyung	ThDT12-04.2	62
Cha, Eun Jong	FrDT11-06.1	98
Cha, Ju Young	FrDT16-01.3	104
Cha, Jung Won	FrBT14.1	78
Cha, Junghwa	ThDT6-01.2	53
	ThDT6-01.4	53
Cha, Kwang Su	ThDT9-08.2	58
	ThDT9-10.2	58
	FrDT8-11.1	95
Cha, Seongkwang	FrDT17-08.8	107
Cha, Yoon-Hee	ThBT9.4	40
	FrCT8.3	81
Cha, Youngsu	ThDT4-03.6	51
Chacon-Castano, Julian	WeCT2-01.8	10
Chae, Hyeseon	FrDT14-02.3	102

Chae, Soyoung	WeBT1.3	5	Chatzaki, Charikleia	WeCT12-03.4	26
Chai, Rifai	WeCT1-04.1	9	Chaudhary, Vipin	WeCT2-02.5	11
	ThAT18.5	37	Chaumont, Thomas	ThDT10-03.3	59
	ThDT8-01.15	56	Chbat, Nicolas W.	WeAT15.1	C
	ThDT10-05.5	60		WeBT12.1	C
	FrAT7.1	71		FrBT11.1	CC
	FrAT7.2	71		FrBT11.6	77
	SaBT9.6	115	Chedid, Raissan	WeCT1-01.3	8
Chai, Rui	ThAT11.5	35	Chee, Youngjoon	FrDT4-05.7	89
Chai, Tao	FrBT8.5	76		FrDT16-07.2	106
Chai, Xiaoke	FrDT17-03.2	106	Cheema, Hammad M.	ThDT4-02.7	51
Chai, Xinyu	FrAT9.6	72	Chembrammel, Pramod	WeCT11-05.1	24
Chaichaowarat, Ronnapree	WeCT7-04.1	18		FrDT8-02.1	94
Chaiwatanarat, Tawatchai	WeCT3-01.8	12		FrDT16-06.1	105
	ThDT18-02.7	69	Chen, Antony	FrAT6.1	CC
Chakrabartty, Shantanu	ThDT18-02.10	69		FrAT6.5	71
Chakraborty, Chandan	ThDT2-05.1	48	Chen, Chen-Huan	ThDT15-08.2	65
Chakravarty, Kingshuk	WeCT4-04.1	13	Chen, Chiu-Kuo	ThDT17-03.4	67
	FrAT7.3	71	Chen, Chung-Ming	WeCT14-04.1	28
	SaBT7.1	114		ThDT3-08.1	50
Chamberlain, Daniel	WeCT12-02.15	25		FrDT3-07.6	88
Chambers, Jonathon A.	FrAT18.6	74		FrDT12-04.2	99
Chan, Guo-Jing	ThDT4-03.1	51	Chen, Dong	WeCT2-02.10	11
Chan, Leanne LH	ThAT9.1	35	Chen, Fang	ThDT13-04.1	63
	FrCT9.4	81	Chen, Guan-Yen	FrAT18.3	74
Chan, Rosa H. M.	ThDT8-02.9	57	Chen, Guojun	WeAT13.3	4
	SaCT5.1	119	Chen, Hong	WeCT12-01.1	25
Chan, Yau Kei	FrBT6.4	76		ThDT4-02.6	51
Chanani, Nikhil	ThDT10-01.1	58	Chen, Hongda	ThBT8.6	40
Chandrika Sreekantan, Anoop	WeCT15-01.3	29	Chen, Hsu-Yan	FrDT5-07.2	91
	ThAT11.4	35		FrDT17-05.1	106
Chang, Chia-Hao	ThDT3-09.3	50	Chen, Hung-En	ThDT12-04.1	62
Chang, Edward	ThAT8.5	35	Chen, Jackie	FrDT16-06.1	105
	FrCT9.5	82	Chen, Junjun	WeBT1.4	5
Chang, Heng-Hua	FrBT14.5	78		SaBT18.6	118
Chang, Hojong	WeCT7-01.11	17	Chen, Jyh-Horng	FrDT2-08.1	87
	FrDT16-06.10	106	Chen, Ke	FrCT9.4	81
Chang, Hyuk-Jae	ThDT12-06.1	62	Chen, Li Wei	FrDT3-07.6	88
	FrDT10-11.1	97	Chen, Liang	WeCT3-01.6	12
	FrDT13-05.1	101	Chen, Mei Lin	ThAT8.4	35
	FrDT18-01.1	107	Chen, Na	FrDT8-09.4	94
Chang, Jin Ho	FrCT2.3	80	Chen, Peng-Tzu	FrCT1.1	79
Chang, Jin Woo	ThDT7-02.1	55	Chen, Pengyu	FrBT6.1	76
	ThDT7-02.6	55	Chen, Ping	FrBT14.4	78
	ThDT7-02.9	55	Chen, Pochuan	FrDT5-07.2	91
	ThDT7-02.10	55		FrDT17-05.1	106
	ThDT7-02.11	55	Chen, Runge	WeCT10-01.3	22
	FrDT8-09.2	94	Chen, S.R. Wayne	ThDT2-04.1	48
	FrDT9-03.4	95	Chen, Shixiong	WeCT8-03.1	19
	FrDT12-05.9	100		WeCT10-03.4	23
Chang, Kyung Hwa	WeCT15-09.1	30		ThDT1-04.8	47
Chang, Stephen KY	WeCT10-02.1	22		FrAT1.5	70
Chang, Won Hyuk	WeCT16-13.1	32		SaAT7.2	110
	FrDT9-04.6	96	Chen, Shuyang	SaBT16.3	117
	FrDT9-04.12	96	Chen, Siping	FrAT2.2	70
Chang, Won Seok	ThDT7-02.1	55	Chen, Supin	ThDT6-06.1	54
	ThDT7-02.10	55	Chen, Tenn Francis	WeAT10.5	3
	ThDT7-02.11	55		SaBT13.2	116
	FrDT12-05.9	100	Chen, Wei	WeBT4.2	5
Chang, Yeon Hee	ThDT2-01.9	48	Chen, Wei-Chen	FrAT10.6	73
Chang, Yeun-Chung	WeCT14-04.1	28	Chen, Wei-Ling	WeCT11-07.2	24
Chang, Young Hwan	WeCT3-03.4	12	Chen, Weiqiang	FrBT6.1	C
	SaBT3.1	113		FrBT6.2	76
Chang, Yuan-Hsiang	SaBT3.4	113		FrBT6.6	76
Chao, Yi-Ping	FrDT1-02.10	85	Chen, Weisheng	WeCT2-02.10	11
Chao, Yun-Peng	WeCT13-04.1	26	Chen, Wenhui	FrBT10.4	77
	WeCT13-04.2	26	Chen, Wenxi	ThBT5.1	38
Chaofeng, Wang	ThAT14.3	36	Chen, XiaoBin	WeBT8.3	6
	SaBT3.2	113		WeCT1-01.1	8
Chaovatut, Varin	ThDT10-03.1	59	Chen, Xiaogang	ThCT9.6	43
Chapa Martell, Mario Alberto	FrDT16-06.3	105	Chen, Xin	FrAT2.2	70
Charleston-Villalobos, Sonia	ThDT17-01.4	67	Chen, Yafen	WeCT2-01.12	10
	FrBT18.5	79		ThBT9.4	40
Charlotte, Birkett	ThDT10-04.1	59	Chen, Yang	ThAT11.6	36
Charoenpong, Theekapun	WeCT14-01.3	27		FrDT16-06.7	106
Charpentier, Guillaume	WeCT12-04.4	26	Chen, Yao	WeCT8-01.3	18
Charrière, Katia	ThBT14.6	41		FrAT9.6	72
Chateaux, Jean-François	FrCT6.5	81	Chen, Yazhu	WeAT2.2	1
Chatterjee, Debatri	WeCT4-04.1	13	Chen, Yen-Ling	ThDT3-01.1	49
	FrAT7.3	71	Chen, Yen-Ting	ThDT10-01.5	59
	SaBT7.1	114	Chen, Yi	WeCT2-02.2	11

Chen, Ying	WeCT2-01.5	10	Cho, Dongrae	ThCT8.5	43
Chen, Yinsheng	WeCT2-01.13	10		FrAT10.2	72
Chen, Yongjun	FrCT3.1	80		FrAT11.2	73
Chen, You-Yin	FrDT5-07.2	91		SaAT18.5	112
	FrDT17-05.1	106	Cho, Dong-Woo	SaBT6.3	114
Chen, Yuxuan	WeCT2-01.12	10		SaBT6.4	114
Chen, Zhong	FrBT3.5	75		SaBT6.5	114
	FrCT3.5	80	Cho, Eunjeong	FrDT6-08.4	92
	FrDT3-04.1	87	Cho, Haemi	ThDT16-04.1	66
	FrDT3-04.2	87		ThDT16-04.2	66
	FrDT3-08.1	88		ThDT16-09.2	66
Chen, Zhongping	WeCT2-01.13	10	Cho, Hwan-ho	FrAT8.4	72
Chen, Zhuo	ThAT8.1	34	Cho, Hwi-young	ThDT3-07.1	50
Chen, Ziyang	WeCT10-03.2	22	Cho, Hyangryeong	FrDT2-06.5	86
Cheng, Chang-Chieh	ThDT3-01.1	49	Cho, Hyeon	ThDT3-07.1	50
Cheng, Cheng-Hsiang	FrAT9.1	72	Cho, Hyo-Min	ThDT3-09.2	50
Cheng, Chihwen	WeCT12-01.2	25	Cho, Hyoyoung	ThDT5-04.6	53
Cheng, Chun An	ThDT9-10.9	58	Cho, Hyunwoo	ThDT5-04.1	53
Cheng, Hao-min	ThDT15-08.2	65		FrDT17-05.2	106
Cheng, Jiyu	ThBT4.4	38	Cho, Ji-Eun	FrDT8-01.2	94
Cheng, Jun	WeCT2-02.6	11	Cho, Jin-Ho	FrDT4-01.3	88
	WeCT3-01.1	11		FrDT4-01.4	88
	WeCT3-03.2	12	Cho, Joowon	FrDT13-01.1	100
	WeCT14-02.2	28		FrDT13-01.2	100
Cheng, Leo	ThCT13.1	CC	Cho, Ju Yeon	FrDT10-04.2	97
Cheng, Leo K	WeCT4-04.3	14	Cho, Jung-Hee	WeCT14-03.2	28
	ThCT13.4	45	Cho, Kyeong Won	WeCT16-10.1	31
	ThDT11-01.3	60		ThDT9-07.1	57
	ThDT17-02.2	67	Cho, Kyu-Jin	WeCT7-05.3	18
	SaBT11.2	115		WeCT16-08.1	31
	SaBT11.3	116		SaBT7.5	114
Cheng, Lin	SaBT8.4	114	Cho, Min Hyoung	ThDT3-02.1	49
Cheng, Ma	SaAT2.2	109		ThDT3-04.1	49
Cheng, Po-Wei	FrDT2-08.1	87		ThDT3-04.2	49
Cheng, Shuo	ThAT11.6	36		ThDT3-04.3	49
	FrDT16-06.7	106	Cho, Minwoo	FrDT11-07.5	99
Chenniappan, M	ThCT11.3	44	Cho, Myung Hye	ThDT3-02.1	49
Cheon, Jae Yeong	FrDT15-04.1	103		ThDT3-04.2	49
Cheong, Audrey	FrDT13-01.2	100	Cho, Sang Hyun	ThDT3-09.1	50
Cheong, Jae-Ho	ThDT6-01.1	53	Cho, Sangwoo	FrDT8-01.2	94
Cheong, Jia Hao	WeBT9.1	6	Cho, Seonghee	FrDT3-03.2	87
Cherian, Perumpilichira Joseph	ThDT17-04.3	68	Cho, Song Lee	FrDT10-11.1	97
Cherif, Alhaji	ThDT11-03.4	61		FrDT13-05.1	101
Chester, Eric Graeme	WeBT4.1	5	Cho, Soo Hyun	ThDT9-10.5	58
Chételat, Olivier	ThBT5.6	39		ThDT9-10.8	58
	SaCT4.2	118	Cho, Soo Jin	FrDT10-11.1	97
Chetlur Adithya, Prashanth	WeCT11-04.1	24		FrDT13-05.1	101
Chew, Tsong Huey Sophia	WeCT14-01.8	27	Cho, Suk In	FrDT17-03.1	106
Chi Ryang, Chung	WeBT15.4	8	Cho, Sung Do	FrDT15-04.1	103
Chi, Yanling	WeCT10-02.1	22	Cho, Sungbo	ThDT5-01.10	52
	SaBT10.1	115	Cho, SungHwan	ThDT5-03.3	52
Chiang, Chung-Jen	WeCT13-04.1	26		FrDT4-02.2	89
	WeCT13-04.2	26		FrDT14-01.8	102
Chiang, Ting-Hui	ThDT4-03.1	51	Cho, Taehwan	ThDT4-01.5	50
Chiba, Kaori	SaAT7.5	110	Cho, Wonwoo	WeCT13-01.1	26
Chieh, Angela	FrDT14-02.5	103	Cho, Woo Sang	ThDT13-01.1	63
Chien, Jui-Hong	SaAT14.5	111		FrDT3-02.5	87
Chiew, Mark	WeCT2-01.4	10	Cho, Woohyeong	FrDT10-03.1	96
Chikhani, Marc	WeAT15.1	4	Cho, Woorim	WeCT16-08.2	31
	WeBT15.1	8	Cho, Woosang	SaBT8.6	115
Chin, Kazuo	FrDT16-06.8	106	Cho, Yang-sun	FrDT15-04.2	103
Chin, Richard	SaAT1.2	109	Cho, Yoon Kyung	ThDT7-02.1	55
Ching, YuTai	ThDT3-01.1	49		ThDT7-02.6	55
	ThDT4-03.1	51		ThDT7-02.9	55
Chirumamilla, Venkata Chaitanya	ThDT17-02.4	67		FrDT8-09.2	94
Chitose, Ryota	ThDT9-06.1	57		FrDT9-03.11	95
Chitsakhon, Arnon	ThDT11-03.2	61	Cho, Youngbin	FrDT6-02.1	91
Chiu, Hung-Wen	ThDT9-10.9	58		FrDT6-02.3	91
Cho, Baek Hwan	FrDT7-06.4	93	Cho, Youngkyu	WeCT6-04.1	16
Cho, BeomKi	FrDT14-01.8	102		FrDT6-09.2	92
Cho, Bum Joo	ThAT9.3	35	Cho, Yun Sung	WeCT16-06.1	31
Cho, Byunghyun	WeCT16-03.4	31		WeCT16-07.1	31
Cho, Chae Ho	WeCT5-01.5	14	Chockalingam, Nachiappan	SaAT3.2	109
	FrDT18-07.2	108	Choe, Se-woon	FrDT12-05.6	100
	FrDT18-07.4	108	Choe, Woo-Seok	ThDT5-03.5	52
Cho, Dong Il	ThBT6.6	39	Choe, Yoonsuck	FrBT8.2	76
	FrDT17-08.8	107	Choi, Ahnryul	ThDT16-02.1	66
Cho, Dong-Ho	SaAT13.2	110		FrDT10-04.1	96
	SaAT13.5	111		FrDT14-02.3	102
	SaBT13.3	116			

Choi, Bareum	ThAT14.5	37	Choi, Myunghwan	ThDT2-01.3	47
	FrDT15-08.5	104		ThDT2-06.1	48
	FrDT15-08.6	104		ThDT2-08.1	48
Choi, Booyong	ThDT4-01.5	50	Choi, Samjin	ThDT5-01.2	51
Choi, Bup Kyung	WeCT14-03.1	28		ThDT5-03.1	52
	ThDT13-10.1	63		ThDT5-03.6	52
	FrDT2-06.1	86	Choi, SangDong	FrDT14-01.8	102
Choi, Byeong Hyeon	WeCT6-03.7	16	Choi, Sangho	ThDT1-04.5	47
Choi, ByungJune	WeCT7-07.1	18		FrDT1-02.5	85
Choi, Byung-Ok	WeCT16-13.1	32	Choi, Seong Wook	ThDT12-08.3	62
	FrDT9-04.6	96		ThDT16-05.1	66
	FrDT9-04.12	96		FrDT18-08.2	108
Choi, Chang Jun	ThDT11-09.4	61	Choi, Seoyoung	FrDT9-04.11	96
Choi, Changhoon	ThDT14-09.2	64	Choi, Seung Hong	FrDT2-06.4	86
Choi, Changmok	SaBT4.6	113	Choi, Seungyeop	WeCT6-05.4	16
Choi, Da Heui	ThDT6-07.1	54		ThDT6-04.1	53
	ThDT6-07.2	54		ThDT6-05.1	53
Choi, Dongil	ThDT6-05.2	53		ThDT6-06.2	54
Choi, Eunsuk	FrDT5-05.4	90	Choi, Songe	ThAT14.5	37
Choi, Ga-Young	FrDT7-04.1	92	Choi, Soo-In	ThDT9-10.6	58
Choi, Gwang Jin	WeCT7-01.7	17		FrDT7-04.1	92
	FrDT7-03.1	92	Choi, Sung Young	ThDT6-06.6	54
Choi, Han-Sol	WeCT16-06.1	31	Choi, Sunghye	FrDT12-05.12	100
	WeCT16-07.1	31	Choi, Sun-mi	ThDT12-08.4	62
	FrDT15-05.1	103	Choi, Taejin	WeCT7-07.3	18
Choi, Heung Ho	ThDT13-05.1	63		ThBT18.4	42
	FrDT12-05.4	100	Choi, Wonseok	FrCT16.2	83
	FrDT12-05.5	100	Choi, Wonsuk	FrDT7-07.4	93
Choi, Ho Seon	FrDT14-01.11	102		FrDT7-07.6	93
Choi, Hojong	FrDT12-05.6	100	Choi, Woosu	FrCT13.3	82
Choi, Hongsoo	ThDT16-10.1	67	Choi, Yeok In	WeCT6-03.5	16
Choi, Hoseok	FrDT17-01.1	106	Choi, Yeon Shik	FrDT14-03.6	103
Choi, Hyun Do	WeCT7-07.4	18	Choi, Yeonho	WeCT6-03.6	16
	SaAT16.4	111		WeCT6-03.7	16
Choi, Hyun Tae	WeCT14-03.4	28	Choi, Yeseong	ThDT6-06.5	54
	FrDT4-05.5	89	Choi, Yong-Ho	FrDT2-03.2	86
Choi, Ik-kyu	FrDT4-06.2	89	Choi, Youra	ThDT9-10.5	58
Choi, Ilhong	FrDT15-08.4	104	Chollet, Paul	SaAT5.1	109
Choi, Jaesoon	WeCT16-02.3	30	Chon, Ki	WeAT4.1	C
	WeCT16-09.3	31		WeAT4.4	1
	ThAT14.5	37		ThCT5.1	C
	ThBT7.5	39		ThCT5.2	42
	FrDT6-09.3	92	Chong, Eunsuk	WeCT7-07.3	18
	FrDT14-01.14	102		ThBT18.4	42
	FrDT15-08.5	104		FrDT9-04.7	96
	FrDT15-08.6	104	Chong, Jo Woon	WeCT5-01.5	14
Choi, Jaewon	ThDT1-04.5	47		ThDT5-03.7	52
Choi, Jeong Woo	ThDT9-03.1	57		FrDT18-07.2	108
	ThDT9-08.2	58		FrDT18-07.4	108
	ThDT9-10.2	58	Chong, Tune Hau	WeBT12.2	7
	FrDT8-11.1	95		WeCT7-01.14	17
Choi, Jeongbong	WeCT16-10.1	31	Chong, Winston	FrBT11.2	77
	ThDT9-07.1	57		FrBT11.3	77
Choi, Jeong-Hee	ThDT12-08.4	62	Chong, Woo-Suk	FrDT10-04.2	97
Choi, Jin Woo	WeCT6-05.1	16		FrDT14-01.10	102
Choi, Jinyoung	FrDT18-07.1	108	Choo, Yun-Huoy	FrDT1-02.1	84
Choi, Ji-Woong	ThDT7-01.6	54	Choquehuanca, Ebert	WeCT7-07.2	18
Choi, Jiyeon	FrDT4-02.2	89	Chou, Chin	FrDT5-07.2	91
Choi, Jong Woo	WeCT16-09.3	31		FrDT17-05.1	106
Choi, Jongchan	WeCT6-05.5	16	Chou, Namsun	FrDT4-06.2	89
Choi, Jong-ryul	WeBT1.2	4		FrDT7-06.1	93
Choi, Joon Hyuk	ThDT15-06.1	65		FrDT14-02.1	102
Choi, Junhee	WeCT6-05.1	16	Chou, Pai H.	WeCT5-01.2	14
Choi, Junhyuk	WeCT7-07.3	18	Chou, Yi-Ting	FrDT5-07.2	91
	FrDT9-04.7	96		FrDT17-05.1	106
Choi, Junjeong	ThDT6-01.2	53	Choudhury, Samiul	WeCT2-01.9	10
Choi, Junseo	ThDT5-02.6	52	Chouliara, Spyridoula	ThDT10-04.3	59
Choi, Kyong-Hoon	WeCT15-09.1	30	Choupina, Hugo Miguel Pereira	WeCT12-01.3	25
Choi, Mi Jin	FrDT10-19.1	98	Chouvarda, Ioanna	ThCT17.2	45
	FrDT13-01.4	100	Chowdhury, Ananda	WeBT14.3	7
Choi, Min Hyuk	WeCT16-02.1	30	Choy, Chiu Sing	FrBT1.1	74
	WeCT16-03.2	30	Choy, Young Bin	WeCT13-01.2	26
	WeCT16-03.3	31		WeCT13-02.1	26
	ThDT3-08.4	50		WeCT13-06.1	26
Choi, Min Joo	ThDT15-06.1	65		FrDT3-07.5	88
	FrDT5-03.2	90	Christensen, Helen	WeBT12.5	7
	FrDT12-05.10	100	Christophe, Francois	FrBT9.2	77
Choi, Minhoo	SaBT10.2	115	Chrysostomou, Charalambos	WeCT10-01.4	22
Choi, Munsik	FrDT5-02.2	90	Chu, Jun-Uk	FrDT7-06.5	93
Choi, Myounghwan	FrDT15-04.1	103		FrDT9-02.1	95
	FrDT17-08.8	107			

Dai, Zhongxiang	SaBT17.2	117	Delgado-Gonzalo, Ricard	WeAT12.6	3
Dal-Bianco, Peter	SaAT1.1	109		ThAT17.4	37
D'Aleo, Raina	WeCT8-01.4	18		ThBT5.6	39
Damen, Dima	WeCT12-02.12	25		ThCT11.2	44
Dan, Wang	ThAT14.3	36		SaCT13.2	121
	FrBT2.1	74	Delgado-Martínez, Ignacio	ThBT9.1	40
Dang, Duc	WeCT5-01.5	14	Dellimore, Kiran	WeCT5-01.1	14
Dang, Quoc Khanh	FrDT4-05.7	89		WeCT12-03.3	26
	FrDT16-07.2	106		FrBT15.1	78
Dannhauer, Moritz	ThAT12.4	36	Delopoulos, Anastasios	WeCT5-02.3	14
Danno, Hirotsuke	FrDT10-01.2	96		WeCT10-03.7	23
Dantanarayana, Muditha	WeCT15-14.1	30		ThDT17-06.3	68
Danzi, Olivia Purnima	FrBT18.1	79	DeMarse, Thomas B.	FrCT9.3	81
D'Arnese, Eleonora	WeCT14-01.9	27	Demko, Laszlo	FrDT13-02.1	100
Das, Abhijit	FrAT7.3	71	Dempsey, Eugene	SaAT17.6	112
	SaAT7.3	110	Deng, Callie	FrBT9.6	77
Das, Anup	WeAT15.1	4	Deng, Zhi-De	WeCT12-04.2	26
	WeAT15.4	4	Denoël, Vincent	FrDT10-03.2	96
	WeBT15.1	8	Deoni, Sean	WeBT2.5	5
	WeCT15-01.1	29		WeBT2.6	5
Das, Debayan	WeAT4.1	1		FrAT8.5	72
Das, Deepan	SaCT10.4	120	Dereymaeker, Anneleen	ThBT17.1	42
Das, Nilakash	FrDT13-04.2	101	Desai, Nandakishor	ThBT3.2	38
Das, Rajat Kumar	SaBT7.1	114	Desai, Usha	WeCT1-03.1	9
Das, Soumen	WeCT9-01.12	20	Deshpande, Parijat	SaCT10.4	120
Dash, Debasis	ThBT11.3	40		SaCT18.3	121
Dassie-Leite, Ana Paula	SaCT18.5	121		SaCT18.6	121
Datta, Shreyasi	SaCT18.1	C	DeStefano, Lisa	FrCT8.5	81
	SaCT18.6	121	Destrade, Michel	WeCT8-01.6	18
Dau, Torsten	SaBT4.5	113		ThAT12.3	36
Dauwels, Justin	FrAT7.4	71	Dey, Jishnu	WeAT11.3	3
David S., Sumam	ThDT1-01.3	46		ThDT4-03.9	51
David, Romain	ThAT13.2	36	Dey, Soumyabrata	ThDT4-01.3	50
de Carvalho, Paulo	WeAT12.3	3	D'Gama, Alissa	FrDT1-02.8	85
	WeCT11-01.4	23	Dhaenens, Kristof	FrDT16-03.1	105
	ThDT9-01.6	57	Dhafer, Yasin	SaAT9.1	C
	ThDT10-01.4	58		SaAT9.2	110
	ThDT10-04.4	60		SaAT9.5	110
	ThDT17-01.5	67	Dharmawan, Dhimas Arief	WeBT16.4	8
	FrCT1.6	79	Dhif, Imen	ThDT17-04.4	68
	SaBT10.4	115	Dhinagar, Nikhil	FrDT11-07.7	99
de Chazal, Philip	WeAT11.1	C	Dhulipala, Pranav Vaidik	FrBT3.3	75
	WeAT11.6	3	Dhyani, Manish	ThDT18-02.4	69
	WeCT10-02.5	22	Di Flumeri, Gianluca	ThDT8-01.11	56
	WeCT15-02.5	29		FrBT1.6	74
	ThBT15.1	41		SaAT17.4	112
	SaAT14.2	111		SaBT9.4	115
de Frutos, Julio	FrCT17.2	83		SaCT9.1	119
de Groot, Kristel	SaCT10.2	120	Di Matteo, Francesco Maria	SaCT12.2	120
De Jonckheere, Julien	ThBT17.5	42	Di Nardo, Francesco	ThDT10-02.3	59
de Jong, Jonas S. S. G.	WeAT11.2	3		FrAT17.2	74
de la Oliva, Natàlia	ThBT9.1	40		FrBT17.5	79
de Lange, Jan	ThDT16-09.1	66	Di Rienzo, Marco	ThAT5.1	CC
De Lathauwer, Lieven	WeCT1-03.2	9		ThAT5.3	34
De Maria, Beatrice	FrAT11.1	73		ThBT11.1	40
	FrAT11.4	73	Diab, Ahmad	ThDT18-02.12	69
De Santis, Silvia	FrAT3.5	70	Diana, Michele	WeCT5-04.8	15
De Sciscio, Paul	WeCT11-02.1	23		SaCT12.3	120
De Volder, Michael	FrDT6-10.1	92	Diaz, Silvana	WeCT3-02.2	12
De Vos, Maarten	ThDT17-04.3	68	Díaz-Parra, Antonio	WeCT1-02.4	9
De Wel, Ofelie	ThBT17.1	42		WeCT2-01.11	10
Deadwyler, Sam	WeCT8-03.5	19		FrAT3.3	70
Dean, Douglas	WeBT2.5	5	Diaz-Vilor, Carles	ThDT1-03.5	47
	WeBT2.6	5	Diciotti, Stefano	FrBT8.4	76
	FrAT8.5	72		FrBT8.6	76
Deb, Sujay	ThCT11.4	44	Dicks, Adrienne	WeBT2.5	5
	FrDT15-01.1	103	Dimitrakopoulos, Georgios	FrBT1.4	74
Debals, Otto	WeCT1-03.2	9	Ding, Dewu	ThDT11-05.1	61
Debard, Glen	ThDT10-05.3	60	Ding, Lei	WeCT2-01.12	10
Degenaar, Patrick	WeBT4.1	5		ThAT1.1	CC
Degiorgis, Yan	ThCT11.2	44		ThAT1.6	33
Dekimpe, Remi	ThDT1-03.7	47		ThBT9.4	40
del Campo, Félix	FrCT17.2	83		FrCT8.3	81
	FrCT17.5	84		FrCT8.5	81
Del Piccolo, Lidia	FrBT18.1	79		FrCT8.6	81
Del Sozzo, Emanuele	WeCT10-02.8	22		SaBT8.3	114
del Valle, Jaume	ThBT9.1	40	Ding, Mingzhou	ThBT1.1	CC
Delampady, Ashik	WeCT10-02.2	22		ThBT1.1	37
			Ding, Ran	WeCT14-07.3	29
				SaBT2.2	112

Esmailbeigi, Hananeh	FrCT5.5	80	Favre-Félix, Antoine	SaBT4.5	113
	FrDT16-06.11	106	Fazel-Rezai, Reza	WeCT5-03.1	15
	SaAT5.4	109		ThDT4-03.5	51
Esterer, Benjamin	WeAT7.1	CC		FrBT1.2	74
	WeAT7.5	2		SaBT14.1	116
	WeAT7.6	2	Fei, Baowei	SaBT2.6	113
Estlack, Zachary	WeCT6-05.8	16	Feigin, Micha	FrDT3-06.1	88
Estrada, Luis	WeBT15.2	8	Feil, Michael	WeCT6-03.3	15
	WeCT15-02.6	29	Feldheiser, Aarne	SaBT1.5	112
	ThBT15.2	41	Felici, Federica	WeCT1-01.5	8
Etcher, LuAnn	ThDT1-04.3	47		WeCT11-03.5	24
Etcheverry, Gibran	FrDT8-03.2	94	Felton, Christopher	ThDT10-02.1	59
Etienne-Cummings, Ralph	WeBT9.5	6	Feng, Dagan	WeCT2-02.1	11
Euan, Ashley	SaBT10.4	115		FrCT3.3	80
Eun, Seulgi	SaBT8.2	114	Feng, Dandan	ThDT18-02.2	69
Eunjeong, Cho	ThBT13.1	41	Feng, Wentao	WeCT11-02.5	23
Eunkyo, Kim	ThBT13.1	41		ThDT11-02.5	60
Eunmin Ko, Eunmin	FrDT6-01.1	91	Feng, Xiaohua	WeCT14-07.3	29
	FrDT6-02.1	91		SaBT2.2	112
Eva, Costa	FrBT2.4	75	Feng, Zhiguo	SaBT13.1	116
Evans, Benjamin	SaCT10.3	120	Feng, Zhouyan	ThDT7-02.3	55
Exarchos, Themis P.	WeAT10.6	3		ThDT7-02.4	55
	WeCT2-02.11	11	Ferdinando, Hany	WeCT1-03.5	9
	WeCT11-04.4	24	Ferin, Guillaume	FrAT2.4	70

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Faes, Luca	ThAT1.1	C	Ferreira, Carlos	ThDT9-01.6	57
	ThAT1.1	32	Ferreira, Manuel Joao	FrBT2.4	75
	ThAT1.2	33	Ferreira-Coimbra, João	ThDT10-02.4	59
	FrBT18.3	79	Ferrer, Jose	ThDT10-03.3	59
Faghih, Rose T.	WeCT3-02.1	12	Ferrero, Simone	WeCT10-01.5	22
Fahimi, Fatemeh	WeCT1-02.1	9	Ferrigno, Rosaria	WeCT5-02.2	14
Faini, Andrea	FrAT11.6	73		FrCT6.5	81
	FrBT18.2	79	Fetzner, John	ThDT12-01.1	61
Faivre, Magalie	WeCT5-02.2	14	Feucht, Martha	ThAT1.5	33
	FrCT6.5	81	Fico, Giuseppe	FrDT10-08.1	97
Falhi, Abdessamad	SaCT4.2	118	Fidone, Irene	WeCT10-02.8	22
Fallahianbijan, Fatemeh	ThBT6.2	39	Fierro, Germán	ThBT5.2	38
Faller, Josef	ThDT3-03.1	49		FrBT5.2	75
	ThDT3-03.2	49	Fietze, Ingo	ThAT15.1	37
Fallon, James	ThDT13-10.2	63	Figueroa, Miguel	WeCT3-02.2	12
Falzon, Owen	ThCT8.1	43	Filbin, Michael	ThDT10-04.6	60
	SaAT3.2	109	Finch, Charles	WeCT15-14.1	30
	SaBT8.5	115	Fingeret, Michelle	FrDT13-01.1	100
Fan, Fan	ThDT18-02.2	69		FrDT13-01.2	100
Fan, Jiang Lan	ThDT6-06.1	54	Finlay, Dewar	WeCT5-02.4	14
Fan, Mengying	FrDT8-01.1	93	Finley, James	WeAT8.1	2
Fan, Qing	FrCT3.1	80		SaCT9.1	C
Fan, Qiuyun	FrAT3.5	70		SaCT9.4	119
Fan, Yan	WeAT4.5	1	Fioretti, Sandro	ThDT10-02.3	59
Fan, Yubo	WeCT11-02.5	23		FrAT17.2	74
	ThBT6.3	39		FrBT17.5	79
	ThDT11-02.5	60	Fiorini, Laura	WeCT7-01.1	16
Fan, Zhining	ThCT13.3	45		WeCT7-01.2	17
Fanelli, Andrea	SaBT1.1	C	Fiorini, Samuele	ThAT10.4	35
	SaBT1.2	112	Fischer, Georg	FrCT4.5	80
Fang, Peng	WeCT1-01.7	9	Fischer, Joshua	ThDT10-01.7	59
	FrAT1.5	70	Fitriatul, Nurul	ThCT6.5	43
	FrCT9.6	82	Fiz Fernandez, José Antonio	WeCT15-02.2	29
	SaCT4.5	119	Fleck, Ivor	ThDT3-05.2	49
Fang, Qiang	ThAT4.1	33	Flesher, Sharlene N	WeAT9.3	2
Fang, Wai-Chi	ThDT17-03.4	67	Fletcher, Richard Ribon	WeCT12-02.15	25
Fang, Xiunan	WeCT2-01.10	10	Floor, Pål Anders	FrBT4.1	75
Farber, Mark	FrAT2.1	70	Flotho, Philipp	SaCT2.4	118
Farhangi, Mohammad Mehdi	FrBT14.1	78	Flynn, Ryan	SaBT15.6	117
Farina, Dario	ThAT8.4	35	Fofi, David	ThDT17-06.5	68
	ThDT17-02.5	67	Foin, Nicolas	WeCT2-02.6	11
	FrBT17.1	78		WeCT14-02.2	28
Farjadian, Amir Bahador	ThBT8.2	39	Foldager, Jonathan	FrDT18-08.4	108
Faro, Ismael	FrDT16-06.6	105	Fonseca, Pedro	WeAT11.5	3
Farrand, Jesse	WeCT2-01.12	10	Fontana, Elisa	ThAT17.4	37
Farro, Ignacio	WeBT11.6	7	Foo, David Ming Hui	WeCT4-03.3	13
Farzaneh, Negar	FrAT8.1	72		WeCT15-10.1	30
Fatima, Sarwat	FrBT1.5	74	Foo, Zi Hui	WeCT15-10.1	30
Fatlawi, Hayder K.	ThDT18-01.5	68			
Fattah, Nabeel	WeBT4.1	5			
Favieiro, Gabriela Winkler	WeCT1-01.3	8			
	WeCT4-02.1	13			
	ThBT18.5	42			

Geng, Yanjuan	ThDT1-04.8	47	Gonzalez Calle, Alejandra	WeCT9-04.3	21
	FrAT1.5	70	Gonzalez, Cesar	FrCT6.1	81
	FrCT9.6	82	Gonzalez, Sara	WeBT2.5	5
Geng, Yuehua	ThDT1-04.6	47		FrAT8.5	72
	SaBT13.1	116	Gonzalez-Camarena, Ramon	ThDT17-01.4	67
Genov, Roman	ThDT1-02.1	46		FrBT18.5	79
Gentili, Claudio	FrAT17.3	74	Gonzalez-Escamilla, Gabriel	ThDT17-02.4	67
Georga, Eleni I.	ThDT17-02.1	67	Gonzalez-Hermosillo, Jesus Antonio	FrBT18.5	79
George, Stephanie	SaBT4.2	113	Gonzalez-Martinez, Jorge	ThDT8-02.1	56
Georgiades, Matthew	FrAT7.1	71		ThDT17-04.1	67
	FrAT7.2	71		FrBT1.3	74
Georgopoulos, Voula	ThDT10-04.3	59		FrBT9.3	77
Georgoulas, George	ThDT10-04.2	59	Goo, Yong Sook	FrDT17-08.8	107
Gerke, Sebastian	FrDT16-06.6	105	Good, Norm	ThDT10-03.4	59
Germany, Enrique I.	WeCT16-08.4	31	Goodyear, Brad	WeCT2-01.9	10
	FrDT9-01.1	95	Goovaerts, Griet	WeCT1-03.2	9
Gerstle, J. Ted	SaCT5.2	119	Gopalai, Alpha Agape	WeBT12.2	7
Gevaert, Olivier	ThAT14.4	36		WeCT7-01.14	17
Ghasemi Kamasi, Zeinab	WeCT14-02.1	27	Gordon, Christine	ThAT4.5	33
	SaCT2.5	118	Gordon, Keith	WeAT8.5	2
	ThDT15-09.2	65		SaAT9.1	CC
Ghavaminejad, Amin	FrCT10.2	82		SaAT9.1	110
Ghimenti, Silvia	WeBT12.1	7		SaAT9.2	110
GholamHosseini, Hamid	WeBT14.3	7	Gore, Amit	ThDT18-02.10	69
Ghosal, Sayan	FrBT10.2	77	Gorji, ALi Heydari	WeCT5-01.2	14
Ghosh, Joydeep	FrCT10.1	82	Gortsas, Theodoros	SaBT11.1	115
	FrAT3.2	70	Gotoh, Mari	WeCT3-01.2	11
Ghosh, Nirmalya	ThDT11-01.5	60	Goubran, Rafik A.	WeCT14-01.1	27
Ghosh, Shouryadipta	WeCT2-02.7	11		SaAT3.5	109
Gi, Geon	WeCT10-02.9	22	Gouwanda, Darwin	WeBT12.2	7
	ThDT8-01.1	55		WeCT7-01.14	17
Gichoya, Judy	FrDT4-02.3	89	Goyal, Deeksha	SaAT16.2	111
Gifford, Stacey	WeCT6-05.3	16	Gozal, David	FrCT17.5	84
Gijs, Martin	FrDT6-07.1	92	Grabmaier, Anton	WeBT11.1	6
	FrAT7.1	71	Gradišek, Miha	FrDT9-03.12	95
Gilat, Moran	FrAT7.2	71	Graham, Michael	FrBT14.2	78
	ThDT10-02.1	59	Granberg, Tobias	FrAT3.5	70
Gilbert, Barry	ThDT3-01.3	49	Grande-Allen, Jane	WeCT11-08.1	24
Gilbert, Kathleen	FrDT13-06.1	101	Grando Sirtoli, Vinicius	WeAT16.4	4
Giorgitsi, Eleftheria	WeCT11-03.7	24	Granero Belinchon Carlos, Granero	ThBT17.2	42
Giraldo, Beatriz	WeCT15-02.2	29	Graßhoff, Jan	ThDT1-01.2	46
	ThDT1-02.2	46	Graversen, Carina	SaBT4.5	113
	FrBT18.6	79	Gray, Joe	WeCT3-03.4	12
Giurazza, Francesco	SaCT12.2	120		SaBT3.1	113
Glaser, Vojko	WeCT1-02.5	9	Grayden, David B.	ThAT8.2	34
	FrBT17.1	78	Greaux, Alexander	WeCT2-02.5	11
Glass, Kristin	FrAT10.4	73	Greco, Alberto	WeCT1-01.5	8
	FrAT10.5	73		WeCT11-03.5	24
Gleason, Joseph D.	SaBT15.4	117		ThAT1.1	32
Glos, Martin	ThAT15.1	37		ThAT4.4	33
	FrCT17.4	84		ThDT1-04.2	47
Glott, Thomas	ThBT4.5	38		ThDT1-04.9	47
Go, Dooyoung	ThDT14-04.1	64		FrAT17.3	74
Go, Dooyoung	ThDT14-04.1	64		FrBT18.1	79
Goda, Márton Áron	WeCT15-04.1	29		FrCT18.5	84
Godoy, Sebastián E.	WeCT3-02.2	12	Greco, Francesco G.	WeCT12-02.8	25
Goel, Neha	ThDT10-05.1	60	Greidanus, Fabrizio	SaCT10.2	120
Goetz, Theresa	ThAT1.4	33	Griffin, Jay	SaBT3.6	113
Goh, Wang Ling	WeBT9.1	6	Griffioen, Maarten	ThDT16-09.1	66
Goh, Wooi Boon	WeCT1-02.1	9	Griffith, Henry	WeCT5-04.3	15
Gohel, Bakul	FrDT18-03.1	107		SaCT5.3	119
Goldenberg, Andrew A.	WeCT16-03.1	30	Grimaldi, Marco	WeCT14-01.9	27
	SaAT16.1	111	Grisan, Enrico	WeBT14.3	7
Goldstein, Jesse	SaBT5.4	113	Griswold, Mark	FrBT3.4	75
Golestanirad, Laleh	FrCT6.3	81	Grivas, Konstantinos	SaBT11.1	115
Goletsis, Yorgos	FrCT10.2	82	Groppa, Sergiu	ThDT17-02.4	67
Golkar, Mahsa	FrDT8-09.1	94	Gross, Robert	ThCT9.1	43
Gollo, Leonardo	ThAT1.7	33		ThCT9.5	43
Gomaa, Walid	WeCT12-02.12	25	Grube, Manon	FrDT18-08.8	108
Gomez, Britam	WeCT16-08.4	31	Gruenwald, Johannes	SaBT8.6	115
	FrDT9-01.1	95	Grundfest, Warren S.	SaAT16.3	111
Gomez, Carlos	WeCT1-02.3	9	Gruterich, Martin	WeCT12-03.3	26
	ThDT1-02.4	46	Grygoryev, Konstantin	FrCT6.2	81
Gomez-Pilar, Javier	ThDT1-02.4	46	Gu, Jia	FrCT14.3	83
Gonenc, Berk	SaBT16.3	117	Gu, Jimin	ThDT5-04.5	53
Gong, Shaoqin	WeAT13.1	CC		FrDT5-05.2	90
	WeAT13.3	4	Gu, Lin	WeCT8-04.1	20
Gontar, Amelia	WeAT14.3	4	Gu, Lixu	WeCT2-02.10	11
Gonuguntla, Venkateswarlu	ThDT9-05.1	57		FrBT11.1	77
Gonzalez Acevedo, Hernando	FrBT18.6	79	Gu, Weibing	WeBT4.2	5
Gonzalez Ballester, Miguel Angel	WeBT14.1	C	Gu, Xudong	ThAT4.1	33
	ThDT11-02.3	60			

Gu, Zhen	WeAT13.1	4
Gu, Zhenghui	WeCT8-02.7	19
Guadix, Sergio	SaAT14.5	111
Guan, Cuntai	WeCT1-02.1	9
	ThBT8.3	39
	ThBT8.4	40
	FrAT1.1	C
	FrAT1.2	70
Guan, Yun	SaAT7.4	110
Gubbi, Jayavardhana	WeCT10-02.2	22
	WeCT10-02.6	22
Guerrero Robles, Carla	FrCT6.1	81
Guerrero, Jorge	ThDT10-03.3	59
Guerrisi, Maria	FrBT8.1	76
	FrBT8.3	76
	SaBT17.5	118
	SaBT17.6	118
Guger, Christoph	SaBT8.6	115
Guidi, Andrea	WeCT1-01.5	8
	WeCT11-03.4	24
	WeCT11-03.5	24
	ThAT4.4	33
Guldenring, Daniel	WeCT5-02.4	14
Gundling, William	ThAT10.1	35
Gunduz, Aysegul	ThDT7-02.2	55
	ThDT9-10.1	58
	ThDT18-01.4	68
	FrDT7-04.3	93
	FrDT10-08.3	97
	SaBT18.1	118
Gungordu, M. Zeki	ThAT2.4	33
Gunnarsdottir, Kristin	ThDT17-04.1	67
	FrBT1.3	74
Guo, Aiwen	WeCT4-02.3	13
Guo, Di	FrBT3.5	75
	FrDT3-04.1	87
	FrDT3-04.2	87
	FrDT3-08.1	88
Guo, Han	WeCT2-02.2	11
Guo, Jundan	SaBT13.1	116
Guo, Kairui	WeCT1-04.7	10
	ThCT10.4	44
Guo, Meng	WeCT11-02.5	23
	ThDT11-02.5	60
Guo, Tianruo	WeCT9-04.2	21
	ThDT11-02.4	60
Guo, Xiaoli	SaBT17.4	118
Guo, Xin	WeCT2-01.7	10
	FrCT9.6	82
Guo, Xingming	FrDT18-05.2	107
	SaCT18.4	121
Guo, Yanrong	WeCT12-02.16	25
	FrAT2.2	70
Guo, Yi	WeCT3-01.6	12
	FrBT14.4	78
	FrDT2-06.9	86
Guo, Zheshan	ThDT7-02.4	55
Gupta, Ankesh	FrCT5.3	80
Gupta, Matrika	WeCT10-01.1	21
Gupta, Ravish	WeCT10-01.1	21
Gupta, Sandeep K. S.	WeCT4-04.6	14
	FrDT10-16.2	98
Gupta, Shashwat	WeCT11-05.1	24
Gupta, Suranjana	ThDT11-01.4	60
Gupta, Surendra	ThBT11.3	40
Guve, Dharmendra	ThDT17-03.3	67
Gutierrez, Gonzalo Cesar	FrCT17.2	83
	FrCT17.5	84
Gweon, Bomi	FrDT3-07.4	88
	FrDT6-02.2	91
	FrDT6-03.2	91
Gweon, Dae-Gab	ThDT2-06.2	48
Gwon, Tae Mok	FrDT7-03.1	92
	FrDT7-06.3	93
	FrDT9-03.4	95
Gyoosuk, Kim	ThDT16-03.1	66

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Ha, Heeseung	FrDT12-05.8	100
Ha, Hoang Kha	SaBT18.3	118
Ha, Jihyeon	FrDT1-01.4	84
Ha, Jinyong	WeAT3.3	1
Ha, Jiyun	FrDT15-05.1	103
Ha, Kanglyeol	FrDT5-03.2	90
Ha, Sangho	FrDT14-02.4	103
Ha, Taewoo	SaBT5.1	113
Ha, Van Kha Ly	ThDT10-05.5	60
Haab, Lars	SaCT2.4	118
Haas, Michael	WeCT9-01.8	20
Hachicha, Khalil	ThDT17-04.4	68
Haddad, Elia	FrAT3.2	70
Hadders-Algra, Mijna	WeCT4-03.2	13
Hadjileontiadis, Leontios	ThCT17.2	45
Hadwen, Timothy Ryan	WeCT4-05.1	14
Haenni, Etienne	SaCT4.2	118
Häfiger, Philipp	WeCT8-01.5	18
Haghighi, Marzieh	FrAT1.4	70
Hagio, Motoharu	FrDT17-08.3	107
Hagiwara, Mamoru	FrDT4-06.3	89
Hagiwara, Naoki	WeBT10.2	6
	WeBT10.5	6
	FrDT10-01.2	96
Hahn, Jin-Oh	ThBT11.1	C
	ThBT11.5	40
	ThBT11.6	41
	ThDT15-08.2	65
Haider, Clifton	ThDT10-02.1	59
Haider, Md. Ali	FrBT1.2	74
Hajiaghajani, Faezeh	SaCT5.3	119
Hajinoroozi, Mehdi	SaBT9.1	115
Hakamata, Masashi	FrDT5-07.3	91
Haldar, Aparajita	WeCT8-02.11	19
Halici, Ugur	WeCT3-03.8	13
Hall, Christopher	ThDT10-03.2	59
Hall, Drew	FrBT5.5	76
Hall, Travis	WeCT4-04.5	14
Hallez, Hans	SaCT10.5	120
Ham, Jinsil	SaAT18.5	112
Hama, Kengo	FrDT13-08.2	101
Hamad, Eyad	WeCT8-02.6	19
Hamid, Laith	ThCT18.1	C
	ThCT18.3	46
	ThCT18.4	46
Hamid, Rawnak	WeAT12.4	3
Hamidi Beheshti, Mohammad Taghi	FrAT18.4	74
Hamilton, Garun	ThCT15.2	45
Hampson, Robert	WeCT8-03.5	19
Han, Byunghun	FrDT16-06.10	106
Han, Chang-Hee	ThDT7-01.9	54
	ThDT7-01.10	54
Han, Chengcheng	ThAT8.3	34
Han, Cheol-Min	ThDT15-05.1	65
Han, Chungmin	WeCT5-01.3	14
Han, Dong Keun	ThDT15-05.1	65
Han, Gyu-Bum	SaAT13.2	110
Han, Haejun	WeCT6-04.6	16
Han, Hao	SaCT8.6	119
Han, Hyun Ho	SaBT6.3	114
Han, Jae-Ho	FrDT3-07.1	88
Han, Jeong Eun	FrDT6-13.1	92
Han, Jianda	WeCT7-01.9	17
Han, JiHye	ThDT9-10.7	58
Han, Jisoo	ThDT2-06.1	48
Han, June-Chiew	WeCT11-02.2	23
Han, Kiwan	ThDT14-10.1	64
Han, Moojae	FrDT15-08.3	104
Han, Sangjin	FrDT18-08.3	108
Han, Sangjun	FrDT18-07.1	108
Han, Sang-wook	FrDT4-06.5	89
Han, Se Jik	FrDT6-06.2	91
Han, Seonhye	ThDT9-08.1	58
	FrDT7-02.1	92
Han, Seung-Moo	WeCT2-02.7	11
	WeCT10-02.9	22
Han, SeungSeong	WeCT16-09.1	31
Han, Sookyeong	ThDT3-06.2	49

Han, Sungmin	FrDT9-04.5	96	Hegazy, Mohamed Abdalla Ahmed	ThDT3-02.1	49
	FrDT12-05.8	100		ThDT3-04.1	49
Han, Taehwa	FrDT10-11.1	97		ThDT3-04.2	49
	FrDT13-05.1	101		ThDT3-04.3	49
Han, Xingliang	FrBT10.1	77	Hegde, Nagaraj	FrCT5.6	80
Hanapiah, Fazah Akhtar	WeBT12.2	7	Heikhmakhtiar, Aulia Khamas	ThDT11-10.2	61
	WeCT7-01.14	17	Heimann, Konrad	SaAT3.1	109
Hanazaki, Izumi	FrDT8-06.1	94	Heiser, Clemens	FrCT17.1	83
Hancock, Lyra	FrDT16-01.1	104	Helander, Elina	FrDT14-02.5	103
Handly, Neal	WeCT11-02.4	23	Heldt, Thomas	WeAT15.1	CC
	WeCT11-02.6	23		WeAT15.6	4
Handojoseno, Aluysius Maria Ardi	FrAT7.1	71		WeBT15.1	C
	FrAT7.2	71		WeBT15.3	8
Hansen, John	ThAT5.4	34		ThAT11.1	35
Hanson, Summer	FrDT13-01.1	100		ThDT1-03.7	47
Hanssen, Eric	ThDT11-01.5	60		ThDT10-04.6	60
Hanumara, Nevan	WeCT2-01.8	10		SaBT1.2	112
Hanzlick, Harrison	ThAT7.1	34	Hellandsvik, Are	ThBT4.5	38
Hao, Dongmei	WeCT12-01.5	25	Hemberg, Erik	FrAT10.1	72
	ThDT18-02.5	69	Henderson, Jette	FrCT10.1	82
Hao, Huaqing	WeCT8-04.1	20	Henriques, Jorge	WeAT12.3	3
Hao, Liling	ThAT11.5	35		WeCT11-01.4	23
Hao, Manzhao	FrBT7.1	76		ThDT10-01.4	58
Hara, Kazuhiro	FrDT16-02.2	105		ThDT10-04.4	60
Hara, Takeshi	WeAT14.2	4		ThDT17-01.5	67
Hardiman, Orla	SaAT17.1	111		FrCT1.6	79
Hardin, Sonya	SaBT4.2	113		SaBT10.4	115
Hardman, Jonathan G.	WeAT15.1	4	Hensley, Dale	WeBT4.6	5
	WeAT15.4	4	Hentze, Benjamin	FrCT8.1	81
	WeBT15.1	8	Heo, Chan Yeong	WeCT13-06.1	26
	WeCT15-01.1	29	Heo, Changyong	ThDT3-08.3	50
Hargrove, Levi	WeCT16-08.5	31	Heo, Dayoung	FrDT10-18.2	98
Harirchian, Mohammad Hosein	FrAT1.6	70	Heo, Hyun Mu	FrDT10-04.1	96
Harrer, Stefan	ThAT8.1	C	Heo, Jaeseok	FrAT11.2	73
	ThAT8.2	34	Heo, Jeong	WeCT15-03.1	29
Harris, Hobart	ThAT13.6	36		FrDT1-02.7	85
Hart, Stuart	WeCT11-04.1	24	Heo, Jeongmin	FrDT12-01.3	99
Haruta, Makito	FrAT9.2	72	Heo, Man seung	FrDT7-06.4	93
	FrDT4-01.1	88	Heo, Min	FrDT12-03.1	99
	FrDT16-05.1	105	Heo, Yeji	FrDT15-08.3	104
Hasan, Mehedy	FrDT14-01.5	102	Her, Seong Jin	ThDT9-03.1	57
Hasegawa, Masahiro	ThDT2-07.1	48		ThDT9-08.2	58
Hasegawa, Masaki	FrDT8-06.3	94		ThDT9-10.2	58
Hashemi, Javad	FrAT17.1	73		FrDT8-11.1	95
Hashimoto, Kei	WeCT3-01.2	11	Heremans, Elisabeth	ThBT17.1	42
Hashimoto, Noriaki	WeAT14.1	4	Herfat, Safa	ThAT13.3	36
	ThDT3-08.5	50	Herff, Christian	WeBT1.1	4
Hashizume, Makoto	WeCT16-03.4	31	Herff, Steffen	WeBT1.1	4
Hashizume, Satoru	WeCT7-01.3	17	Hernandez, Daniel	ThDT3-02.1	49
Hass, Chris	ThDT18-01.4	68		ThDT3-04.1	49
Hassan, Modar	FrBT5.4	75		ThDT3-04.2	49
Hassanzadeh, Hamid	FrBT10.5	77		ThDT3-04.3	49
	SaAT13.4	111	Hernandez, Juan	WeCT5-04.8	15
Hassapis, George	ThDT3-03.3	49	Hernandez, Liss	FrDT10-08.1	97
Hata, Kazunari	FrDT8-13.1	95	Hernandez-Juarez, Jesus	ThDT9-01.3	57
Hata, Kei	WeBT12.4	7	Hernandez-Matas, Carlos	WeBT16.6	8
Hatakeyama, Yasutaka	FrBT4.2	75	Hernandez-Pacheco, Guadalupe	FrBT18.5	79
Hatanaka, Yuji	WeBT16.5	8	Herr, Hugh	FrDT3-06.1	88
Hatsopoulos, Nicholas	FrCT9.2	81	Herrainz, Adela	ThDT2-04.1	48
Hayami, Hajime	FrDT4-01.1	88	Herranz, Elena	FrAT3.5	70
Hayano, Junichiro	ThAT15.2	37	Herrera, Diana Sofia	FrDT3-09.1	88
	FrCT18.2	84	Herrero Exquerro, Maria Trinidad	FrBT1.6	74
	FrCT18.4	84	Herrero, Jose	ThAT8.1	34
	FrDT17-08.5	107	Herrup, Karl	ThAT17.1	37
Hayashi, Hideaki	ThDT8-02.5	56	Hershey, Linda	FrCT8.5	81
Hayashi, Shigeto	FrDT2-01.2	86	Hershkovich, Hadas Sara	ThAT12.5	36
Hayashi, Tatsuro	WeAT14.2	4		ThCT12.3	44
Hayashida, Yuki	WeCT9-02.1	20	Herzog, Michael	FrCT17.1	83
	FrAT9.1	C	Hesse, Nikolas	ThBT7.6	39
	FrAT9.3	72	Heung, Michael	ThCT18.6	46
He, Bin	ThDT7-01.3	54	Heute, Ulrich	ThCT18.3	46
He, Feng	ThDT1-01.1	46		ThCT18.4	46
	ThDT7-01.1	54	Hewitt, Stephen	FrDT3-02.2	87
He, Hengda	ThDT3-01.1	49		FrDT11-07.6	99
He, Jeffrey	ThDT7-01.3	54	Heydarzadeh, Mehrdad	ThDT9-10.3	58
He, Jiankui	FrAT6.1	71		FrAT18.2	74
He, Jiayu	WeCT12-04.3	26	Hickey, Richard	SaAT5.4	109
He, Naying	SaBT8.4	114	Higashi, Yuichiro	WeCT9-01.2	20
He, Shenghong	WeCT8-02.7	19	Higuchi, Masakazu	WeBT10.5	6
Hee, Cheok Lek	WeBT12.2	7		FrDT10-01.2	96
Hee-Joung, Kim	ThDT3-09.2	50			

Higuchi, Yukiharu	WeCT7-01.6	17	Hong, Linbi	ThDT3-03.2	49
	ThDT8-01.10	56	Hong, Nhayoung	WeCT16-05.1	31
Hikita, Tomoko	FrDT13-10.1	101	Hong, Seunghyeok	FrDT1-02.5	85
Hilal-Alnaqbi, ali	FrCT6.6	81		FrDT14-03.4	103
Hildebrand, David G. C.	ThCT14.4	45	Hong, Sung A	ThDT5-03.2	52
Hildreth, Cara	WeBT11.4	6		ThDT5-04.3	53
Hillen, Brian	ThBT13.3	41	Hong, Sung jun	ThDT15-04.1	65
Himanen, Sari-Leena	ThDT18-01.8	68	Hong, Sunghoi	WeCT3-03.7	16
Himidan, Sharifa	SaAT16.5	111	Hong, Youna	FrDT15-08.7	104
Hinatsu, Shun	FrBT5.3	75	Hoog Antink, Christoph	WeCT5-04.4	15
Hirai, Hiroaki	WeCT7-01.13	17	Hoque Tania, Marzia	SaCT10.3	120
Hiraishi, Keizo	SaCT11.2	120	Horan, Kelsey	WeCT3-03.3	12
	SaCT11.4	120	Hori, Junichi	FrDT8-12.3	95
Hirakochi, Ren	ThDT9-04.1	57	Hori, Yutaka	SaBT7.4	114
	ThDT9-10.4	58	Horio, Keiichi	FrBT16.1	CC
	FrDT14-01.6	102		FrBT16.3	78
Hirano, Yasushi	WeAT14.1	4		FrDT18-06.2	108
	ThCT14.1	45	Horise, Yuki	WeCT16-09.2	31
	ThDT3-08.5	50	Hornberger, Erik	WeCT2-01.8	10
Hirata, Masayuki	FrAT9.5	72	Horner, Marc	WeCT14-01.6	27
Hirota, Masakazu	ThAT9.4	35		ThCT12.4	44
Hisada, Toshiaki	SaAT11.1	110	Hornero, Roberto	WeCT1-02.3	9
Hissabu, Semira M. S.	SaAT18.3	112		ThDT1-02.4	46
Hiura, Shinsaku	FrDT5-06.2	91		FrCT17.2	83
Ho, Cyrus SH	ThDT9-01.2	57		FrCT17.5	84
Ho, Jong Gab	FrDT5-04.2	90	Horng, Shi-Jinn	WeCT5-01.6	14
	FrDT16-01.2	104	Hornung, Oliver	ThBT3.6	38
Ho, Joyce C.	ThAT10.2	35	Hoshino, Takayuki	WeCT6-02.1	15
	FrCT10.1	82		ThAT6.4	34
Ho, Pei-Shan	FrAT18.3	74	Hosoi, Rie	FrDT2-01.5	86
Ho, Roger	ThDT9-01.2	57	Hossain, M Alamgir	SaCT10.3	120
Ho, Te-Wei	FrCT1.3	79	Hotehama, Takuya	SaBT9.2	115
Ho, Ye Ji	ThBT7.5	39	Hotta, Shinji	SaBT1.4	112
	FrDT14-01.14	102	Hou, Benjamin	WeBT4.5	5
	FrDT15-08.5	104	Hou, Chun-Ju	ThDT10-01.5	59
	FrDT15-08.6	104	Hou, Wensheng	ThBT9.2	40
Ho, Yong Kuen	WeCT11-02.3	23	Hou, Zeng-Guang	FrBT11.4	77
Hobara, Hiroaki	WeCT7-01.3	17		SaBT7.3	114
Hochberg, Sylvain	ThDT17-04.4	68	Houlihan, Ruth	FrCT6.2	81
Hochhausen, Nadine	WeBT15.5	8	Hove-Madsen, Leif	ThDT2-04.1	48
	SaAT3.4	109	Hsiao, Kaiwen	FrBT5.4	75
Hodgins, Jessica	WeAT12.5	3	Hsieh, Chih-Chung	FrBT14.5	78
Hodgson, Antony J.	ThDT18-01.1	68	Hsieh, Han-Lin	WeBT8.1	5
Hoenicke, Janet	SaCT2.6	118	Hsieh, Jui Hsuan	FrCT1.1	79
Hoff, William	WeCT11-01.2	23	Hsieh, Michael	WeBT2.7	5
Hoffman, Rachel	WeCT2-01.8	10	Hsin, Yue-Loong	FrAT9.1	72
Hofmann, Ulrich G.	ThBT7.6	39	Hsu, Fu-Sheng	FrDT3-07.6	88
Hogan, N. Catherine	WeBT13.2	7	Hsu, Hsiang-Chen	FrDT18-06.4	108
	WeBT13.3	7	Hsu, Pin Chen	ThDT10-01.5	59
	WeBT13.5	7	Hsu, Sheng-Hsiou	FrCT9.1	81
Hohenhorst, Winfried	FrCT17.1	83	Htet, Aung Thu	ThBT12.4	41
Holder, David	WeCT2-01.10	10		SaBT11.5	116
Ho-Le, Thao P.	SaBT10.5	115	Hu, Diane	ThAT13.3	36
Holland, Alex	ThDT17-02.3	67	Hu, Huan	FrDT4-02.3	89
Hollensteiner, Marianne	WeAT7.5	2	Hu, Qingmao	FrAT8.1	C
	WeAT7.6	2		FrAT8.3	72
Holmes, David	ThDT10-02.1	59		FrBT14.6	78
Holobar, Ales	WeCT1-02.5	9	Hu, Suyi	SaBT14.2	116
	FrBT17.1	78	Hu, Wen-Hsin	ThCT15.3	45
Holzman, Jonathan	ThAT6.2	34	Hu, Xin	WeAT1.2	1
Homeister, Jonathon	FrAT2.1	70	Hu, Yaopeng	SaCT11.1	120
Hong, Bo	SaCT8.6	119		SaCT11.2	120
Hong, Chae Seon	ThDT11-09.2	61		SaCT11.3	120
Hong, Cheolpyo	ThDT3-09.2	50		SaCT11.4	120
Hong, ChulUn	WeCT7-03.1	18	Hu, Yi-fei	ThBT14.2	41
Hong, Do young	FrDT6-11.1	92	Hu, Zhenkai	WeCT16-02.3	30
Hong, Helen	FrDT3-07.2	88	Hu, Zixiang	FrBT7.1	76
	FrDT3-07.7	88	Hua, Yingqi	WeAT10.3	3
	FrDT11-07.1	98	Huang, Adam	SaAT18.2	112
	FrDT11-07.2	98	Huang, Chih-Mao	FrAT18.3	74
	FrDT11-07.9	99	Huang, Chun-Hao	ThCT6.2	43
Hong, Hyeonggi	FrDT1-01.3	84	Huang, Felix	WeAT8.5	2
Hong, Hyuckki	FrDT14-03.6	103	Huang, Han	ThBT9.5	40
Hong, Hyun Ki	SaCT12.6	121	Huang, Hao-Chung	ThDT7-01.7	54
Hong, Jaesung	WeCT16-03.4	31	Huang, Hsin-Kai	FrDT5-07.2	91
Hong, Jeeyoung	FrDT13-14.1	102	Huang, Kairong	WeCT14-02.5	28
Hong, Jinkee	ThDT6-07.1	54	Huang, Liyu	ThDT18-01.2	68
	ThDT6-07.2	54	Huang, Ming	WeCT7-01.6	17
Hong, Jinwoo	FrDT2-06.3	86		ThDT8-01.10	56
Hong, Jisu	ThDT18-01.10	69	Huang, Min-Wei	ThDT10-01.5	59
Hong, Kyoung Sup	FrDT11-07.5	99	Huang, Nien-Tsu	FrBT6.3	76

Huang, Pin-Gao	FrCT9.6	82	Hwang, Seoyoon	FrDT8-07.1	94
Huang, Shao-Xiong	WeCT15-12.1	30	Hwang, Suk-Won	FrDT4-02.1	88
Huang, Shiuan	ThDT7-01.7	54		FrDT5-02.1	90
Huang, Shu-yi	FrDT1-02.10	85	Hwang, Sung Il	FrDT11-07.1	98
Huang, Su	WeBT14.1	7	Hwang, Yeji	FrDT9-04.10	96
Huang, Weimin	WeBT14.1	7	Hwang, Yoha	WeCT7-07.3	18
	WeCT10-02.1	22		ThBT18.4	42
	FrDT3-07.10	88	Hwang, Youngeun	WeCT16-01.1	30
	SaBT10.1	115	Hwang, Yunchan	WeCT11-04.5	24
	SaBT16.5	117	Hwong, Yuh Jen	FrBT6.3	76
Huang, Xu	ThDT9-01.3	57	Hyde, Damon	ThAT12.1	C
Huang, Yi-De	ThDT7-01.7	54		ThAT12.4	36
Huang, Yufei	ThAT10.5	35		FrCT8.2	81
	ThBT18.1	C	Hyosun, Kweon	WeCT13-11.2	27
	ThBT18.2	42	Hyttinen, Jari	FrBT9.2	77
	SaBT9.1	C	Hyun, Ji-chul	WeCT6-05.7	16
	SaBT9.1	115	Hyun, Jung Keun	WeCT9-03.3	21
Huang, Zhijie	ThDT14-09.1	64	HyunJong, Lee	WeCT13-11.2	27
	FrBT2.2	75	Hyunjung, Kim	ThDT2-01.4	47
Hubbard, Jeremy	WeAT12.6	3	Hyunkyung, Kim	WeCT13-11.2	27
Huerta, Mónica	FrCT5.2	80	Hyvärinen, Aapo	SaBT8.1	114
Huertas, Gloria	WeCT5-03.3	15			
Hughes, Jeremy	FrCT8.5	81			
Huh, Beom Kang	WeCT13-01.2	26			
	WeCT13-02.1	26			
	WeCT13-06.1	26			
Huh, Jung Sik	FrDT12-05.10	100	Iacono, Maria Ida	ThAT12.1	36
Hui, Edward S.	FrBT3.2	75	Ibáñez-Marcelo, Esther	FrDT8-12.1	95
Huixiong, Xu	ThAT14.3	36	Ibrahim, Bassem	ThCT5.5	43
	FrBT2.1	74	Ichikawa, Jun	SaCT11.2	120
Hülser, Matthias	SaCT2.4	118	Ichikawa, Tomohide	FrDT1-02.18	85
Humayun, Mark	WeCT9-01.4	20	Ichiki, Mayu	FrDT17-08.1	106
	WeCT9-01.11	20		FrDT18-06.1	108
Humphris, Gerald	ThDT10-04.1	59	Ide, Tomomi	SaBT15.5	117
Huneker, Erik	WeCT12-04.4	26	Ifeachor, Emmanuel	ThDT1-04.7	47
Hung, Chen-Ying	FrAT10.6	73	Igasaki, Tomohiko	WeCT8-03.3	19
Hung, Wei-Hsin	ThDT3-08.1	50		ThDT18-01.13	69
Hunsicker, Oliver	SaBT1.5	112		FrBT5.6	76
Hunter, Andrew	WeBT16.2	8	Ihara, Yoshihiro	ThBT4.3	38
Hunter, Ian	WeBT13.2	7	Ihn, Yong Seok	WeBT9.3	6
	WeBT13.3	7	Iida, Tadayuki	FrDT14-02.6	103
	WeBT13.5	7	Ikuni, Takahiro	FrDT4-06.3	89
Huo, Xiaolin	WeCT9-03.6	21	Iioka, Toshimitu	FrDT8-06.1	94
	ThBT9.6	40	Iiyama, Junichi	WeCT8-03.3	19
	ThCT6.1	43	Ikarashi, Akira	ThDT12-02.1	62
Huo, Yunlong	ThDT15-07.1	65	Ikeda, Akio	FrDT17-08.3	107
Huonker, Ralph	ThAT1.4	33	Ikeda, Kazushi	FrAT10.1	CC
Hur, Sue Jeong	FrDT9-04.2	96		FrAT10.3	73
Hur, Su-Gil	FrDT6-09.1	92		FrBT16.1	78
Hurnanen, Tero	ThAT5.1	33	Ikegawa, Mitsuhiro	FrDT13-09.1	101
Hussain, Aini	WeBT16.3	8	Ikhsan, Mohammad	WeCT14-01.8	27
Hussain, Dildar	WeCT2-02.7	11		FrAT14.3	73
Hussain, Saddam	ThBT14.5	41	Im, Chang-Hwan	WeAT1.1	C
Hussein, Mohamed	WeCT12-02.12	25		WeAT1.1	1
Hutton, Adam	WeCT2-02.5	11		ThDT7-01.9	54
Huynh, Huu Toan	ThDT5-02.5	52		ThDT7-01.10	54
Hwang, Bosun	ThDT4-02.8	51		FrDT1-01.4	84
Hwang, Changho	FrDT15-04.1	103		FrDT1-02.20	85
Hwang, Dong Hyun	ThDT13-09.1	63		FrDT3-07.5	88
Hwang, Dong-Gyu	ThAT7.4	34		FrDT12-03.3	99
Hwang, Donghyun	WeBT9.3	6	Im, Changkyun	WeCT9-01.10	20
Hwang, Dosik	WeCT9-02.5	21	Im, Cheolki	FrDT9-03.1	95
Hwang, Han-Jeong	WeAT1.1	CC	Im, Jintaek	WeCT16-02.2	30
	WeAT1.3	1	Im, Maesoon	ThCT9.3	43
	ThBT18.1	CC	Im, Soobin	FrDT8-06.6	94
	ThDT9-10.6	58	Imaduddin, Syed	ThAT11.1	35
	FrDT7-04.1	92		SaBT1.2	112
Hwang, Jae Hun	FrDT6-08.1	92	Imai, Masaharu	ThAT4.6	33
Hwang, Jae Youn	ThDT2-01.9	48	Imajo, Kaoru	FrAT9.5	72
	ThDT14-05.4	64	Imamura, Yumeko	ThAT7.5	34
	FrDT10-14.1	97	Imoto, Hirochika	WeBT12.4	7
Hwang, Jeong Min	WeCT10-02.3	22	Imtiaz, Syed Anas	WeCT5-04.9	15
	WeCT10-03.6	23		SaCT5.5	119
	WeCT14-02.4	28	In, Young-Ryeol	FrDT9-04.9	96
Hwang, Jong Ho	FrDT17-01.2	106	Inaba, Hiroshi	FrDT11-01.1	98
Hwang, Ken-Pin	WeCT14-05.1	28	Inan, Omer	ThBT11.1	CC
Hwang, Layoung	FrDT1-01.3	84		ThBT11.5	40
Hwang, Minjoo	FrDT10-14.1	97	Inaoka, Yoshimi	FrDT2-01.5	86
Hwang, Moon Jung	FrDT2-09.1	87	Inati, Sara	ThDT17-04.1	67
Hwang, Seo Young	ThDT7-02.6	55	Ince, Nuri Firat	ThAT17.5	37
Hwang, Seonhong	ThDT16-01.1	66	Indovina, Iole	FrBT8.1	76
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Infante, Christian	WeCT12-02.15	25	Jallon, Pierre	WeCT12-04.4	26
Inomata, Akihiro	SaBT1.4	112	Jamaluddin, Nurul Fauzani	ThDT8-02.3	56
Inostroza, Fabián	WeCT3-02.2	12	James, Christopher	ThDT4-02.4	51
Inoue, Jun	FrDT8-06.1	94	James, Clarissa	FrAT3.1	70
Inoue, Masayuki	FrBT15.2	78	Jammeh, Emmanuel	ThDT1-04.7	47
	SaBT15.1	117	Jampa-ngern, Sira	FrCT6.7	81
Inoue, Ryuji	SaCT11.1	C	Jané, Raimon	WeBT15.1	CC
	SaCT11.1	120		WeBT15.2	8
	SaCT11.2	120		WeCT15-02.2	29
	SaCT11.3	120		WeCT15-02.3	29
	SaCT11.4	120		WeCT15-02.4	29
	SaCT11.5	120		WeCT15-02.6	29
	SaCT11.6	120		ThBT15.2	41
Inoue, Shinichiro	FrCT15.2	83	Jang, Dae-Geun	SaCT10.1	120
Inoue, Takao	WeBT12.4	7	Jang, DongPyo	WeCT16-10.1	31
Inoue, Takenobu	WeCT7-01.6	17		ThDT5-04.1	53
	ThDT8-01.10	56		ThDT9-07.1	57
Insausti-Delgado, Ainhua	ThDT8-02.6	56		FrDT17-01.1	106
Inyang, Adijat Omowumi	ThAT7.3	34		FrDT17-01.2	106
Ioi, Kiyoshi	FrDT16-06.4	105		FrDT17-05.2	106
Iordachita, Lulian	SaBT12.1	C	Jang, Geuk Young	WeBT15.4	8
	SaBT12.6	116		WeCT14-03.6	28
	SaBT16.3	117		FrDT4-05.5	89
Iozzia, Luca	ThAT17.3	37	Jang, Gyeongcheol	ThDT9-05.2	57
Iqbal, Shabab	ThBT13.5	41	Jang, Hwanseok	FrDT6-03.1	91
Iramina, Keiji	WeCT8-01.7	19	Jang, HyeJung	FrDT10-11.1	97
	SaBT18.2	118	Jang, Hyun Woo	FrDT14-02.4	103
Iranmanesh, Emad	FrBT5.1	75	Jang, Jinah	SaBT6.1	CC
Irastorza-Landa, Nerea	FrAT1.1	70		SaBT6.5	114
Irawan, Yoke Saadia	ThDT10-03.5	59	Jang, Jinwook	FrDT3-07.8	88
Isezaki, Takashi	SaBT5.3	113	Jang, Jungwoo	WeCT7-01.7	17
Ishibashi, Koichiro	ThDT17-06.4	118		WeCT9-01.9	20
Ishida, Yuji	SaAT7.5	110	Jang, Jun-Su	FrCT13.2	82
Ishiguro, Hiroshi	FrDT5-08.2	91		FrCT13.5	83
Ishii, Takayuki	ThDT9-04.1	57	Jang, Junwon	WeCT16-13.1	32
	ThDT9-10.4	58	Jang, Min	WeCT11-07.1	24
	FrDT14-01.6	102	Jang, Minjeong	ThDT6-01.1	53
Ishikawa, Bunnoshin	WeCT1-04.2	9	Jang, Minsu	FrDT7-07.5	93
Ishiya, Kohei	SaCT9.6	120	Jang, Sehyeon	FrDT18-07.1	108
Ishiyama, Atsushi	FrDT1-01.1	84	Jang, Seo Young	ThDT6-07.2	54
Iskander, D Robert	WeCT3-01.4	12	Jang, Serim	FrDT6-08.2	92
Islam, Syed Kamrul	WeBT4.6	5	Jang, Seungwan	FrDT1-02.2	84
Isoda, Hiroyoshi	FrDT13-02.2	101	Jang, Suebin	FrDT4-05.4	89
Isse, Tatsuyoshi	FrDT5-02.5	90	Jang, Sunjin	WeCT16-02.2	30
Istrate, Dan	ThDT17-01.1	67		WeCT16-04.1	31
Itkonen, Matti	ThDT8-02.4	56	Jang, Won Hyuk	FrCT16.1	83
Ito, Kohta	ThAT7.4	34	Jang, Wonseuk	FrDT3-02.3	87
Ito, Koichi	FrAT3.6	71		FrDT18-02.1	107
Ito, Masakazu	FrDT16-02.2	105		FrDT18-05.3	107
Ivashov, Sergey	FrCT17.3	84	Jang, Yo Chang	ThDT6-04.2	53
Iversen, Helle K.	FrDT18-08.4	108	Jang, Yurim	FrDT1-01.3	84
Iwao, Tomohide	WeCT10-03.1	22	Janiga, Gabor	WeCT11-04.2	24
Iwasaki, Kiyotaka	ThDT15-09.1	65		WeCT15-07.3	30
Iwata, Hiroyasu	WeCT14-01.7	27	Janjua, Ghalib Muhammad Waqas	WeCT5-02.4	14
Iwata, Yuuki	FrDT1-01.1	84	Janott, Christoph	FrCT17.1	83
Iyer, Parameswaran M.	SaAT17.1	111	Jansen, Katrien	ThBT17.1	42
Iyer, Ravishankar	ThAT10.1	C	Jansen-Park, So-Hyun	ThDT15-08.1	65
	ThAT10.1	35	Janssens, Wim	FrDT13-04.2	101
Izumi, Hiroyuki	FrDT10-09.1	97	Janusek, Dariusz	WeCT14-07.2	28
Izumi, Shintaro	FrAT4.5	71	Japaridze, Natia	ThCT18.3	46
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			Jared, Willardson	WeAT12.6	3
			Jarmin, R	WeCT5-04.7	15
			Jarrahi, Behnaz	WeCT2-01.2	10
				ThDT14-10.4	64
			Jartakar, Mayur	WeCT8-02.11	19
			Jarumaneeroj, Pisit	WeCT3-01.8	12
				WeCT14-01.2	27
				ThDT18-02.7	69
			Jatesiktat, Prayook	WeAT12.1	3
				WeCT5-02.1	14
			Jatti, Dr.Anand	WeCT2-02.12	11
			Javorka, Michal	ThAT1.2	33
				FrBT18.3	79
			Jayawardhana, Madhuka	WeAT11.6	3
				WeCT15-02.5	29
			Je, Minkyu	ThCT9.4	43
			Jeanne, Mathieu	ThBT17.5	42
			Jeicheong, Ryu	ThDT16-03.1	66
			Jelfs, Beth	ThDT8-02.9	57

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Jabbari, Esmail	SaAT6.1	C
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Jackson, Andrew	WeBT4.1	5
Jackson, Guy	FrDT7-02.1	92
Jacobo, Sylvia	ThDT10-03.3	59
Jacobs, Eddie	FrCT3.2	80
Jacquel, Dominique	WeCT4-03.3	13
Jae Ho, Kim	WeCT13-11.2	27
Jaeyeon, Lee	ThDT6-02.2	53
Jafari Tadi, Mojtaba	ThAT5.1	33
	ThAT5.2	34
Jafari, Roozbeh	ThCT5.5	43
Jahangiri, Amir	ThCT8.4	43
Jain, Monika	ThCT11.4	44
Jaishankar, Rohan	SaBT1.2	112

Jennum, Poul	FrDT18-08.4	108	Jiang, Changqing	FrDT5-08.1	91
	SaAT1.1	109	Jiang, Cheng	FrAT8.1	72
Jensen, Ask Schou	ThAT5.4	34	Jiang, Haowei	FrBT5.5	76
Jeon, Beom S.	FrDT5-05.3	90	Jiang, Hongyang	WeCT2-02.3	11
Jeon, Beom Su	WeCT13-06.1	26		SaAT14.3	111
Jeon, Bomim	SaAT7.1	110	Jiang, Jiehui	WeAT7.3	2
Jeon, Chuljin	ThDT9-10.5	58		WeAT7.4	2
	ThDT9-10.8	58		ThCT10.1	44
Jeon, Jessie	ThDT6-02.3	53		SaBT2.3	112
Jeon, Noo Li	WeCT6-05.6	16		SaBT2.4	113
	SaBT6.4	114	Jiang, Keyuan	WeCT10-01.1	21
Jeon, Seokhee	FrCT16.3	83	Jiang, Ning	ThAT8.4	35
Jeon, Seung Ryong	ThDT9-05.2	57		ThDT17-02.5	67
Jeon, Seungwan	ThDT14-09.2	64	Jiang, Qing	FrBT10.4	77
	ThDT14-11.2	65	Jiang, Shenglong	ThDT7-01.1	54
	FrBT16.4	78	Jiang, Tianxiao	ThAT17.5	37
Jeon, Sohye	FrDT12-07.2	100	Jiang, Yanbing	ThDT1-04.8	47
	FrDT13-07.1	101	Jiang, Yizhou	ThDT4-03.7	51
Jeon, Soo	FrAT2.3	70	Jiao, Xuejun	WeCT8-02.5	19
Jeon, Tae Hyeong	FrDT10-19.1	98	Jimbo, Yasuhiko	FrDT6-06.1	91
	FrDT13-01.4	100	Jimison, Holly	ThAT4.5	33
Jeon, Youngju	FrCT13.4	82	Jin Hwa Lee, Jin Hwa	FrDT6-02.1	91
Jeon, Yuyong	FrDT17-09.1	107	Jin, Hongyan	WeAT4.5	1
Jeong Jugyeong, Jeong Jugyeong	SaAT7.1	110	Jin, Hyeongmin	ThDT3-08.3	50
Jeong, Bong Hyuk	ThDT3-06.1	49	Jin, Lian	WeCT11-01.3	23
Jeong, Daun	ThDT11-10.2	61		WeCT15-08.1	30
Jeong, Do-Un	ThBT15.3	42	Jin, SangHyeon	FrDT1-02.11	85
	ThDT1-04.5	47		FrDT14-01.13	102
Jeong, Gangwon	FrDT3-07.3	88	Jin, Sang-Man	FrDT10-12.1	97
Jeong, Gu An	FrDT9-04.2	96	Jin, Xian	ThAT6.2	34
Jeong, Hee Soo	ThDT7-02.6	55	Jing, Jin	FrAT7.4	71
	ThDT7-02.9	55	Jinung, An	FrDT1-02.11	85
	FrDT8-09.2	94		FrDT14-01.13	102
Jeong, Hyesun	WeCT6-03.7	16	Jitsuishi, Tatsuya	SaCT9.3	119
	FrDT9-03.11	95	Jiwon, Lee	ThBT13.1	41
Jeong, Hyoyoung	SaBT5.1	113	Jo, Cheolwoo	FrDT17-09.2	107
Jeong, Hyuntae	FrDT6-02.3	91	Jo, Jihoon	WeCT9-02.4	21
Jeong, Jae-Heon	ThDT2-06.2	48	Jo, JongHyun	FrDT14-01.10	102
Jeong, Jae-Young	ThDT16-08.1	66	Jo, Kyungmin	ThAT14.5	37
	FrDT15-07.1	104		FrDT15-08.5	104
Jeong, Jeong-Won	ThDT3-05.1	49		FrDT15-08.6	104
Jeong, Jinwoo	WeBT9.3	6	Jo, Yongjae	ThDT2-01.3	47
Jeong, Jiseung	FrDT4-05.2	89	Jo, Young Chang	FrDT14-03.6	103
Jeong, Jiyeoun	ThDT14-05.2	64		FrDT18-08.9	108
Jeong, Jong Seob	FrDT5-03.1	90	João, Lima	ThDT9-01.6	57
	FrDT12-05.1	99	Joe, Cody	SaBT5.5	114
Jeong, Ki-Hun	FrDT5-02.6	90	Joe, Haeyoung	FrDT9-03.10	95
Jeong, Seoi	FrDT4-05.4	89	Johansen, Alexander Rosenberg	ThDT18-01.11	69
Jeong, Seok Hwan	FrDT5-01.5	90	Johansen, Peter	SaBT4.4	113
Jeong, Seonyun	FrDT14-01.13	102	Johansson, Julia	FrBT9.2	77
Jeong, Won-Ki	ThCT14.1	C	Johnson, Brett	WeCT3-03.4	12
	ThCT14.4	45	Johnson, Garrett	WeBT1.1	4
Jeong, Woo Shik	WeCT16-09.3	31	Johnson, Jacob J.	ThDT8-02.1	56
Jeong, Yong-Hoon	ThDT16-08.1	66		FrBT9.3	77
	FrDT15-07.1	104	Johnson, Matthew	ThDT7-02.5	55
Jeong, Yongrok	ThDT5-04.5	53		ThDT8-02.1	56
	FrDT5-05.2	90		FrBT9.3	77
Jeong, You Jeong	WeAT4.6	1	Johnston, Benjamin	WeCT10-02.5	22
Jeong, Yu Rang	FrDT12-05.4	100	Jomprasert, Kritsada	ThDT11-03.2	61
Jeong, Yunjin	WeCT6-04.6	16	Jones, Peter	WeCT4-03.1	13
Jeong-min, Park	WeCT2-02.7	11	Jones, Richard D.	SaBT9.5	115
	WeCT10-02.9	22		SaCT9.5	120
Jeppesen, Jesper	SaBT4.4	113	Joo, Chulmin	ThDT12-08.2	62
Ji, Chang-Hyeon	ThDT5-02.2	52	Joo, Hannah	ThDT6-06.1	54
Ji, Hyo Chul	WeCT15-09.1	30	Joo, Huijin	FrDT3-05.1	87
Ji, Hyungki	FrDT1-01.3	84	Joo, Mingyu	FrDT12-01.3	99
Ji, In Hee	FrDT16-06.5	105		FrDT12-05.3	100
Ji, Jim Xiuquan	FrBT3.3	75	Joo, Segyeong	FrDT4-06.4	89
	SaBT3.6	113		FrDT14-04.1	103
Ji, Ning	ThDT1-04.8	47		FrDT15-09.1	104
Ji, Seungmuk	ThDT6-01.3	53	Joo, Seongsoo	FrDT1-02.14	85
Ji, Xiang	WeAT2.2	1	Joo, Seung-Jae	ThDT15-06.1	65
Ji, Xin	WeCT3-03.5	12	Joo, Yoon Ha	WeCT11-08.3	25
Ji, Young Bin	ThAT2.2	33	Joosten, Simon	ThCT15.2	45
Jia, Xiao	FrAT14.5	73	Jorgolli, Marsela	FrBT6.7	76
Jia, Xiaofeng	FrDT7-05.1	93	Jorjandi, Sahar	SaCT2.1	118
Jia, Yaguang	FrBT10.1	77			
Jia, Zheng	ThDT5-02.6	52			
Jiacheng, He	FrBT6.1	76			
Jian, Zhang	FrBT3.2	75			
Jiang, Bin	ThBT9.2	40			

Kang, Gwansuk	ThDT15-06.1	65	Karimi, Maryam	ThAT14.1	36
	FrDT5-03.2	90	Karimi, Nader	ThAT14.1	36
Kang, Ha Lim	FrDT12-05.10	100	Karimi, Yasha	WeBT9.5	6
Kang, HeeJung	FrDT12-05.4	100	Karlen, Walter	SaBT14.1	C
Kang, HeeKyung	ThDT15-08.1	65		SaBT14.2	116
Kang, HeeKyung	WeCT9-02.4	21	Karlicek, Robert F.	SaBT15.4	117
Kang, Heesung	ThDT2-01.10	48	Karmakar, Chandan	WeCT5-04.1	15
Kang, Hong-Goo	SaCT4.4	119		WeCT11-03.6	24
Kang, Hongki	FrCT5.1	C		ThAT18.4	37
	FrCT5.1	80		FrBT18.4	79
	FrDT7-07.3	93		SaCT13.5	121
Kang, Hyun Seo	ThDT2-07.2	48	Karmaker, Mithun	ThBT13.5	41
Kang, Hyun-Wook	SaBT6.2	114	Karpul, David	ThCT13.1	44
Kang, Iksung	FrCT3.4	80	Kärnman, Marcus	FrDT4-05.9	89
Kang, Jae-Hwan	FrDT14-03.6	103	Karsten, Juan	WeCT2-02.8	11
	FrDT18-08.9	108	Karthik, Srinivasa	ThAT11.3	35
Kang, Jihoon	ThDT3-05.4	49		ThCT11.3	44
	ThDT3-06.2	49	Karunanithi, Mohanraj	WeCT4-03.5	13
Kang, Jinbum	ThDT14-03.1	64	Karupppasamy, Subburaj	ThAT7.2	34
	ThDT14-04.1	64	Karvelis, Petros	ThDT10-04.2	59
	ThDT14-08.1	64	Kaseda, Yuto	FrDT13-08.2	101
	FrDT4-05.8	89	Kassab, Ghassan	ThDT15-07.1	65
Kang, Juehyung	ThDT2-01.1	47	Katagiri, Wataru	ThDT2-05.3	48
Kang, KyuMin	WeCT15-13.2	30	Kato, Misa	ThDT10-01.2	58
	FrDT14-01.11	102	Kato, Yoshitaka	FrDT7-01.1	92
Kang, Matthew	SaAT16.1	111	Katoch, Nitish	WeCT14-03.1	28
	SaCT5.2	119		ThDT13-10.1	63
Kang, Minhee	ThDT6-05.2	53		FrDT2-06.1	86
Kang, Sangsik	FrDT15-08.3	104	Katscher, Ulrich	ThCT3.1	42
	FrDT15-08.4	104	Katsumata, Akitoshi	WeAT14.2	4
Kang, Se Ryong	WeCT16-02.1	30	Katsuyama, Akiyoshi	FrDT4-01.2	88
	WeCT16-03.2	30	Katzberg, Fabrice	WeAT8.2	2
	WeCT16-03.3	31	Kaufmann, Walter	WeCT1-03.3	9
	ThDT3-08.4	50		FrDT1-02.8	85
	SaCT2.2	118	Kauppi, Jukka-Pekka	SaBT8.1	114
Kang, Seok-Gu	ThDT6-01.2	53	Kawabata, Minoru	FrDT4-06.3	89
Kang, Seong Min	ThDT12-08.3	62	Kawaguchi, Hiroshi	FrAT4.5	71
	ThDT16-05.1	66		FrCT4.4	80
	FrDT18-08.2	108	Kawaguchi, Takayasu	FrDT14-01.9	102
Kang, Seung Rok	WeCT7-03.1	18	Kawahara, Ryoma	FrDT14-01.3	102
Kang, Shinil	FrDT1-02.12	85	Kawahito, Shoji	FrDT5-07.3	91
	FrDT1-02.13	85	Kawai, Toshikazu	WeCT16-09.1	31
Kang, Subin	FrDT15-08.3	104		WeCT16-09.2	31
	FrDT15-08.4	104		FrCT14.5	83
Kang, Taegeon	ThDT2-01.7	47	Kawamoto, Hiroaki	FrDT8-04.1	94
Kang, Un gyo	FrDT3-07.4	88	Kawamura, Kazuya	FrDT8-06.1	94
Kang, Wonok	FrDT10-12.1	97	Kawanabe, Motoaki	SaBT8.1	114
Kang, Woo Jae	ThDT2-02.1	48	Kawasaki, Hiroshi	FrDT5-06.2	91
Kang, Ye Na	ThDT9-10.6	58	Kawasaki, Ryo	WeBT16.5	8
Kang, YooNa	FrDT7-06.1	93	Kawashima, Kenji	FrDT12-01.1	99
Kang, You Jung	WeBT13.6	7	Kay, Joshua	WeBT9.2	6
Kang, YoungHwan	FrDT4-02.2	89	Kazanides, Peter	SaBT16.3	117
	FrDT14-01.8	102	Kazunori, Kotani	FrBT2.5	75
Kang, Yumin	ThDT5-04.1	53	Ke, Yufeng	ThDT8-01.4	55
	FrDT17-05.2	106	Kearney, Robert Edward	WeAT8.6	2
Kanhangad, Vivek	ThDT14-01.1	64		ThBT17.4	42
Kaniusas, Eugenijus	FrCT4.2	80		ThDT10-02.2	59
Kannas, Christos	FrDT10-03.3	96		FrDT8-09.1	94
Kano, Manabu	WeBT12.4	7	Keatmanee, Chadaporn	FrBT2.5	75
	ThDT12-05.3	62	Kennedy, Alan	ThBT4.6	38
	FrAT7.5	72	Ker, Ming-Dou	FrAT9.1	72
	FrDT10-08.2	97	Kerkhof, Peter LM	WeCT11-02.4	23
	FrDT14-03.3	103		WeCT11-02.6	23
Kanoga, Suguru	ThAT18.2	37	Kerkman, Jennifer N.	ThAT1.7	33
Kant Kumar, Dinesh	WeAT7.1	C		FrBT17.1	C
	WeAT7.1	2	Kerr, Kevin	FrCT5.5	80
	WeBT16.1	8		SaAT5.4	109
	WeCT12-03.5	26	Kerr, Matthew	ThDT8-02.1	56
	ThDT8-01.2	55		FrBT9.3	77
	FrBT17.3	79	Kesavadas, Thenkurussi	WeCT11-05.1	24
Kapeller, Christoph	SaBT8.6	115		ThDT14-12.2	65
Kap-Ho, Seo	FrDT12-03.5	99		FrDT8-02.1	94
Kappel, Simon Lind	ThDT4-03.2	51		FrDT16-06.1	105
Kapucu, Fikret Emre	FrBT9.2	77	Kesner, Filip	WeCT1-02.2	9
Karalikkadan, Ashhar	SaCT5.4	119	Kessman, Paul	WeCT11-01.2	23
Karamolegkos, Nikolaos	FrBT11.6	77	Kettlgruber, Gerald	WeAT7.5	2
Karanasiou, Georgia	WeAT10.6	3	Kettner, Norman	FrAT11.5	73
	FrCT10.2	82	Key, Jaehong	WeCT6-03.4	15
Karanasos, Antonis	WeCT2-02.11	11		WeCT13-08.1	27
Karbing, Dan Stieper	WeAT15.5	4	Khademhosseini, Ali	ThDT6-03.1	53
Karfoul, Ahmad	ThDT17-03.2	67	Khaghani-Far, Iman	ThAT4.5	33

Khajehpour, Hassan	FrAT1.6	70	Kim, Chulhong	WeAT3.1	1
Khaki, Hossein	SaAT1.3	109		WeCT14-06.2	28
Khalifa, Adam	WeBT9.5	6		WeCT14-07.4	29
Khalil, Mohamad	ThDT18-02.12	69		ThBT2.3	38
Khan, Abdul Rashid	FrCT10.4	82		ThDT2-01.4	47
Khan, Hassan Aqeel	ThDT18-02.10	69		ThDT2-01.6	47
Khan, Muhammad Jazib	ThDT4-02.7	51		ThDT11-09.1	61
Khan, Muhammad Waqas Ahmad	ThAT13.4	36		ThDT14-06.1	64
Khan, Wajahat Ali	FrDT13-03.1	101		ThDT14-09.2	64
Khandelwal, Siddhartha	FrDT4-05.9	89		ThDT14-11.2	65
Khandhari, Ajay	ThDT12-02.2	62		FrBT16.1	C
Khandoker, Ahsan Habib	ThBT17.1	C		FrBT16.4	78
	ThCT17.1	C		FrCT16.1	C
	ThCT17.1	45		FrCT16.2	83
	ThCT17.2	45		FrDT3-03.2	87
Khang, Gon	FrDT9-04.1	96	Kim, Daechang	FrDT13-08.1	101
Khanna, Sankalp	ThDT10-03.4	59	Kim, Daeik	WeCT5-01.5	14
Khantachawana, Anak	FrCT6.7	81		FrDT18-07.4	108
Khatib, Oussama	SaAT16.2	111	Kim, Daejeong	FrDT7-07.3	93
Khatri, Ravi	FrDT15-06.2	104	Kim, Dae-Kwan	FrDT6-13.2	92
Khattak, Asad Masood	FrDT13-03.1	101	Kim, Daeyoung	WeCT16-05.2	31
Khayat, Karima	FrDT10-18.2	98		ThDT16-05.2	66
Kheirandish-Gozal, Leila	FrCT17.5	84		ThDT16-08.2	66
Kheirkhah Dehkordi, Parastoo	FrCT17.6	84	Kim, Deok-Hwan	ThDT9-03.2	57
Khong, Andy W H	ThDT18-01.2	68	Kim, Diana	ThCT9.2	43
Khoo, Michael	WeCT15-13.1	30	Kim, Do Yeon	ThDT7-01.9	54
	ThAT15.1	C		FrDT12-03.3	99
	ThAT15.4	37	Kim, Do Youn	ThDT5-01.6	52
	ThBT15.1	C		FrDT4-05.3	89
	ThCT15.1	C	Kim, Dohyun	ThDT15-04.1	65
	ThCT15.3	45		FrDT13-04.1	101
Khorrani, Milad	ThBT6.2	39	Kim, Doik	ThDT4-03.6	51
Khorshidi, Reza	FrDT1-02.4	84	Kim, Dong Jun	FrDT14-01.14	102
Khurshid, Khawar	WeCT10-02.4	22		FrDT15-08.5	104
Khushaba, Rami N.	WeCT15-02.1	29		FrDT15-08.6	104
	FrDT8-12.1	95	Kim, Dong Sung	FrCT16.4	83
kianimajd, Adell	FrCT1.6	79	Kim, DongHwee	WeBT8.4	6
Kidmose, Preben	ThDT4-03.2	51		FrDT9-04.5	96
Kido, Shoji	WeAT14.1	4		FrDT12-05.8	100
	ThCT14.1	45	Kim, Dong-Hyun	ThCT3.2	42
	ThDT3-08.5	50		FrDT2-07.1	86
Kiele, Patrick	WeCT9-01.3	20	Kim, Dong-Seok	WeCT16-13.1	32
Kigka, Vassiliki	WeAT10.6	3		FrDT9-04.6	96
Kiguchi, Kazuo	WeCT16-05.2	31		FrDT9-04.12	96
	ThDT16-08.2	66	Kim, Dongsoo	ThDT4-01.5	50
Kijima, Yoshifumi	FrDT8-06.1	94	Kim, Dong-Wook	ThDT9-09.1	58
Kikuchi, Takehito	SaCT9.6	120		FrDT8-06.4	94
Kikuchi, Yutaka	FrDT5-01.4	90		FrDT13-13.1	102
Kilany, Mohamed	WeCT2-02.7	11	Kim, Dongyun	FrDT10-18.2	98
Kim Jaeho, Jaeho	ThCT8.6	43	Kim, Doo Hee	FrDT7-06.3	93
Kim, Aram	SaCT9.4	119	Kim, Do-Won	ThDT7-01.10	54
Kim, Bae-Yeon	FrDT6-08.5	92	Kim, Du Beom	FrDT10-04.2	97
Kim, Bo Kyoung	ThDT3-06.1	49	Kim, Euijin	FrDT3-07.5	88
Kim, Bo-Hyun	FrDT2-06.5	86	Kim, Euisun	WeCT9-03.1	21
Kim, Bong Kyu	FrDT5-02.6	90	Kim, EungBo	ThDT5-03.3	52
Kim, Bong-Soo	SaCT12.6	121		FrDT4-02.2	89
Kim, Bora	ThDT5-02.3	52		FrDT14-01.8	102
Kim, Boram	WeCT13-08.1	27	Kim, Eun-ji	ThDT9-10.6	58
Kim, Bumju	FrCT16.1	83	Kim, Eunjoo	ThDT14-05.4	64
Kim, Byeongnam	FrDT18-02.1	107	Kim, Eunkyo	FrDT6-08.4	92
	FrDT18-05.3	107	Kim, Gene	FrDT2-02.1	86
	FrDT18-09.1	108	Kim, Geonyoung	ThDT12-05.4	62
Kim, Byeongyeon	ThDT6-06.6	54	Kim, Guk Han	ThDT11-09.4	61
Kim, Byung Hwi	WeCT13-06.1	26	Kim, Hae Sung	WeCT15-06.1	29
Kim, Chaebin	ThDT7-02.11	55	Kim, Haena	FrDT14-03.6	103
	FrDT9-03.4	95	Kim, Hak Gu	WeCT3-03.7	13
Kim, Chang-Sei	ThBT11.5	40	Kim, Han Woong	FrDT3-02.3	87
Kim, Changsik	FrDT15-04.1	103		FrDT18-05.3	107
	FrDT17-08.8	107	Kim, Hanbyul	WeCT6-05.5	16
Kim, Chang-Soo	ThDT2-01.5	47		WeCT15-06.1	29
Kim, Chan-Il	FrDT5-01.3	90		FrDT5-05.3	90
Kim, Cheol Sang	WeCT7-05.1	18	Kim, Hang-Keun	ThDT3-07.1	50
	ThDT5-01.1	51	Kim, HanSung	ThDT13-09.1	63
	ThDT6-08.1	54	Kim, Hanvit	WeCT1-03.6	9
	ThDT15-09.2	65			
	FrDT6-08.1	92			
	FrDT6-08.2	92			
Kim, Cho Rim	WeCT13-01.2	26			
Kim, Choong Hyun	ThDT16-08.3	66			
Kim, Choong-Yong	ThDT13-03.3	63			

Kim, Hee Chan	WeCT6-05.1	16	Kim, In-Young	WeCT16-10.1	31
	WeCT15-07.2	30		ThDT5-04.1	53
	WeCT15-11.1	30		ThDT9-07.1	57
	ThBT11.2	40		ThDT15-04.1	65
	ThDT5-01.6	52		FrDT1-02.6	85
	ThDT13-03.1	63		FrDT1-02.9	85
	ThDT15-03.1	65		FrDT1-02.12	85
	FrDT3-02.6	87		FrDT1-02.13	85
	FrDT4-05.3	89		FrDT1-02.14	85
	FrDT10-01.1	96		FrDT12-03.3	99
Kim, Hee Jin	FrDT2-06.6	86		FrDT13-04.1	101
Kim, Heejin	WeCT15-11.1	30		FrDT17-01.2	106
Kim, Heeran	ThDT14-05.2	64		FrDT17-05.2	106
	ThDT14-05.3	64		FrDT18-07.3	108
Kim, Heesong	FrDT1-01.3	84	Kim, Jae Jong	WeCT15-09.1	30
Kim, Hodam	FrDT1-01.4	84	Kim, Jae Jun	FrDT10-04.2	97
Kim, Hogene	FrDT8-01.2	94		FrDT14-01.10	102
Kim, Hojae	ThDT3-09.2	50	Kim, Jaehyo	WeCT9-03.7	21
Kim, Hojoong	SaBT7.5	114		WeCT16-08.2	31
Kim, Hong Nam	FrDT12-05.11	100		WeCT16-11.2	32
Kim, Hoon	FrDT14-01.5	102		SaBT12.4	116
Kim, Hoyeon	FrDT7-07.5	93	Kim, Jae-Jin	FrAT11.2	73
Kim, Huiyun	ThDT9-09.1	58	Kim, Jaeseong	ThDT9-09.1	58
	FrDT8-06.4	94	Kim, Jaeseung	WeCT16-01.1	30
Kim, Hwan	ThDT8-01.16	56		ThDT3-06.1	49
	SaAT7.1	110	Kim, Jaeuk U	WeCT14-03.2	28
Kim, Hwi-Jae	WeCT8-01.1	18		FrCT13.1	C
Kim, Hyeongbeom	WeCT9-03.3	21		FrCT13.1	82
Kim, Hyeonggon	FrDT1-02.22	85		FrCT13.4	82
	FrDT14-01.12	102		FrDT18-08.7	108
Kim, Hyeonjin	FrDT3-07.7	88	Kim, Jaeyoung	FrDT12-05.12	100
Kim, Hyeonseok	WeCT9-03.7	21	Kim, Jason	ThBT10.1	CC
Kim, Hyojung	ThAT13.5	36		ThBT10.2	40
Kim, Hyoung-Ihl	ThBT9.3	40	Kim, Jee Hyun	FrDT11-07.5	99
	FrBT4.3	75	Kim, Jeehoon	WeCT1-03.4	9
Kim, Hyoungseop	ThCT14.1	45		ThBT10.4	40
Kim, Hyoung-sik	WeCT13-10.2	27		FrDT16-01.4	105
Kim, Hyun	WeBT13.4	7	Kim, Jeesu	WeCT14-06.2	28
	ThBT6.6	39		FrCT16.2	83
	ThDT9-03.1	57	Kim, Je-Nam	FrDT10-04.2	97
	ThDT9-08.2	58		FrDT14-01.10	102
	ThDT9-10.2	58	Kim, Jeong Hong	ThDT18-01.2	68
Kim, Hyun Jeong	WeCT8-01.1	18	Kim, Jeong Hun	WeCT13-01.1	26
Kim, Hyun Koo	WeCT6-03.6	16	Kim, Jeong Hyeon	FrDT5-01.2	90
	WeCT6-03.7	16	Kim, Jeong In	WeCT7-05.1	18
Kim, Hyun Seok	ThDT7-01.2	54	Kim, Jeong Kon	FrDT11-07.3	98
Kim, Hyun Soo	FrDT3-02.6	87	Kim, Jeonghun	WeCT7-07.1	18
Kim, Hyunduk	FrDT16-06.10	106		WeCT7-07.4	18
Kim, Hyung Ham	FrCT2.1	CC	Kim, Jeongtae	FrDT5-07.4	91
	FrCT2.5	80	Kim, Ji Sung	WeCT10-02.3	22
Kim, Hyung Joong	WeCT14-03.1	28		ThBT6.6	39
	ThDT13-10.1	63		FrDT12-07.1	100
	FrDT2-06.1	86	Kim, Jieun	ThDT5-02.3	52
Kim, Hyunggun	ThDT11-09.3	61	Kim, Ji-Eun	ThDT5-01.9	52
Kim, Hyungmin	WeCT7-07.3	18	Kim, Jihun	ThDT2-01.9	48
	WeCT9-02.5	21		ThDT14-05.4	64
	ThBT18.4	42		SaBT12.4	116
	ThDT7-02.8	55	Kim, Jihye	FrDT10-05.1	97
	FrDT9-03.8	95		FrDT15-08.1	104
	FrDT9-03.10	95	Kim, Jin Seob	SaBT12.6	116
	FrDT9-04.7	96	Kim, Jin Won	WeBT3.5	5
	FrDT12-05.8	100		ThDT2-01.2	47
Kim, Hyunho	FrDT6-09.2	92		ThDT2-01.5	47
Kim, Hyun-Seung	FrDT4-02.1	88		ThDT2-02.1	48
Kim, Hyunsoo	ThDT13-03.1	63		ThDT2-02.2	48
Kim, IkHwan	ThDT4-03.7	51		FrDT6-02.2	91
Kim, Il Kon	SaBT13.6	116	Kim, Jin Woo	FrDT12-05.4	100
Kim, In Young	FrDT8-03.1	94	Kim, Jin Young	ThDT2-01.6	47
Kim, InSeon	ThDT5-01.9	52	Kim, Jinyun	FrDT15-14.1	104
Kim, Insoo	ThCT5.1	CC	Kim, Jinseok	FrDT7-07.4	93
Kim, Insu	ThDT5-03.4	52		FrDT7-07.5	93
	ThDT6-06.5	54		FrDT7-07.6	93
			Kim, Jinsoo	WeBT1.1	4
				FrDT17-07.1	106
			Kim, Jinuk	WeCT9-03.7	21
			Kim, Jinwon	FrDT7-06.3	93
			Kim, Jinwoo	ThDT15-09.2	65
			Kim, Ji-Sun	ThCT10.2	44
			Kim, Jong Hyo	ThDT3-08.3	50
				FrDT3-07.3	88
			Kim, Jong Yeol	FrCT13.4	82

Kim, Jongbeom	ThDT2-01.6	47	Kim, Kyoungmin	ThDT9-10.6	58
Kim, Jonghoon	FrDT2-03.1	86	Kim, Kyung	FrDT14-01.10	102
	FrDT4-01.3	88	Kim, Kyung Ah	FrDT11-06.1	98
Kim, Jonghyun	WeCT9-03.4	21	Kim, Kyung Hwan	ThDT9-03.1	57
	ThDT16-10.1	67		ThDT9-08.2	58
	FrDT8-07.1	94		ThDT9-10.2	58
	FrDT9-04.10	96		FrAT9.1	CC
	FrDT9-04.11	96		FrAT9.4	72
	FrDT10-16.1	98		FrDT8-11.1	95
Kim, Jongin	ThBT14.3	41	Kim, Kyung Sook	FrDT6-06.2	91
	ThDT18-01.3	68	Kim, Kyungmin	FrDT3-03.2	87
	FrAT11.2	73	Kim, Kyungrock	FrDT9-04.12	96
Kim, Jong-Wan	WeCT9-03.3	21	Kim, Kyungsoo	ThDT7-01.6	54
Kim, Jongwoo	SaBT7.5	114	Kim, Kyuyoung	ThDT5-04.5	53
Kim, Joojin	FrDT3-07.2	88		FrDT5-05.2	90
Kim, Joon Yeong	ThDT16-05.1	66	Kim, Laehyun	FrDT1-01.4	84
Kim, Joong Hyun	ThDT5-02.4	52	Kim, Mansu	SaAT14.6	111
Kim, Joo-Young	FrDT1-02.6	85	Kim, Mi Hye	ThBT13.1	41
	FrDT12-03.3	99		FrDT6-08.4	92
Kim, Ju Hyung	FrDT3-02.1	87	Kim, Mi Ju	WeCT16-11.2	32
Kim, Ju Yeon	ThDT6-08.1	54	Kim, Mi Kyung	ThAT13.5	36
	FrDT6-08.1	92	Kim, Mijung	FrDT15-03.1	103
Kim, Ju Young	ThDT13-05.1	63	Kim, Min Hyuck	FrDT7-02.1	92
	FrDT12-05.4	100	Kim, Min Sun	FrDT9-03.2	95
	FrDT12-05.5	100	Kim, Minah	FrDT18-06.3	108
Kim, Juhyon	FrDT4-06.3	89	Kim, Min-Ah	FrDT15-04.2	103
Kim, Jun Hyung	SaAT16.4	111	Kim, Minho	FrDT10-16.2	98
Kim, Jung Hoon	FrDT12-05.11	100	Kim, Min-Hyung	WeCT6-04.4	16
Kim, Jung Uk	WeCT3-03.7	13		WeCT6-05.4	16
Kim, Junghun	ThDT3-08.2	50		ThDT6-04.1	53
	FrDT2-09.1	87	Kim, Minjeong	ThDT6-08.1	54
	FrDT16-06.5	105	Kim, Min-Ju	ThDT7-02.8	55
	FrDT17-03.1	106	Kim, MinJun	FrDT7-07.5	93
Kim, Jungkyu	WeCT6-05.8	16	Kim, Minseo	WeCT12-04.5	26
Kim, Jungyoon	WeCT14-03.2	28	Kim, Myeong Ok	WeCT6-01.1	15
	FrCT13.1	82	Kim, Myeongjin	ThBT3.4	38
Kim, Jun-Min	WeCT9-01.10	20	Kim, Myoungnam	FrDT4-01.3	88
	WeCT10-03.6	23	Kim, Myungjoon	WeCT16-05.1	31
	SaCT2.2	118		FrDT1-02.7	85
Kim, Junmo	FrDT11-07.2	98	Kim, Nam Hyun	SaCT12.6	121
Kim, Jun-Sik	ThDT13-03.3	63	Kim, Nayeong	FrDT3-07.4	88
Kim, JunYoung	ThDT2-01.2	47	Kim, Ockchul	FrDT7-07.4	93
	ThDT16-10.1	67		FrDT7-07.5	93
Kim, Jun-Young	ThDT14-05.4	64		FrDT7-07.6	93
Kim, Juri	FrDT17-01.2	106	Kim, Pilnam	ThDT6-01.1	53
Kim, Kap Jin	WeAT4.6	1		ThDT6-01.2	53
Kim, Keehoon	WeBT9.1	C		ThDT6-01.4	53
	WeBT9.3	6		SaAT6.1	109
Kim, Keeyoung	ThAT6.2	34	Kim, Pilsu	ThDT14-05.2	64
	SaAT6.2	110	Kim, Pyojin	WeBT13.4	7
Kim, Keonwoo	ThDT11-03.3	61	Kim, Raeyoung	ThDT2-08.2	48
Kim, Keo-Sik	ThDT2-07.2	48	Kim, Sang Joon	FrCT1.4	79
Kim, Keun Ho	FrCT13.3	82		SaBT4.6	113
	FrCT13.6	83	Kim, Sang Kyong	FrDT5-05.3	90
	FrDT10-05.1	97	Kim, Sang Woo	SaBT10.2	115
	FrDT15-08.1	104	Kim, Sangho	WeCT6-04.3	16
Kim, Ki Hean	FrCT16.1	83	Kim, Sang-Hun	WeCT16-08.1	31
Kim, Kidong	ThDT14-05.2	64	Kim, Sangkyu	FrDT18-05.3	107
Kim, Ki-duk	WeCT7-01.11	17	Kim, Sang-Wook	WeCT14-03.5	28
	FrDT16-06.10	106	Kim, Se Na	WeCT13-01.2	26
Kim, Kihyun	ThDT9-05.2	57		WeCT13-02.1	26
Kim, Kipyoung	FrDT1-01.3	84		FrDT3-07.5	88
Kim, Kusun	FrDT10-04.1	96	Kim, Sehui	ThDT2-01.6	47
Kim, Kiwoong	ThDT5-01.9	52	Kim, Seo Hyun	ThDT13-09.1	63
	FrCT1.1	CC	Kim, Seok-ki	ThDT2-01.7	47
	FrDT1-02.15	85	Kim, Seok-Won	SaBT6.5	114
	FrDT18-03.1	107	Kim, Seon-Chil	ThDT3-01.2	49
Kim, Ku Ho	FrDT8-03.1	94		FrDT5-01.3	90
Kim, Kwang Gi	WeCT16-06.1	31		FrDT10-18.2	98
	WeCT16-07.1	31	Kim, Seong Cheol	ThDT13-05.1	63
	FrDT2-06.4	86	Kim, Seong-Eun	FrDT18-08.6	108
	FrDT15-05.1	103	Kim, Seong-Hyun	FrDT10-04.2	97
Kim, Kwangdon	ThDT3-05.3	49		FrDT14-01.10	102
	FrDT3-07.8	88	Kim, Seongsin M.	ThAT2.1	CC
Kim, Kwangsoo	FrDT17-08.8	107		WeAT2.4	33
Kim, Kwantae	WeCT12-04.5	26	Kim, Seonjik	ThCT14-07.1	28
Kim, Kyeong Min	ThDT3-05.3	49	Kim, Seung	WeCT12-02.10	25
Kim, Kyong	FrDT10-04.2	97	Kim, Seung Min	FrDT7-03.1	92
Kim, Kyotae	FrDT15-08.3	104	Kim, Seung won	FrDT6-11.1	92
	FrDT15-08.4	104			
Kim, Kyoung Ok	FrDT11-06.1	98			

Kim, Seung-Jong	WeCT7-07.3	18	Kim, Yongmin	FrDT3-03.2	87
	ThBT18.4	42	Kim, Yong-Oock	ThDT6-01.3	53
	FrDT9-04.7	96	Kim, Yong-Wook	ThDT7-01.9	54
Kim, Sewoong	FrDT10-14.1	97		ThDT7-01.10	54
Kim, Sohee	WeCT9-02.4	21	Kim, Yongwook Bryce	FrAT10.1	C
	FrDT4-06.2	89		FrAT10.1	72
	FrDT7-06.1	93	Kim, Yoon Jae	WeCT16-05.1	31
	FrDT14-02.1	102		FrDT1-02.7	85
Kim, Soochan	FrDT10-18.1	98	Kim, Yoon Nyun	FrDT5-01.3	90
Kim, Soogeun	ThDT2-03.1	48	Kim, Yoon-Chul	ThAT15.4	37
	ThDT12-08.5	63	Kim, Youn Ho	SaBT4.6	113
Kim, Soonyoung	ThDT7-02.1	55	Kim, Young Eun	WeCT14-03.5	28
	ThDT7-02.6	55		ThDT14-11.1	65
	ThDT7-02.9	55	Kim, Young Hun	ThDT12-07.3	62
	FrDT8-09.2	94	Kim, Young Jae	FrDT2-06.4	86
	FrDT9-03.11	95		FrDT15-05.1	103
Kim, Su Kyoung	WeCT1-04.3	9	Kim, Young-Bok	WeBT15.4	8
Kim, Sun	WeCT13-08.1	27		WeCT14-03.6	28
Kim, Sun I.	WeCT16-10.1	31	Kim, YoungChan	WeCT16-11.2	32
Kim, Sun Young	WeCT13-11.1	27	Kim, YoungGi	FrDT11-07.1	98
Kim, Sung Chan	ThDT14-08.1	64	Kim, Younghoon	ThDT11-03.3	61
Kim, Sung Chang	ThDT2-07.2	48	Kim, Young-jun	ThDT5-04.6	53
Kim, Sung June	WeCT7-01.7	17		FrDT5-01.5	90
	ThDT7-02.10	55	Kim, Young-Min	FrCT13.4	82
	ThDT7-02.11	55		FrCT13.5	83
	FrDT7-03.1	92	Kim, Yun Ah	ThDT15-05.1	65
	FrDT7-06.3	93	Kim, Yun-Hee	WeCT16-13.1	32
	FrDT9-03.4	95		FrDT9-04.6	96
Kim, Sung Nyun	FrDT18-06.3	108		FrDT9-04.12	96
Kim, Sung Won	SaBT6.5	114	Kim, Yusung	FrBT14.2	78
Kim, Sung-Cheol	FrDT4-02.3	89		SaBT15.6	117
Kim, SungHo	ThDT4-01.5	50	Kimmel, Bradley William	ThDT11-02.6	61
Kim, Sungll	ThDT5-03.3	52		SaCT13.6	121
	FrDT4-02.2	89	Kimura, Astuomi	FrDT2-01.5	86
	FrDT14-01.8	102	Kimura, Keisuke	ThDT9-06.1	57
Kim, Sungjong	WeCT6-05.1	16	Kimura, Takeshi	WeCT10-03.1	22
Kim, Sung-Phil	WeBT1.1	C	Kimura, Yoshitaka	ThCT17.1	45
	WeBT1.3	5	King, Jean Remi	SaCT8.2	119
	FrDT14-03.6	103	Kinney-Lang, Eli	ThAT18.1	37
	FrDT17-07.1	106		FrAT18.1	74
	FrDT18-08.9	108		SaAT1.2	109
Kim, Sungsik	FrDT15-14.1	104	Kinugawa, Jun	WeCT7-04.1	18
Kim, Sungwan	WeCT16-05.1	31	Kinukawa, Yoshiki	FrDT1-02.18	85
	FrDT1-02.7	85	Kiral-Kornek, Filiz Isabell	ThAT8.2	34
	FrDT11-07.5	99	Kirchner, Jens	FrCT4.5	80
Kim, Sung-Woo	ThCT14.2	45	Kirimoto, Tetsuo	WeCT11-03.3	24
Kim, Sunkook	FrDT5-01.5	90	Kirson, Eilon David	ThAT12.5	36
Kim, Sunwon	ThDT2-02.2	48		ThCT12.3	44
Kim, Tae Ho	ThDT16-04.1	66	Kiryu, Shogo	FrDT4-03.1	89
	ThDT16-04.2	66	Kishi, Takuya	ThDT13-03.2	63
	ThDT16-09.2	66		SaBT15.5	117
Kim, Tae Hyong	ThDT11-09.3	61	Kishima, Haruhiko	ThAT9.4	35
Kim, Tae San	FrDT4-05.5	89	Kitani, Yuki	FrDT9-03.3	95
Kim, Tae Won	FrDT10-04.2	97	Kitidee, Kuntida	FrCT6.4	81
Kim, Tae Young	SaCT13.4	121	Kiviniemi, Tuomas	ThAT5.1	33
Kim, Tae-Ho	WeCT7-01.11	17	Kiyomatsu, Hidemichi	FrBT2.3	75
Kim, Taejin	ThDT3-07.1	50	Kiyono, Ken	FrCT18.2	84
Kim, Taeksoo	ThDT9-05.2	57		FrCT18.4	84
Kim, Tae-Seong	WeCT2-02.7	11	Kjaer, Troels W.	ThDT10-01.3	58
	WeCT10-02.9	22		FrDT13-05.3	101
	ThDT4-02.3	51	Klee, Sascha	ThDT14-02.1	64
Kim, Tae-Woo	FrDT7-06.4	93	Klucken, Jochen	WeCT10-03.9	23
Kim, Tae-yeon	WeCT2-02.7	11	Klum, Michael	SaBT1.5	112
	WeCT10-02.9	22	Knafnitz, Marco	WeAT8.3	2
Kim, Wanho	ThDT6-02.3	53		ThDT8-01.12	56
Kim, Wan-joong	ThDT5-04.6	53		ThDT8-02.2	56
Kim, Wansun	ThDT5-01.2	51	Knickerbocker, John	FrDT4-02.3	89
	ThDT5-03.1	52	Knoefel, Frank-Dietrich	WeCT14-01.1	27
Kim, Weon	WeCT12-04.5	26		SaAT3.5	109
Kim, Won-jae	WeCT10-03.6	23	Knoll, Alois	ThBT3.6	38
Kim, Wonkyoung	FrCT16.4	83	Ko, Byung-Hoon	SaBT4.6	113
Kim, Woo Seop	FrDT8-03.1	94		SaCT10.1	120
Kim, Yangsoo	ThDT8-01.16	56	Ko, Chang-Yong	ThDT16-03.1	66
	SaAT7.1	110	Ko, Han Seok	FrDT12-05.11	100
Kim, yeaji	ThDT6-05.2	53	Ko, Hoon	ThCT5.3	42
Kim, Yeji	FrDT3-05.1	87	Ko, JeongGil	SaCT13.4	121
Kim, Yeong-Rim	FrDT12-03.1	99	Ko, Kwan Hwi	WeCT6-03.4	15
Kim, Yeon-Wook	FrDT10-03.1	96		WeCT6-04.4	16
Kim, Yong Hee	FrDT7-08.1	93	Ko, Seunghun	FrDT8-06.4	94
Kim, Yong Tae	FrDT4-05.1	89	Ko, Song Ah	FrDT3-07.5	88
Kim, Yonghyun	ThAT2.4	33	Ko, Sung Won	FrDT6-08.2	92

Ko, Wei-Chun	ThDT3-08.1	50	Kornegay, Joe	SaBT3.6	113
Kobayashi, Etsuko	WeCT16-05.2	31	Korostenskaja, Milena	SaBT8.6	115
	ThDT16-05.2	66	Korostovtseva, Lyudmila	FrCT17.3	84
	ThDT16-08.2	66	Kos, Maciej Rafal	ThAT4.5	33
	FrBT2.3	75	Kosaka, Manabu	WeCT5-03.2	15
Kobayashi, Hiroyuki	WeCT16-09.2	31		FrDT9-03.3	95
Kobayashi, K	FrDT13-09.1	101	Kosuge, Kazuhiro	WeCT7-04.1	18
Kobayashi, Mai	WeCT11-03.3	24	Kotani, Hiroko	ThDT10-01.2	58
Kobayashi, Makiko	FrBT5.6	76	Kotanko, Peter	WeCT12-02.9	25
Kobayashi, Sayumi	ThDT13-06.1	63		ThDT11-03.4	61
Kobayashi, Takahiro	WeCT5-03.2	15	Kouchaki, Zahra	WeBT11.4	6
Kobayashi, Yoshiyuki	WeCT7-01.3	17	Kourou, Konstantina	SaAT13.1	110
Kober, Jens	ThDT16-09.1	66	Koutsiana, Elisavet	ThCT17.2	45
Kocejko, Tomasz	FrCT1.5	79	Koutsouris, Dimitrios	SaAT13.6	111
Koch, Julia	WeBT9.6	6	Kouzani, Abbas Z.	WeCT9-02.7	21
Koch, Philipp	WeAT8.2	2	Kovács, Ferenc	WeCT15-04.1	29
Kodama, Takumi	SaAT1.6	109	Koyanagi, H	FrDT13-09.1	101
Kodama, Tomonobu	FrAT7.5	72	Kozlov, Mikhail	WeCT14-01.5	27
Kodgule, Rahul	WeCT12-02.15	25		WeCT14-01.6	27
Koehn, Obadiah	FrDT7-02.1	92	Krajewski, Jarek	SaAT1.4	109
Koenig, Kathrin	WeCT2-01.6	10	Krauss, Baruch	WeAT15.6	4
Koerner, Mario	ThBT3.6	38		WeBT15.3	8
Koesoema, Allya Paramita	ThDT10-03.5	59	Krauss, Jens	ThBT5.6	39
Koganti, Nishanth	FrBT16.1	78	Krausz, Nili Eliana	WeCT16-08.5	31
Koh, Chin Su	WeCT9-01.10	20	Krell, Mario Michael	WeCT1-04.3	9
	ThDT7-02.1	55	Kretch, Kari	SaCT9.4	119
	ThDT7-02.6	55	Kreuz, Thomas	FrDT17-02.2	106
	ThDT7-02.9	55		FrDT17-02.2	106
	ThDT7-02.10	55	Krishna.S, Dr.Deepu	WeCT2-02.12	11
	ThDT7-02.11	55	Krishnan, Sridhar	WeCT5-02.5	14
	FrDT8-09.2	94		ThDT1-04.4	47
	FrDT9-03.4	95		ThDT17-03.3	67
	FrDT12-05.9	100	Krizaj, Dejan	WeAT16.1	4
Koh, Ilkyoo	ThDT6-01.2	53		FrDT9-03.12	95
Koh, Myungjun	WeCT1-03.4	9	Krohn, Berit	SaBT11.2	115
	WeCT15-06.1	29	Krohova, Jana	ThAT1.2	33
Koh, Tze Hui	ThBT8.4	40		FrBT18.3	79
Koh, Vivian	WeCT11-02.3	23	Kroll, Mark William	ThCT13.2	45
Koh, Won-Gun	ThDT15-05.1	65		ThCT13.5	45
Kohl, Zacharias	WeCT10-03.9	23		ThCT13.6	45
Kohmura, Eiji	FrDT2-01.2	86	Krusienski, Dean	WeBT1.1	4
Koivisto, Tero	ThAT5.1	33	Krzyżanowska-Berkowska, Patrycja	WeCT3-01.4	12
	ThAT5.2	34	Ku, Boncho	FrCT13.1	82
Kolbl, Florian	WeBT9.4	6	Ku, Jeonghun	ThDT7-01.8	54
	ThBT13.3	41		FrDT9-04.9	96
Kolmanič, Kaja	FrDT9-03.12	95	Ku, Yunseo	ThDT5-01.6	52
Komiyama, Masatoshi	SaCT9.3	119	Kuang, Irene	SaBT5.1	113
Komori, Tatsuya	FrBT4.2	75	Kubo, Takatomi	FrAT10.3	73
Kondo, Toshiyuki	ThDT8-02.10	57	Kulkarni, Tanmay	WeAT4.2	1
Kong, Chanho	ThDT7-02.1	55		ThDT5-01.4	52
	ThDT7-02.6	55	Kum, Chang-Hun	ThDT13-03.3	63
	ThDT7-02.9	55	Kumagai, Yuiko	ThDT18-01.7	68
	ThDT7-02.10	55	Kumamoto, Etsuko	FrDT2-01.2	86
	ThDT7-02.11	55	Kumar, Anil	FrCT4.1	80
	FrDT8-09.2	94	Kumar, Saurabh	ThDT17-02.4	67
	FrDT9-03.4	95	Kumari, Poonam	ThDT4-02.3	51
	FrDT12-05.9	100	Kung, Patrick	ThAT2.4	33
Kong, Chee Fai	WeCT14-01.8	27	Kunumpol, Patthapol	WeCT14-01.3	27
Kong, Hojun	FrDT4-01.3	88	Kunyang, Li	FrDT17-08.6	107
Kong, Hyoun-Joong	FrDT3-02.6	87	Kuo, Chung-Fan	WeBT13.6	7
	FrDT11-07.5	99	Kuo, Po-Ling	ThCT6.6	43
	FrDT13-14.1	102	Kuo Cheng, Wang	ThDT14-12.2	65
Kong, Juae	ThDT16-01.1	66	Kupakanjana, Tayakorn	WeCT14-01.3	27
Kong, Keng He	SaCT5.4	119	Kurabayashi, Daisuke	WeCT7-01.6	17
Kong, Lingzhi	WeCT7-01.9	17		ThDT8-01.10	56
Kong, Youngsun	SaBT4.3	113	Kurahara, Lin-Hai	SaCT11.2	120
Kong, Zhuang	WeAT4.5	1		SaCT11.4	120
Konitsiotis, Spiros	SaAT13.6	111	Kuramoto, Kasumi	ThDT10-01.2	58
Konkimalla, Chandra Prakash	ThDT8-01.3	55	Kurian, Thomas	WeCT11-01.2	23
Koo, Chiwan	FrDT4-02.2	89	Kurita, Yuichi	ThDT8-02.5	56
	FrDT5-07.4	91		FrDT8-06.3	94
Koo, Dohoon	FrDT8-01.2	94	Kuroda, Tomohiro	WeCT10-03.1	22
Koo, Ho	FrDT9-03.2	95		FrDT13-02.2	101
Koo, Hyojin	ThDT4-01.5	50		FrDT13-10.1	101
Koo, Kyoin	ThBT6.6	39		FrDT16-06.8	106
	FrDT15-01.2	103	Kuroda, Yoshihiro	FrBT5.3	75
	FrDT15-04.1	103	Kurosaki, Kanami	FrDT14-01.2	102
	FrDT17-08.8	107	Kusaba, Shihori	FrDT16-06.2	105
Koo, Yoonjeong	FrDT12-05.12	100	Kusmakar, Shitanshu	SaCT13.5	121
Kori, Hiroshi	WeCT3-01.2	11	Kusnin, Norzila	SaCT10.3	120
Korley, Frederick K	FrAT8.1	72	Kuwabara, Mariko	FrDT7-09.1	93

Kuwabara, Yukimitsu	SaBT15.5	117	Lai, Chao-Sung	ThDT4-02.5	51
Kwak, Jaekyung	WeCT12-02.14	25	Lai, Feipei	FrCT1.3	79
		104	Lai, Hsin-Yi	FrDT17-05.1	106
Kwak, Ji Min	WeCT13-01.2	26	Lai, Po-Tsun	FrAT10.6	73
Kwak, Jin Tae	FrDT3-02.2	87	Lai, Puxiang	SaAT2.1	C
	FrDT11-07.3	98	Lai, Tung-Yen	SaBT5.2	113
	FrDT11-07.6	99	Lai, Yi-Ping	ThCT6.4	43
Kwak, Kiyoung	ThDT9-09.1	58	Lake, Blossom	FrCT15.1	83
	FrDT8-06.4	94	Laleg Kirati, Taous Meriem	WeCT15-07.1	29
Kwan-Su, Kang	FrDT15-07.1	104	Lalitharatne, Thilina Dulantha	WeCT7-01.5	17
Kwasniewska, Alicja	WeCT12-03.1	25	Lalkov, Vasko	WeCT4-02.4	13
Kwon, Chiheon	FrDT4-05.3	89	Lalor, Edmund	SaAT17.1	111
Kwon, Dahye	FrDT16-03.4	105	Lam, Raymond H. W.	FrBT6.1	CC
Kwon, Dasol	FrDT5-03.1	90		FrBT6.6	76
	FrDT12-05.1	99	Lam, Stephanie	WeCT6-03.1	15
Kwon, DoHyung	ThDT5-03.4	52	Lamard, Mathieu	ThBT14.6	41
Kwon, Hee Jung	ThDT5-03.2	52		SaCT2.3	118
Kwon, Hunki	FrDT2-03.2	86	Lan, Ning	WeCT8-04.1	20
Kwon, Hyock Ju	FrAT2.3	70		FrBT7.1	C
	FrDT4-06.5	89		FrBT7.1	76
Kwon, Hyuk Chan	ThDT5-01.9	52	Lanata', Antonio	WeCT11-03.4	24
Kwon, Hyunbin	ThDT1-04.5	47		ThAT1.1	32
	FrDT1-02.5	85		ThAT4.4	33
	FrDT14-02.2	102		ThDT1-04.2	47
Kwon, Hyungju	FrDT3-02.6	87	Landry, Shane	ThCT15.2	45
Kwon, Jang Woo	FrDT10-03.1	96	Langley, Brandon	SaBT4.2	113
Kwon, Jeonghoon	FrDT15-09.1	104	Larin, Kirill	SaBT2.5	113
Kwon, Jimin	ThDT5-04.2	53	LaRocco, John	FrDT7-04.2	93
Kwon, Jinuk	FrDT1-02.20	85	Larradet, Fanny Isabelle	ThDT8-01.8	56
	FrDT12-03.3	99	Larroza, Andres	WeCT2-01.1	10
Kwon, Jun Soo	FrDT18-06.3	108	Larsen, Mark Erik	WeBT12.5	7
Kwon, Junhwan	ThDT2-08.1	48	Laschi, Cecilia	WeCT7-01.1	16
	FrDT3-02.3	87		WeCT7-01.2	17
	FrDT18-02.1	107		SaCT4.3	119
Kwon, Moonyoung	FrDT18-07.1	108	Lau, James Y. W.	ThBT5.5	39
Kwon, Oh Seok	WeCT5-01.5	14		ThCT5.4	42
	ThDT5-03.7	52	Laude, Augustinus	ThDT8-01.6	55
	FrDT18-07.2	108		FrAT14.2	73
	FrDT18-07.4	108	Laurenson, Callum	WeCT4-02.5	13
Kwon, Ohbin	FrDT5-03.2	90	Lavanga, Mario	ThBT17.1	42
Kwon, Oh-Hun	FrDT3-07.9	88	Lavarello, Roberto	FrAT2.5	70
Kwon, Oh-Hyep	ThDT5-03.5	52		FrBT2.1	C
Kwon, Ohin	WeCT14-03.1	28	Laviola, Marianna	WeAT15.1	4
	ThDT13-10.1	63		WeBT15.1	8
	FrDT2-06.1	86	Lavrik, Nickolay	WeBT4.6	5
Kwon, Ohwon	ThDT5-01.7	52	Laxpati, Nealen	ThCT9.1	43
	FrDT16-01.3	104	Layne, Charles	FrDT12-03.6	99
Kwon, Sang-Mo	SaBT6.5	114	Lazar, Roland M	FrDT2-06.2	86
Kwon, Sangwoo	FrDT6-06.2	91	Lazzeroni, Davide	FrBT18.2	79
Kwon, Soon Bin	FrDT4-05.3	89	Le Blanc, Pascale	SaCT10.2	120
	FrDT10-01.1	96	Le Douget, Jean-Eudes	WeCT1-04.4	9
Kwon, Soonjae	FrCT16.1	83	Le Troter, Arnaud	WeBT14.2	7
Kwon, Sunghoon	WeCT6-04.6	16	Le Van Quyen, Michel	WeCT1-04.4	9
	ThDT12-07.4	62	Lederman, Dror	FrDT11-07.4	99
	FrDT15-14.1	104	Lee, Alexander	FrDT14-03.1	103
Kwon, Taekyu	WeCT7-03.1	18		SaBT4.1	113
Kwon, Uikun	SaBT4.6	113	Lee, Amos Chungwon	FrDT15-14.1	104
Kwon, Young-Sam	FrDT6-09.1	92	Lee, Beom-Chan	FrDT12-03.5	99
Kye, Saewon	ThDT4-02.2	50		FrDT12-03.6	99
	SaCT4.4	119	Lee, Bo-Ram	WeCT8-01.1	18
Kyoso, Masaki	ThDT9-04.1	57	Lee, Boreom	WeCT3-03.6	13
	ThDT9-10.4	58		ThBT14.3	41
	FrDT4-03.1	89		ThCT8.1	C
	FrDT14-01.6	102		ThCT8.5	43
Kyriacou, Panayiotis	ThBT4.1	38		ThDT9-02.1	57
Kyriakides, Minas	FrDT13-06.1	101		ThDT18-01.3	68
Kyritsis, Konstantinos	ThDT17-06.3	68		FrAT10.2	72
				FrAT11.1	C
				FrAT11.2	73
				FrDT1-02.16	85
				FrDT18-08.1	108
				SaAT18.5	112
L			Lee, Byung Chul	FrDT12-05.11	100
L. Tanaka, Yuji	SaCT9.3	119	Lee, Byungjun	SaBT6.4	114
Lachal, Sylvain	WeCT12-04.4	26	Lee, Chang Min	ThDT16-08.3	66
Lachert, Piotr	WeCT14-07.2	28	Lee, Changho	ThBT2.1	CC
Lacroix, Patrick	ThBT12.4	41		ThBT2.3	38
	SaBT11.5	116		ThDT2-01.6	47
Ladetto, Marco	WeCT10-01.5	22	Lee, ChangHsuan	WeCT15-05.2	29
Ladewig, Dorothy	ThCT5.1	42	Lee, Chany	FrDT3-07.5	88
Lahdenoja, Olli	ThAT5.1	33	Lee, Chen-Yi	FrAT9.1	72
Lahiri, Uttama	WeCT4-04.1	13			
Lahuec, Cyril	SaAT5.1	109			

Lee, Chi-Chun	FrAT10.6	73	Lee, In Haeng	FrDT2-03.1	86
Lee, Chiwon	WeCT16-05.1	31	Lee, In-Su	SaCT12.1	120
Lee, Chongju	FrDT12-05.12	100	Lee, Insup	FrCT15.3	83
Lee, Chung-Wei	SaAT18.2	112	Lee, Ivan	ThBT3.3	38
Lee, Colin	WeCT5-03.4	15	Lee, Jaehyun	FrDT16-07.2	106
	SaBT5.5	114	Lee, Jae-Ik	ThCT9.3	43
Lee, Daae	FrDT7-07.1	93	Lee, Jaejong	ThDT5-01.7	52
Lee, Dae-Sik	ThDT12-02.3	62	Lee, Jaemyeon	ThDT5-02.1	52
Lee, David	ThCT8.6	43		ThDT5-03.6	52
Lee, Deuk Yong	FrDT1-02.2	84		ThDT12-08.1	62
	FrDT6-08.3	92	Lee, Jaewon	FrDT3-07.3	88
	FrDT6-08.5	92	Lee, Jaeyeon	FrDT5-02.3	90
Lee, Do Yeon	FrDT18-08.2	108	Lee, Je sang	FrDT4-06.2	89
Lee, Dong Gyu	FrDT2-03.1	86	Lee, Jee Won	ThDT7-02.6	55
Lee, Dong Jun	ThDT11-09.3	61		ThDT7-02.9	55
Lee, Dong uk	ThDT5-02.4	52		FrDT8-09.2	94
Lee, Dongheon	FrDT3-02.6	87	Lee, JeeEun	FrDT18-02.1	107
Lee, Donghyun	ThDT2-01.4	47		FrDT18-05.3	107
Lee, Dongkyu	ThDT5-01.7	52		FrDT18-09.1	108
	FrDT16-01.3	104	Lee, Jeong Seok	ThDT3-02.1	49
Lee, Dong-Kyun	ThDT14-10.3	64		ThDT3-04.2	49
Lee, Dongseok	FrDT14-02.2	102	Lee, Jeong Woo	WeCT13-03.1	26
Lee, Doo Yong	ThBT3.4	38	Lee, Jeong-Seok	SaBT6.3	114
Lee, Doyeon	ThDT5-02.1	52	Lee, Jeongsu	FrDT1-02.5	85
	ThDT12-08.1	62	Lee, JeongTaek	FrDT2-04.2	86
Lee, Do-Youn	SaBT13.6	116	Lee, Jeyeon	FrDT17-01.1	106
Lee, Duck Hee	FrDT14-01.14	102	Lee, Ji Soo	FrDT6-13.2	92
	FrDT15-08.2	104	Lee, Ji Yeon	FrDT6-08.2	92
	FrDT15-08.5	104	Lee, Jihun	WeCT7-01.7	17
	FrDT15-08.6	104	Lee, Jihye	FrDT5-01.2	90
Lee, EunAh	ThCT6.1	C	Lee, Jihyeon	ThDT7-02.1	55
	ThDT6-07.1	54		ThDT7-02.11	55
	ThDT6-07.2	54		FrDT12-05.9	100
	FrDT6-13.1	92	Lee, Jihyoung	FrDT16-06.2	105
	FrDT6-13.2	92	Lee, Jimmy Addison	WeCT2-02.6	11
Lee, Eunjung	ThDT9-05.2	57		WeCT14-02.2	28
Lee, Gihyoun	FrDT1-02.11	85	Lee, Jin woo	FrDT6-11.1	92
	FrDT14-01.13	102		SaBT6.1	114
Lee, Gi-Ja	ThDT5-02.1	52	Lee, Jinseok	ThCT5.3	42
	ThDT5-03.6	52	Lee, Jiwon	WeCT12-04.5	26
	ThDT12-08.1	62		FrDT6-08.4	92
	FrDT12-03.1	99	Lee, Jiyeon	WeCT7-07.3	18
	FrDT12-03.2	99		ThDT5-03.7	52
Lee, Gobert	WeAT14.1	CC		FrDT18-07.2	108
	WeAT14.4	4		FrDT18-07.4	108
Lee, Gu-Haeng	FrCT5.1	80	Lee, Jiyeong	WeCT15-08.2	30
Lee, Gyu Myoung	ThDT4-02.3	51	Lee, Jong Hee	WeCT16-01.1	30
Lee, Gyudo	ThDT6-06.5	54		ThDT12-07.2	62
Lee, Hae-Seung	ThCT11.1	44	Lee, Jong Min	WeCT7-07.3	18
Lee, Hak Jong	FrDT11-07.1	98		ThBT18.4	42
Lee, Hakjae	ThDT3-05.3	49		FrDT9-04.7	96
	FrDT3-07.8	88	Lee, Jongbeom	ThBT3.4	38
Lee, Han A	ThDT13-09.1	63	Lee, Jong-Ha	ThDT3-01.2	49
Lee, Han Sang	FrDT11-07.2	98		FrBT18.1	CC
Lee, Hanji	WeCT16-01.1	30		FrDT5-01.3	90
Lee, Hee-Jae	ThCT8.6	43		FrDT10-18.2	98
Lee, Heung-No	ThDT14-05.1	64	Lee, Jongmin	ThDT3-08.2	50
	FrCT4.1	80		FrDT2-09.1	87
Lee, Ho Yong	FrDT15-06.1	103		FrDT16-06.5	105
Lee, Hojung	ThDT14-03.1	64		FrDT17-03.1	106
Lee, Hong Ji	FrDT14-02.2	102	Lee, Jong-Min	FrDT2-03.2	86
	FrDT16-01.4	105		FrDT2-06.3	86
Lee, Hoo Jeong	WeCT13-03.2	26		FrDT2-06.5	86
Lee, Hooseok	ThCT5.3	42		FrDT2-06.6	86
Lee, Hoyul	WeCT16-09.3	31		FrDT2-06.7	86
Lee, Hwang-Jae	WeCT16-13.1	32	Lee, Jong-Shill	ThDT15-04.1	65
	FrDT9-04.6	96		FrDT1-02.12	85
	FrDT9-04.12	96		FrDT1-02.13	85
Lee, Hwiyoung	FrDT8-01.2	94		FrDT1-02.14	85
Lee, Hyeongrae	ThDT14-10.1	64		FrDT13-04.1	101
	ThDT14-10.3	64		FrDT18-07.3	108
Lee, Hyojin	FrDT1-02.9	85	Lee, Jongwon	WeCT7-07.1	18
Lee, Hyowon	WeCT6-03.1	15	Lee, Jongwook	SaBT4.6	113
	WeCT6-03.2	15	Lee, Joong Hoon	FrDT5-02.1	90
Lee, Hyungbeen	ThDT6-04.1	53	Lee, Joonnyong	ThBT11.2	40
	ThDT6-05.1	53		ThDT15-03.1	65
	ThDT6-06.5	54	Lee, Joonsung	ThCT3.1	C
Lee, Hyunglae	ThAT7.1	34	Lee, Jooyoung	ThDT3-05.5	49
	SaBT7.2	114		ThDT3-06.3	50
Lee, Hyungseok	SaBT6.3	114	Lee, Joshua	FrDT6-08.2	92
Lee, Hyunjoo Jenny	ThAT13.5	36	Lee, Ju Hyung	SaCT12.6	121

Lee, Juhwan	ThCT5.1	42	Lee, Sang Woo	WeCT6-03.4	15
Lee, Jun Hee	WeCT7-05.1	18		WeCT6-04.4	16
Lee, Jun Seok	WeCT12-02.14	25		WeCT6-05.4	16
	FrDT16-07.1	106		ThDT6-04.1	53
Lee, Junchang	FrDT1-02.9	85		ThDT6-05.1	53
Lee, June-Young	FrAT5.1	71		ThDT6-06.2	54
Lee, Jung Chan	WeCT6-05.1	16	Lee, Sang Wook	WeCT9-03.2	21
	WeCT11-08.3	25		SaBT7.6	114
	WeCT15-07.2	30	Lee, Sang-Goog	ThCT8.6	43
	ThDT13-01.1	63	Lee, Sang-Heon	ThBT3.3	38
	ThDT13-03.1	63	Lee, Sanghoon	WeCT12-04.5	26
	FrDT3-02.5	87	Lee, Sanghun	WeCT14-03.2	28
	FrDT11-05.1	98		ThDT11-09.5	61
Lee, Jung Heon	WeCT13-03.2	26		FrCT13.6	83
Lee, Jung Ho	FrDT14-01.10	102		FrDT10-05.1	97
Lee, Jung Keun	FrDT10-19.1	98		FrDT16-03.4	105
	FrDT13-01.4	100	Lee, Sangjun	FrDT3-07.5	88
Lee, Junghyo	WeCT4-04.6	14	Lee, Sanglim	FrDT15-05.1	103
	FrDT10-16.2	98	Lee, Sangmin	WeCT6-03.5	16
Lee, Junghyun H.	ThDT14-10.3	64		FrDT10-03.1	96
Lee, Jung-Rok	FrDT5-04.1	90		FrDT17-09.1	107
Lee, Junho	WeCT6-05.1	16	Lee, Sangwon	SaAT14.5	111
	WeCT13-10.2	27	Lee, Sang-Won	ThDT2-01.10	48
Lee, Junseok	FrBT8.2	76	Lee, Sangyeop	ThDT4-02.2	50
Lee, Ju-Yeon	WeCT11-07.1	24	Lee, Sang-Yoep	WeCT7-05.3	18
	ThDT15-08.1	65	Lee, Saram	ThBT11.2	40
Lee, Jyung Hyun	FrDT5-05.1	90		ThDT15-03.1	65
Lee, Kang Ju	WeCT13-01.1	26	Lee, Seeun	WeCT13-11.1	27
Lee, Kang Moo	ThDT11-09.5	61	Lee, Seho	FrDT17-01.1	106
Lee, Kang-Ho	ThDT5-01.7	52	Lee, Seo Kyung	FrDT12-03.1	99
	FrDT16-01.3	104	Lee, Seok Young	FrDT3-02.1	87
Lee, Khuan Y.	WeCT5-04.7	15	Lee, Seon Heui	FrDT15-08.7	104
	ThDT18-01.6	68	Lee, Seon Young	FrDT11-07.9	99
Lee, Kijoon	SaBT3.3	113	Lee, Seonggeon	WeCT16-01.1	30
Lee, Kisung	ThDT3-05.3	49	Lee, Seongpung	WeCT16-03.4	31
	FrDT3-07.8	88	Lee, Seong-Whan	WeCT8-01.1	18
Lee, Kunkyu	ThDT14-07.2	64	Lee, Seonjin	FrDT13-13.1	102
Lee, Kwang Jin	FrDT1-02.16	85	Lee, Seoyeon	FrDT6-08.2	92
Lee, Kyeong Jae	FrDT14-02.1	102	Lee, Seul	WeCT9-02.5	21
Lee, Kyoung Jin	FrDT3-02.5	87	Lee, Seung Ho	WeCT13-01.2	26
	FrDT11-05.1	98		WeCT13-02.1	26
Lee, Kyoung Joung	WeCT15-13.2	30		ThDT5-01.2	51
	FrDT1-02.22	85		ThDT5-03.1	52
	FrDT14-01.11	102	Lee, Seung Hwan	FrDT1-02.22	85
	FrDT14-01.12	102	Lee, Seung Hyun	FrDT1-02.11	85
Lee, Kyoungwoo	ThDT4-02.2	50		FrDT2-06.4	86
	SaCT4.4	119		FrDT14-01.13	102
Lee, Kyu Back	ThDT6-06.3	54	Lee, Seung Jae	ThAT6.3	34
Lee, Kyu Eun	FrDT3-02.6	87	Lee, Seung Jun	FrAT5.1	71
Lee, Kyung Eun	ThDT11-10.1	61	Lee, Seung Woo	WeAT9.1	2
	SaAT11.3	110	Lee, Seung Yeob	ThDT12-07.1	62
Lee, Kyungsuk	FrDT14-02.3	102	Lee, Seung-A	ThDT11-09.5	61
Lee, Kyu-Sung	ThDT6-04.2	53	Lee, Seung-Beck	FrDT5-05.4	90
	FrDT7-06.4	93	Lee, Seungchan	FrCT4.1	80
Lee, Min Woo	WeCT11-07.1	24	Lee, Seungchak	FrAT3.4	70
	ThDT2-02.1	48	Lee, Seunghee	FrDT10-16.1	98
Lee, Min young	ThDT6-04.2	53	Lee, Seunghyun	WeCT14-07.4	29
	ThDT6-06.3	54		FrDT12-05.11	100
Lee, Ming-Yih	WeCT15-05.2	29	Lee, Seung-Hyun	FrDT10-12.1	97
	ThDT4-02.5	51	Lee, SeungJae	FrDT1-02.13	85
Lee, Minhyoung	WeCT14-03.6	28	Lee, SeungJin	WeCT6-04.5	16
Lee, Minhyung	WeCT7-07.1	18		FrDT12-05.2	99
Lee, Minji	WeCT8-01.1	18		FrDT12-05.3	100
Lee, Minjin	FrDT3-07.2	88		FrDT12-05.7	100
Lee, Miran	ThDT9-03.2	57	Lee, Seung-Kyun	ThCT3.1	CC
Lee, Mooseung	FrDT5-07.4	91		FrDT2-04.2	86
Lee, Myeongsang	ThDT5-03.7	52	Lee, Seungrag	ThDT2-01.7	47
Lee, Saewoom	ThBT10.2	40	Lee, Seung-ro	ThDT5-02.3	52
Lee, Sang Eun	FrDT10-11.1	97	Lee, Seungwan	WeAT3.3	1
	FrDT13-05.1	101	Lee, Seung-Youl	SaCT12.1	120
Lee, Sang Hoon	WeCT6-04.7	16	Lee, Shwu-Hua	FrAT18.3	74
Lee, Sang Jeong	WeCT16-02.1	30	Lee, Soo Yeol	ThDT2-03.1	48
	WeCT16-03.2	30		ThDT3-02.1	49
	WeCT16-03.3	31		ThDT3-04.1	49
	ThDT3-08.4	50		ThDT3-04.2	49
Lee, Sang Won	ThDT5-03.4	52		ThDT3-04.3	49
	ThDT6-06.5	54		ThDT12-08.5	63
			Lee, Soojin	ThCT9.2	43
			Lee, Soo-Jin	ThDT3-05.6	49
				ThDT3-08.6	50
			Lee, Sooyoung	ThDT3-05.3	49

Lee, Suhwan	FrDT8-06.6	94	Lemkaddem, Alia	WeAT12.6	3
Lee, Suhyun	WeCT16-13.1	32		SaCT13.2	121
	FrDT9-04.6	96	LeMoyné, Robert	ThDT10-05.2	60
	FrDT9-04.12	96		SaCT13.3	121
Lee, Sukhoon	SaCT13.4	121	Lenny, Kaminsky	SaBT10.4	115
Lee, Sung Q	WeCT8-02.3	19	Leo, Andrea	WeCT1-01.5	8
	FrDT16-02.1	105		WeCT11-03.5	24
Lee, Sungho	FrDT15-08.2	104	Leonarduzzi, Roberto Fabio	FrCT18.3	84
Lee, Sungyoung	ThDT10-04.7	60	Leonhardt, Steffen	WeCT5-04.4	15
	FrDT10-10.1	97		FrCT8.1	81
	FrDT13-01.3	100		SaAT3.1	109
	FrDT13-03.1	101	Lepore, Franco	FrAT3.1	70
	FrDT13-05.4	101	Lepore, Natasha	WeBT2.3	5
Lee, Sun-Jae	FrDT10-11.1	97		WeBT2.5	5
Lee, Suwon	ThDT16-08.1	66		WeBT2.6	5
	FrDT15-07.1	104		FrAT3.1	70
Lee, Tae Geol	ThDT2-01.10	48		FrAT8.5	72
Lee, Tae Soo	ThDT3-05.5	49		FrCT14.1	C
	ThDT3-06.3	50	Lerch, Till	WeCT7-01.12	17
Lee, Tae Young	FrDT18-06.3	108	Letizia, Maria Cristina	WeCT6-05.3	16
Lee, Tae-Hee	SaCT12.1	120		FrDT6-07.1	92
Lee, Taeho	ThDT4-02.2	50	Leupold, Jochen	WeCT2-01.6	10
Lee, Taeyong	ThAT7.1	C	Lev, Zimin	FrDT5-08.2	91
	ThAT7.4	34	Lever, Teresa	WeCT2-02.9	11
Lee, Tak Hyung	FrDT18-06.3	108	Levi, David	SaBT12.6	116
Lee, Tatia Mei-Chun	FrAT18.3	74	Levin, Nathan W.	WeCT12-02.9	25
Lee, Tih Shih	WeCT1-02.1	9	Lew, John Paul	FrAT14.3	73
Lee, Wen-Jeng	ThDT3-08.1	50	Lewis, Noëlle	ThBT13.3	41
Lee, Won Hee	SaCT8.3	119	Lewis, Simon J.G.	FrAT7.1	71
Lee, Wonkyoung	FrDT5-02.6	90		FrAT7.2	71
Lee, Wonseok	ThDT5-03.4	52	Leza Lahuerta, Cristina	ThDT1-01.4	46
	ThDT6-05.1	53	Li, Adam	ThDT17-04.1	67
	ThDT6-06.5	54		FrBT1.3	74
Lee, Woo Hyung	FrDT11-07.5	99	Li, Annan	WeCT3-03.2	12
Lee, Woo Ram	WeCT9-01.10	20		WeCT14-02.2	28
Lee, Woonghee	ThDT11-03.3	61	Li, Charles X.-T.	ThAT18.6	37
Lee, Woon-Hee	WeCT14-02.4	28		ThBT4.4	38
	ThBT6.6	39	Li, Chia-Chen	FrDT3-07.6	88
Lee, Yang Soo	FrDT8-07.1	94	Li, Chuang	ThBT9.4	40
Lee, Yeasol	FrDT15-04.1	103		FrCT8.3	81
Lee, Yee Han Dave	ThAT7.2	34	Li, Dianyou	FrBT7.2	76
Lee, Yena	ThDT7-02.1	55	Li, Fei	WeCT4-02.3	13
	ThDT7-02.6	55	Li, Guanglin	WeCT1-01.7	9
Lee, Yong Ho	ThDT5-01.9	52		WeCT4-03.4	13
Lee, Yong Seung	ThDT4-02.2	50		WeCT8-03.1	19
	SaCT4.4	119		WeCT10-03.4	23
Lee, Yongki	ThDT3-06.1	49		ThDT1-03.2	46
Lee, Yongkoo	FrDT16-01.3	104		ThDT1-04.8	47
Lee, Yongkwan	FrDT15-04.1	103		FrAT1.5	70
Lee, Yongkyun	ThDT4-01.5	50		FrBT14.3	78
Lee, Yongsu	WeCT4-02.2	13		FrCT9.6	82
Lee, Youjin	ThDT7-02.6	55		SaAT7.2	110
	ThDT7-02.9	55		SaCT4.5	119
	FrDT8-09.2	94	Li, Hai	WeCT3-03.5	12
Lee, Younbaek	WeCT7-07.1	18	Li, Haifeng	FrBT9.1	C
Lee, Young Ju	ThDT5-02.1	52		FrBT9.5	77
	ThDT5-03.6	52	Li, Heng	WeBT14.5	7
	ThDT12-08.1	62		ThDT11-01.6	60
	FrDT12-03.1	99	Li, Huihui	WeCT1-04.5	10
	FrDT12-03.2	99	Li, Huijun	ThCT8.3	43
Lee, Yu Jin	ThDT6-06.6	54	Li, Huiqi	WeCT1-04.7	10
Lee, Yujin	ThBT15.3	42	Li, Jianping	FrDT9-04.8	96
	ThDT1-04.5	47	Li, Jia-Quan	WeCT15-12.1	30
Leem, Chae Hun	SaAT11.1	CC	Li, Jie	WeCT4-01.2	13
	SaAT11.4	110		FrDT16-06.7	106
Leermakers, Jelle	SaCT10.2	120	Li, Jieyi	SaBT10.3	115
Legorburu Cladera, Borja	ThDT1-02.2	46	Li, Jingzhen	WeCT4-01.3	13
Lehang, Guo	ThAT14.3	36	Li, Junji	WeCT6-05.2	16
	FrBT2.1	74	Li, Ke	WeAT2.2	1
Lehtonen, Eero Lennart	ThAT5.1	33		ThDT8-02.7	56
	ThAT5.2	34	Li, Le	FrDT8-01.1	93
Lei, Kin Fong	ThCT6.2	43		FrDT8-09.4	94
Leinveber, Pavel	ThDT10-02.1	59	Li, Liming	FrAT9.6	72
Leistritz, Lutz	ThAT1.4	33	Li, Luming	FrBT7.3	76
	ThAT1.5	33		FrDT5-08.1	91
Lemaitre, Guillaume	FrAT14.1	73	Li, Meng	WeCT3-02.5	12
Lemay, Mathieu	ThAT17.4	37		SaBT16.3	117
	ThBT5.6	39	Li, Mengmeng	WeCT3-01.7	12
	SaCT13.2	121		ThDT18-02.8	69
Lemdiasov, Rosti	ThCT12.2	44	Li, Mengnan	WeCT2-01.5	10
			Li, Michael Hong Gang	FrBT10.6	77

Li, Min	ThAT8.3	34	Lim, Hyunmi	ThDT7-01.8	54
	ThDT1-02.5	46	Lim, Jaegook	WeCT7-01.7	17
	FrBT10.1	77	Lim, Jaeyeong	WeAT3.3	1
Li, Peng	WeCT8-03.1	19	Lim, Jeong-Hwan	ThDT9-10.5	58
	WeCT11-03.6	24		ThDT9-10.8	58
	ThCT9.4	43	Lim, Jongwon	WeCT6-04.4	16
	ThDT1-04.8	47		ThDT6-04.1	53
Li, Pengwei	FrDT7-04.2	93		ThDT6-05.1	53
Li, Rihui	WeCT14-02.5	28		ThDT6-06.2	54
Li, Rui	FrBT3.1	75	Lim, Jungeun	WeCT6-05.6	16
Li, Sheran	WeBT11.4	6	Lim, Ki Moo	WeCT15-08.2	30
Li, Siman	ThAT11.5	35		ThDT11-10.2	61
Li, Ssu-Ju	FrDT17-05.1	106		SaAT11.2	110
Li, Tengyue	WeCT9-01.11	20	Lim, Kim Chuan	FrDT1-02.1	84
Li, Wai-ho	WeAT9.2	2	Lim, Min Hyuk	WeCT16-05.1	31
Li, Wanlu	SaBT2.1	112	Lim, Sanghyun	ThDT5-01.9	52
Li, Wei	WeBT4.2	5		FrDT1-02.15	85
Li, Wen-Tyng	ThDT6-06.4	54		FrDT18-03.1	107
Li, William	ThDT4-01.1	50	Lim, Song-I	FrDT2-07.2	87
Li, Xiangxin	WeCT1-01.7	9	Lim, Soo Teik	ThDT15-07.1	65
	FrAT1.5	70		FrDT3-07.10	88
	SaAT7.2	110		SaBT10.1	115
Li, Xinyang	ThCT18.1	45	Lim, Taeyoon	FrDT16-06.10	106
Li, Xiuli	ThBT14.4	41	Lim, Tock Han	ThDT8-01.6	55
Li, Xuan	ThAT4.5	33		FrAT14.2	73
Li, Xuwen	WeCT12-01.5	25	Lim, Wanyoung	WeCT6-04.5	16
	ThDT18-02.5	69	Lim, Yerin	FrDT15-04.2	103
Li, Ya	WeCT3-01.7	12	Lim, Yo-An	SaAT16.4	111
Li, Yan	WeCT14-01.7	27	Lim, Yoonseob	FrDT7-03.1	92
Li, Yang	WeCT11-03.6	24	Lima, Carlos Manuel Gregorio Santos	WeCT3-02.7	12
Li, Yao	ThDT18-02.9	69		FrDT11-07.8	99
	FrCT3.1	80	Lima, Estêvão	WeCT3-02.7	12
	SaBT2.1	112	Limotai, Chusak	WeCT14-01.2	27
Li, Ye	WeCT10-01.3	22	Lin, Binghui	WeCT5-04.5	15
	ThBT5.3	39	Lin, Chemin	FrAT18.3	74
Li, Yier	WeCT15-10.1	30	Lin, Cheng-Yu	SaBT3.4	113
Li, Yuanqing	WeCT8-02.7	19	Lin, Chia-Yu	ThDT3-09.3	50
Li, Yujie	FrBT11.2	77	Lin, Ching-Heng	FrAT10.6	73
	FrBT11.3	77	Lin, Chuang	SaAT7.2	110
Li, Yuqi	ThDT8-02.9	57	Lin, Chun-Cheng	ThDT14-12.1	65
Li, Zeyuan	FrDT6-03.2	91	Lin, Denan	WeCT10-01.3	22
Li, Zheng	ThBT1.3	38	Lin, Haoming	FrAT2.2	70
Li, Zhi	WeAT10.3	3	Lin, Hong	ThDT12-04.1	62
Li, Ziyue	WeCT9-02.6	21	Lin, Kang	ThDT18-01.12	69
Lian, Jiayuan	FrDT16-06.7	106	Lin, Mong-Wei	FrDT3-07.6	88
Liang, changhong	WeCT3-02.5	12	Lin, Monica	ThAT13.3	36
Liang, Dong	FrDT2-04.1	86	Lin, Ruo Jhen	WeCT14-04.1	28
Liang, Faya	WeCT8-03.1	19	Lin, Shan	FrCT15.3	83
Liang, Fupeng	WeCT6-05.2	16	Lin, Shu-Ping	SaBT5.2	113
Liang, Jie	ThDT11-08.1	61	Lin, Ting-Chun	FrDT17-05.1	106
	FrDT11-04.1	98	Lin, Tsung-Wu	SaBT5.2	113
Liang, Jiu-Xing	WeCT15-12.1	30	Lin, Wan-Hua	WeCT4-03.4	13
Liang, Sheng-Fu	FrAT9.1	72	Lin, Wen-Yen	WeCT15-05.2	29
Liang, Shengyun	WeCT4-01.2	13		ThDT4-02.5	51
	ThDT4-02.9	51	Lin, Xiangqian	WeCT7-01.10	17
Liang, Zilu	FrDT16-06.3	105	Lin, Yi-Chen	ThDT3-08.1	50
Liao, Amy	ThAT13.6	36	Lin, Yida	ThDT3-03.1	49
Liao, Hongen	ThDT13-04.1	63	Lin, Yuan-Hsiang	SaBT14.6	117
	SaBT16.1	117	Lin, Yu-Chen	SaBT14.6	117
Liao, Justin	FrDT2-06.2	86	Lin, Zhiping	WeBT14.1	7
Liao, Zhuxiu	SaBT16.1	117		WeCT4-04.2	13
Liau, Ian	ThDT3-01.1	49	Lin, Zhirong	WeCT5-01.6	14
Libatique, Nathaniel Joseph	ThDT16-06.1	66	Linares, Pedro	ThBT4.6	38
Libedinsky, Camilo	ThBT8.3	39	Lindholm, Harri	WeBT11.2	6
	ThBT8.4	40		WeBT11.3	6
Libsch, Frank	FrDT16-06.6	105	Ling, Chen	WeBT14.1	7
Lie, Donald Yu-Chun	WeCT4-04.5	14	Ling, Huawei	SaBT8.4	114
Liebeskind, David S.	FrDT2-01.1	85	Ling, Steve	ThAT18.5	37
	FrDT10-14.2	97		ThDT18-01.5	68
Liew, Siaw-Hong	FrDT1-02.1	84	Lingurar, Marius George	WeBT2.3	C
Lightbody, Gordon	SaAT17.6	112		WeBT2.7	5
Lih, Eugene	ThDT15-05.1	65		WeBT2.8	5
Lim, Chang-Sung	ThDT12-08.4	62	Link, Jason	WeCT3-03.4	12
Lim, Choon Guan	WeCT1-02.1	9	Lioe, Dexing	FrDT5-07.3	91
Lim, Dohyung	ThDT9-10.7	58	Lisanby, Sarah	WeCT12-04.2	26
Lim, Dongjun	FrDT4-06.4	89	List, Julia	WeCT10-03.9	23
Lim, Einly	WeCT11-02.3	23	Liu, Bingchuan	ThCT9.6	43
Lim, Hyung Soo	ThDT13-01.1	63	Liu, Chang-Chia	WeCT9-02.2	20
Lim, Hyunjun	FrDT18-02.1	107		SaAT14.5	111
	FrDT18-05.3	107	Liu, Changchun	WeCT11-03.6	24
	FrDT18-09.1	108	Liu, Chun	FrDT11-04.1	98

Liu, Congcong	ThAT17.1	37	Lomonaco, Tommaso	FrCT10.2	82
Liu, Dongquan	ThCT15.1	45	Long, Mian	FrAT6.3	71
Liu, Fanghua	WeCT10-03.4	23	Long, Zhiying	ThBT1.3	38
Liu, Fu-Long	WeCT12-02.16	25		ThDT18-02.9	69
Liu, Guan-Zheng	FrBT10.4	77	Longfei, Xiong	ThDT17-02.4	67
Liu, Guitong	FrDT17-03.2	106	Lønningdal, Torill	FrBT15.4	78
Liu, Hao	WeCT7-01.9	17	Looi, Irene	ThDT18-01.6	68
	ThBT14.4	41	Looi, Thomas	SaCT5.2	119
Liu, Ho-Ling	FrAT18.3	74	Loópez-Beniítez, Miguel	ThDT4-02.3	51
Liu, Hon-Man	SaAT18.2	112	López Noriega, Carlos	WeCT12-02.11	25
Liu, Hua	ThDT6-03.1	53	López Zapata, Erwin Daniel	WeCT7-02.1	17
Liu, Huiying	ThDT8-01.6	55		WeCT7-06.1	18
	FrAT14.2	73	Lopez, Jerry	WeCT4-04.5	14
Liu, Jia	ThAT11.2	35	López-Larraz, Eduardo	ThAT8.6	35
	ThCT8.3	43		ThDT8-02.6	56
	FrDT1-01.2	84		FrAT1.1	70
Liu, Jiang	WeCT3-01.1	11		FrAT7.6	72
	WeCT3-03.2	12	Lopez-Perez, Laura	FrDT10-08.1	97
Liu, Jiankun	ThDT15-08.2	65	Lorusso, Maria Luisa	WeCT10-03.5	23
Liu, Jing	ThDT1-02.3	46	Louie, Sara	ThCT12.4	44
	FrAT5.2	71		ThCT12.6	44
Liu, John	WeBT13.5	7	Lovell, Nigel H.	WeCT9-04.2	21
Liu, Jun	FrDT13-01.1	100		WeCT11-02.3	23
	FrDT13-01.2	100		ThDT11-02.4	60
Liu, Juntao	WeAT4.5	1		FrCT11.4	82
	ThDT18-02.5	69		SaBT11.4	116
Liu, Lei	ThCT9.4	43	Low, Cheng Yee	WeBT12.2	7
	FrCT14.3	83		WeCT7-01.14	17
Liu, Min-Yin	SaAT18.2	112	Low, Ris	ThDT15-07.1	65
Liu, Na	FrDT5-01.5	90	Low, Yin Fen	FrDT1-02.1	84
Liu, Rong	WeCT7-01.10	17	Lowery, Arthur James	WeAT9.2	2
Liu, Shing-Hong	FrDT18-06.4	108	Loza, Carlos	SaBT18.1	118
Liu, Shuang	WeCT8-02.4	19	Lu, Bochao	ThBT6.1	39
	WeCT8-02.5	19	Lu, Chih-Cheng	ThDT12-04.1	62
	ThDT1-01.1	46	Lu, Hengfa	FrBT3.5	75
Liu, Siyu	WeCT14-07.3	29		FrDT3-04.1	87
	SaBT2.2	112	Lu, Huimin	ThCT14.1	45
Liu, Siyuan	SaAT16.3	111	Lu, Huiyang	ThDT1-03.2	46
Liu, TingWei	WeAT7.4	2		SaCT4.5	119
Liu, Tongtong	WeCT3-01.6	12	Lu, JianChao	WeCT5-04.1	15
Liu, Xia	WeCT3-02.5	12	Lu, Lin	WeCT8-03.1	19
Liu, Xin	SaBT2.3	112	Lu, Minhua	FrDT4-02.3	89
Liu, Xinyu	ThDT18-02.8	69	Lu, Na	WeCT6-05.2	16
Liu, Xu	ThCT9.4	43	Lu, Nanshu	SaBT5.1	113
Liu, Xueliang	ThBT5.3	39	Lu, Pengfei	FrCT4.3	80
Liu, Xueyu	ThDT1-04.8	47	Lü, Shouqin	FrAT6.3	71
Liu, Yan	ThDT1-03.6	47	Lu, Weide	SaBT13.1	116
	FrAT8.2	72	Lü, Xiaoying	WeBT8.3	6
Liu, Yi-Hung	ThDT7-01.7	54		WeCT1-01.1	8
Liu, Yuhang	WeCT4-01.3	13		WeCT4-02.3	13
Liu, Yunsong	FrDT3-04.2	87		ThCT13.3	45
	FrDT3-08.1	88		ThDT8-01.9	56
Liu, Zaiyi	WeCT3-02.5	12	Lu, YangTing	FrDT17-03.2	106
Liu, Zhenyu	WeCT3-02.5	12	Lu, Yasong	ThDT11-03.1	61
	ThAT14.4	36	Lu, Yue	WeAT13.1	4
Liu, Zhihui	ThDT18-02.5	69	Lu, Zhongkang	WeBT14.1	7
Liu, Zhiwen	WeBT14.5	7	Lu, Zuhong	WeCT6-05.2	16
	ThDT11-01.6	60		FrAT6.1	C
Liu, Zhonghui	FrDT5-07.3	91		FrAT6.4	71
Liu, Zi-chuan	ThBT14.2	41	Lubecke, Victor	FrDT14-03.1	103
Liu., Quanjun	FrAT6.2	71	Lucini, Daniela	FrAT11.1	73
Llumiguano, Carlos	FrCT5.2	80	Luengo-Oroz, Miguel Angel	ThDT1-03.5	47
Lo Presti, Daniela	SaCT4.1	118	Luepschen, Henning	FrCT8.1	81
Lo, Po Wen	ThAT18.6	37	Luff, Paul	WeCT10-03.2	22
	ThBT4.4	38	Lugadilu, Brian Ingasia	WeBT14.6	8
Lochner, Donna R.	ThAT12.1	36	Lunner, Thomas	SaBT4.5	113
Loertscher, Emanuel	FrDT16-06.6	105	Luo, Ailing	ThAT8.3	34
Logier, Regis	ThBT17.5	42		ThDT1-02.5	46
Lohia, Pranay	WeCT10-01.2	21		FrBT10.1	77
Lohitnavy, Manupat	ThDT11-02.1	60	Luo, Andrew	SaBT12.3	116
	ThDT11-03.1	61	Luo, Cunjin	FrCT11.5	82
	ThDT11-03.2	61		SaBT13.5	116
Lohitnavy, Omrat	ThDT11-02.1	60	Luo, Jie	ThCT10.4	44
	ThDT11-03.1	61		FrDT8-01.1	93
	ThDT11-03.2	61		FrDT8-09.4	94
Lohitvisate, Wanrudee	FrBT2.5	75	luo, Jinping	WeAT4.5	1
Lohmann, Chris	SaBT16.2	117	Luo, Lincong	SaBT7.3	114
Loiselle, Denis	WeCT11-02.2	23	Luo, Ying	ThAT11.2	35
Lombardi, Prospero	ThAT5.3	34	Luo, Yu-Xi	WeCT15-12.1	30
	ThBT11.1	40	Luu, Trieu Phat	ThBT8.1	39
Lommel, Moritz	ThDT15-08.1	65	Lv, Wenlong	WeCT11-04.6	24

Lv, Zhen	WeCT12-02.16	25
Ly, Quynh Tran	FrAT7.1	71
	FrAT7.2	71
Lynch, James	ThDT10-04.6	60
Lynn, William David	FrDT16-03.2	105
Lyu, Mengye	FrBT3.2	75
Lyu, Qing	FrAT9.6	72
Lyu, Xingzheng	WeCT3-03.5	12

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M B, Srinivas	SaAT5.2	109
M, Ganeshkumar	FrAT1.2	70
M. P. R., Sai Kiran	ThDT7-01.5	54
Ma, Chenming	FrDT8-09.4	94
Ma, He	WeCT2-02.3	11
	SaAT14.3	111
Ma, Heather Ting	WeCT2-01.7	10
	ThAT11.6	36
	FrBT8.5	76
	FrDT16-06.7	106
Ma, Jianjia	ThDT4-01.2	50
Ma, Jingfei	WeCT14-05.1	28
Ma, Joohyeong	FrDT9-04.1	96
Ma, Junwei	FrCT8.6	81
Ma, Lei	FrBT2.3	75
Ma, Lin	FrBT9.5	77
Ma, Samantha J.	FrDT2-01.1	85
	FrDT10-14.2	97
Ma, Weijian	ThDT7-02.3	55
Ma, Xinxin	SaBT13.1	116
Ma, Yingnan	WeCT4-01.2	13
	ThDT4-02.9	51
Ma, Zhenqiang	ThCT5.1	42
Maaroomashat, Mohammadebrahim	ThDT7-01.4	54
Maaß, Marco	WeAT8.2	2
Maayan, Osher	WeCT2-01.4	10
Mabuchi, Kunihiko	WeCT6-02.1	15
	ThAT6.4	34
Macedo, Milton	FrCT15.4	83
Machado, Gonçalo	FrCT15.4	83
Machireddy, Archana	WeCT4-03.2	13
Mackey, Sean	WeCT2-01.2	10
	ThDT14-10.4	64
MacPherson, Emma	ThAT2.1	C
	ThAT2.1	33
Madhushri, Priyanka	ThDT4-03.3	51
Madin, Owen	WeCT3-03.4	12
Maeda, Yuka	WeCT15-05.1	29
Maehara, Taketoshi	ThDT12-05.3	62
Maetzler, Walter	FrDT8-06.2	94
Magatani, Kazushige	FrDT9-04.3	96
	FrDT9-04.4	96
Maggi, Davide	ThAT10.4	35
Maggioni, Eleonora	ThDT17-04.2	67
Magjarevic, Ratko	FrDT3-01.1	87
Maglione, Anton Giulio	ThDT8-01.11	56
	FrBT1.6	74
	SaCT9.1	119
Magnotta, Vincent Alfonso	FrBT14.2	78
Mahadevappa, Manjunatha	WeCT9-01.12	20
Mahajan, Lalit	FrCT15.5	83
Mahapatra, Arindam Gajendra	FrDT18-06.2	108
Maharatna, Koushik	ThDT8-01.3	55
Maharbiz, Michel	WeBT9.2	6
	WeCT4-05.2	14
	WeCT5-04.6	15
	ThAT13.3	36
	ThAT13.6	36
	ThBT6.1	39
Maharjan, Bikendra	ThDT15-09.2	65
Maher, Kevin	ThDT10-01.1	58
Maheshwari, Vaibhav	ThDT11-03.4	61
Mahmood, Amama	WeCT8-03.2	19
Mahmoodi, Maryam	FrAT1.6	70
Mahmoudi, Babak	ThCT9.1	43
	ThCT9.5	43
Maier, Mathias	SaBT16.2	117
Mainardi, Luca	WeCT3-01.5	12
	ThAT17.3	37

Mainero, Caterina	FrAT3.5	70
Maino, Nicholas	ThBT12.4	41
	SaBT11.5	116
	FrBT17.4	79
Maitra, Diptasree	WeAT4.1	1
Maity, Shovan	ThDT11-01.4	60
Majawadia, Avni	WeBT13.6	7
Majd, Sheereen	ThAT6.1	34
	ThBT14.5	41
	FrCT10.4	82
Majolo, Mariano	WeCT1-01.3	8
Makarov, Sergey	WeCT12-02.13	25
	WeCT12-04.1	26
	WeCT14-01.5	27
	ThAT12.6	36
	ThBT12.1	41
	ThBT12.3	41
	ThCT12.4	44
	ThCT12.6	44
Makary, Meena M.	SaBT8.2	114
Makeyev, Oleksandr	WeCT5-03.4	15
	SaBT5.5	114
	FrBT2.5	75
Makhanov, Stanislav	WeCT5-03.2	15
Makikawa, Masaaki	SaAT1.6	109
Makino, Shoji	FrAT1.6	70
Makki Abadi, Bahador	FrAT11.1	73
Malacarne, Mara	ThDT8-01.11	56
Malerba, Paolo	ThAT2.4	33
Maleski, Alexander	ThCT15.2	45
Malhotra, Atul	ThDT17-06.5	68
Malik, Aamir Saeed	ThBT13.4	41
Malik, Avinash	ThDT9-05.1	57
Mallipeddi, Rammohan	ThDT9-01.5	57
Maloney, Venda Porter	WeCT15-14.1	30
Malouf, Gordon Joseph	ThAT10.4	35
Malpassi, Davide	FrDT17-02.2	106
Malvestio, Irene	FrBT11.5	77
Mamori, Hiroya	WeBT4.6	5
Mamun, Khandaker	ThDT14-11.2	65
Managuli, Ravi	FrAT2.1	C
	FrCT2.2	80
	FrDT3-03.2	87
Manchanda, Rohit	ThDT11-01.4	60
Manchester, Ian	ThBT7.1	39
Mandana, K M	SaCT10.4	120
	SaCT18.3	121
	SaBT18.2	118
Maneewongvatana, Suthathip	ThBT13.3	41
Mangalore, Ashwin	FrDT17-08.3	107
Maniamma, Jisha	ThDT8-01.2	55
Manjeri Keloth, Sana	WeCT7-01.5	17
Manodara Acharige, Nisal	ThDT3-09.1	50
Manohar, Nivedh	WeCT10-01.2	21
Mansfield, Avril	FrCT15.4	83
Manso, André	WeBT2.8	5
Mansoor, Awais	ThDT18-01.6	68
Mansor, Wahidah	SaCT4.3	119
Manti, Mariangela	ThDT1-03.1	46
Mantilla, Juan	WeAT7.2	2
Mantzavinou, Aikaterini	ThAT17.4	37
Manzoni, Cecilia	FrAT6.3	71
Mao, Debin	WeAT10.3	3
Mao, Min	ThDT18-02.9	69
Mao, Nini	WeCT2-01.7	10
Mao, Shuai	FrBT8.5	76
	ThAT10.5	35
Mao, Zijing	ThBT18.2	42
	WeCT15-08.2	30
Marcellinus, Aroli	FrAT17.2	74
Marchegiani, Enrico	ThDT2-04.1	48
Marchena, Miquel	ThDT10-03.6	59
Marchetti, Fulvio	WeBT3.3	5
Marcu, Laura	ThCT6.3	43
Mardhiyah, Ainaaul	FrDT15-01.3	103
Marega Pinhel, Marcelo	WeCT5-04.8	15
Marescaux, Jacques	SaCT12.3	120
	ThBT8.2	39
Marghi, Yeganeh M.	WeCT3-03.4	12
Margolin, Adam	SaBT3.1	113
Marias, Kostas	WeCT12-03.4	26

Maridaki, Anna	WeCT12-03.4	26	Matsuse, Hiroo	ThBT7.4	39
Marjaninejad, Ali	WeCT8-02.2	19	Mattei, Alessia	WeCT4-04.4	14
Marjanovic, Nicholas	FrCT5.5	80	Matthew, Robert, Peter	ThBT7.2	39
	FrDT16-06.11	106	Mattia, Donatella	WeCT2-01.14	10
	SaAT5.4	109		SaAT17.2	111
Markey, Mia	FrDT13-01.1	100		SaAT17.5	112
	FrDT13-01.2	100		SaBT17.1	117
Marling, Cindy	ThDT18-01.9	69		SaBT17.3	117
Marmor, Meir	ThAT13.3	36	Mattos, Leonardo	ThDT8-01.8	56
Marque, Catherine	ThDT18-02.12	69		SaBT12.2	116
Marquez, Juan S.	WeCT1-01.4	8	Mauger, Charlène Alice	ThDT3-01.3	49
	FrDT16-04.1	105	Mayor Torres, Juan Manuel	WeCT1-03.3	9
Marri, Kiran	FrBT17.4	79		FrDT1-02.8	85
Mars, Monica	WeCT5-02.3	14	Mazumder, Oishee	FrAT7.3	71
Marshall, Randolph S	FrDT2-06.2	86	Mazur-Milecka, Magdalena	SaAT3.3	109
Mart, Christopher	FrBT14.2	78	McAdams, Eric	WeCT5-02.2	14
Martel, Adrien	WeCT8-02.12	19	McClelland, Verity M.	ThDT17-03.1	67
Martens, Luc	FrCT4.2	80	McConnell, Stephen	SaBT3.6	113
Martenson, Drew	SaBT12.3	116	McCullagh, Paul	WeCT5-04.2	15
Martí, Robert	FrAT14.1	73		FrDT4-04.1	89
Martin, Bernard	FrDT12-03.6	99	McDannold, Nathan	ThBT13.2	41
Martindale, Christine F	WeCT10-03.9	23	McDermott, Hugh	ThDT13-10.2	63
Martinez Santamaria, Jaime Andres	WeCT5-02.2	14	McElmurray, Lindsay	WeCT4-04.3	14
Martinez, Lucia	ThDT12-05.1	62	McEaney, David	FrDT16-03.2	105
Martinez-Gomez, Cristina	WeCT5-03.3	15	McEwan, Alistair	WeCT2-01.10	10
Martinez-Heras, Jose Antonio	SaCT13.2	121		WeCT4-03.1	13
Martinho, Miguel	FrCT15.4	83		WeCT10-02.5	22
Martini, Chiara	ThAT10.4	35	McFarlane, Nicole	WeBT4.6	5
Martins, Nelson	FrBT2.4	75	McHugh, Peter	WeCT8-01.6	18
Martinsen, Ørjan G	WeAT16.2	4		ThAT12.3	36
	ThBT4.2	38	McIntyre, Sarah	ThCT13.1	44
	SaBT1.1	112	Mckeage, James William	WeBT13.3	7
Martis, Roshan Joy	WeCT1-03.1	9	McKeown, Martin	ThCT9.2	43
Martucci, Katherine	WeCT2-01.2	10	McKhann, Guy	WeCT8-01.2	18
	ThDT14-10.4	64		ThAT8.1	34
Maruyama, Shuki	WeCT13-09.1	27	McLaughlin, James	WeCT5-02.4	14
Marzbani, Hengameh	WeCT9-03.5	21		ThBT4.6	38
Marzbanrad, Faezeh	ThCT17.1	45	McMahon, Daniel	WeCT12-04.3	26
Marzilli, Mario	FrCT10.2	82	McMahon, Richard	WeCT11-02.1	23
Masamune, Ken	WeCT16-09.2	31	McManis, Mark	WeCT5-01.3	14
Mascarell Llorens, Ignacio	FrBT1.6	74	McMillan, Lachlan	WeAT12.4	3
Masciullo, Marcella	SaBT17.3	117	Md Ali, Sawal Hamid	FrAT17.4	74
Maselli, Martina	WeCT7-01.1	16	Means, Shawn	ThDT11-01.3	60
	WeCT7-01.2	17	Medved, Dennis	WeAT10.1	2
	SaCT4.3	119	Meechai, Asawin	FrCT6.4	81
Mashford, Benjamin Scott	ThAT8.2	34	Meena, Yogesh Kumar	WeCT7-01.4	17
Maskani Filali, Mohamed	WeCT1-04.4	9	Meghelli, Mounir	FrDT16-06.6	105
Masotti, Leigh	SaCT5.2	119	Mehri Dehnavi, Alireza	WeCT14-02.3	28
Massaroni, Carlo	WeCT4-04.4	14	Mehta, Ashesh	ThAT8.1	34
	WeCT5-04.10	15	Meier, Christophe	SaCT4.2	118
	SaCT4.1	118	Meier, Jens	WeAT7.5	2
	SaCT12.2	120	Mejía Ávila, Mayra	ThDT17-01.4	67
Massey, Jackson White	ThCT12.5	44	Melanson, Ed	FrCT5.6	80
Mastroianni, Timothy	ThDT10-05.2	60	Memedi, Mevludin	WeAT12.2	3
	SaCT13.3	121	Menard, Frederic	ThAT6.2	34
Masugi, Yohei	WeCT9-02.3	21	Mendelevitch, Ofer	FrCT10.6	82
Masuyama, Yuto	FrDT12-02.1	99	Mendes, Diana	ThDT10-04.4	60
Mat Ariffin, Suriani	SaCT12.4	121	Mendes, Luis	ThDT17-01.5	67
Mata Miranda, Mónica Maribel	FrCT6.1	81	Mendes, Renata	SaBT10.4	115
Mateos-Toledo, Heidegger	ThDT17-01.4	67	Mendis, Dulini	ThAT8.2	34
Mathew, Bobby	FrCT6.6	81	Meng, Ellis	ThAT13.1	36
Matsubara, Sigehito	WeCT8-03.3	19		FrDT7-06.2	93
Matsuda, Akira	FrDT7-01.1	92	Meng, Jianjun	ThDT7-01.3	54
Matsuda, Kento	FrDT2-01.2	86	Meng, Max Q.-H.	ThAT18.6	37
Matsuda, Tetsuya	ThCT10.3	44		ThBT4.4	38
	FrCT11.1	82		FrAT14.5	73
	FrDT10-13.1	97	Mengarelli, Alessandro	FrBT17.5	79
	FrDT10-15.1	97	Menon, Samir	SaAT16.2	111
Matsui, Takemi	WeCT11-03.3	24	Merchant, Fatima	FrDT13-01.2	100
Matsuki, Yoshihiro	FrDT14-01.1	102	Meriaudeau, Fabrice	WeCT12-03.4	26
Matsukuma, Takeshi	FrBT4.2	75		ThDT17-06.5	68
Matsumoto, Kana	ThDT9-04.1	57		FrAT14.1	73
	ThDT9-10.4	58	Merillon, Jean Paul	WeCT11-02.4	23
	FrDT14-01.6	102	Merlet, Isabelle	ThCT18.3	46
Matsumoto, Keiji	FrDT16-06.6	105		ThCT18.4	46
Matsumoto, Nozomu	WeCT16-03.4	31	Merola, Maria Consiglia	ThDT16-07.1	66
Matsumoto, Riki	FrDT17-08.3	107	Meroni, Davide	WeCT12-02.8	25
Matsunaga, Daichi	FrCT4.4	80	Mersky, Barry	WeCT15-02.3	29
Matsuno, Maka	ThDT10-01.2	58	Mertes, Gert	ThDT10-05.3	60
Matsuo, Masahiro	FrDT10-08.2	97		SaCT10.5	120
	FrDT14-03.3	103	Mertins, Alfred	WeAT8.2	2

Merwa, Robert	WeAT7.5	2	Miyasaka, Kiyoyuki	SaBT15.1	117
Mesgarani, Nima	ThAT8.1	34	Miyata, Shogo	FrDT6-05.1	91
Messerotti Benvenuti, Simone	FrAT17.3	74	Miyazaki, Daisuke	FrDT5-06.2	91
Mestha, Lalit, K.	ThCT11.1	CC	Miyazaki, Fumio	WeCT7-01.13	17
	FrDT17-08.2	107	Miyazako, Hiroki	WeCT6-02.1	15
Mestre, Tiago	FrBT10.6	77	Miyoshi, Tomomitsu	ThAT9.4	35
Metwally, Ahmed	SaBT13.4	116	Mizobuchi, Fumiya	WeCT16-09.1	31
Meyer, Pablo	FrDT4-02.3	89	Mizutani, Koichi	WeCT15-05.1	29
Meyers, Cole	WeCT3-03.4	12	Mizzi, Anabelle	SaAT3.2	109
Meynier, Cyril	FrAT2.4	70	Mizzi, Stephen	SaAT3.2	109
Mhedhbi, Imen	ThDT17-04.4	68	Mo, Lingfei	FrDT14-03.5	103
Miao, Fen	WeCT10-01.3	22	Mochiyama, Hiromi	FrBT5.4	75
	ThBT5.3	39	Modica, Enrica	ThDT8-01.11	56
Miao, Xin	FrDT2-06.9	86		FrBT1.6	74
Micera, Silvestro	ThDT6-03.1	53		SaCT9.1	119
Michalis, Lampros	WeCT2-02.11	11	Moeller, Steen	WeCT14-01.4	27
	WeCT11-04.4	24	Moghadamfalahi, Mohammad	FrAT1.3	70
Michel, Bruno	FrDT16-06.6	105		FrAT1.4	70
Miele, Frank	ThDT10-03.3	59	Mohamad Suhaimi, Fatanah	SaCT12.4	121
Mielke, Matthias	ThDT3-05.2	49	Mohamed Ameen Mashood, M.A.H.	ThDT17-06.5	68
Mieloszyk, Rebecca	WeAT15.6	4	Mohamed, Atef	WeCT5-04.5	15
	WeBT15.3	8	Mohan, Anand	WeAT9.2	2
	ThDT10-03.2	59	Mohd Radzol, Afaf Rozan	ThDT18-01.6	68
Miesenberger, Klaus	WeCT10-02.7	22	Mohebbi, Ali	ThDT18-01.11	69
Mihaylova, Lyudmila	ThDT8-02.11	57	Mohiuddin, Imran	SaBT15.6	117
Mikami, Sadayoshi	SaAT7.5	110	Mohr, Kieran	SaAT17.1	111
Mikami, Tsuyoshi	FrDT3-02.4	87	Mohseni Salehi, Seyed Sadegh	FrAT1.3	70
Miki, Norihisa	ThAT4.3	33		FrAT1.4	70
	ThAT13.2	36	Mokhtary, Marzieh	WeCT14-02.1	27
Miki, Yuki	FrCT18.2	84		WeCT14-02.3	28
Miki, Yuma	WeAT14.2	4		SaCT2.5	118
Mikkonen, Tommi	FrBT9.2	77	Molaei, Somayeh	WeCT3-03.3	12
Miklody, Daniel	FrCT14.2	83		ThCT18.6	46
Milej, Daniel	WeCT14-07.2	28	Molina, Rene	ThDT7-02.2	55
Milenkovic, Aleksandar	ThDT4-03.3	51		ThDT9-10.1	58
Milián Ccopa, Leonardo Paul	WeCT7-07.2	18		ThDT18-01.4	68
Miller, Aaron	FrDT4-06.1	89		FrDT7-04.3	93
Miller, Karla	WeCT2-01.4	10	Molinari, Marco	SaBT17.3	117
Miller, Michele	WeCT10-01.6	22	Mollah, A. Shahab	ThAT2.4	33
Mills, Kelly	WeCT9-02.2	20	Momose, Keiko	FrDT18-05.1	107
	SaAT14.5	111	Mondal, Arindam	ThDT4-01.3	50
Mills, Kerry R.	ThDT17-03.1	67	Mondal, Ashok	ThDT18-02.13	69
Milne, Andrew	WeBT1.1	4	Monfaredi, Reza	SaBT12.6	116
Min, Cheol-Hong	WeBT12.3	7	Montagu, Diana	WeBT15.3	8
	ThDT12-01.1	61	Montalibet, Amalric	WeCT5-02.2	14
Min, Gihyeon	ThDT2-07.2	48	Montano, Giuseppe	SaCT13.2	121
Min, Hye-kyoung	ThDT5-02.3	52	Montesano, Luis	ThCT8.2	43
Min, Jung-Joon	ThBT2.1	C	Montgomery, Dean	SaBT1.3	112
	ThBT2.2	38	Montgomery, Erwin	FrBT9.6	77
Min, Jun-Hong	ThDT7-01.10	54	Montgomery, Johanna	FrDT7-07.2	93
Min, Kyou Sik	FrDT7-06.3	93	Montin, Eros	WeCT3-01.5	12
Min, Se Dong	FrDT5-04.2	90	Moon, Hyeongcheol	FrDT7-07.1	93
	FrDT16-01.2	104	Moon, Jeong Wook	FrDT9-04.7	96
Minamino-Muta, Eri	WeCT10-03.1	22	Moon, Jin-hee	ThDT11-09.4	61
Ming, Dong	WeCT8-02.4	19		ThDT11-09.5	61
	WeCT8-02.5	19		FrDT16-03.4	105
	ThDT1-01.1	46	Moon, Jinseok	ThDT12-08.4	62
	ThDT7-01.1	54	Moon, Jong Hoon	ThDT3-07.1	50
	ThDT8-01.4	55	Moon, Junhyung	ThDT4-02.2	50
Minhas, Atul Singh	ThDT4-02.3	51		SaCT4.4	119
Minjeong Son, Minjeong	FrDT6-02.3	91		WeCT8-02.3	19
Mino, Hiroyuki	FrDT9-03.6	95		FrDT16-02.1	105
	FrDT9-03.7	95	Moon, Sang-Hyub	WeCT15-09.1	30
	SaBT1.6	112	Moon, Youngjin	WeCT16-02.3	30
Minvielle, Ludovic	FrBT15.5	78		WeCT16-09.3	31
Miranda Pereira, Pietro	WeCT7-07.2	18		ThBT7.5	39
Miranda, Pedro Cavaleiro	ThAT12.2	36	Moore, Tom	FrCT6.2	81
Miranda-Escalada, Antonio	ThBT10.1	40	Moradi Birgani, Parmida	WeCT9-03.5	21
Mirbagheri, Mehdi	WeCT9-03.5	21	Morais, João	ThDT10-04.4	60
Miró, Rafael	WeCT2-02.4	11	Morales, Renee-Tyler Tan	FrBT6.2	76
	ThDT12-05.1	62	Morasuk, Thirawut	ThDT11-02.1	60
Mirshekarian, Sadegh	ThDT18-01.9	69	Moratal, David	WeCT1-02.4	9
Mirza, Khalid	WeBT4.5	5		WeCT2-01.1	10
Mitamura, Yoshinori	WeCT11-08.2	24		WeCT2-01.11	10
Mitobe, Kazutaka	FrDT12-01.2	99		WeCT12-01.4	25
Mitsuyoshi, Shunji	WeBT10.1	6		ThBT3.1	C
	WeBT10.5	6		ThBT3.5	38
	FrDT10-01.2	96		FrAT3.3	70
Miyahara, Maki	FrDT13-09.1	101		SaBT5.1	C
Miyajima, Miho	ThDT12-05.3	62		SaBT5.6	114
Miyamoto, Yoshitaka	ThBT6.4	39			

Morató, Sergio	WeCT2-02.4	11	Murase, Kenya	WeCT13-09.1	27
	ThDT12-05.1	62		WeCT14-06.1	28
Morcelles, Kaue Felipe	WeAT16.4	4		ThDT13-06.1	63
Moreau, Richard	ThDT1-03.3	46		ThDT14-10.2	64
Moreno, Wilfrido	WeCT11-04.1	24		FrDT2-01.5	86
Moretini, Micaela	ThDT10-02.3	59	Murase, Kimihiko	FrDT16-06.8	106
	FrAT17.2	74	Murata, Takuya	FrDT8-06.3	94
Morey, Gautam	ThBT11.3	40	Murayama, Nobuki	WeCT8-03.3	19
Mori, Masayuki	SaCT11.5	120	Murayama, Ryoko	FrDT13-09.1	101
Mori, Ryosuke	FrDT9-03.7	95	Murayama, Yuichi	FrAT7.5	72
Mori, Taketoshi	FrDT13-09.1	101		FrBT11.5	77
	FrDT14-01.9	102	Muromaki, Takao	WeCT7-05.2	18
	SaCT9.3	119	Murphy, Paige	WeCT8-04.2	20
Morie, Takamasa	ThDT18-01.13	69	Mustaqeem, Anam	FrCT10.4	82
Morikawa, Naoki	FrDT1-02.21	85	Muthuganapathy, Ramanathan	SaCT13.5	121
Morimoto, Takeshi	ThAT9.4	35	Muthuraman, Muthuraman	ThDT17-02.4	67
Morimoto, Tania	WeBT2.7	5	Mutsvangwa, Tinashe Ernest Muzvidzwa	WeBT14.6	8
Morimoto, Yuji	WeBT10.1	C		ThAT7.3	34
Morita, Mitsuki	ThCT10.3	44		ThAT7.6	34
Moriya, Hiroki	SaBT8.1	114		ThBT3.1	38
Morley, John William	WeCT9-04.2	21		FrDT15-10.1	104
Mortezapouraghdam, Zeinab	ThCT18.2	45	Myers, Jonathan	SaBT10.4	115
	ThDT18-02.1	69	Myers, Julianne	WeCT4-03.2	13
Morup, Morten	ThDT18-01.11	69	Myoung, Hyoun Seok	FrDT1-02.22	85
Motin, Mohammod Abdul	ThAT18.4	37		FrDT14-01.12	102
Mougeot, Mathilde	FrBT15.5	78			
Moussavi, Zahra	SaBT9.3	115			
Mrhcacz-Kersting, Natalie	ThAT8.4	35			
	ThDT17-02.5	67			
Mu, Zhou	ThAT14.4	36			
Muders, Thomas	FrCT8.1	81	Na Young, Kwon	FrDT6-08.4	92
Mudvari, Akrit	ThDT17-05.1	68	Na, Chohee	ThDT11-09.2	61
Muehlsteff, Jens	WeAT12.3	3	Na, Hyeon-su	SaCT12.1	120
Mueller, Matthias	WeCT9-01.3	20	Na, Kyuhwan	FrDT6-09.2	92
	ThBT9.1	40	Na, Se Hee	FrAT11.2	73
Muengtaweepongsa, Sombat	FrBT10.3	77	Na, Sungsoo	ThDT5-03.7	52
Mukaeda, Takayuki	WeCT7-01.8	17	Na, YoungCheol	FrDT12-05.9	100
Mukai, Toshiharu	FrDT5-02.4	90		SaCT12.6	121
	FrDT18-08.5	108	Nabar, Namita	ThDT16-07.1	66
Mukherjee, Ayan	ThDT17-01.3	67	Nabney, Ian T.	ThCT18.5	46
Mukkamala, Ramakrishna	ThAT11.1	C	Nadal, Jurandir	WeCT1-01.6	8
	ThBT11.5	40		FrDT17-08.10	107
	ThBT11.6	41	Nagamatsu, Yuiko	FrDT5-06.1	90
	ThCT11.1	C	Nagano, Hanatsu	WeCT7-01.16	17
	ThDT15-08.2	65	Nagaoka, Tomoaki	ThBT12.1	C
	FrDT17-08.2	107		ThBT12.2	41
Mulaffer, Lamana	FrCT17.4	84	Nagasaki, Takayuki	FrBT16.2	78
Mulansky, Mario	FrDT17-07.2	106	Nah, Jaewook	FrDT16-06.5	105
Mullen-Fortino, Margaret	FrCT15.3	83	Naik, Ganesh R	WeCT7-01.15	17
Muller, David	SaBT11.4	116		ThAT18.5	37
Müller, Klaus-Robert	WeAT1.4	1		ThDT8-01.3	55
	FrDT18-08.8	108		ThDT8-01.15	56
	SaCT8.4	119		FrAT7.1	71
Müller, Meinard	WeCT10-03.9	23		FrAT7.2	71
Müller-Felber, Wolfgang	ThBT7.6	39		SaBT9.6	115
Müller-Putz, Gernot	ThCT8.2	43	Naik, Sarif Kumar	ThAT10.3	35
Muma, Michael	WeAT11.2	3	Nair, Aiswaria	WeCT12-01.2	25
Mun, Hajun	FrDT4-01.4	88	Nair, Chaitanya Muralidharan	FrCT5.4	80
Mun, Jeffrey S.	FrDT14-02.3	102	Naito, Hisashi	ThDT12-02.1	62
Mun, Joung Hwan	ThDT11-09.3	61	Naito, Masahito	FrDT5-06.2	91
	ThDT16-02.1	66	Najafizadeh, Laleh	ThDT9-01.5	57
	FrDT10-04.1	96	Najarian, Kayvan	WeAT10.3	3
Mun, Se Yeon	FrDT13-05.1	101		WeCT3-03.3	12
Mun, Yang Ji	ThDT3-02.1	49		ThAT14.1	36
	ThDT3-04.1	49		ThCT18.6	46
	ThDT3-04.2	49		FrAT8.1	72
	ThDT3-04.3	49	Naka, Katerina	FrCT10.2	82
Mundahl, John	ThDT7-01.3	54	Nakagawa, Hidenori	ThDT10-01.2	58
Munia, Tamanna Tabassum Khan	ThDT4-03.5	51		ThDT12-09.1	63
	FrBT1.2	74		ThDT9-01.1	57
	SaBT14.1	116		FrDT18-01.2	107
Muppalla, RoopTeja	WeCT10-01.6	22		SaBT9.2	115
Murai, Akihiko	WeCT7-01.3	17	Nakaguchi, Toshiya	FrCT14.1	83
	ThAT18.2	37	Nakai, Tomoaki	FrDT2-01.2	86
Murakami, Mami	FrDT1-02.23	85	Nakajima, Kazuki	FrDT4-06.3	89
Muramatsu, Chisako	WeAT14.2	4	Nakamae, Kenta	FrBT2.3	75
	WeBT16.5	8	Nakamoto, Hiroyuki	FrDT16-03.5	105
			Nakamura, Hideo	FrDT10-17.1	98
			Nakamura, Jillian	FrDT16-01.1	104
			Nakamura, Kazuyuki	FrDT17-06.1	106
			Nakamura, Masahito	ThAT4.2	33

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Nakamura, Mitsuteru	WeBT10.5	6	Nelson, Marvin	WeBT2.3	5
	FrDT10-01.2	96		WeBT2.5	5
Nakamura, Ryota	FrAT4.5	71		WeBT2.6	5
	FrCT4.4	80		FrAT8.5	72
Nakamura, Saya	FrDT1-02.23	85	Neofytou, Marios	FrDT13-06.1	101
Nakamura, Tatsuo	WeCT16-09.1	31	Nerheim, Max	ThCT13.5	45
	FrCT14.5	83	Ness, Torbjørn V	WeCT8-01.5	18
Nakamura, Toru	FrCT18.1	84	Neubert, Jeremiah	SaBT14.1	116
Nakamura, Yukio	SaBT3.4	113	Neumann, Wiebke	FrCT3.6	80
Nakanishi, Hiroki	FrDT11-01.1	98	Nezamfar, Hooman	FrAT1.3	70
Nakanishi, Masaki	FrCT9.1	81		FrAT1.4	70
	FrDT1-02.21	85	Ng, Boon Poh	WeBT16.4	8
Nakano, Akimasa	FrDT17-06.1	106	Ng, Fu Siong	WeBT4.5	5
Nakano, Masayuki	ThDT2-05.2	48	Ng, Soon Huat	WeCT4-04.2	13
Nakano, Yukari	ThDT9-11.1	58	Ngamsirijit, Panasun	ThDT18-02.7	69
	ThDT9-11.2	58	Ngeo, Jimson	ThDT16-06.1	66
	FrDT7-09.1	93	Ngo, Lua	FrDT3-07.1	88
Nakao, Megumi	ThCT10.3	44	Nguyen, Bao	WeCT11-01.2	23
	FrDT10-13.1	97	Nguyen, Binh Kien	WeBT2.5	5
	FrDT10-15.1	97		FrAT8.5	72
Nakasono, Satoshi	FrDT6-06.1	91	Nguyen, Diep N.	SaBT18.3	118
Nakasuji, Hisa	FrCT14.5	83	Nguyen, Hung T.	WeCT1-04.1	9
Nakayama, Chikao	FrDT10-08.2	97		WeCT1-04.7	10
Nakazawa, Kimitaka	WeCT9-02.3	21		WeCT4-05.3	14
Nalam, Varun	SaBT7.2	114		WeCT15-01.2	29
Nallamothu, Brahmajee	WeCT3-03.3	12		ThAT18.5	37
Nam, Eunsuk	WeCT13-10.2	27		ThCT10.4	44
Nam, Gibaek	ThDT12-06.1	62		ThDT8-01.15	56
	FrDT18-01.1	107		ThDT10-05.5	60
Nam, Hyeong Soo	ThDT2-02.1	48		FrAT7.1	C
	ThDT2-02.2	48		FrAT7.1	71
	FrDT3-07.4	88		FrAT7.2	71
Nam, Hyosuk	FrDT18-01.1	107		FrBT10.1	C
Nam, Hyoung Ho	WeCT7-01.11	17		FrBT10.4	77
	FrDT16-06.10	106		SaBT10.1	C
Nam, Ki Chang	WeCT15-09.1	30		SaBT10.5	115
Nam, Kihyuk	ThDT4-03.6	51	Nguyen, Manh Thang	FrDT4-05.7	89
Nam, Sang-Seok	SaCT10.1	120	Nguyen, Minh Phuong	WeCT1-03.6	9
Nam, Seung Min	FrDT13-07.1	101	Nguyen, Tam	WeCT4-04.5	14
Nam, Woojin	SaCT13.4	121	Nguyen, Thanh Duc	ThDT9-02.1	57
Nam, Yoonkey	ThDT2-08.2	48	Nguyen, Thuong	WeCT4-03.5	13
	FrCT5.1	80	Nguyen, Tran	WeCT6-03.1	15
	FrDT7-07.3	93	Nguyen, Trung	FrDT15-04.1	103
Nam, Yunyoung	FrDT8-06.6	94	Nguyen, Tuan V.	SaBT10.5	115
	SaBT4.3	113	Nguyen-Dinh, An	FrAT2.4	70
Nambu, Masayuki	FrDT16-06.8	106	Ni, Pavel	ThDT14-05.1	64
Namkoong, Kak	ThDT5-01.3	51	Ni, Penfei	FrDT15-06.1	103
	FrAT5.1	CC	Ni, Rui	WeCT8-01.3	18
Napadow, Vitaly	FrAT11.5	73	Ni, Xie	ThDT4-02.9	51
Narasimhachar, Harikrishna	WeCT4-04.5	14	Ni, Yikun	ThBT6.3	39
Nardelli, Mimma	ThDT1-04.2	47	Ni, Yu-Ching	ThDT3-09.3	50
	ThDT1-04.9	47	Nick, Tyler	WeCT7-05.2	18
	FrBT18.1	79	Nicklaus, Krista	FrDT13-01.2	100
Naruki, Kazuki	FrCT14.5	83	Nie, Siqing	FrBT14.4	78
Naruse, Yasushi	WeCT9-01.2	20	Nie, Zedong	WeCT4-01.3	13
	FrDT8-01.3	94	Nielsen, Poul	WeBT13.3	7
Nasrollahhosseini, Seyed Hadi	ThDT4-03.10	51	Niikawa, Takuya	FrDT5-06.1	90
Nasser, Lamees	ThBT14.2	41	Nik Hashim, Nik Nur Wahidah	WeBT10.1	6
Nasseri, M. Ali	ThBT3.6	38	Nikolakopoulos, George	ThDT10-04.2	59
	SaBT16.2	117	Nilakantan, Aneesha	WeCT2-01.2	10
Nasserolelami, Bahman	SaAT17.1	111		ThDT14-10.4	64
Natarajan, Keerthana	ThDT15-08.2	65	Nilsson, Johan	WeAT10.1	2
Nathan, Viswam	ThCT5.5	43	Ning, Taikang	ThDT17-05.1	68
Naulaers, Gunnar	ThBT17.1	42	Ning, Zhenfei	FrCT6.2	81
	ThDT17-04.3	68	Nishi, Eri	FrDT5-06.1	90
Nava-Guerra, Leonardo	WeCT15-13.1	30	Nishida, Kentaro	ThAT9.4	35
Navapol, Kanchanaranya	WeCT14-01.3	27	Nishikawa, Atsushi	WeCT16-09.1	31
Navarro, Xavier	ThBT9.1	40		WeCT16-09.2	31
Naveh, Ariel	ThCT12.3	44		FrCT14.5	83
Nayak, C Gurudas	WeCT1-03.1	9	Nishikawa, Shigeru	FrDT5-02.4	90
Nayak, Krishna	ThAT15.4	37	Nishikawa, Takuya	SaBT15.5	117
	FrDT2-06.9	86	Nishimura, Yukio	ThDT8-02.6	56
Nayak, Rajarama	WeCT10-02.2	22	Nishino, Takashi	FrDT2-01.2	86
	WeCT10-02.6	22	Nishio, Mizuho	FrDT13-02.2	101
Nayak, Tapsya	ThAT10.5	35	Nishizawa, Yuji	WeCT16-09.1	31
Nayeri, Payam	WeCT11-01.2	23		FrCT14.5	83
Nazarpour, Kianoush	FrAT18.6	74	Niu, Chuanxin M.	WeCT8-04.1	20
Nedel, Luciana	WeCT4-02.1	13		FrBT7.1	CC
Negi, Shubham	WeCT15-01.3	29		FrBT7.2	76
	ThAT11.4	35	Niu, Haijun	ThDT18-02.2	69
Nejati, Mansour	ThAT14.1	36		FrDT17-03.2	106

Niwayama, Masatsugu	FrDT5-02.5	90	Ogata, Yuta	ThDT16-02.2	66
	FrDT5-07.3	91		FrDT8-07.2	94
	FrDT14-01.1	102	Ogawa, Hiroshi	SaBT8.6	115
	FrDT14-01.3	102	Ogawa, Mitsuhiro	ThDT12-02.1	62
N'Kaoua, Gilles	ThBT13.3	41		FrDT14-01.2	102
Noailly, Jérôme	ThDT11-02.3	60	Ogawa, Sayaka	FrDT14-03.3	103
Nobili, Lino	ThDT17-04.2	67	Ogawa, Takeshi	SaBT8.1	114
Nochino, Teruaki	FrDT9-03.3	95	Ogier, Augustin	WeBT14.2	7
Noda, Toshihiko	FrAT9.2	72	Ogihara, Naomichi	ThAT7.4	34
	FrDT4-01.1	88	Ogishi, Yudai	FrDT18-08.5	108
	FrDT7-09.1	93	Ogohara, Kazunori	WeBT16.5	8
	FrDT16-05.1	105	O'Grady, Gregory	WeCT4-04.3	14
Noda, Yuki	ThAT4.6	33		ThCT13.4	45
Noetscher, Gregory	WeCT12-04.1	26		ThDT17-02.2	67
	WeCT14-01.5	27		SaBT11.2	115
	ThBT12.1	41		SaBT11.3	116
	ThBT12.4	41	Oh Mi Young, Oh Mi Young	ThDT8-01.16	56
	ThCT12.4	44	Oh, Byungho	FrCT16.1	83
	ThCT12.6	44	Oh, Dong Yoon	ThDT12-07.4	62
	SaBT11.5	116	Oh, Dongryul	ThDT11-09.2	61
Nogawa, Masamichi	ThDT12-02.1	62	Oh, Eun Seol	WeCT6-03.4	15
Noghanian, Sima	WeCT5-03.1	15		WeCT13-08.1	27
Noguchi, Hiroshi	FrDT13-09.1	101	Oh, Gayeon	FrDT6-08.3	92
	FrDT14-01.9	102	Oh, Gyungseok Oh	WeCT14-04.2	28
Nogueira-Neto, Guilherme	FrDT17-08.7	107	Oh, Han-Byeol	ThCT10.2	44
Noh, Jeong Won	FrDT6-08.3	92	Oh, Jieun	FrDT3-09.1	88
Noh, Jiho	WeCT16-08.2	31	Oh, Jooyoung	FrAT11.2	73
Noh, Si Cheol	ThDT13-05.1	63		SaAT18.5	112
	FrDT12-05.4	100	Oh, Kyeong Taek	FrDT3-02.3	87
	FrDT12-05.5	100		FrDT18-02.1	107
Noh, Sumi	FrDT12-05.5	100	Oh, Min Tack	FrDT12-05.11	100
Nohama, Percy	FrDT15-01.3	103	Oh, Sang-Rok	WeBT9.3	6
	FrDT17-08.7	107	Oh, Seung Ha	FrDT7-06.3	93
Nolla-Colomer, Carme	ThDT2-04.1	48	Oh, Seung Jae	ThAT2.3	33
Nollo, Giandomenico	ThAT1.2	33	Oh, Seung Young	FrDT3-02.3	87
	FrBT18.3	79		FrDT18-09.1	108
Nolte, Guido	SaBT18.5	118	Oh, Sung Suk	FrDT3-05.1	87
Nomoto, Tomohiro	WeCT9-02.1	20	Oh, Sungjin	WeBT8.4	6
Nomura, Kohei	FrAT4.1	71		FrDT9-04.5	96
Nomura, Sadahiro	WeBT12.4	7		FrDT12-05.8	100
Nomura, Taishin	FrCT18.2	84	Oh, Ting Ting	FrAT14.3	73
Noponen, Kai	SaAT18.6	112	Oh, Tong In	WeAT4.6	1
Noriega González, Jesús Enmanuel	FrCT6.1	81		WeBT15.4	8
Nosrati, Hadis	ThBT15.1	41		WeCT14-03.3	28
Nourani, Mehrdad	FrAT18.2	74		WeCT14-03.4	28
Noya, Ferran	FrAT14.6	73		WeCT14-03.5	28
Ntziachristos, Vasilis	WeAT3.5	1		WeCT14-03.6	28
Nugent, Chris	WeCT5-04.2	15		ThBT15.4	42
	FrDT4-04.1	89		ThDT6-07.1	54
Nugues, Pierre	WeAT10.1	2		ThDT6-07.2	54
Numata, Tomohiro	SaCT11.2	120		ThDT14-11.1	65
	SaCT11.6	120		FrDT4-05.5	89
Nummenmaa, Aapo	ThAT12.6	36		FrDT6-13.1	92
	ThCT12.6	44		FrDT6-13.2	92
Nundy, Srijita	ThDT5-03.5	52	Oh, Wang-Yuhl	ThDT2-02.1	48
Nunes, Diogo	ThDT10-01.4	58		ThDT2-02.2	48
Nunes, Maria Cristina de Alencar	ThDT17-01.2	67	Oh, Yong-Seok	ThDT2-01.9	48
Núñez, Pablo	ThDT1-02.4	46	Ohk, Kyungeun	WeCT6-04.2	16
Nurse, Ewan	ThAT8.2	34	Ohki, Akiko	ThDT13-06.1	63
Nyberg, Tobias	ThDT2-05.3	48	Ohki, Takuya	FrDT11-06.2	98
Nyholm, Dag	WeAT12.2	3	Ohnishi, Hiro	WeCT7-05.2	18
			Ohsuga, Akihiko	SaAT13.3	110
			Ohta, Hidetoshi	FrAT4.5	71
			Ohta, Jun	FrAT9.2	72
				FrDT4-01.1	88
				FrDT7-09.1	93
				FrDT16-05.1	105
			Ohta, Makoto	WeCT11-04.3	24
				FrBT11.2	77
				FrBT11.3	77
			Ohta, Masahiro	FrAT4.2	71
			Ohta, Yasumi	FrAT9.2	72
			Ohuchi, Mikio	ThDT12-09.1	63
			Ohya, Jun	WeCT14-01.7	27
			Ohyashiki, Junko H.	FrDT11-06.2	98
			Oishi, Meeko	SaBT15.4	117
			Okada, Jun-ichi	SaAT11.1	110
			Okada, Kazunori	WeAT8.4	2

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O Leary, Gerard	ThDT1-02.1	46
Obata, Hiroki	WeCT9-02.3	21
Obeid, Rawad	WeBT2.8	5
Ober, Stephanie	ThBT11.5	40
Oberueber, Felix	WeCT9-01.1	20
Obiweluzor, Francis	ThDT15-09.2	65
Oblak, Ethan	WeCT5-01.3	14
O'Brien, Terence	SaCT13.5	121
Odagaki, Masato	FrDT5-01.4	90
O'Dea, Bridianne	WeBT12.5	7
Odo, Tsukasa	ThDT3-08.5	50
O'Donnell, Johanna	FrDT1-02.4	84
Oei, Ing	SaCT13.2	121
Ogata, Toru	WeCT7-01.6	17
	ThDT8-01.10	56

Okada, Shima	WeCT5-03.2	15
	FrDT9-03.3	95
	FrDT11-02.1	98
	FrDT13-11.1	101
	FrDT16-06.4	105
Okada, Yuki	FrDT16-06.4	105
Okamoto, Kazuya	FrDT13-02.2	101
	FrDT13-10.1	101
Okamura, Allison	WeBT2.7	5
Okawa, Haruki	ThDT18-01.7	68
O'Keefe, Johnny	WeCT2-01.12	10
	FrCT8.5	81
Okonogi, Rena	SaCT9.3	119
Okun, Michael	ThDT18-01.4	68
	SaBT18.1	118
Okutani, Chihiro	ThAT6.4	34
Olatunji Mumini, Omisore	SaBT16.4	117
Oldham, Kenn	ThCT18.6	46
O'Leary, Heather	WeCT1-03.3	9
	FrDT1-02.8	85
Oleksyuk, Vira	SaBT5.4	113
Olivares, Andy	ThDT11-02.3	60
Oliveira, Flavia M. G. S. A.	FrAT17.5	74
Olmo, Alberto	WeCT5-03.3	15
O'Mahony, Conor	FrCT6.2	81
	FrDT14-01.7	102
Omedes, Jason	ThCT8.2	43
Ometto, Giovanni	WeBT16.2	8
Omiya, Yasuhiro	WeBT10.2	6
	WeBT10.5	6
	FrDT10-01.2	96
Omoto, Masayuki	ThBT7.4	39
O'Muircheartaigh, Jonathan	WeBT2.5	5
	WeBT2.6	5
	FrAT8.5	72
Omure, Yu	FrDT10-09.1	97
Onda, Hiroyuki	FrDT13-11.1	101
Ong, Ee Ping	WeCT3-01.1	11
Ong, Jing Wen Ivy	ThDT8-01.6	55
Ono, Rei	FrDT16-03.5	105
Ono, Takuya	FrDT1-02.23	85
Onu, Charles Chijioke	ThBT17.4	42
Oosawa, Kouji	ThAT9.4	35
Ootaka, Hideo	FrDT16-03.5	105
Opri, Enrico	ThDT7-02.2	55
	ThDT9-10.1	58
	FrDT7-04.3	93
O'Reilly, Una-May	FrAT10.1	72
Orglmeister, Reinhold	SaBT1.5	112
Orphanidou, Christina	ThDT18-02.3	69
Ortiz Nieves, Marilu	ThDT13-07.1	63
Ortiz-Ramón, Rafael	WeCT2-01.1	10
Ortmanns, Maurits	WeCT9-01.8	20
	SaBT18.4	118
Oshiro, Osamu	FrBT5.3	75
Oshita, Kazushige	ThDT8-02.8	57
Ostadabbas, Sarah	FrAT18.2	74
O'Sullivan, James	ThAT8.1	34
O'Sullivan, Mark	ThBT17.3	42
	FrDT14-01.7	102
Otake, Satoshi	ThBT4.3	38
O'Toole, John M.	SaAT17.6	112
Otsuka, Seiya	FrDT14-01.2	102
Otton, James	SaBT11.4	116
Ou, Keng-Liang	ThDT9-01.3	57
Oudre, Laurent	ThDT1-03.1	46
Ouellette, Russell	FrAT3.5	70
Overeem, Sebastiaan	WeAT11.5	3
Owens Jr, William	WeCT2-02.5	11
Owens, Robert	ThCT15.2	45
Oyama, Nozomi	FrDT9-03.3	95
Ozawa, Motoki	ThAT9.4	35
Ozawa, Yuta	FrDT4-03.1	89
Ozilgen, Burak Arda	WeCT5-04.6	15
Ozturk, Musa	ThAT17.5	37
Ozturk, Yusuf	FrDT16-02.1	105

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P, Balamuralidhar	WeCT10-02.2	22
P, Rajalakshmi	ThBT14.1	41
	ThDT7-01.5	54
	SaBT14.3	116
Pabst, Oliver	ThBT4.2	38
Pacheco, Jesús	WeCT2-01.11	10
Pacheco, Kevin	WeCT8-02.9	19
Pachori, Ram Bilas	ThDT14-01.1	64
Pack, Daniel	ThAT10.5	35
Padasdao, Bryson	FrDT16-01.1	104
	FrDT16-05.3	105
Padhye, Nikhil	ThDT1-04.3	47
Pagani, Massimo	FrAT11.1	73
Pagès-Zamora, Alba	ThDT1-03.5	47
Pagin, Matteo	SaBT18.4	118
Pahk, Ki Joo	ThDT7-02.8	55
	FrDT9-03.8	95
	FrDT9-03.10	95
Paik, Sang-Min	WeCT6-05.6	16
Paiva, Rui Pedro	WeCT11-01.4	23
	ThDT17-01.5	67
Pal, Arpan	ThDT17-06.1	68
	SaCT10.4	120
	SaCT18.3	121
	SaCT18.6	121
Pal, Sharmistha	ThAT2.4	33
Palaniappan, Kannappan	WeCT2-02.9	11
Palaniswami, Marimuthu	ThAT18.4	37
	ThBT3.2	38
	FrBT18.4	79
	SaCT13.5	121
Palaniswami, Paari	ThBT3.2	38
Palar, Pramudita Satria	WeCT11-04.3	24
Palau, Francesc	SaCT2.6	118
Pallas, Rémi	SaAT5.1	109
Palma Setti, João	FrDT15-01.3	103
Palomba, Daniela	FrAT17.3	74
Pampouchidou, Anastasia	WeCT12-03.4	26
Pan, Gang	ThDT18-01.12	69
Pan, Janice	FrBT10.2	77
Pan, Yixin	FrBT7.2	76
Pan, Yongwei	WeCT9-01.13	20
Panayides, Andreas	FrDT13-06.1	101
	FrDT13-12.1	101
	FrDT13-12.2	101
Panda, Priyadarshini	WeAT10.2	2
Pandya, Shrikant	FrDT16-06.11	106
Panescu, Dorin	ThCT13.1	C
	ThCT13.2	45
	ThCT13.5	45
	ThCT13.6	45
	FrBT15.1	CC
	FrCT15.1	83
Panev, Stanislav	WeAT12.5	3
Pang, Fengqian	WeBT14.5	7
	ThDT11-01.6	60
Pani, Danilo	WeCT8-03.4	19
	ThBT9.1	40
Panigraphy, Ashok	WeBT2.3	5
Pänkäälä, Mikko	ThAT5.1	33
	ThAT5.2	34
Pant, Jeevan Kumar	WeCT5-02.5	14
	ThDT17-03.3	67
Pantazis, Dimitrios	WeCT2-01.8	10
Pantziaris, Marios	FrDT13-12.1	101
Panwar, Madhuri	WeCT7-01.15	17
	ThDT8-01.3	55
Papadopoulou, Théodore	FrCT8.4	81
Papadopoulou, Theofilos	FrCT10.2	82
Papafaklis, Michail	WeCT11-04.4	24
Papaloukas, Costas	SaAT13.1	110
Papapanagiotou, Vasileios	WeCT5-02.3	14
	WeCT10-03.7	23
Papini, Gabriele	WeAT11.5	3
Paradkar, Neeraj	WeAT11.1	3
	WeAT11.4	3
Paredes, Simao	ThDT10-04.4	60
	SaBT10.4	115
Paredes, Stephan	FrDT16-06.6	105

Pareek, Shrey	FrDT8-02.1	94	Park, Inkyu	ThDT5-04.5	53
	FrDT16-06.1	105		FrDT5-05.2	90
Park, Bong Joo	WeCT15-09.1	30	Park, Insoo	WeCT6-03.4	15
Park, Bo-yong	ThDT18-01.10	69		WeCT6-04.4	16
	FrDT2-03.1	86		WeCT6-05.4	16
	FrDT3-02.1	87		ThDT6-05.1	53
Park, Byullee	ThDT11-09.1	61		ThDT6-06.2	54
Park, Byungjun	FrDT3-07.3	88	Park, Jae Seong	ThDT6-07.1	54
Park, Chan Hee	WeCT7-05.1	18		ThDT6-07.2	54
	ThDT5-01.1	51		FrDT6-13.1	92
	ThDT6-08.1	54	Park, Jaeho	ThDT5-04.5	53
	ThDT15-09.2	65		FrDT5-05.2	90
	FrDT6-08.1	92	Park, Jaena	WeCT6-03.7	16
	FrDT6-08.2	92	Park, JaeSoon	FrDT14-01.8	102
Park, Chan Young	FrDT6-03.1	91	Park, Jaesub	FrAT11.2	73
Park, Chan Yuk	FrDT5-03.1	90	Park, Jaewon	FrDT5-07.4	91
Park, Chang Won	WeCT13-10.2	27	Park, JaeYeon	SaCT13.4	121
	WeCT13-11.1	27	Park, Jang-Yeon	FrDT2-04.2	86
	ThBT13.1	41	Park, Jea Sung	FrDT11-06.1	98
	ThDT5-02.3	52	Park, Jeong Hoan	FrDT9-03.4	95
	FrDT6-08.4	92	Park, Jeong Hwan	FrDT10-05.1	97
	FrDT12-05.12	100	Park, Ji Ho	WeCT6-03.7	16
	SaCT12.1	120	Park, Ji Su	ThDT16-08.3	66
Park, Chanki	FrDT1-02.16	85	Park, Jieun	ThDT3-08.2	50
	FrDT18-08.1	108		FrDT2-09.1	87
Park, Chanwon	ThDT16-01.1	66		FrDT16-06.5	105
Park, Chan-Yong	FrDT16-06.9	106		FrDT17-03.1	106
Park, Cheolsoo	ThDT4-02.8	51	Park, Jihoon	ThDT13-01.2	63
Park, CheonHo	ThDT5-04.1	53		ThDT14-11.2	65
	FrDT17-05.2	106	Park, Jihwan	FrDT8-06.6	94
Park, ChulWoo	FrDT12-05.6	100		SaBT4.3	113
Park, Chun Gwon	WeCT13-02.1	26	Park, Jikoon	FrDT15-08.3	104
Park, Dae Kwon	FrDT15-04.1	103		FrDT15-08.4	104
Park, Dajeong	ThDT15-04.2	65	Park, Jin Young	FrAT11.2	73
Park, Duk-In	FrDT6-09.1	92	Park, Jinil	FrDT2-04.2	86
Park, Edward J.	ThCT10.6	44	Park, JinoH	WeCT16-10.1	31
	ThDT4-01.4	50		ThDT9-07.1	57
Park, Eun Jin	ThDT2-01.5	47	Park, Jinsick	ThDT15-04.1	65
Park, Eun Young	FrDT6-01.1	91		FrDT17-01.2	106
	FrDT6-02.3	91	Park, Jinsoo	ThDT5-01.10	52
Park, Eunjeong	ThDT12-06.1	62	Park, Jisoo	ThDT2-01.10	48
	FrDT18-01.1	107	Park, Jisung	FrDT17-07.1	106
Park, Eun-Kyoung	FrDT7-06.4	93	Park, Jong Gwan	ThDT6-06.6	54
Park, Eunyong	ThDT14-06.1	64	Park, Jong Kuk	ThDT6-07.1	54
	FrCT16.2	83	Park, Jong Woong	FrDT7-07.6	93
Park, Geehoon	WeBT13.3	7		FrDT12-05.8	100
Park, Gilsoon	FrDT2-06.7	86	Park, Jonghyun	ThBT11.2	40
Park, Hae-Jeong	FrDT2-06.8	86		ThDT15-03.1	65
Park, Haeyong	ThDT7-02.10	55	Park, Jongkil	FrDT7-08.1	93
Park, Hea Jeong	FrDT10-11.1	97	Park, Jongoh	WeCT16-01.1	30
	FrDT13-05.1	101	Park, Jonguk	WeCT15-13.2	30
Park, Heejin	WeCT9-02.4	21		FrDT14-01.11	102
Park, Hee-Jun	FrDT5-05.1	90	Park, Ju Young	SaBT6.4	114
	FrDT15-03.1	103		SaBT6.5	114
Park, Heekyeong	ThDT5-04.6	53	Park, Jun Hwan	WeCT14-03.3	28
	FrDT5-01.5	90		WeCT14-03.4	28
Park, Hodong	FrDT15-04.1	103	Park, Jun Ik	WeCT15-08.2	30
Park, Hoon Ki	FrDT13-04.1	101	Park, Jungseong	ThDT6-01.2	53
Park, Hoon-Hee	ThDT3-05.5	49	Park, Junil	FrDT4-05.8	89
	ThDT3-06.3	50	Park, Kitae	FrDT12-05.6	100
Park, Hun-Jun	SaBT6.5	114	Park, Kwan Kyu	ThDT12-07.3	62
Park, Hun-Kuk	ThDT5-01.2	51		FrBT2.1	CC
	ThDT5-03.1	52		FrDT12-05.11	100
Park, Hun-Young	SaCT10.1	120	Park, Kwang S.	WeCT1-03.4	9
Park, Hyeong-jun	ThDT18-01.3	68		WeCT15-03.1	29
Park, Hyung joon	ThDT6-06.3	54		WeCT15-06.1	29
Park, HyungDal	FrDT7-07.4	93		ThBT10.1	C
	FrDT7-07.6	93		ThBT10.4	40
Park, Hyunjin	ThDT18-01.10	69		ThBT15.3	42
	FrAT3.4	70		ThDT1-04.5	47
	FrAT8.1	CC		ThDT7-01.2	54
	FrAT8.4	72		FrDT1-02.5	85
	FrDT2-03.1	86		FrDT1-02.7	85
	FrDT3-02.1	87		FrDT5-05.3	90
	SaAT14.1	C		FrDT14-02.2	102
	SaAT14.6	111		FrDT14-03.4	103
Park, Hyun-ju	ThDT6-04.2	53		FrDT16-01.4	105
Park, Hyunjung	ThDT16-01.1	66	Park, Kwang-Min	ThDT16-08.1	66
Park, Hyun-Sang	ThDT2-02.2	48		FrDT15-07.1	104
Park, Hyuntai	SaBT7.5	114	Park, Kyeongsoon	ThDT2-01.5	47
Park, Ilyong	WeCT9-03.3	21	Park, Kyong Hwan	ThDT9-07.1	57

Park, Kyungjin	ThDT2-01.6	47	Patchava, Krishna Chaitanya	ThAT18.3	37
Park, Kyungmo	SaBT8.2	114	Patel, Nitish	ThBT13.4	41
Park, Mingun	FrDT4-05.4	89		FrDT7-07.2	93
Park, Moon Young	FrDT6-06.2	91	Patel, Prakruti	SaAT9.3	110
Park, Moonseong	FrDT5-02.6	90	Patel, Shwetak	ThDT4-01.1	50
Park, Sang Min	FrCT16.4	83		SaBT12.3	116
Park, Sang-Eon	ThCT9.1	43	Patel, Vrajeshri	WeBT8.5	6
	ThCT9.5	43	Patel, Zaibaa	ThBT4.1	38
Park, Sang-Eun	ThBT7.5	39	Pathinarupothi, Rahul Krishnan	ThAT10.6	35
	FrDT15-08.5	104	Patil, Keshav	WeCT8-02.11	19
	FrDT15-08.6	104	Patil, Meru	ThAT10.3	35
Park, Sanghoon	FrDT6-09.3	92	Patra, Amit	ThAT11.4	35
	FrDT15-08.5	104	Patti, Chanakya Reddy	WeCT12-03.2	25
	FrDT15-08.6	104	Pattichis, Constantinos	FrDT10-03.3	96
Park, Sang-Hoon	ThCT8.6	43		FrDT13-06.1	101
Park, SangHyo	WeCT13-08.1	27		FrDT13-12.1	101
Park, Sangwan	WeCT7-01.7	17	Pattichis, Marios	FrDT13-12.1	101
	WeCT9-01.9	20	Patton, James and Ryan, Shirley	SaBT7.1	C
Park, Sara	WeCT14-06.2	28	Patwardhan, Kaustubh	FrBT14.2	78
Park, Se-Je	WeCT2-02.7	11	Paudyal, Prajwal	FrDT10-16.2	98
Park, Seung Hyun	ThDT12-08.2	62	Paul, Steffen	SaBT14.5	117
Park, Seung Jo	ThAT2.4	33	Pavel, Misha	ThAT4.5	33
Park, Shinsuk	ThDT16-08.3	66	Paydar, Omeed	SaAT16.3	111
Park, SooHyun	ThAT6.1	34	Peace, Richard A.	WeCT11-02.4	23
Park, Sooji	WeCT12-02.14	25	Pearce, Sarah	ThDT17-02.5	67
	FrDT14-03.2	103	Pebbles, Jeanine	ThDT6-06.1	54
	FrDT16-07.1	106	Pediaditis, Matthew	WeCT12-03.4	26
Park, Soo-jin	FrDT18-08.2	108	Pei, Weihua	ThBT8.6	40
Park, Sooyoung	FrDT10-12.1	97	Pelosi, Gualtiero	WeAT10.6	3
Park, Soyun	ThDT3-07.1	50		WeCT11-04.4	24
Park, Subin	ThDT14-10.1	64	Peng, Liang	SaBT7.3	114
	ThDT16-01.1	66	Peng, Mingxu	WeCT5-04.9	15
Park, Sukang	FrDT12-07.2	100		SaCT5.5	119
	FrDT13-07.1	101	Pengcheng, Wen	ThCT8.3	43
Park, Sung Heum	ThDT5-04.4	53	Pengdong, Xiao	ThDT11-01.2	60
Park, Sunggook	ThDT5-02.6	52		ThDT15-01.1	65
Park, Sunghee	WeCT9-02.5	21	Penn, Anna	WeBT2.8	5
	ThDT15-04.2	65	Pennace, John	WeAT4.4	1
Park, Sungjo	ThDT2-01.4	47	Penzel, Thomas	ThAT15.1	CC
Park, Sung-Min	FrAT5.1	C		ThAT15.1	37
	FrDT10-12.1	97		ThBT15.1	CC
Park, Sungsu	WeCT6-04.5	16		ThCT15.1	CC
Park, Sungwoo	WeAT8.1	2		ThDT17-05.4	68
Park, Sunup	ThDT2-01.7	47		FrBT15.1	C
Park, Tae Young	FrDT9-03.8	95		FrCT17.4	84
Park, Taiwoo	WeCT16-04.1	31	Peralta-Malváez, Lizbeth	FrDT8-03.2	94
Park, Wanjo	FrDT1-01.4	84	Pereira, Daniel	ThDT10-02.4	59
Park, Yeong-Hun	FrDT2-06.7	86	Perera, Chamika Janith	WeCT7-01.5	17
Park, Yongdo	ThDT6-02.2	53	Perera, Thushara	ThDT13-10.2	63
	FrDT6-03.1	91	Perez, Pablo	WeCT5-03.3	15
Park, Yong-Lae	SaBT7.5	114	Pérez-Feito, Ricardo	WeCT12-01.4	25
Park, Young Min	FrDT17-01.2	106	Perez-Macias, Jose Maria	ThDT18-01.8	68
Park, Young Seok	FrDT7-07.1	93	Pérez-Ramírez, Úrsula	WeCT2-01.11	10
Park, Youngsik	FrDT4-01.4	88		FrAT3.3	70
Park, Yubin	ThAT10.2	35	Peritore, Angelica	ThAT5.3	34
Park, Yujin	ThDT3-08.2	50	Perlini, Cinzia	FrBT18.1	79
	FrDT2-09.1	87	Perlman, Or	ThDT13-08.1	63
	FrDT16-06.5	105	Perold, Willem Johannes	FrDT5-01.1	90
	FrDT17-03.1	106	Perrone, Guido	WeCT5-04.8	15
Park, Yuongjin	FrDT17-09.1	107	Peru, Deborah	ThDT9-01.5	57
Parodi, Oberdan	WeAT10.6	3	Pesala, Bala	ThBT11.3	40
	WeCT11-04.4	24	Pesaran, Bijan	WeBT8.1	5
Parsa, Maryam	WeAT10.2	2	Pester, Britta	ThAT1.5	33
Parsons, David	ThBT3.3	38	Peters, Jurriaan	FrCT8.2	81
Parween, Rizuwana	ThAT7.2	34	Peters, Nicholas	WeBT4.5	5
Pasakarnis, Corey	ThDT10-04.6	60	Petersen, Asger	ThDT10-01.3	58
Pascarella, Suzanne	SaBT5.4	113	Petersen, Christian	FrCT17.6	84
Pascual-Leone, Alvaro	WeCT12-04.1	26	Petersen, Eike	ThDT1-01.2	46
	ThAT12.6	36	Petr, Jan	FrDT2-06.2	86
	ThBT12.1	41	Petri, Giovanni	FrDT8-12.1	95
Paskaranandavadivel, Niranchan	WeCT4-04.3	14	Petrov, Vitaliy	FrDT4-05.10	89
	ThCT13.4	45	Petti, Manuela	WeCT2-01.14	10
	ThDT17-02.2	67		SaAT17.5	112
Pasluosta, Cristian Federico	WeCT2-01.6	10		SaBT17.3	117
Passamonti, Luca	FrBT8.1	76	Pezhman Pour, Mansoureh	WeCT3-02.3	12
	FrBT8.3	76	Pezzano, Antonio	ThAT5.3	34
	FrBT8.4	76	Pfarr, Simone	WeCT2-01.11	10
	FrBT8.6	76	Pflugi, Silvio	WeCT7-01.12	17
	SaBT17.5	118	Pham, H. Minh	FrDT8-06.2	94
	SaBT17.6	118	Pham, Minh Tu	ThDT1-03.3	46
Patania, Alice	FrDT8-12.1	95	Pham, Ngoc Quan	FrBT15.3	78

Qu, Xiaobo	FrBT3.1	C	Ratmat-Samii, Yahya	ThAT13.4	36
	FrBT3.5	75	Ratsgoo, Mojdeh	FrAT14.1	73
	FrCT3.5	80	Ratray, Robbrey	WeCT2-02.5	11
	FrDT3-04.1	87	Rauch, Gaiane Margishvili	WeCT14-05.1	28
	FrDT3-04.2	87	Ravi, Vidya	ThAT10.3	35
	FrDT3-08.1	88	Ray, Andreas Markus	ThAT8.6	35
Quan, Chenghao	FrDT10-03.1	96		FrAT7.6	72
Quan, Tran Minh	ThCT14.4	45	Ray, Shruti	ThAT17.5	37
Quan, Yu Hua	WeCT6-03.6	16	Raymond, Jason L	WeAT2.3	1
Quanyin, Hu	WeAT13.1	4	Razevig, Vladimir	WeCT10-03.8	23
Quarta, Rossella	WeCT4-04.4	14	Razzaq, Muhammad Asif	FrDT13-05.4	101
Quek, Chai	ThDT8-01.14	56	Reddick, Wilburn	FrCT3.2	80
Quellec, Gwenole	ThBT14.6	41	Reddy, Chandan K	FrCT10.5	82
	SaCT2.3	118	Reddy, Chinnadayala Somasekhar	ThDT5-01.10	52
Quero, Giuseppe	SaCT12.2	120	Redeker, Nancy	ThDT1-04.3	47
	SaCT12.3	120	Redel, Thomas	WeCT11-04.2	24
Quinn, Barry	SaAT18.4	112	Redfearn, Damian P	FrAT17.1	73
Quiñones, Dario Ruben	WeCT12-01.4	25	Redouté, Jean-Michel	WeAT12.4	3
	SaBT5.6	114		WeCT4-01.1	13
Quivira, Fernando	FrAT1.3	70		WeCT4-02.5	13
Qureshi, Muhammad Naveed Iqbal	ThCT8.5	43		FrAT4.4	71
				FrBT4.4	75

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Ra, Rina	FrDT1-02.17	85	Reece, Gregory	FrDT13-01.1	100
Rabbani, Hossein	WeCT14-02.1	27		FrDT13-01.2	100
	WeCT14-02.3	28	Rees, Stephen Edward	WeAT15.5	4
	SaCT2.1	118	Regensburger, Martin	SaBT12.1	116
	SaCT2.5	118	Regev, Nir	ThAT17.6	37
Racca, Vittorio	ThAT5.3	34	Reggiani, Enrico	WeCT14-01.9	27
Radcliffe, Pj	WeAT7.1	2	Reiman, Derek	SaBT13.4	116
Radhakrishnan, Geethanjali	ThDT12-02.2	62	Reisfeld, Brad	ThDT11-03.2	61
	ThDT12-02.2	62	Reisner, Andrew	ThDT10-04.6	60
Raffo, Luigi	WeCT8-03.4	19	Reissman, Megan	SaAT9.2	110
	ThBT9.1	40	Ren, Lingxue	SaBT16.4	117
Rahimi, Kazem	FrDT1-02.4	84	Ren, Xiaoping	FrDT7-04.2	93
Rajagopal, Vijayaraghavan	ThDT11-01.5	60	Ren, Xue	ThDT3-05.6	49
Rajala, Satu	WeBT11.2	6	Renaud, Sylvie	ThBT13.3	41
	WeBT11.3	6	Renevey, Philippe	WeAT12.6	3
Rajan Unnithan, Afeesh	FrDT6-08.1	92		ThBT5.6	39
Rajan, Sunder	ThAT12.1	36		SaCT13.2	121
Rajan, Vaibhav	FrCT10.5	82	Reni, Gianluigi	WeCT10-03.5	23
Rajasegarar, Sutharshan	WeCT5-04.1	15		ThDT4-03.4	51
Rakvongthai, Yothin	WeCT3-01.8	12	Reulecke, Sina	FrBT18.5	79
	WeCT14-01.2	27	Reyes, Bersaín Alexander	FrDT14-02.4	103
	ThDT18-02.7	69	Reyes, Deogracias Alberto	ThDT16-06.1	66
Ramachandran, Harish	SaAT18.4	112	Reyneke, Corius	WeBT14.6	8
Ramakrishnan, Swaminathan	FrBT17.4	79	Reynoso, Francisco	ThDT3-09.1	50
Raman, Jai	WeCT11-05.1	24	Rezk, Abdelrahman	FrDT6-08.1	92
Ramchuankiat, Saranya	WeCT14-01.2	27	Rhie, Jong-Won	SaBT6.3	114
Ramezani, Hamideh	FrBT9.4	77	Rho, Donggee	WeCT12-02.10	25
	SaAT1.3	109	Riaz, Zertasha	WeCT13-03.2	26
Raminfard, Samira	WeCT9-03.5	21	Ricard, Damien	ThDT1-03.1	46
Ramkrishna, Bharath	ThBT14.1	41	Riccelli, Roberta	FrBT8.1	76
	ThDT7-01.5	54		FrBT8.3	76
	SaBT14.3	116	Ricciardi, Emiliano	WeCT1-01.5	8
Ramos-Garcia, Raul Ignacio	WeCT10-03.3	22		WeCT11-03.5	24
Ramos-Murguialday, Ander	ThAT8.6	35	Riccio, Angela	SaAT17.2	111
	ThDT8-02.6	56	Richards, Craig	WeBT14.6	8
	FrAT1.1	70	Rieger, Steffen	ThDT14-02.1	64
	FrAT7.6	72	Rigas, Georgios	WeAT10.6	3
Rana, Rajneil	ThDT4-01.1	50		WeCT2-02.11	11
Rangaka, Molebogeng	FrDT15-10.1	104		WeCT11-04.4	24
Rangan, Ekanath	ThAT10.6	35	Righi, Martina	SaAT13.6	111
Ranger, Bryan	WeAT7.2	2		ThDT6-03.1	53
	FrDT3-06.1	88	Rimini, Daniele	ThDT8-02.2	56
Rani, Priya	WeCT12-03.5	26	Rivera, Patricio	WeCT2-02.7	11
Ranjan, Prabhat	FrDT15-01.1	103		WeCT10-02.9	22
Ransmayr, Gerhard	SaAT1.1	109	Rivolta, Massimo Walter	SaAT1.5	109
Ranucci, Marco	FrAT11.4	73	Rizos, Evangelos C.	ThDT17-02.1	67
Ranuzzi, Giovanni	FrAT11.1	73	Rizwan, Muhammad	ThAT13.4	36
	FrAT11.4	73	Ro, Jung Hoon	ThDT12-06.2	62
Rao, Aravinda	ThBT3.2	38	Ro, Yong Man	WeCT3-03.7	13
Rapin, Michael	SaCT4.2	118	Roberts, Stephen	ThCT10.5	44
Rapp, Mary	ThDT1-04.3	47	Robertson, Ian	WeCT8-02.12	19
Rasheed, Ahmed	FrBT5.1	75	ROBIN, Maxime	ThDT17-01.1	67
Rasooli, Amirhossein	WeCT9-03.5	21	Robinovitch, Stephen	ThCT10.6	44
Rasyidin, Fakhmi Adi	ThDT11-10.2	61	Rocha, Ana Patricia	WeCT12-01.3	25
Rathbone, Daniel	WeCT2-01.8	10	Rocha, Bruno	ThDT17-01.5	67
Rathee, Dheeraj	SaCT8.1	119	Rocha, Teresa	ThDT10-04.4	60
				FrCT1.6	79
				SaBT10.4	115
			Roche, Stephen	ThAT7.3	34

Rodrigues, Carlos M. B.	WeCT1-01.6	8	Ryu, WonHyoung	WeCT13-01.1	26
	FrDT17-08.10	107		ThDT5-01.5	52
Rodrigues, Marco Aurélio Benedetti	WeCT1-01.6	8		ThDT12-08.2	62
	FrDT17-08.10	107			
Rodrigues, Pedro Luiz Coelho	FrAT18.5	74	S		
Rodriguez, Javier	WeCT11-03.7	24	S. P., Deepu	ThDT1-01.3	46
Rodriguez-Villegas, Esther	WeCT5-04.9	15	Sa, Ruhan	WeCT2-02.5	11
	SaCT5.5	119	Saad, Naufal	ThDT17-06.5	68
Rodriquez, Rafael	ThDT10-01.7	59	Saavedra, Ana Cecilia	FrAT2.5	70
Rognlien, Dag Kristian	ThBT4.5	38	Saavedra, Francisco	WeCT16-08.4	31
Röhrle, Oliver	SaBT11.2	115		FrDT9-01.1	95
Roitmann, Eva	FrDT14-02.5	103		SaAT5.3	109
Roland, Theresa	WeCT1-01.8	9	Saba, Emmanuel	WeCT12-02.12	25
Rolanda Gonçalves, Carla	FrDT11-07.8	99	Saccomandi, Paola	WeCT4-04.4	14
Rolfe, Peter	FrDT16-06.2	105		WeCT5-04.8	15
Roloff, Christoph	WeCT11-04.2	24		SaCT4.1	118
Romero Santiago, Alejandro E.	SaCT2.4	118		SaCT12.2	120
Romine, William	WeCT10-01.6	22		SaCT12.3	120
Rong, Wei	WeCT9-01.13	20	Sacré, Pierre	WeCT8-01.2	18
Rood, Ryan	WeAT4.4	1		ThDT8-02.1	56
Roop, Parthasarathi	ThBT13.4	41		FrBT9.3	77
Roper, Jaimie	ThDT18-01.4	68		SaAT7.4	110
Rosa, Marcello	WeAT9.2	2	Sacristán, María Camila	FrDT3-09.1	88
Rosa, Marcelo	ThDT17-01.2	67	Sadashivaiah, Vijay	SaAT7.4	110
	SaCT18.5	121	Sadeghi, Koosha	WeCT4-04.6	14
Rosati, Riccardo	FrAT17.2	74		FrDT10-16.2	98
Rosati, Samanta	WeAT8.3	2	Sadr, Nadi	WeCT15-02.5	29
	WeCT10-01.5	22	Saeed, Maryam	WeCT8-03.2	19
	ThDT8-01.12	56		WeCT9-01.5	20
	ThDT8-02.2	56	Saenz Aldea, Eduardo	ThDT13-07.1	63
	ThDT10-03.6	59	Safa Naraghi, Safa Kagiso	FrDT15-10.1	104
	ThDT10-03.2	59	Safavi, Seyedemahya	WeCT5-01.2	14
Rosenbaum, Joshua	WeAT9.2	2	Saffaran, Sina	WeAT15.4	4
Rosenfeld, Jeffrey V.	WeBT2.8	5		WeCT15-01.1	29
Roshanitabrizi, Pooneh	WeBT15.5	8	Safi Harb, Yosef	WeAT11.2	3
Rossaint, Rolf	SaAT3.4	109	Saha, Anindo	ThBT13.5	41
	ThDT8-01.11	56	Saha, Monjoy	ThDT2-05.1	48
	FrBT1.6	74	Sahin, Mustafa	WeCT1-03.3	9
Rostalski, Philipp	ThDT1-01.2	46		FrDT1-02.8	85
Rouse, Adam	WeCT8-01.4	18	Sahoo, Saswata	ThDT4-01.3	50
Routray, Aurobinda	ThDT9-01.4	57		ThDT4-03.9	51
Roux, Stéphane	ThBT17.2	42	Saidane, Yosra	WeCT1-01.2	8
Roxby, Daniel Ninio	WeCT4-05.3	14	Saito, Akira	FrDT10-13.1	97
Roy Chowdhury, Shubhajit	WeAT11.1	3	Saito, Atsushi	FrDT6-06.1	91
	WeAT11.4	3	Saito, Hajime	FrDT12-01.2	99
Roy, Kaushik	WeAT10.2	2	Saito, Kenjiro	ThDT16-05.2	66
Roy, Ronald A	WeAT2.3	1	Saito, Koko	WeBT16.5	8
Roy, Sangheeta	WeCT4-04.1	13	Sajda, Paul	ThDT3-03.1	49
Roy, Sitikantha	FrCT5.3	80		ThDT3-03.2	49
Ruamthanthong, Anuchit	FrBT10.3	77	Sajib, Saurav Z K	WeCT14-03.1	28
Ruano, Antonio	FrCT1.6	79		ThDT13-10.1	63
Ruano, M. Graça	ThDT10-01.4	58		FrDT2-06.1	86
	FrCT1.6	79	Sakaguchi, Hirokazu	ThAT9.4	35
Rubino, Annalisa	ThDT17-04.2	67	Sakamoto, Takafumi	ThDT13-03.2	63
Ruddy, Bryan	WeBT13.3	7	Sakane, Fumiya	ThDT12-05.3	62
Rueda, Alice	ThDT1-04.4	47	Sakellarios, Antonis	WeAT10.6	3
Ruhunage, Isuru	WeCT7-01.5	17		WeCT2-02.11	11
Ruiz, Kate	SaAT14.2	111		WeCT11-04.4	24
Ruiz, Saúl J.	WeCT1-02.3	9	Saket, Munib	WeCT8-02.6	19
Rumagit, Arthur Mourits	ThDT18-01.13	69	Sakota, Daisuke	WeCT11-08.2	24
Ruminski, Jacek	WeCT12-03.1	25	Sakriani, Sakti	FrDT1-02.19	85
	SaAT3.1	CC	Saku, Keita	ThDT13-03.2	63
	SaAT3.3	109		SaBT15.5	117
Russold, Michael	WeCT1-01.8	9	Sakuma, Ichiro	WeCT16-05.2	31
Ryu, Gyu Ha	WeCT16-13.1	32		ThDT16-05.2	66
	FrDT9-04.6	96		ThDT16-08.2	66
	FrDT9-04.12	96		FrBT2.3	75
Ryu, Hyunryul	SaBT6.4	114	Salamonsen, Robert F	WeCT11-02.3	23
Ryu, Jae Ha	ThCT5.1	42	Salan, Teddy	FrCT3.2	80
Ryu, Jae Myung	FrDT12-05.6	100	Salari Shahrababaki, Sobhan	ThDT17-05.4	68
Ryu, Jaehwan	ThDT9-03.2	57	Salazar Arévalo, Renzo Sebastián	WeCT7-02.1	17
Ryu, Jeongwon	FrAT2.3	70		WeCT7-06.1	18
Ryu, Ji Woo	ThDT4-02.8	51	Salazar Herrera, Daniel	ThDT4-03.10	51
Ryu, Jiheun	ThDT2-01.5	47	Saleh, Majd	ThDT17-03.2	67
	ThDT2-06.2	48	Salhi, Asma	ThAT7.6	34
Ryu, Rae-Hyung	ThDT13-03.3	63	Salimpour, Yousef	WeCT9-02.2	20
Ryu, Seon Young	ThDT2-01.6	47		SaAT14.5	111
Ryu, Suho	ThDT12-08.2	62	Saluja, Daman	ThDT12-02.2	62
Ryu, Taekyeong	ThDT8-01.16	56	Salvaña, Mary Lai	ThDT16-06.1	66
	SaAT7.1	110			

Samah, N. L. M. A.	WeCT5-04.7	15	Scalzo, Fabien	FrDT2-01.1	85
Samanta, Debasis	ThDT10-01.6	59		FrDT10-14.2	97
Samavi, Shadrokh	ThAT14.1	36	Scebba, Gaetano	SaBT14.2	116
Samek, Wojciech	SaBT18.5	118	Schäck, Tim	WeAT11.2	3
Samima, Shabnam	ThDT10-01.6	59	Schad, Lothar R.	FrCT3.6	80
Samir, Anthony Edward	ThDT18-02.4	69	Schappacher, Gudrun	ThDT11-03.4	61
Samoudi, Mohammed Amine	FrCT4.2	80	Scharinger, Josef	SaBT8.6	115
Sampaio, Luiz C.	WeCT11-02.1	23	Schaworonkow, Natalie	FrBT4.3	75
	WeCT11-08.1	24	Schena, Emiliano	WeCT4-04.4	14
Samtani, Kartik	ThDT1-01.3	46		WeCT5-04.8	15
Samuel, Oluwarotimi Williams	WeCT4-03.4	13		WeCT5-04.10	15
	WeCT8-03.1	19		ThDT10-05.4	60
	WeCT10-03.4	23		SaCT4.1	118
	FrAT1.5	70		SaCT12.2	120
	FrCT9.6	82	Schevon, Catherine	WeCT8-01.2	18
Sanada, Hiromi	FrDT13-09.1	101	Schieber, Marc	WeCT8-01.4	18
	FrDT14-01.9	102	Schiecke, Karin	ThAT1.5	33
Sanada, Makoto	FrDT11-02.1	98	Schindhelm, Klaus	WeCT15-02.1	29
Sanchez Bornot, Jose Migueal	SaCT8.2	119		ThCT15.1	45
Sanchez-Casanova, Jorge	ThBT10.1	40	Schiza, Eirini	FrDT13-06.1	101
Sanchez-Reillo, Raul	ThBT10.1	40	Schizas, Christos	FrDT13-06.1	101
Sanders, Robert D.	WeCT8-01.1	18	Schmale, Sebastian	SaBT14.5	117
Sandra, Mattos	FrBT2.4	75	Schmidt, Michael	SaBT12.1	116
Sandri Heidner, Gustavo	WeCT9-03.2	21	Schmidt, Reinhold	SaAT1.1	109
	SaBT7.6	114	Schmidt, Samuel Emil	ThAT5.4	34
Sands, Scott Aaron	ThCT15.2	45	Schmitt, Maximilian	SaAT1.4	109
Sang, Pilgyu	FrDT12-01.3	99	Schmitz, Cristiane	FrDT15-01.3	103
	FrDT12-05.2	99	Schneider, Sophie	FrDT13-02.1	100
	FrDT12-05.3	100	Schnyer, David	WeCT5-01.3	14
Sankai, Yoshiyuki	ThAT6.5	34	Schoebel, Christoph	ThAT15.1	37
	FrDT8-04.1	94	Schoettker, Patrick	ThCT11.2	44
Sankar, Ravi	WeCT11-04.1	24	Scholten, Kee	FrDT7-06.2	93
Sanne, Ujwal Sriharsha	SaBT12.5	116	Schramm, Axel	SaBT12.1	116
Santacruz, Samantha R.	ThDT7-02.7	55	Schrempf, Andreas	WeAT7.5	2
Santambrogio, Marco	WeCT10-02.8	22		WeAT7.6	2
	WeCT14-01.9	27	Schröder, A. Sebastian	ThBT7.6	39
Santana, Gisele	ThDT17-01.2	67	Schroedl, Falk	WeAT7.6	2
Santaniello, Sabato	WeCT8-04.2	20	Schrumpf, Fabian	WeCT1-03.7	9
	ThBT9.5	40	Schuetzler, Martin	WeBT9.6	6
	FrBT9.1	CC	Schuldt, Dennis	ThDT2-01.8	48
	FrBT9.6	77	Schuller, Bjoern	FrCT17.1	83
Sant'Anna, Guilherme Mendes	ThBT17.4	42		SaAT1.4	109
	ThDT10-02.2	59	Schulz, Florian	WeCT5-04.4	15
Santiago-Fuentes, Laura Mercedes	ThDT17-01.4	67	Schulz, Steffen	ThDT1-02.2	46
Santos de Oliveira e Silva, Bernardo Jose'	WeAT12.3	3	Schwartz, Cédric	FrDT10-03.2	96
Sarac, Ferdi	FrCT10.3	82	Schwartz, Frank	ThDT18-01.9	69
Saraste, Antti	ThAT5.1	33	Schwarz, Andreas	ThCT8.2	43
	ThAT5.2	34	Schwarz, Lisa	ThAT15.1	37
Saravana Kumar, Gurunathan	FrDT15-06.2	104	Schwarzkopf, Karen	SaBT12.1	116
Sardar, Arghya	FrDT15-01.1	103	Schweizer, Benedikt	WeCT9-01.8	20
Sarlabous, Leonardo	WeBT15.2	8	Schwerdfeger, Karsten	SaCT2.4	118
Sarma, Monalisa	ThDT10-01.6	59	Sciaraffa, Nicolina	FrBT1.6	74
Sarma, Sridevi V.	WeCT8-01.2	18		SaAT17.4	112
	WeCT8-01.4	18	Scilingo, Enzo Pasquale	WeCT1-01.5	8
	ThDT8-02.1	56		WeCT11-03.4	24
	ThDT17-04.1	67		WeCT11-03.5	24
	FrBT1.3	77		ThAT1.1	32
	FrBT9.3	74		ThAT4.1	C
	SaAT7.4	110		ThAT4.4	33
Sasagawa, Kiyotaka	FrAT9.2	72		ThCT18.1	45
	FrDT4-01.1	88		ThDT1-04.2	47
	FrDT16-05.1	105		ThDT1-04.9	47
Sasamoto, Yuki	SaBT1.4	112		FrAT17.3	74
Sassi, Roberto	SaAT1.5	109		FrBT18.1	79
Sathar, Shameer	ThCT13.4	45		FrCT18.5	84
	SaBT11.2	115	Sclocco, Roberta	FrAT11.5	73
Sato, Kazunori	FrAT3.6	71	Scott, David	WeAT12.4	3
Sato, Kensuke	WeCT7-01.6	17	Sdika, Michaël	WeBT14.2	7
Sato, Ryutaro	ThDT16-08.2	66	Seemann, Gunnar	FrCT11.6	82
Sato, Shunsuke	FrDT1-02.23	85	Seenumani, Gayathri	FrDT17-08.2	107
Satoshi, Nakamura	FrDT1-02.19	85	Sequin, Fabrice	SaAT5.1	109
Satti, Muhammad Hashim	WeCT9-01.5	20	Se-Hwan, Lee	ThDT6-02.2	53
Satuvuori, Eero	FrDT17-07.2	106	Sei, Yuichi	SaAT13.3	110
Sauter, Axel R.	WeAT4.3	1	Seidel, Pascal	SaBT14.5	117
Sawan, Mohamad	FrDT16-05.1	105	Seino, Kimihiro	ThDT12-02.1	62
Sawosz, Piotr	WeCT14-07.2	28	Sekanina, Lukas	WeCT1-02.2	9
Sazonov, Edward	WeCT10-03.3	22	Seker, Huseyin	WeCT3-02.3	12
	FrCT5.6	80		WeCT10-01.4	22
Sbrollini, Agnese	ThDT10-02.3	59		WeCT14-02.6	28
	FrAT17.2	74		FrCT10.3	82
Scali, Maria Chiara	FrCT10.2	82	Seketa, Goran	FrDT3-01.1	87

Sekine, Masaki	WeCT15-05.1	29	Sethi, Aartika	FrDT15-01.1	103
Sekitani, Tsuyoshi	ThAT4.6	33	Sethi, Tavpritesh	ThBT11.3	40
	ThBT4.3	38	Setola, Roberto	WeCT4-04.4	14
Seko, Sarah	ThBT7.2	39	Setsompop, Kawin	FrBT3.4	75
Seko, Yuta	FrDT5-01.4	90	Sha, Ying	FrBT10.5	77
Selvaganapathy, Ravi	ThDT6-02.1	53	Sha'ban, Munirah	ThCT6.3	43
Semenova, Oksana	SaAT17.1	C		ThCT6.5	43
	SaAT17.6	112	Shabani Varaki, Elham	FrDT16-03.3	105
Sen, Shreyas	WeAT4.1	1	Shaffer, Robert	FrBT10.2	77
	WeAT10.2	2	Shafiee, Mohammad Javad	SaBT15.2	117
Senek, Marina	WeAT12.2	3	Shafiq, Ghufuran	ThDT9-05.1	57
Sengupta, Abhishek	FrCT10.5	82		ThDT18-01.2	68
Sengupta, Anwesha	ThDT9-01.4	57	Shah, Malay llesh	WeBT11.5	7
Senhadji, Lotfi	ThDT17-03.2	67		FrCT15.5	83
Seo, Ahyeon	FrDT1-02.2	84		SaBT12.5	116
Seo, Anna	ThDT14-05.4	64	Shaharabany, Tal	FrDT11-07.4	99
Seo, Han-Kyu	FrDT12-07.2	100	Shahbazi Avarvand, Forooz	SaBT18.5	118
Seo, Hyein	SaBT13.3	116	Shahhaidar, Ehsaneh	FrDT16-05.3	105
Seo, Hyeon	ThBT9.3	40	Shahin, Mostafa	FrCT17.4	84
	FrBT4.3	75	Shahnawazuddin, S	ThDT18-02.14	69
	FrDT9-03.1	95	Shahrabi Farahani, Ehsan	WeCT2-01.9	10
	FrDT18-07.1	108	Shahrestani, Arash	SaCT10.2	120
Seo, HyoChang	FrDT14-04.1	103	Shalish, Wissam	ThBT17.4	42
	FrDT15-09.1	104		ThDT10-02.2	59
Seo, Hyukjun	ThDT5-02.4	52	Shanechi, Maryam	WeBT8.1	5
Seo, Jae-sun	FrCT1.4	79		WeBT8.2	5
Seo, Jeongwoo	ThDT16-04.1	66		ThAT8.5	35
Seo, Jiwon	FrCT10.6	82	Shang, Zhigang	WeCT3-01.7	12
Seo, Jong Mo	WeBT13.4	7		ThDT18-02.8	69
	WeCT7-01.7	17	Shanta, Aysha Siddique	WeBT4.6	5
	WeCT9-01.9	20	Shao, Ling	WeCT3-02.3	12
	WeCT9-01.10	20	Sharafi, Bahar	SaAT9.5	110
	WeCT10-02.3	22	Sharan, Roneel V	ThDT17-05.2	68
	WeCT10-03.6	23		SaCT18.2	121
	WeCT11-04.5	24	Shariat, Mohammad Hassan	FRAT17.1	73
	WeCT14-02.4	28	Sharla, Birch	SaBT3.6	113
	ThAT6.3	34	Shaw, Fu-Zen	FrAT9.1	72
	ThAT9.3	35	She, Xiwei	WeCT8-03.5	19
	ThBT6.6	39	Shen, Haibin	ThDT1-04.1	47
	ThDT12-05.4	62	Shen, Jiangrong	ThDT18-01.12	69
	FrDT3-03.1	87	Shen, Linxiao	SaBT5.1	113
	FrDT12-07.1	100	Shen, Wenfeng	SaCT11.1	120
	FrDT15-01.2	103		SaCT11.3	120
Seo, Joohyun	ThCT11.1	44	Shen, Yanghua	SaCT11.1	120
Seo, Jungmin	WeCT7-01.7	17		SaCT11.3	120
Seo, Kangmoon	WeCT7-01.7	17	Shen, Yu-Hsiang	ThDT3-09.3	50
	WeCT9-01.9	20	Sheng, Xinjun	ThAT8.4	35
Seo, Kwang-Suk	WeCT8-01.1	18	Sheth, Sameer	WeCT8-01.2	18
Seo, Min-Won	WeCT10-03.6	23		ThAT8.1	34
	WeCT11-04.5	24	Shi, Bertram E	WeCT5-01.4	14
	FrDT15-01.2	103		ThAT17.1	37
Seo, Min-Woong	FrDT5-07.3	91	Shi, Caiyun	FrBT3.3	75
Seo, Pukyeong	ThDT9-03.1	57	Shi, Jie	WeBT2.3	5
	ThDT9-08.2	58	Shi, Jun	ThAT14.3	36
	ThDT9-10.2	58		FrBT2.1	74
Seo, Sang Won	FrDT2-06.6	86		SaBT3.2	113
Seo, Sangbo	WeCT16-06.1	31	Shi, Riyi	WeCT6-03.1	15
Seo, Sung Eun	ThDT5-03.7	52	Shi, Weiwei	FrBT1.1	74
	FrDT18-07.2	108	Shi, Yonggang	WeBT14.5	7
	FrDT18-07.4	108		ThDT11-01.6	60
Seo, Won Ju	FrDT10-12.1	97	Shi, Zhifeng	WeCT3-01.6	12
Seo, Youngseob	FrDT2-03.3	86	Shi, Zhixi	WeCT14-02.5	28
Seok, HyeonSeok	FrDT12-04.1	99	Shiba, Kenji	FRDT4-01.2	88
Seol, Bokyung	FrDT6-08.5	92		FrDT16-02.2	105
Seol, Jeonga	FrDT10-04.2	97	Shiba, Naoto	ThBT7.4	39
Seong, Joon-Kyung	ThCT14.2	45		FrDT8-07.2	94
	ThDT15-04.2	65	Shibata, Tomohiro	WeCT16-08.3	31
Seong, Kiwoong	FrDT4-01.4	88		ThDT16-06.1	66
Seong, Si-Baek	FrDT2-06.8	86		FrBT16.1	78
Seonho, Park	FrDT7-05.2	93		FrDT10-09.1	97
Seppänen, Tapio	WeCT1-03.5	9	Shibata, Tsuyoshi	WeCT16-08.3	31
	SaAT18.6	112	Shibui, Toyohito	FRDT1-02.18	85
Sepulveda, Francisco	WeBT9.4	6		FrDT13-08.2	101
	ThCT8.4	43	Shih, Jerry	WeBT1.1	4
	FrBT9.1	77	Shih, Shyang-Rong	FrDT12-04.2	99
Ser, Wee	SaCT18.1	121	Shikh-Bahaei, Mohammad	WeCT10-03.2	22
Serbes, Gorkem	ThDT18-02.6	69	Shikh-Bahaei, Tamanna	WeCT10-03.2	22
Serra, Renan	FrBT15.5	78	Shim, Eun Bo	ThDT11-10.1	61
Serracino-Ingloft, Ferdinand	WeAT9.2	2		FrBT11.1	C
Sert, Egemen	WeCT3-03.8	13		SaAT11.1	C
Seshikala, G	WeCT1-03.1	9		SaAT11.3	110

Shim, Jin-Hyung	SaBT6.3	114	Shinohara, Shuji	WeBT10.3	6
Shim, Miseon	ThDT7-01.10	54		WeBT10.5	6
Shim, On	WeCT6-03.6	16		FrDT10-01.2	96
Shim, Shinyong	FrDT9-03.4	95	Shiomi, Hiroki	WeCT10-03.1	22
Shim, Youngbo	WeCT7-07.4	18	Shiozawa, Naruhiro	WeCT5-03.2	15
Shima, Keisuke	WeCT7-01.8	17	Shipeng, Han	SaBT16.4	117
Shimada, Kazuki	WeCT13-09.1	27	Shiraishi, Naru	WeCT2-02.9	11
Shimada, Takamasa	WeCT1-04.2	9	Shiraishi, Ryoichiro	FrDT8-04.1	94
Shimai, Shogo	FrBT5.6	76	Shirbani, Fatemeh	ThBT11.4	40
Shimatani, Koji	FrDT8-06.3	94	Shodo, Kenzo	ThDT9-11.1	58
	FrDT14-02.6	103	Shoji, Kazuma	ThBT6.4	39
Shimatani, Yuichi	ThDT9-04.1	57	Shoji, Yutaka	WeCT12-03.2	25
	ThDT9-10.4	58	Shokrollahi, Elnaz	WeCT16-03.1	30
	FrDT4-03.1	89		SaAT16.1	111
Shimauchi, Suehiro	SaAT18.1	112	Shokrollahi, Peyman	WeCT16-03.1	30
Shimayoshi, Takao	FrCT11.1	82	Shon, Ahnsei	FrDT7-06.5	93
Shimba, Kenta	ThBT6.4	39	Shon, Ho Sun	FrDT11-06.1	98
Shimizu, Yuto	FrAT4.2	71	Shoorangiz, Reza	SaBT9.5	115
Shimoda, Shingo	ThDT8-02.4	56	Shou, Guofa	WeCT2-01.12	10
Shimotake, Akihiro	FrDT17-08.3	107		ThBT9.4	40
Shimoyama, Koji	WeCT11-04.3	24	Shrestha, Bishnu	ThDT5-01.1	51
Shin, Bonghun Shin	FrAT2.3	70	Shrestha, Sita	ThDT5-01.1	51
Shin, Byung Ho	WeCT13-06.1	26	Shriram, Duraisamy	ThAT7.2	34
Shin, Cheung Soo	FrAT11.2	73	Shtessel, Yuri	ThDT4-03.3	51
Shin, Daehyeon	FrDT15-04.1	103	Shu, Yuxia	SaBT2.3	112
Shin, Dong Ah	WeCT15-07.2	30	Shukla, Satya Narayan	ThAT17.2	37
Shin, Dongho	FrDT4-01.4	88		FrCT10.5	82
Shin, Eui Seok	FrAT5.1	71		FrCT10.5	82
Shin, Hangsik	WeCT12-02.14	25	Shum, Ho Cheung 浩璋	FrBT6.4	76
	FrDT12-04.1	99	Shute, Jonathan	SaBT18.1	118
	FrDT14-03.2	103	Shyu, Liang-Yu	FrDT1-02.10	85
	FrDT16-07.1	106	Sia, Angelia	ThDT9-01.2	57
	FrDT17-08.4	107	Siddiqui, Hasan	ThAT17.5	37
	FrDT18-08.3	108	Siddiqui, Nabeel	SaCT5.1	119
Shin, Hojin	ThDT5-04.1	53	Siddiqui, Shoaib Ahmed	ThDT4-02.7	51
	FrDT17-05.2	106	Sidenius, Per	SaBT4.4	113
Shin, Hye In	ThDT5-01.5	52	Siebenrock, Klaus	WeCT7-01.12	17
Shin, Hyung-Cheul	WeCT9-01.10	20	Sielużycki, Cezary	WeCT3-01.4	12
	ThDT7-02.10	55	Sihyung, Yoo	ThBT13.1	41
Shin, Hyunku	WeCT6-03.7	16	Sikdar, Debdeep	WeCT9-01.12	20
Shin, I Su	FrDT8-03.1	94	Silveira, Fernando	ThBT5.2	38
Shin, Jae Ho	FrDT12-03.1	99		FrBT5.2	75
Shin, Jaewoo	ThDT7-02.1	55	Silveira, Margarida	WeCT2-01.3	10
	ThDT7-02.6	55	Silvério Cabrita, António	FrCT15.4	83
	ThDT7-02.9	55	Silvestri, Sergio	WeCT5-04.10	15
	ThDT7-02.10	55		SaCT12.2	120
	ThDT7-02.11	55	Sim, Jai Kyoung	FrDT4-05.1	89
	FrDT8-09.2	94	Sim, Minyoung	ThDT14-10.3	64
	FrDT12-05.9	100	Sim, Taeyong	ThDT16-02.1	66
Shin, Jaeyoung	FrDT1-02.20	85		FrDT10-04.1	96
Shin, Jennifer Hyunjong	FrDT6-01.1	91	Simantiraki, Olympia	WeCT12-03.4	26
	FrDT6-02.1	91	Simkulet, Michelle	SaBT15.4	117
	FrDT6-02.3	91	Simms, Leslie Simms	ThDT13-07.1	63
Shin, Jeong-Sik	WeCT2-02.7	11	Simões, Marco	ThDT9-01.6	57
Shin, Jeong-Woong	FrDT5-02.1	90	Simos, Panagiotis	WeCT12-03.4	26
Shin, Ji-Yean	FrDT6-08.5	92	Simpson, Jeremy C.	ThDT14-12.1	65
Shin, Joon-Ho	FrDT8-01.2	94	Sims, Nat	SaBT15.3	117
Shin, Ki-Young	FrDT14-02.3	102	Sin, In-Tae	WeCT14-07.1	28
Shin, Kyoungwon	FrDT12-05.5	100	Sinclair, Nicholas Campbell	ThDT13-10.2	63
Shin, Sang Hoon	WeCT11-07.1	24	Sinclair, Peter James	ThBT7.1	39
	ThDT15-08.1	65	Singh Chadha, Jaidev	ThCT11.4	44
Shin, Seung-chul	ThDT4-02.2	50	Singh, Balbir	FrDT17-08.1	106
	SaCT4.4	119		FrDT18-06.1	108
Shin, Soowon	WeCT7-01.7	17	Singh, Pratik	ThDT18-02.14	69
	ThDT7-02.11	55	Singh, Rahul Kumar	WeCT15-01.3	29
Shin, Su	ThDT6-03.1	53	Singh, Rituraj	ThDT17-01.3	67
Shin, Sung Woong	ThDT11-10.1	61	Singh, Shane	ThDT13-07.1	63
Shin, Taemin	FrDT1-01.3	84	Singh, Surya P. N.	SaBT14.4	117
Shin, Yeongcheol	ThDT12-06.1	62	Singh, Thoithoi	FrCT5.3	80
	FrDT18-01.1	107	Singh, Wazir	ThCT11.4	44
Shin, Yong Beom	FrDT4-06.2	89	Sinha, Aniruddha	WeCT4-04.1	13
Shin, Young Seok	FrDT8-03.1	94		FrAT7.3	71
Shin, Younggwon	ThDT2-03.1	48		SaAT7.3	110
	ThDT12-08.5	63		SaBT7.1	114
Shin, Younghak	FrBT4.5	75	Sinha, Roopak	WeBT12.1	7
	FrCT4.1	80	Sinha, Sanjana	SaAT7.3	110
Shin, Yujin	FrDT3-07.4	88	Siniatchkin, Michael	ThCT18.3	46
	FrDT6-02.2	91		ThCT18.4	46
Shinba, Toshikazu	WeCT11-03.3	24	Sinno, Zeina	FrBT10.2	77
Shingo, Kouki	FrDT16-02.2	105			
Shinohara, Minoru	WeCT9-03.1	21			

Siogkas, Panagiotis	WeAT10.6	3	Song, Cheol	WeCT16-02.2	30
	WeCT2-02.11	11		WeCT16-04.1	31
	WeCT11-04.4	24		ThDT2-01.9	48
Siti Anom, Ahmad	ThDT8-02.3	56		SaBT3.1	C
	FrAT17.4	74		SaBT3.3	113
Siu, Ricardo	ThBT13.3	41	Song, Choong Seok	WeAT3.3	1
Siu, Vince	FrDT4-02.3	89	Song, Daniel	SaBT16.3	117
Sivaprakasam, Mohanasankar	WeBT11.1	CC	Song, Dong	WeCT8-03.5	19
	WeBT11.5	7		ThAT13.1	C
	ThAT11.3	35		ThAT13.1	36
	ThCT11.3	44		FrDT9-03.9	95
	FrCT15.5	83	Song, Fei	WeCT9-01.13	20
	SaBT12.5	116	Song, Harim	WeCT13-10.2	27
	SaCT13.1	121	Song, Hayoung	ThDT13-05.1	63
Sivarasu, Sudesh	ThAT7.3	34	Song, Hyun Beom	WeCT13-01.1	26
	ThAT7.6	34	Song, Hyunwoo	ThDT14-07.1	64
Sklar, Samuel	WeCT8-01.2	18	Song, Ilseob	ThDT14-03.1	64
Slaughter, Gymama	WeAT4.2	1		ThDT14-08.1	64
	ThDT5-01.4	52		FrDT4-05.8	89
	FrDT6-04.1	91	Song, Jae Eun	FrDT2-07.1	86
Smallbon, Vanessa Jane	WeCT4-05.1	14	Song, Joon Woo	ThDT2-01.2	47
Smiley, Brianna	ThAT2.4	33		ThDT2-02.1	48
Smital, Lukas	ThDT10-02.1	59		ThDT2-02.2	48
Smith, Brian	FrBT14.2	78	Song, Joonyoung	WeCT3-03.6	13
Smith, Elliot	WeCT8-01.2	18	Song, Ju Hwan	FrDT4-05.2	89
Smith, Gerard	ThDT10-01.7	59	Song, Jung Yong	FrDT8-03.1	94
Smith, Graeme E.	FrBT15.6	78	Song, Kang-Il	WeCT9-02.5	21
Smith, Michael	WeCT2-01.9	10		FrDT9-04.2	96
Smith, Peter Alex	WeCT11-02.1	23	Song, Kiseok	WeCT12-04.5	26
Smith, Richard	ThBT7.1	39	Song, Kyu-Ho	FrDT2-07.4	87
Sneyd, James	ThDT11-01.3	60	Song, Minsu	WeCT9-03.4	21
Sng, Ban Leong	FrAT14.3	73	Song, Moon-Yong	FrDT6-09.1	92
So, Rosa	ThBT8.3	39	Song, Rong	FrDT8-01.1	93
	ThBT8.4	40		FrDT8-09.4	94
	FrAT1.2	70	Song, Sang-Eun	ThDT13-07.1	63
So, Soonwon	FrDT1-02.6	85	Song, Seowoo	ThDT12-07.4	62
Soares, Daniel Fuess	WeCT12-02.11	25	Song, Seung Joon	FrDT14-01.14	102
Sobhani Tehrani, Ehsan	FrDT8-09.1	94		FrDT15-08.2	104
Sodini, Charles	ThCT11.1	44	Song, Si Young	FrDT13-05.1	101
Sodré, Bruno	SaCT18.5	121	Song, Tai-Kyong	ThDT14-05.2	64
Soegijoko, Soegijardjo	ThDT10-03.5	59		ThDT14-05.3	64
Søgaard, Peter	ThAT5.4	34		ThDT14-07.1	64
Soh, Cheong Boon	SaCT5.4	119		ThDT14-07.2	64
Sohankar, Javad	WeCT4-04.6	14		ThDT14-07.3	64
Söhle, Mona	SaBT12.1	116	Song, Tongjin	FrDT9-04.1	96
Sohn, Hyunmin	SaAT16.3	111	Song, William	FrDT12-03.4	99
Sohn, Jangjay	ThBT11.2	40	Song, Wolf	WeAT7.4	2
	ThDT5-01.6	52	Song, Xiangfen	FrBT2.2	75
	ThDT15-03.1	65	Song, Xubo	WeCT4-03.2	13
	FrDT4-05.3	89	Song, YeEun	FrDT15-08.2	104
Sohn, Jeong-woo	WeBT1.2	4	Song, Yilin	WeCT9-02.6	21
	FrDT3-05.1	87	Song, Yong-Joon	SaAT13.5	111
Sohn, Wonbum	ThDT2-03.1	48	Song, Yoon-Kyu	WeCT7-01.7	17
Sokolsky, Oleg	FrCT15.3	83		WeCT9-01.9	20
Sola, Josep	ThBT5.6	39	Song, Younghoon	WeCT6-04.6	16
	ThCT11.2	44	Song, Yu-Lin	ThDT14-07.4	64
Solà-Soler, Jordi	WeCT15-02.2	29	Sonka, Milan	FrBT14.2	78
Solt, Ken	SaBT15.3	117	Soraya, Sabrina Ifahdini	ThDT4-03.1	51
Soltan, Ahmed	WeBT4.1	5	Sorensen, Helge B D	ThDT10-01.3	58
Sombune, Praotasna	FrBT10.3	77		FrDT13-05.3	101
Sommer, Friedrich	FrCT9.5	82		FrDT18-08.4	108
Sommer, Wolfgang H.	WeCT2-01.11	10		SaAT1.1	109
Son, Dong Hoon	ThDT2-07.2	48	Sørensen, Kasper	ThAT5.4	34
Son, Jae Ik	FrDT10-19.1	98	Soriano, Jaymar	FrAT10.3	73
Son, Jaebum	FrDT3-09.1	88	Soroshmehr, S.M.Reza	WeAT10.3	3
Son, Jegoo	ThDT6-02.3	53		ThAT14.1	36
Son, Jong Bum	WeCT14-05.1	28		FrAT8.1	72
Son, Kuk Hui	FrDT6-11.1	92	Soto, Angel	FrCT5.2	80
Son, Seong-Jin	SaAT14.6	111	Soto, Javier E.	WeCT3-02.2	12
Son, Young Don	WeCT16-01.1	30	Sowalsky, Kristen	ThDT18-01.4	68
	ThDT3-06.1	49	Sp, Preejith	SaCT13.1	121
	ThDT3-07.1	50	Spahr, Axel	SaAT14.2	111
Son, Younsun	FrDT12-03.5	99	Sparrey, Carolyn	ThBT7.3	39
Song, Aiguo	ThCT8.3	43	Sparrow, William	WeCT7-01.16	17
Song, Biao	WeCT11-01.3	23	Spilka, Jiri	FrCT18.3	84
	WeCT15-08.1	30	Spyrou, Loukianos	ThAT18.1	37
Song, Byeong-Wook	SaCT12.6	121		SaAT1.2	109
Song, Byung Seop	FrDT4-01.4	88	Sridhar, Arvind	FrDT16-06.6	105
			Srikram, Richalannaphat	WeCT3-01.8	12
			Srinivasan, Ashok	FrAT8.1	72
			Srinivasan, Shraddha	WeCT8-01.2	18

Sristi, Ram Dyuthi	ThDT8-01.3	55	Sun, Bin	WeCT9-01.4	20
Stadnik, Paul	ThCT12.1	44		WeCT9-01.11	20
Stanacevic, Milutin	WeBT9.5	6	Sun, Chang	ThDT8-01.4	55
Steele, Preston	SaBT8.3	114	Sun, Changjiao	WeCT9-01.13	20
Steenkamp, Marco	FrDT5-01.1	90	Sun, Chenglu	WeBT4.2	5
Stefanini, Cesare	ThAT13.5	36	Sun, Guanghao	WeCT11-03.3	24
Stefos, Theodoros	ThDT10-04.3	59		ThDT17-06.4	68
Steinfeldt, Torsten	WeAT4.3	1	Sun, Jianqi	WeCT2-02.2	11
Steinseifer, Ulrich	ThDT15-08.1	65	Sun, Jing	WeCT3-03.2	12
Stephani, Ulrich	ThCT18.3	46	Sun, Junfeng	SaBT8.1	C
	ThCT18.4	46		SaBT8.4	114
Stephens, Nicole	ThDT10-03.3	59	Sun, Lingfen	ThDT1-04.7	47
Stephenson, Robert	SaBT9.6	115	Sun, Nan	SaBT5.1	113
Stevens, Michael Charles	WeCT11-02.3	23	Sun, Tony	FrBT9.6	77
Stewart, Pilar	ThDT10-03.3	59	Sun, Xiao	ThDT11-05.1	61
Stickley, Cris	FrDT16-05.3	105	Sun, Xinchen	ThCT13.3	45
Stieglitz, Thomas	WeBT9.6	6	Sun, Yu	ThDT8-01.5	55
	WeCT2-01.6	10		ThDT8-01.13	56
	WeCT9-01.1	20		FrBT1.4	74
	WeCT9-01.3	20		SaAT17.3	111
	WeCT9-01.6	20		SaBT17.2	117
	ThBT9.1	40	Sunaga, Yoshinori	FrAT9.2	72
Stilson, Kelsey	FrCT9.2	81	Sunagawa, Genya	ThDT13-03.2	63
Stocker, Abigail	WeCT4-04.3	14	Sunagawa, Kenji	ThDT13-03.2	63
Stolovitzky, Gustavo	FrDT4-02.3	89		SaBT15.1	C
Stone, Scellig	FrCT8.2	81		SaBT15.5	117
Stotts, Larry	ThCT12.1	44	Sunayama, Wataru	WeBT16.5	8
Stout, James	SaBT12.3	116	Sundaram, Subramanian Meenakshi	WeCT5-01.2	14
Straessle, Rahel	FrDT16-06.6	105	Sunderam, Sridhar	FrCT8.6	81
Strauss, Daniel J.	ThCT18.2	45		SaBT8.3	114
	ThDT18-02.1	69	Sung Ho, Park	FrDT12-03.5	99
	SaCT2.4	118	Sung, Dongsuk	WeCT1-03.4	9
Strauss, Martin	WeCT10-03.9	23		FrDT16-01.4	105
Strazza, Annachiara	FrBT17.5	79	Sung, Jinho	FrDT5-03.1	90
Struijk, Johannes	ThAT5.4	34	Sung, Kung-Bin	ThDT12-09.2	63
Studin, Mark	WeCT2-02.5	11	Sung, Shih-Hsien	ThDT15-08.2	65
Sturgeon, Cassandra	SaAT3.2	109	Sungjune, Jung	ThDT5-04.2	53
Sturm, Matthias	WeCT1-03.7	9		SaBT6.1	C
Styer, Aaron	WeCT3-02.1	12	Sunoo, Sub	SaCT10.1	120
Stylios, Chrysostomos	ThDT10-04.2	59	Sunwoo, Leonard	FrDT2-06.4	86
	ThDT10-04.3	59	Surace, Elisabetta	SaCT4.3	119
Su, Peng	ThDT1-02.3	46	Susha Nair, Aravind	FrDT17-08.9	107
	FrAT5.2	71	Susumu, Kaori	SaCT9.3	119
Su, Shaojie	WeCT12-01.1	25	Sutorma, Andreas	ThDT2-01.8	48
Su, Steven Weidong	WeCT1-04.1	9	Suvasanuthi, Saroj	FrCT6.7	81
	WeCT1-04.7	10	Suzuki, Ikuto	ThDT12-02.1	62
	WeCT11-03.2	24	Suzuki, Katsuyoshi	FrAT9.5	72
	WeCT15-01.2	29	Suzuki, Kenji	FrBT5.4	75
	ThCT10.4	44		SaBT5.3	113
	FrBT10.4	77	Suzuki, Kenta	SaBT7.4	114
	FrBT17.2	79	Suzuki, Michiyasu	WeBT12.4	7
Su, Yi-Juan	ThDT4-03.1	51	Suzuki, Takafumi	FrAT9.5	72
Suanning, Gregg	WeCT9-04.2	21	Suzuki, Takashi	FrBT11.5	77
	ThAT9.1	CC	Suzuki, Tatsuto	WeCT7-05.2	18
	ThAT9.2	35	Suzuki, Toshiyuki	FrCT14.1	83
Subramanian, Meera	ThBT11.3	40	Suzuki, Yoko	ThDT12-05.3	62
Subramanya, Rakshit	WeCT10-02.2	22	Suzurikawa, Jun	WeCT7-01.6	17
Suda, Atsushi	WeCT7-05.2	18		ThDT8-01.10	56
Sudo, Kazuhiro	SaBT3.4	113	Svensson, Tim	FrDT4-05.9	89
Suefusa, Kaori	FrDT1-02.21	85	Sviridova, Nina	FrDT17-06.1	106
Sugahara, Kengo	FrDT13-11.1	101	Svirskis, Darren	FrDT7-07.2	93
Sugawara, Hisayoshi	SaCT9.3	119	Sviryaev, Yurii	FrCT17.3	84
Sugimachi, Masaru	ThAT11.1	CC	Swanepoel, Liam	FrBT15.1	78
	FrBT4.1	CC	Swarnkar, Vinayak	ThDT17-05.2	68
	FrCT4.1	CC		ThDT17-05.3	68
Sugimoto, Chika	FrDT12-02.1	99		SaCT18.2	121
Sugimoto, Ryosuke	FrDT4-06.3	89	Swift, James	SaBT8.6	115
Sugiura, Seiryō	SaAT11.1	110	Sydänheimo, Lauri	ThAT13.4	36
Sugiyama, Osamu	FrDT13-10.1	101	Syga, Piotr	WeCT3-01.4	12
Sugiyama, Yoshimi	FrDT14-02.6	103	Szeles, Constantin	FrCT4.2	80
Suh, Gee Young	WeBT15.4	8			
Sui, Xiaohong	WeCT2-01.5	10			
Suinesiaputra, Avan	ThDT3-01.3	49			
Suk, Heung-Il	ThCT14.3	45			
Sul, Onejae	FrDT5-05.4	90			
Sulaiman, S.A.	WeCT5-04.7	15			
Sulas, Eleonora	WeCT8-03.4	19			
Sultan, Malik Saad	FrBT2.4	75			
Sulzer, James	WeCT5-01.3	14			
Sun Kwon, Kim	FrDT17-09.1	107			
Sun, Aiqi	FrBT3.1	75			

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Tabatabaei Balaei, Asghar	ThBT15.1	41
	SaAT14.2	111
Taberner, Andrew	WeBT13.3	7
	WeCT11-02.2	23
Tachibana, Rie	ThCT14.1	45

Tachos, Nikolaos	WeAT10.6	3	Tanaka, Yujiro	ThAT4.2	33
Tack, Gye-Rae	ThDT16-04.1	66	Tanaka, Yuta	WeCT9-02.1	20
	ThDT16-04.2	66	Tang, Haiyun	SaBT3.5	113
	ThDT16-09.2	66	Tang, Hao	WeCT12-01.1	25
Tada, Mitsunori	WeCT7-01.3	17	Tang, Hong	ThDT18-02.13	69
	ThAT18.2	37	Tang, Julia	WeCT2-01.12	10
Tadano, Kotaro	FrDT12-01.1	99	Tang, Sai Chun	ThBT13.2	41
Tae, Chul-Gyu	ThDT4-01.4	50	Tang, Tao	WeBT9.1	6
taehyun, kim	FrDT18-07.3	108	Tang, Wensi	FrCT3.3	80
Taekyu, Kwon	WeCT16-11.1	31	Tang, Xiaoying	SaBT3.5	113
Tagawa, Munenori	FrDT10-17.1	98	Tang, Zhenchao	ThAT14.4	36
Tagawa, Yoshihiko	ThBT7.4	39	Tangamornsuksan, Wimonchat	ThDT11-02.1	60
	ThDT16-02.2	66	Tangel, Chang	FrBT14.2	78
	FrDT8-07.2	94	Tanghe, Emmeric	FrCT4.2	80
	FrDT8-09.3	94	Tangonan, Gregory	ThDT16-06.1	66
Tahafchi, Parisa	ThDT18-01.4	68	Tanida, Sousuke	SaCT9.6	120
Taherian, Babak	WeCT8-02.2	19	Tanji, Yutaro	FrDT1-02.21	85
TaheriNejad, Nima	ThDT4-02.1	50	Tankaria, Harshal	WeCT14-01.5	27
Tahir, Bilal	ThDT8-01.1	55		ThCT12.6	44
Tahk, Dongha	WeCT6-05.6	16	Tannast, Moritz	WeCT7-01.12	17
Tahmasebi, Nazanin	WeBT14.4	7	Tanoue, Minori	ThDT13-06.1	63
Taiki, Oshimoto, Taiki	SaCT9.6	120	Tanriverdi, Fatih	ThDT2-01.8	48
Taipalus, Tapio	WeBT11.2	6	Tanskanen, Jarno M. A.	FrBT9.2	77
	WeBT11.3	6	Tansley, Geoff	WeCT11-08.1	24
Tajima, Mikiya	WeBT16.5	8	Tantibundhit, Charturong	WeCT14-01.3	27
Tajima, Takuro	ThAT4.2	33		FrBT10.3	77
Takada, Chisato	FrCT14.1	83	Tao, Wanjun	ThCT13.3	45
Takahashi, Kazutaka	WeCT2-02.9	11	Tao, Xuan	WeCT3-02.4	12
Takahashi, Masanobu	ThDT2-05.2	48		FrAT14.4	73
Takahashi, Masayuki	FrDT6-06.1	91	Tarassenko, Lionel	FrDT1-02.4	84
Takano, Masashi	ThDT2-05.2	48	Tariq, Taimoor	WeCT9-01.5	20
Takano, Noriyuki	WeCT16-05.2	31	Taruya, Akira	WeCT14-02.2	28
Takano, Yoshio	FrDT8-09.3	94	Tashiro, Hiroyuki	FrDT7-09.1	93
Takao, Hiroyuki	FrBT11.5	77	Tasker, Robert	SaBT1.2	112
Takashima, Atsushi	WeCT7-01.6	17	Taswell, Carl	FrCT14.4	83
	ThDT8-01.10	56		FrDT2-01.3	86
Takatori, Fumihiko	FrBT15.2	78		FrDT2-01.4	86
	FrCT15.2	83	Taswell, S. Koby	FrCT14.4	83
Takeda, Toki	SaAT18.1	112		FrDT2-01.3	86
Takei, Yusuke	ThDT12-05.2	62	Tataraidze, Alexander	WeCT10-03.8	23
Takeuchi, Yoshinori	ThAT4.6	33		FrCT17.3	84
Taki, Yasuyuki	FrAT3.6	71	Tatinati, Sivanagaraja	ThDT18-01.2	68
Takiguchi, Tetsuya	ThDT9-01.1	57		FrAT18.6	74
	FrDT1-02.17	85	Tatli, Christina	ThDT17-06.3	68
	FrDT18-01.2	107	Tatsuho, Nagatomo	ThAT4.3	33
Takizawa, Kenta	WeCT7-01.6	17	Taubenblatt, Mark A.	FrDT16-06.6	105
	ThDT8-01.10	56	Tavakoli, Nasrin	ThAT14.1	36
Talhan, Aishwari	FrCT16.3	83	Tavakolian, Kouhyar	ThAT5.1	C
Tamei, Tomoya	FrBT16.1	78	Tay, Elton L.T.	WeCT3-01.1	11
Tamura, Hiroshi	WeCT10-03.1	22	Tayapiwatana, Chatchai	FrCT6.4	81
Tamura, Toshiyo	WeAT12.1	C	Tay-Kearney, Mei-Ling	WeCT3-03.1	12
	WeCT7-01.6	17	Taylor, Adam	WeCT8-02.12	19
	WeCT15-05.1	29	Tedeschi, Federico	FrBT18.1	79
	ThBT5.1	38	Teixeira, César	ThDT10-01.4	58
	ThDT8-01.10	56	Temiz, Yuksel	FrDT16-06.6	105
Tan, Chin-Tuan	WeCT9-04.1	21	Temko, Andriy	ThBT17.3	42
	ThDT9-10.3	58		FrDT14-01.7	102
	FrAT18.2	74		SaAT17.6	112
Tan, Isabella	FrCT11.2	82	ten Dam, Anne Maria	WeCT12-02.7	25
Tan, Joo Kooi	ThCT14.1	45	Teng, Teng	ThDT8-01.17	56
Tan, Justin	WeCT6-04.3	16	Tenhunen, Mirja	ThDT18-01.8	68
Tan, Kok Kiong	WeCT14-01.8	27	Tenner, Felix	SaBT12.1	116
	FrAT14.3	73	Teo-Jeon, Shin	ThDT3-09.2	50
Tan, Ru San	ThDT15-01.1	65	Tepmongkol, Supatporn	WeCT14-01.2	27
	ThDT15-07.1	65	Terasawa, Naoto	FrDT1-02.19	85
	FrDT3-07.10	88	Terasawa, Yasuo	ThAT9.4	35
	SaBT10.1	115		ThDT9-11.1	58
Tan, Sha	FrDT2-04.1	86		ThDT9-11.2	58
Tan, ShengWei	FrAT6.2	71		FrDT7-09.1	93
Tan, Swee Yaw	FrDT3-07.10	88	Terebus, Anna	FrDT11-04.1	98
Tanabe, Fumika	ThAT4.6	33	Terracciano, Antonio	FrBT8.1	76
Tanaka, Atsushi	WeCT14-02.2	28	Terrill, Philip Ian	ThCT15.2	45
Tanaka, Hirokazu	FrBT4.2	75	Tesei, Marco	WeCT4-04.4	14
Tanaka, Hiroki	FrDT1-02.19	85	Teshima, Yoshinori	WeCT7-01.6	17
Tanaka, Nobuyuki	ThDT3-08.5	50	Tessa, Carlo	FrBT8.4	76
Tanaka, Shinobu	ThDT12-02.1	62		FrBT8.6	76
Tanaka, Shun-ichi	FrDT10-01.2	96	Thaha, Mohamed	ThBT4.1	38
Tanaka, Takayuki	FrDT14-02.6	103			
Tanaka, Toshihisa	ThDT18-01.7	68			
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Thakor, Nitish	ThDT8-01.5	55	Tonthat, Loi	FrDT12-01.2	99
	ThDT8-01.13	56	Topalovic, Marko	FrDT13-04.2	101
	FrBT1.4	74	Toppi, Jlenia	SaAT17.2	111
	SaAT17.3	111		SaAT17.4	112
	SaAT17.4	112		SaBT17.1	117
	SaBT17.2	117	Torre, Fernando de la	WeAT12.5	3
Thamrin, Cindy	WeCT4-03.1	13	Torres, Abel	WeBT15.2	8
Thandayam, Sai Ruthvik	WeCT8-02.11	19	Torres, Gabriela	FrAT2.1	70
Thangappan, Anandaraj	FrDT17-08.9	107	Torres, Iñigo	SaCT5.5	119
Theocharides, Theocharis	ThDT18-02.3	69	Toschi, Nicola	FrAT3.5	70
Thevathasan, Wesley	ThDT13-10.2	63		FrBT8.1	76
Thévenin, Dominique	WeCT11-04.2	24		FrBT8.3	76
Thiansupornpong, Pongpak	ThDT11-02.1	60		FrBT8.4	76
Thibault, Guillaume	WeCT3-03.4	12		FrBT8.6	76
Thiem, Jörg	ThDT2-01.8	48		SaBT17.5	118
Thiermann, Steffen	SaBT14.5	117		SaBT17.6	118
Thijssen, Stephan	ThDT11-03.4	61	Tosin, Maurício C	WeCT1-01.3	8
Thomas, Ilias	WeAT12.2	3	Toth, Jake	WeCT8-02.10	19
Thomas, Jobin	ThDT1-01.3	46	Toumazou, Christofer	WeBT4.5	5
Thomas, John	FrAT7.4	71	Tousoulis, Dimitris	WeCT2-02.11	11
Thomas, Louise	ThBT7.1	C	Toutouzas, Kostas	WeCT2-02.11	11
	ThBT7.3	39	Town, Graham	SaAT18.4	112
Thomenius, Kai Erik	ThDT18-02.4	69	Trakoolwilaiwan, Thanawin	ThDT7-01.6	54
Thomsen, Lars Pilegaard	WeAT15.5	4	Tran, Anh Le	WeCT12-02.13	25
Thong, Yoke Jia	WeCT4-03.5	13		ThBT12.3	41
Thorsen, Jill	ThDT10-04.6	60	Tran, Bao Tram	FrDT7-07.1	93
Thrasher, Timothy Adam	FrDT12-03.6	99	Tran, Nguyen Bao	ThDT8-02.10	57
Thuerauf, Sabine	ThBT3.6	38	Tran, Nhat	ThDT11-02.2	60
Thyagarajan, Dominic	ThBT3.2	38	Tran, Yvonne	ThAT18.5	37
Tian, Hao	WeAT13.2	4		FrAT7.1	71
Tian, Jie	WeCT3-02.5	12		FrAT7.2	71
	ThAT14.4	36	Trapero, Jose Ignacio	FrBT18.6	79
Tian, Lan	WeCT1-01.7	9	Travas-Sejdic, Jadranka	FrDT7-07.2	93
	SaCT4.5	119	Treaba, Constantina	FrAT3.5	70
Tian, Xiang	WeCT8-02.8	19	Trettel, Arianna	FrBT1.6	74
Tian, Zhenlin	ThAT6.2	34	Trew, Mark L	ThBT13.4	41
Tiffany, Stephen	WeCT10-03.3	22	Triesch, Jochen	FrBT4.3	75
Tigges, Timo	SaBT1.5	112	Trimer, Renata	SaBT10.4	115
Timm, Dale	WeCT8-02.3	19	Tripathy, Soumya Ranjan	WeCT4-04.1	13
Timpano Sportiello, Marco	WeCT7-01.1	16		SaBT7.1	114
	WeCT7-01.2	17	Tripoliti, Evanthia	FrCT10.2	82
Ting, Simon	WeCT4-05.3	14	Trivella, Maria G.	FrCT10.2	82
Tiso, Natascia	WeBT14.3	7	Tronstad, Christian	WeAT4.3	1
Tiwari, Abhishek	ThDT9-01.4	57		WeAT16.2	4
Tiwari, Ashwani Kumar	ThDT14-01.1	64		ThBT4.2	38
Tiwari, Vijay Narayan	WeAT11.3	3		SaBT1.1	112
	ThDT4-01.3	50	Troosters, Thierry	FrDT13-04.2	101
	ThDT4-03.9	51	Trouillon, Raphaël	WeCT6-05.3	16
To, Nguyen Nhat Minh	FrDT11-07.3	98		FrDT6-07.1	92
Tocchini, Stefania	WeCT7-01.1	16	Trucco, Marco	ThDT8-01.12	56
	WeCT7-01.2	17	Trujillo, Leslie	ThDT10-03.3	59
Toda, Kazumasa	FrDT4-06.3	89	Truschel, William	WeAT15.3	4
Todaka, Koji	SaBT15.5	117	Tsai, Ming-Dar	SaBT3.4	113
Toe, Kyaw Kyar	WeCT10-02.1	22	Tsai, Yuh-Show	ThDT14-12.1	65
	SaBT10.1	115	Tsao, Bryan	FrAT3.2	70
	SaBT16.5	117	Tseng, Fan-Pin	ThDT3-09.3	50
Togo, Masaya	FrDT17-08.3	107	Tseng, Han-Min	FrDT12-04.2	99
Togo, Satoru	FrCT15.2	83	Tseng, Sheng-Pin	ThDT3-09.3	50
Tokiwa, Tatsuji	FrDT5-08.2	91	Tseng, Yu-Chee	ThDT4-03.1	51
Tokuda, Takashi	FrAT9.2	72	Tsiknakis, Manolis	WeCT12-03.4	26
	FrDT4-01.1	88	Tsiouris, Kostas	SaAT13.6	111
	FrDT7-09.1	93	Tsompou, Panagiota	WeAT10.6	3
	FrDT16-05.1	105	Tsuboki, Mitsuo	FrDT16-02.2	105
Tokuno, Shinichi	WeBT10.1	CC	Tsuchiya, Yoshio	FrDT14-02.6	103
	WeBT10.1	6	Tsueda, Junya	FrDT9-04.3	96
	WeBT10.3	6	Tsuji, Toshio	ThDT8-02.5	56
	WeBT10.5	6	Tsujikawa, Masanori	FrDT18-03.2	107
	FrDT10-01.2	96	Tsujikawa, Takahiro	SaBT3.1	113
Tola-Arribas, Miguel A.	WeCT1-02.3	9	Tsujimoto, Yutaka	FrCT18.2	84
	ThDT1-02.4	46	Tsukamoto, Akira	ThDT11-06.1	61
Tolosa, Vanessa	ThDT6-06.1	54	Tsukihara, Hiroyuki	FrBT2.3	75
Tomarchio, Valeria	ThDT10-05.4	60	Tsutsui, Hiroyuki	SaBT15.5	117
Tomas-Fernandez, Xavier	FrCT8.2	81	Tu, Jing	WeCT6-05.2	16
Tomehata, Sumie	FrDT14-01.4	102		FrAT6.4	71
Tong, Jingjing	ThDT1-01.1	46	Tumurbaatar, Batgerel	WeCT7-05.1	18
Tong, Shanbao	FrCT3.1	80	Turianikova, Zuzana	ThAT1.2	33
	SaBT2.1	112		FrBT18.3	79
	SaBT8.4	114	Tyler, Marcus	FrBT10.2	77
	SaBT17.4	118	Tyson, Joel	FrDT6-04.1	91
Tongvigitmanee, Saowapak	FrBT2.5	75			
Tononi, Giulio	WeCT8-01.1	18			

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U, One Sang	ThDT12-08.3	62
Uchiyama, Takanori	SaBT7.4	114
Udaiwal, Neha Satishkumar	WeCT5-01.2	14
Udhayakumar, Radhagayathri	FrBT18.4	79
Ueda, Jun	WeCT9-03.1	21
Uemura, Mitsunori	WeCT7-01.13	17
Uemura, Takafumi	ThAT4.6	33
	ThBT4.3	38
Ueshima, Kazuo	WeCT10-03.1	22
Ukil, Arijit	ThDT17-01.3	67
Ukkonen, Leena	ThAT13.4	36
Ul Amin, Faiz	WeCT6-01.1	15
Ullensvang, Kyrre	WeAT4.3	1
Ulukaya, Sezer	ThDT18-02.6	69
Um, Soong Ho	FrDT7-07.5	93
Umematsu, Terumi	FrDT18-03.2	107
Umemura, Guilherme Silva	WeCT12-02.11	25
Umezu, Mitsuo	ThDT15-09.1	65
Umezu, Tomohiro	FrDT11-06.2	98
Umpaipant, Wachirawit	WeCT14-01.3	27
Ung Hyun Ko, Ung Hyun	FrDT6-02.1	91
	FrDT6-02.3	91
Unser, Michael	ThBT14.1	C
Urbano, Diamond	ThBT9.4	40
	FrCT8.3	81
Urman, Noa	ThAT12.5	36
	ThCT12.3	44
Urtanasan, Erdenebayar	WeCT15-13.2	30
	FrDT14-01.11	102
Utsunomiya, Mitaku	ThDT18-01.13	69
Uzawa, Shihomi	ThDT9-01.1	57
V		
V, Raj Kiran	WeBT11.5	7
Vafay Eslahi, Samira	FrBT3.3	75
Vaini, Emanuele	ThAT5.3	34
	ThBT11.1	40
Vaish, Pallavi	SaBT14.3	116
Valarezo Añazco, Edwin	WeCT2-02.7	11
	WeCT10-02.9	22
Valente, Martina	FrBT18.3	79
Valenza, Gaetano	WeCT11-01.5	8
	WeCT11-03.4	24
	WeCT11-03.5	24
	ThAT1.1	32
	ThAT4.4	33
	ThAT17.3	37
	ThCT18.1	45
	ThDT1-04.2	47
	ThDT1-04.9	47
	FrAT17.3	74
	FrBT8.4	76
	FrBT8.6	76
	FrBT18.1	79
	FrCT18.4	84
	FrCT18.5	84
	SaBT17.5	118
Valero-Cuevas, Francisco	WeCT8-02.2	19
Valiante, Taufik A.	ThDT1-02.1	46
Vallan, Alberto	WeCT5-04.8	15
Vallés-Lluch, Ana	FrAT4.3	71
Vallmitjana, Alex	ThDT2-04.1	48
	SaCT2.6	118
Van de Ven, Peter	WeCT11-02.6	23
van den Boer, Janet	WeCT5-02.3	14
Van Den Heever, Dawie	WeCT5-01.1	14
	ThDT10-01.7	59
	FrBT15.1	78
Van Der Merwe, Johan	FrDT17-02.1	106
Van Der Merwe, Tys	FrDT17-02.1	106
Van Gorp, Pieter	SaCT10.1	C
	SaCT10.2	120
Van Huffel, Sabine	WeCT11-03.2	9
	ThBT17.1	42
	ThDT17-04.3	68
van Kessel, Theodore	FrDT16-06.6	105
Van Leeuwen, Spencer Richard	WeAT10.5	3
	ThDT11-02.6	61
	SaBT13.2	116
	SaCT13.6	121
Van Orden, Katie	WeBT8.5	6
Van Put, Steven	FrDT16-03.1	105
van Riet, Tom Cornelis Theodorus	ThDT16-09.1	66
Van Santen, Jan	WeCT4-03.2	13
van Schaik, André	ThCT13.1	44
van Soest, Gijs	WeBT3.1	5
van Twisk, Piethen	ThDT16-09.1	66
Vandecasteele, Bjorn	FrDT16-03.1	105
Vanderwinden, Jean-Marie	SaBT11.2	115
Vanfleteren, Jan	FrDT16-03.1	105
Vaninetti, Michael	ThBT13.2	41
Vanrumste, Bart	ThDT10-05.3	60
	SaCT10.5	120
Vaquerizo-Villar, Fernando	WeCT1-02.3	9
	FrCT17.2	83
	FrCT17.5	84
Vargas, Paola Mariana	FrDT3-09.1	88
Varghese, Vicky	FrDT15-06.2	104
Varma, Abhinav	ThDT1-01.3	46
Värri, Alpo	ThDT18-01.8	68
Vasan, Jayaraman Kiruthi	FrCT15.5	83
Vasankari, Tuija	ThAT5.1	33
Vasireddy, Rakesh	WeCT7-01.12	17
Vasyiltsov, Ihor	FrDT4-05.2	89
Vayatis, Nicolas	FrDT15.5	78
Vazakopoulou, Calliope-Marina	WeCT12-03.4	26
Vázquez Zapién, Gustavo Jesús	FrCT6.1	81
Veeramacheni, Teja	FrCT14.4	83
	FrDT2-01.3	86
Veiga, Diana	FrBT2.4	75
Velardo, Carmelo	FrDT1-02.4	84
Vellinga, Quinn	WeAT12.6	3
Veluvolu, Kalyana C.	ThDT9-05.1	57
	ThDT18-01.2	68
	FrAT18.6	74
Venema, Boudewijn	SaAT3.1	109
Venkatasubramanian, Arun	ThCT12.2	44
Venugopalan, Janani	ThDT10-01.1	58
	SaAT14.4	111
Verdú, Gumersindo	WeCT2-02.4	11
	ThDT12-05.1	62
Verghese, George	WeAT15.6	4
	WeBT15.3	8
Verjus, Christophe	ThBT5.6	39
	ThCT11.2	44
Verly, Jacques	FrDT10-03.2	96
Verma, Vijay Kumar	WeCT15-05.2	29
	ThDT4-02.5	51
Vermillion, Billt	WeCT9-03.2	21
	SaBT7.6	114
Verrelli, David I.	FrBT11.2	77
	FrBT11.3	77
Verri, Alessandro	ThAT10.4	35
Vervliet, Nico	WeCT1-03.2	9
Vicario, Francesco	WeAT15.2	4
	WeAT15.3	4
Vieira, Pedro Miguel	WeCT3-02.7	12
	FrDT11-07.8	99
Vienne, Aliénor	ThDT1-03.1	46
Viga, Reinhard	WeBT11.1	6
Vignarajan, Janardhan	WeCT3-03.1	12
Viik, Jari	ThDT18-01.8	68
Vilas-Boas, Maria	WeCT12-01.3	25
Vilic, Adnan	ThDT10-01.3	58
	FrDT13-05.3	101
Viljoen, Jeandre	ThDT10-01.7	59
Villavicencio, Daniel	SaCT5.2	119
Villegas, Ricardo	FrDT16-03.2	105
Vinjamuri, Ramana	WeBT8.5	6
Viravaidya-Pasuwat, Kwanchanok	FrCT6.7	81
Visconti, Lorenzo	ThDT8-01.12	56
Viswanathan, Srikrishnan	FrDT3-07.9	88
Viviers, Pierre	ThDT10-01.7	59
Vlasova, Roza	WeBT2.5	5
	FrAT8.5	72
Vo, Anh Kha	SaBT18.3	118
Vogt, Florian	ThBT3.6	38

Vollero, Luca	ThDT10-05.4	60
Von Arx, Jeffrey	ThCT12.1	44
von Lühmann, Alexander	WeAT1.4	1
	SaCT8.4	119
von Paternos, Adam	WeCT8-04.2	20
Vonberg, Frederick William	SaBT1.2	112
Vongkittirux, Sakchai	WeCT14-01.3	27
Vormanen, Inkeri	FrBT9.2	77
Voss, Andreas	WeCT11-03.7	24
	ThDT1-02.2	46
	FrBT18.5	79
Vu, Quoc Dang	FrDT11-07.6	99
Vujanovic, Anka	FrDT13-01.1	100
Vullings, Rik	WeAT11.5	3
Vupputuri, Anusha	FrAT3.2	70
Vybornova, Anna	ThCT11.2	44

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W Tvedt, Lars Geir	ThBT4.5	38
Wacker, Josias	SaCT4.2	118
Wada, Chikamune	FrBT16.2	78
Wada, Tomoya	ThDT18-01.7	68
Wadamori, Naoki	ThDT16-02.3	66
Wade, Eric	FrDT4-06.1	89
Wagatsuma, Akira	ThAT6.4	34
Wagatsuma, Hiroaki	FrDT7-01.1	92
	FrDT17-08.1	106
	FrDT17-08.3	107
	FrDT18-06.1	108
Wakabayashi, Satoshi	FrDT13-08.2	101
Wakaiki, Tomohiro	FrDT14-02.6	103
Waks, Erin	ThDT10-03.3	59
Wald, Lawrence L.	FrBT3.4	75
Waldron, Timothy	SaBT15.6	117
Walmer, Matthew	WeCT8-01.2	18
Walter, Marian	WeCT5-04.4	15
	FrCT8.1	81
Walterscheid, Ingo	FrBT15.6	78
Wan Zaki, Wan Mimi Diyana	WeBT16.3	8
Wan, Cheng	WeCT3-03.2	12
Wan, Feng	FrCT1.2	79
Wan, Hong	ThDT18-02.8	69
Wan, Lu	ThBT1.1	37
Wan, Min	FrDT3-07.10	88
Wan, Sen	FrDT5-08.1	91
Wang, Aihua	WeCT9-03.6	21
Wang, Azhen	FrDT9-04.8	96
Wang, Bo	ThDT4-02.9	51
Wang, Changwon	FrDT5-04.2	90
	FrDT16-01.2	104
Wang, Chao	WeCT3-02.5	12
Wang, Chiao-Yi	ThDT12-09.2	63
Wang, Ching-Fu	FrDT5-07.2	91
	FrDT17-05.1	106
Wang, Chushan	WeCT14-02.5	28
Wang, Daifa	SaAT2.1	109
Wang, Danny JJ	FrDT2-01.1	85
	FrDT10-14.2	97
Wang, Desheng	FrDT3-07.10	88
Wang, Edward	ThDT4-01.1	50
Wang, Gang	FrCT15.3	83
Wang, Guoxing	WeCT5-04.5	15
Wang, Haipeng	WeBT8.3	6
	WeCT1-01.1	8
	WeCT4-02.3	13
Wang, Haofei	WeCT5-01.4	14
Wang, Hao-Jen	FrDT3-07.6	88
Wang, Hongda	FrBT1.1	74
Wang, Hui	WeCT4-03.4	13
	ThDT1-04.8	47
	FrCT9.6	82
	SaAT7.2	110
Wang, Huikang	ThDT8-01.17	56
Wang, Jia-Jung	FrDT18-06.4	108
Wang, Jianfei	WeCT11-01.3	23
	WeCT15-08.1	30
Wang, Jiankun	ThAT18.6	37
	ThBT4.4	38

Wang, Jianqing	FrAT4.1	71
	FrAT4.2	71
Wang, Jing	SaBT3.5	113
Wang, Jun	WeBT13.1	7
	WeCT14-02.5	28
	FrDT9-04.8	96
Wang, Junchen	FrBT2.3	75
Wang, Kai	FrBT5.1	75
Wang, Kuanquan	FrCT11.5	82
	SaBT13.5	116
Wang, Lei	WeCT1-04.5	10
	WeCT4-01.3	13
	FrCT9.6	82
	SaAT7.2	110
	SaBT16.1	C
	SaBT16.4	117
Wang, Ling	ThDT1-03.6	47
	FrAT8.2	72
Wang, Lizhen	WeCT11-02.5	23
	ThBT6.3	39
	ThDT11-02.5	60
Wang, May D.	WeCT12-01.2	25
	ThDT10-01.1	58
	FrBT10.5	77
	SaAT13.4	111
	SaAT14.4	111
Wang, Min	ThCT13.3	45
Wang, Ming	WeCT9-02.4	21
Wang, Mixia	WeCT9-02.6	21
Wang, Qian	FrDT17-08.6	107
Wang, Qing	ThDT14-09.1	64
	FrBT2.2	75
Wang, Qingmin	WeCT12-02.16	25
Wang, Qiuyue	FrAT8.2	72
Wang, Rui	ThAT4.2	33
	ThDT18-02.2	69
Wang, Ruilin	FrCT3.1	80
Wang, Ruimin	WeCT8-01.7	19
Wang, Ruomei	ThDT1-03.2	46
Wang, Shan	FrDT5-04.1	90
Wang, Shanshan	FrDT2-04.1	86
Wang, Shuo	ThAT14.4	36
Wang, Tong	ThAT11.6	36
Wang, Tzung-Dau	ThDT3-08.1	50
Wang, Wei	ThDT8-02.7	56
Wang, Weiqun	SaBT7.3	114
Wang, Xiu Ying	WeCT2-02.1	11
	FrCT3.3	80
Wang, Yalin	WeBT2.3	5
	WeBT2.5	5
	WeBT2.6	5
	FrAT8.5	72
Wang, Yan	WeCT2-01.7	10
Wang, Yang	WeAT4.5	1
Wang, Yaxin	WeCT11-02.1	23
Wang, Yi	ThAT9.1	35
	FrAT3.1	C
	FrCT9.4	81
Wang, Yijun	ThBT8.5	40
	ThBT8.6	40
	FrCT9.1	81
Wang, Ying	WeCT12-01.5	25
Wang, Yinong	FrBT2.2	75
Wang, Yiwen	WeBT1.4	5
	SaBT18.1	C
	SaBT18.6	118
Wang, Yongting	SaBT2.1	112
Wang, Yuanyuan	WeCT3-01.6	12
	ThDT4-03.7	51
	FrBT14.4	78
Wang, Yubo	ThDT18-01.2	68
Wang, Yueming	ThDT18-01.12	69
Wang, Yu-Te	FrCT9.1	81
Wang, Yuyuan	WeAT13.3	4
Wang, Ze	FrAT3.1	CC
	FrBT3.2	75
	FrCT1.2	79
Wang, Zhaoxiang	ThDT7-02.3	55
Wang, Zheng	ThDT1-03.6	47
	FrAT8.2	72

Wang, Zhigong	WeBT8.3	6	Wickramasinghe Siriwardhana, J.S.M.	WeCT7-01.5	17
	WeCT1-01.1	8	Wickstrom, Nicholas	FrDT4-05.9	89
	WeCT4-02.3	13	Widge, Alik	FrAT18.4	74
	ThCT13.3	45	Wiegand, Raymond	WeCT2-02.5	11
	ThDT8-01.9	56	Wiegand, Thomas	SaBT18.5	118
Wang, Zhihua	WeCT12-01.1	25	Wienecke, Troels	ThDT10-01.3	58
Wang, Zhihui	WeAT10.4	3		FrDT13-05.3	101
Wang, Zhong	ThDT1-03.2	46	Wiest, Joachim	WeCT6-03.3	15
Wang, Zihuan	ThBT6.6	39		ThAT6.6	34
Wang, Zongjie	ThAT6.2	34	Wijesundara, Suharshani	WeAT12.4	3
	SaAT6.2	110	Wildman, Derek	ThAT10.1	35
Wang, Zunliang	FrAT6.4	71	Williams, John Michael	FrCT6.2	81
Waraho-Zhmayev, Dujduan	FrCT6.4	81	Williamson, Craig	FrAT8.1	72
Ward, Kevin	ThCT18.6	46	Wilson, Jenny	WeCT4-03.2	13
	FrAT8.1	72	Winters, Kerry	FrDT2-02.1	86
Warfield, Simon K.	ThAT12.4	36	Wirthl, Daniela	WeAT7.5	2
	FrCT8.2	81	Witte, Herbert	ThAT1.4	33
				ThAT1.5	33
Waser, Markus	SaAT1.1	109	Wiwatanadate, Phongtape	ThDT10-03.1	59
Washio, Takumi	SaAT11.1	110	Won, Chang-Hee	SaBT5.4	113
Washizawa, Shiho	SaBT1.4	112	Won, Chulho	FrDT16-06.5	105
Wasnik, Kirti	ThDT12-02.2	62	Won, Dong-Ok	WeCT8-01.1	18
Wassermann, Yoram	ThCT12.3	44	Won, Ji Hye	FrDT3-02.1	87
Wasswa, William	ThBT3.1	38	Wong, Alexander	SaBT15.2	117
Watanabe, Aiko	WeCT8-01.7	19	Wong, Chi Man	FrCT1.2	79
Watanabe, Eiichi	ThAT15.2	37	Wong, Damon	WeCT2-02.6	11
	FrCT18.2	84		WeCT3-01.1	11
	FrCT18.4	84		WeCT14-02.2	28
	FrDT1-02.18	85		ThDT8-01.6	55
Watanabe, Tomoki	SaBT5.3	113		FrAT14.2	73
Wears, Brennen	SaBT15.6	117	Wong, Peng Shyan	ThDT18-01.6	68
Weaver, Elizabeth	SaBT4.2	113	Wong, Philip	WeCT14-02.2	28
Webber, William Robert (Bob)	WeCT9-02.2	20		ThDT15-01.1	65
Weddell, Stephen J.	SaBT9.5	115		SaBT10.1	115
	SaCT9.5	120	Wong, Yan Tat	WeBT8.1	5
Wee, Justin W.	SaCT5.2	119	Wong-Lin, KongFatt	WeCT7-01.4	17
Wei, Guohui	WeCT2-02.3	11	Woo, Eung Je	WeAT4.6	1
	SaAT14.3	111		WeBT15.4	8
Wei, Jinwen	WeCT8-02.4	19		WeCT14-03.1	28
	WeCT8-02.5	19		WeCT14-03.3	28
	ThDT8-01.4	55		WeCT14-03.4	28
Wei, Na	ThDT8-02.7	56		WeCT14-03.5	28
Wei, Qingtao	FrDT3-04.1	87		WeCT14-03.6	28
Wei, Qun	FrDT5-05.1	90		ThBT15.4	42
	FrDT15-03.1	103		ThDT6-07.1	54
Wei, Yue	FrCT9.6	82		ThDT6-07.2	54
Weiland, James	WeCT9-04.3	21		ThDT13-10.1	63
	ThAT9.1	C		ThDT14-11.1	65
	ThAT9.5	35		FrDT2-06.1	86
	ThAT12.5	36		FrDT4-05.5	89
Weinberg, Uri	WeCT14-01.4	27		FrDT6-13.1	92
Weingartner, Sebastian	WeAT9.3	2		FrDT6-13.2	92
Weiss, Jeffrey	FrDT16-06.6	105	Woo, Jong Shin	WeCT12-04.5	26
Weiss, Jonas	ThDT13-08.1	63	Woo, Sang-Yoon	WeCT16-02.1	30
Weitz, Iris Sonia	WeCT2-01.4	10		WeCT16-03.2	30
Weizman, Lior	ThCT15.2	45		WeCT16-03.3	31
Wellman, David Andrew	FrAT2.2	70		ThDT3-08.4	50
Wen, Huiying	FrCT14.3	83	Wood, John	FrDT2-06.9	86
Wen, Tiexiang	ThCT18.3	46	Woodward, Jane	SaAT9.1	110
Wendling, Fabrice	ThCT18.4	46	Wouters, Kees	WeCT12-03.3	26
	FrCT18.4	84	Wtorek, Jerzy	WeCT12-03.1	25
	FrCT18.6	84		FrCT1.5	79
Wendt, Herwig	ThAT12.2	36		SaCT12.5	121
	ThAT12.5	36	Wu, Changcheng	ThCT8.3	43
	ThCT12.1	C	Wu, Changzhe	WeCT9-03.6	21
Wenger, Michael	FrCT8.5	81		ThBT9.6	40
Wenmin, Chen	WeCT1-04.5	10		ThCT6.1	43
Werber, Matthias	FrCT11.6	82	Wu, Chung-Yu	FrAT9.1	72
Werner-Seidler, Aliza	WeBT12.5	7	Wu, Dee	FrCT8.5	81
Weston, June	FrDT13-01.1	100	Wu, Ed X.	FrBT3.2	75
Westover, Brandon	FrAT7.4	71	Wu, Edzer L.	FrDT2-08.1	87
	SaBT15.3	117	Wu, Guoqing	WeCT3-01.6	12
Wheeler, Bruce	FrCT9.1	C	Wu, Jian	ThCT9.6	43
	FrCT9.3	81	Wu, Jihui	FrDT3-04.1	87
White, David P	ThCT15.2	45	Wu, Kai	FrAT3.6	71
White, Paul	SaBT9.3	115	Wu, Mengnan/Mary	WeAT8.5	2
Whitmire, Eric	SaBT12.3	116		SaAT9.1	110
Whitney, James	WeCT15-02.3	29	Wu, Shun Chi	FrAT18.3	74
Wi, Hun	WeBT15.4	8		FrCT1.1	C
	ThBT15.4	42		FrCT1.1	79
Wi, Jung-Sub	ThDT2-01.10	48	Wu, Taiyang	FrBT4.4	75
Wibirama, Sunu	ThDT8-01.7	56			

Wu, Tianzhun	WeCT9-01.4	20
	WeCT9-01.11	20
Wu, Wenjun	SaAT14.4	111
Wu, Wenqing	SaBT17.4	118
Wu, Xiaomei	WeCT11-01.3	23
	WeCT15-08.1	30
Wu, Yin	WeCT2-01.13	10
Wulich, Dov	ThAT17.6	37
Wuthibenjaphonchai, Nattakarn	FrDT16-05.1	105

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Xia, Junyi	FrBT14.2	78
	SaBT15.6	117
Xia, Kai	WeCT9-01.4	20
	WeCT9-01.11	20
Xia, Lijuan	WeBT4.1	5
Xia, Nan	ThBT9.2	40
Xia, Wu	ThDT18-02.9	69
Xia, Xuke	WeCT5-01.6	14
Xia, Zeyang	FrBT14.1	C
	FrBT14.3	78
Xiang, Liangzhong	ThBT2.1	38
Xiang, Yun	SaAT7.2	110
Xiangjun, Sun	WeCT1-04.5	10
Xiao, Di	WeCT3-03.1	12
	ThAT14.2	36
	ThDT1-04.1	47
Xiao, Feng	WeCT9-02.6	21
Xiao, Guihua	FrCT11.2	82
Xiao, Hanguang	FrBT7.1	76
Xiao, Qin	WeCT9-01.13	20
Xiao, Songhua	FrDT2-04.1	86
Xiao, Taohui	ThDT7-02.5	55
Xiao, YiZi	ThBT14.4	41
Xie, Guotong	FrBT3.3	75
Xie, Guoxi	WeCT2-02.10	11
Xie, Hongzhi	FrBT11.1	77
	ThAT9.1	35
Xie, Hui	ThAT8.3	34
Xie, Jun	ThDT1-02.5	46
	FrBT3.2	75
	FrBT10.1	77
Xie, Qing	WeCT8-04.1	20
Xie, Xiao-Liang	FrBT11.4	77
Xie, Yang	ThDT10-03.4	59
Xing, Jingchao	ThDT2-02.3	48
Xing, Yangyang	ThDT1-04.6	47
	SaBT13.1	116
Xiong, Jing	FrBT14.3	78
Xiong, Wei	FrDT3-07.10	88
Xiong, Yongsheng	WeCT5-01.6	14
Xu, Baoguo	ThCT8.3	43
Xu, Cynthia	FrDT7-05.1	93
Xu, Guanghua	ThAT8.3	34
	ThDT1-02.5	46
	FrBT10.1	77
Xu, Han	ThBT8.5	40
Xu, Hang	ThBT14.2	41
Xu, Huijing	ThAT13.1	36
Xu, Jia	FrDT14-03.1	103
	SaBT4.1	113
Xu, Jun	ThCT10.1	44
Xu, Kai	WeBT1.4	5
	SaBT18.6	118
Xu, Kedi	WeCT8-02.8	19
Xu, Liping	WeCT11-02.1	23
Xu, Lisa Xuemin	WeAT2.1	C
	WeAT2.1	1
Xu, Lisheng	WeCT11-04.6	24
	ThAT11.5	35
Xu, Mengdi	WeCT2-02.6	11
	WeCT14-02.2	28
Xu, Peng	FrBT17.2	79
Xu, Rong	WeCT14-01.7	27
Xu, Shengwei	WeAT4.5	1
	WeCT9-02.6	21
Xu, Xiaojing	ThAT10.5	35
Xu, Yanwu	FrAT14.2	73
Xu, Yong Ping	ThCT9.4	43

Xu, Yuhang	ThDT17-03.1	67
Xue, Genfei	FrDT15-06.1	103
Xue, Xue	ThDT5-03.5	52

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Yagi, Keisuke	FrBT5.4	75
Yagi, Tetsuya	WeCT9-02.1	20
Yagi, Tohru	ThBT6.4	39
Yakami, Masahiro	FrDT13-02.2	101
Yamada, Shuhei	FrDT14-03.1	103
Yamada, Tomohiro	WeCT11-03.1	23
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Yamaguchi, Takahiro	FrAT9.2	72
Yamaji, Tokiya	FrDT16-03.5	105
Yamakawa, Hiroki	SaCT9.3	119
Yamakawa, Takeshi	FrDT5-08.2	91
Yamakawa, Toshitaka	ThDT12-05.3	62
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	FrDT14-03.3	103
Yamakoshi, Ken-ichi	ThDT12-02.1	62
Yamakoshi, Takehiro	FrDT16-06.2	105
Yamamori, Shinji	FrCT15.2	83
Yamamoto, Akio	FrDT16-03.5	105
Yamamoto, Chiemi	FrDT13-09.1	101
Yamamoto, Goshiro	FrDT13-02.2	101
Yamamoto, Kazuki	SaAT7.5	110
Yamamoto, Makoto	FrBT11.5	77
Yamamoto, Masataka	FrDT8-06.3	94
Yamamoto, Naosuke	ThBT7.4	39
	ThDT16-02.2	66
	FrDT8-07.2	94
	FrDT8-09.3	94
Yamamoto, Seiji	FrDT5-07.3	91
Yamamoto, Yoshiharu	FrCT18.1	C
	FrCT18.1	84
	FrCT18.2	84
	FrCT18.4	84
Yamamoto, Yuta	FrCT11.1	82
Yamanaka, Saki	WeCT13-09.1	27
Yamasaki, Hiroshi	ThDT8-02.4	56
Yamashita, Yohachi	FrDT15-06.1	103
Yamashita, Yugo	WeCT10-03.1	22
Yamauchi, Motoo	ThAT15.3	37
Yamazaki, Yoichi	ThDT11-01.1	60
Yan, Bernard	SaCT13.5	121
Yan, Bryan P.	ThCT5.4	42
	ThDT1-02.3	46
	FrAT5.2	71
Yan, Edwin	WeAT9.2	2
Yan, Lirong	FrDT2-01.1	85
	FrDT10-14.2	97
Yan, Wenqiang	ThDT1-02.5	46
Yan, Yuxiang	SaCT8.6	119
Yan, Zhuangzhi	WeAT7.3	2
	WeAT7.4	2
	ThCT10.1	44
	SaBT2.3	112
	SaBT2.4	113
Yana, Kazuo	FrDT1-02.18	85
	FrDT1-02.18	85
	FrDT1-02.23	85
	FrDT1-02.23	85
	FrDT13-08.2	101
	FrDT13-08.2	101
	SaBT1.6	112
Yanamadala, Janakinadh	WeCT12-04.1	26
	ThBT12.1	41
Yanashita, Yudai	WeAT14.2	4
Yang, Ai-Su	WeCT14-04.1	28
Yang, Chen	ThBT8.5	40
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Yang, DaSom	ThDT5-01.5	52
Yang, Fan	WeCT12-03.4	26
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Yang, Fangwei	WeCT12-01.5	25
Yang, Feng	ThDT13-04.1	63
Yang, Frank	ThAT13.3	36
Yang, Ge	SaBT3.5	113
Yang, Hansol	FrDT1-02.2	84

Yang, Heng	WeCT2-01.8	10	Yehya, Nadir	WeAT15.4	4
Yang, Huijuan	ThBT8.3	39		WeCT15-01.1	29
Yang, Huilin	SaBT3.5	113	Yen, Cheng-Yo	FrDT18-06.4	108
Yang, Hung-Wei	FrDT5-07.1	91	Yen, Sheng-che	ThBT8.2	39
Yang, Hye Min	ThDT12-07.2	62	Yeo, Chaebeom	SaBT3.3	113
Yang, Jae-Woong	ThDT16-08.1	66	Yeo, Donghoon	ThDT9-03.1	57
	FrDT15-07.1	104		ThDT9-08.2	58
Yang, Jason	WeCT2-01.8	10		ThDT9-10.2	58
Yang, Jian	FrBT3.5	75	Yeo, Jeongjin	FrDT4-05.4	89
Yang, Jingue	ThDT3-05.4	49		FrDT16-05.2	105
Yang, Jin-Ju	FrDT2-06.6	86	Yeo, Jong-Souk	ThDT6-01.3	53
Yang, Lili	WeCT9-02.6	21		FrDT5-01.2	90
Yang, Lily	WeAT13.3	4	Yeom, Seul-Ki	WeCT8-01.1	18
Yang, Lin	WeCT12-01.5	25	Yesharim, Ofir	ThCT12.3	44
	ThDT18-02.5	69	Yetik, Imam Samil	WeCT3-01.3	11
	FrDT9-04.8	96		WeCT3-01.9	12
Yang, Qi	WeCT6-03.2	15	Yi, Chih-Wei	ThDT4-03.1	51
Yang, Raymond	ThDT11-03.1	61	Yi, Jayeon	WeCT13-10.1	27
Yang, Seungman	ThBT11.2	40	Yi, Ji Eun	FrDT1-02.6	85
	ThDT15-03.1	65	Yi, Jin Wook	FrDT3-02.6	87
Yang, Seung-Tae	FrDT14-01.13	102	Yi, Weibo	ThDT7-01.1	54
Yang, Shasha	WeCT2-01.13	10	Yi, WonJin	WeCT16-02.1	30
Yang, Shih-Hung	FrDT12-04.2	99		WeCT16-03.2	30
Yang, Shun-Mao	FrDT3-07.6	88		WeCT16-03.3	31
Yang, Su	ThDT3-01.2	49		ThDT3-08.4	50
Yang, Sung	WeCT6-05.5	16		SaCT2.2	118
	WeCT6-05.7	16	Yiapatou, Elli	FrDT13-06.1	101
	ThDT5-01.8	52	Yilmaz, Ali	ThCT12.5	44
	ThDT5-03.2	52	Yim, Sehyuk	WeBT9.3	6
	ThDT5-04.3	53	Yin, Cuiping	ThDT8-02.7	56
	ThDT12-07.1	62	Yin, Shihui	FrCT1.4	79
Yang, Sungwoo	FrDT15-08.3	104	Ying, Jiaxi	FrCT3.5	80
	FrDT15-08.4	104		FrDT3-04.1	87
Yang, Tangwen	ThDT1-03.4	46	Ying, Leslie	FrDT2-04.1	86
Yang, Tao	SaBT16.5	117	Ying, Shihui	SaBT3.2	113
Yang, Wanzhang	WeCT8-03.1	19	Yip, Leonard W.L.	WeCT3-01.1	11
Yang, Wen	FrBT6.1	76	Yiyi, Qian	ThAT14.3	36
Yang, Wenting	SaBT9.4	115		FrBT2.1	74
Yang, William	FrBT11.3	77	Yochum, Maxime	ThDT18-02.12	69
Yang, Xianda	WeCT11-02.5	23	Yodogawa, Satoshi	ThDT9-11.1	58
Yang, Xiaofeng	ThDT17-06.4	68	Yokosawa, Koichi	ThDT9-06.1	57
Yang, Yang	FrDT10-06.1	97	Yokota, Hideo	SaBT3.4	113
	SaBT8.4	114	Yokota, Yusuke	WeCT9-01.2	20
Yang, YanWu	WeCT2-01.7	10		FrDT8-01.3	94
Yang, Yimin	WeCT12-01.5	25	Yonezawa, Kazuya	FrDT3-02.4	87
	ThDT18-02.5	69	Yongfeng, Wang	WeCT4-01.2	13
Yang, Yoon La	FrDT17-08.4	107	Yoo, B.W.	WeCT11-02.4	23
Yang, Yoonseok	FrDT4-05.4	89		WeCT11-02.6	23
	FrDT16-05.2	105	Yoo, Byeongwook	ThBT11.2	40
Yang, Yujie	WeCT10-01.3	22		ThDT15-03.1	65
Yang, Yuxiao	ThAT8.5	35	Yoo, Chi-Hyeon	FrDT2-07.3	87
Yang, Zaiyue	SaBT18.6	118	Yoo, Dongyual	FrDT12-03.5	99
Yang, Zelan	WeCT8-02.8	19	Yoo, Geonwook	FrDT5-01.5	90
Yang, Zepa	ThDT3-08.3	50	Yoo, Hakje	ThDT16-02.1	66
Yano, Hajime	FrDT18-01.2	107	Yoo, Hoi-Jun	WeCT4-02.2	13
Yano, Shiro	ThDT8-02.10	57		WeCT12-04.5	26
Yano, Sumio	ThDT8-02.8	57	Yoo, Hongki	WeAT3.1	C
Yano, Tetsuya	WeCT11-08.2	24		WeBT3.1	C
Yao, Dezhong	FrBT17.2	79		ThDT2-01.1	47
Yao, Fuan	SaCT4.5	119		ThDT2-01.2	47
Yao, Jianchu	SaBT4.2	113		ThDT2-01.5	47
Yao, Jie	WeCT11-02.5	23		ThDT2-02.1	48
	ThDT11-02.5	60		ThDT2-02.2	48
Yao, Lei	WeBT9.1	6		ThDT2-02.3	48
	ThCT9.4	43		ThDT2-06.2	48
Yao, Lin	ThAT8.4	35		FrDT3-07.4	88
Yao, Wan Xiang	ThBT18.2	42		FrDT6-02.2	91
Yao, Yang	WeCT11-04.6	24		FrDT6-03.2	91
	ThAT11.5	35	Yoo, Hyun Ji	ThDT5-02.2	52
Yao, Yimin	WeBT11.4	6		ThDT7-02.6	55
Yaothak, Jindaporn	ThDT14-12.1	65	Yoo, Jaewon	FrCT16.4	83
Yasuda, Takashi	SaCT9.6	120	Yoo, James	FrDT7-06.2	93
Yasutomi, Keita	FrDT5-07.3	91	Yoo, Ji Yong	WeCT16-02.1	30
Yates, Mark	WeCT8-01.2	18		WeCT16-03.2	30
Ye, Jong Chul	ThAT14.1	C		WeCT16-03.3	31
	ThCT14.1	CC		ThDT3-08.4	50
Ye, Lin	WeCT11-03.2	24	Yoo, Sihyung	WeCT13-10.2	27
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Ye, Xiang	WeAT4.4	1		FrDT6-08.4	92
Yeginer, Mete	WeCT3-01.9	12	Yoo, Sojeong	ThDT2-01.7	47

Yoo, Sun K.	FrDT3-02.3	87	Yousefi, Ali	FrAT18.4	74
	FrDT18-02.1	107	Yow, Ai Ping	ThDT8-01.6	55
	FrDT18-05.3	107		FrAT14.2	73
	FrDT18-09.1	108	Yu, FengLi	WeCT3-03.2	12
Yoo, Sunyoung	WeCT10-02.3	22	Yu, Hairong	WeCT1-04.7	10
	ThAT6.3	34		ThCT10.4	44
	ThBT6.6	39	Yu, Hao	ThBT14.2	41
	FrDT3-03.1	87	Yu, Hsin-Ju	FrDT12-04.2	99
Yoo, Yangmo	ThDT14-03.1	64	Yu, Hyeong Won	FrDT3-02.6	87
	ThDT14-04.1	64	Yu, Jinhua	WeCT3-01.6	12
	ThDT14-08.1	64		FrBT14.4	78
	FrAT2.1	CC	Yu, Juanhong	ThDT9-01.2	57
	FrCT2.1	C	Yu, Kwon Kyu	ThDT5-01.9	52
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Yook, Sunhyun	WeCT16-10.1	31	Yu, Qianhengyuan	FrDT9-04.8	96
	ThDT9-07.1	57	Yu, Shuang	WeCT3-03.1	12
Yoon, Changhan	ThDT14-05.3	64		ThAT14.2	36
	FrCT2.1	79	Yu, Songlin	FrDT2-01.1	85
Yoon, Dae Sung	ThDT5-03.4	52		FrDT10-14.2	97
	ThDT6-05.1	53	Yu, Tianyou	WeCT8-02.7	19
	ThDT6-06.5	54	Yu, Ting-Wen	ThDT12-09.2	63
Yoon, Dukyong	SaCT13.4	121	Yuan, Chun	FrBT3.1	75
Yoon, Gwonchan	ThDT5-03.7	52	Yuan, Han	WeCT2-01.12	10
Yoon, Hargsoon	ThDT9-08.1	58		ThAT1.6	33
	FrDT7-02.1	92		ThBT9.4	40
Yoon, Heenam	ThBT15.3	42		FrCT8.3	81
	ThDT1-04.5	47		FrCT8.5	81
Yoon, Hyuck-Jun	ThDT3-01.2	49		FrCT8.6	81
Yoon, Hyung-Jin	FrDT10-01.1	96	Yuan, Wei	WeBT4.2	5
	FrDT13-14.1	102	Yuce, Mehmet	WeAT12.4	3
Yoon, Jongsu	ThDT5-01.7	52		WeCT4-01.1	13
Yoon, Jungwon	WeCT6-01.1	15		WeCT4-02.5	13
Yoon, Juseon	WeCT16-11.2	32		FrAT4.4	71
Yoon, Min-Sik	ThDT7-02.1	55		FrBT4.4	75
	ThDT7-02.10	55	Yuda, Emi	ThAT15.2	37
	ThDT7-02.11	55		FrDT17-08.5	107
	FrDT9-03.4	95	Yue, Shouwei	ThDT8-02.7	56
	FrDT12-05.9	100	Yufera, Alberto	WeCT5-03.3	15
Yoon, Sang-Don	FrDT6-09.1	92	Yuki, Ichiro	FrAT7.5	72
Yoon, Seokyoung	WeCT13-03.2	26	Yuki, Muramatsu	ThDT2-07.1	48
Yoon, Seung Keun	SaBT4.6	113	Yun, In-Sik	ThDT6-01.3	53
Yoon, Uicheul	WeCT14-07.1	28	Yun, Jae Hyoung	ThDT12-08.2	62
	FrDT2-06.3	86	Yun, Seunghyeon	ThDT7-02.11	55
Yoon, Yeoreum	FrCT16.1	83		FrDT9-03.4	95
Yoon, Yeup	WeCT13-10.1	27	Yun, Sung-Sik	WeCT16-08.1	31
Yoshida, Anna	FrDT18-05.1	107	Yun, Won-Soo	SaBT6.3	114
Yoshida, Eiichi	ThAT7.5	34	Yun, Yonghyeon	FrDT1-02.2	84
Yoshida, Kazuhiro	WeCT11-03.1	23		FrDT6-08.3	92
Yoshida, Mikako	FrDT13-09.1	101		FrDT6-08.5	92
Yoshida, Yuki	FrDT7-01.1	92	Yun, Young Mi	FrDT13-05.1	101
Yoshida, Yutaka	ThAT15.2	37	Yun, Young-ran	ThDT5-03.2	52
	FrDT17-08.5	107	Yun, Young-Shik	ThDT6-01.3	53
Yoshiki, Hitoshi	FrDT12-01.1	99	Yunhee, Chang	ThDT16-03.1	66
Yoshimoto, Masahiko	FrAT4.5	71	Yuniarti, Ana Rahma	SaAT11.2	110
	FrCT4.4	80	Yuwono, Mitchell	WeCT1-04.1	9
Yoshimoto, Shunsuke	FrBT5.3	75			
Yoshimoto, Shusuke	ThAT4.6	33			
	ThBT4.3	38			
You, Dongwon	ThDT6-06.6	54			
You, Hyeonseok	FrDT15-08.5	104			
	FrDT15-08.6	104			
You, Jihye	WeCT13-11.1	27			
You, Sungmin	FrDT1-02.12	85			
	FrDT13-04.1	101			
	FrDT18-07.3	108			
Youm, Woosub	WeCT8-02.3	19			
	FrDT16-02.1	105			
Youn, Inchan	WeBT8.1	C			
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	WeCT9-02.5	21			
	ThDT9-03.2	57			
	ThDT15-04.2	65			
	FrDT7-06.5	93			
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	FrDT9-04.5	96			
	FrDT12-05.8	100			
Youn, Su Hyun	ThDT11-09.3	61			
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Young, Alistair	ThDT3-01.3	49			
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Zahrán, Saeed	ThDT18-02.12	69
Zainab, Rida	WeCT8-03.2	19
Zainol Alam, Nurzarifha	SaCT12.4	121
Zakeri, Vahid	ThDT18-01.1	68
Zakrzewski, Aaron M.	ThCT11.5	44
Zalevsky, Zeev	SaBT12.1	116
Zaman, Rifat	FrDT18-07.2	108
Zang, Yali	WeCT3-02.5	12
Zecca, Massimiliano	ThDT4-01.2	50
Zema, Maddalena	ThDT10-03.6	59
Zemmyo, Daiki	FrDT6-05.1	91
Zeng, Hong	ThCT8.3	43
Zeng, Jia Hong	ThDT10-01.5	59
Zeng, Ling-Zi	WeCT15-12.1	30
Zeng, Lujie	FrDT14-03.5	103
Zeng, Qi	WeCT9-01.4	20
	WeCT9-01.11	20

Zeng, Shan	FrCT3.3	80	Zhang, Xin	ThDT1-04.6	47
Zeng, Tianjiao	ThDT9-01.5	57		SaBT13.1	116
Zeng, Xiangzhu	ThDT1-03.6	47	Zhang, Xinlin	FrBT3.5	75
	FrAT8.2	72	Zhang, Xin-Yu	WeCT12-02.16	25
Zequera Diaz, Martha Lucia	FrDT3-01.1	87		FrAT2.2	70
Zerafa, Rosanne	SaBT8.5	115	Zhang, Yahui	WeCT11-04.6	24
Zhan, Zhifang	FrDT3-04.2	87	Zhang, Yi	WeCT15-01.2	29
	FrDT3-08.1	88		FrBT17.2	79
Zhang, Ada	WeAT12.5	3	Zhang, Yifan	FrDT7-05.1	93
Zhang, Aoyu	WeBT13.2	7	Zhang, Yingchun	WeCT14-02.5	28
Zhang, Bin	FrDT8-12.2	95		FrBT17.1	CC
Zhang, Boyu	SaBT16.1	117	Zhang, Yong	WeCT3-01.7	12
Zhang, Byoung-Tak	ThDT4-02.8	51	Zhang, Yu	WeCT9-02.6	21
Zhang, Changle	WeCT2-01.7	10	Zhang, Yuan	SaAT17.3	111
	FrBT8.5	76	Zhang, Yuan-Ting	ThDT1-02.3	46
Zhang, Cheng	WeCT9-03.6	21		FrAT5.2	71
	ThBT9.1	CC	Zhang, Yue	FrCT11.5	82
	ThBT9.6	40	Zhang, Yuting	WeAT7.3	2
	ThCT6.1	43		WeAT7.4	2
Zhang, Dan	WeAT1.2	1	Zhang, Zhimin	FrDT17-03.2	106
	FrBT1.1	C	Zhang, Zhuyan	FrAT14.4	73
Zhang, Di	ThDT1-01.1	46	Zhang, Zong	ThBT1.3	38
Zhang, Dingguo	ThDT7-01.4	54	Zhang, Zongfeng	FrCT3.1	80
	FrDT8-12.2	95	Zhao, Bo	FrBT3.1	75
Zhang, Guanghao	WeCT9-03.6	21		FrBT3.4	75
	ThBT9.6	40	Zhao, Guoru	WeCT4-01.2	13
	ThCT6.1	43		ThDT4-02.9	51
Zhang, Guanghe	WeCT10-03.4	23	Zhao, Huixia	ThDT9-11.3	58
Zhang, Haihong	WeCT4-04.2	13		FrDT9-03.5	95
Zhang, Hao	ThBT14.4	41	Zhao, Jieling	ThDT11-08.1	61
Zhang, Haoshi	WeCT10-03.4	23	Zhao, Jing	WeCT2-01.13	10
	ThDT1-03.2	46	Zhao, Jun	WeCT2-02.2	11
	SaCT4.5	119	Zhao, Lei	FrDT9-04.8	96
Zhang, Henggui	FrCT11.5	82	Zhao, Lili	ThCT13.3	45
	SaBT13.5	116		SaBT2.3	112
Zhang, Jia-Fong	FrDT18-06.4	108	Zhao, Ni	ThBT5.4	39
Zhang, Jianqiu	FrBT14.4	78		ThDT1-02.3	46
Zhang, Jianqiu (Michelle)	SaBT9.1	115		FrAT5.2	71
Zhang, Jie	WeBT2.3	5	Zhao, Ning	SaAT7.2	110
Zhang, Jin	FrDT2-02.1	86	Zhao, Qunfei	FrBT14.3	78
Zhang, Jun-Mei	ThDT15-07.1	65	Zhao, Tao	FrDT2-04.1	86
	FrDT3-07.10	88	Zhao, Tiejun	FrDT17-06.1	106
	SaBT10.1	115	Zhao, Xiaodan	ThDT15-01.1	65
Zhang, Lei	ThDT18-02.5	69		FrDT3-07.10	88
Zhang, Lixin	ThDT1-01.1	46	Zhao, Xinzhuo	WeCT2-02.3	11
Zhang, Manning	FrBT9.6	77		SaAT14.3	111
Zhang, Mingzi	FrBT11.2	77	Zhao, Yang	ThBT1.3	38
	FrBT11.3	77	Zhao, Yiyi	WeCT2-01.13	10
Zhang, Pandeng	ThAT11.2	35	Zhao, Zhe	WeCT9-01.13	20
	FrDT1-01.2	84	Zhayida, Simayijiang	FrDT1-02.3	84
Zhang, Peng-Peng	WeCT12-02.16	25	Zhbanov, Alexander	ThDT5-01.8	52
Zhang, Qi	ThAT14.3	36	Zhen, Yi	WeCT3-03.5	12
	FrBT2.1	74	Zheng, Dingchang	WeCT12-01.5	25
	SaBT3.2	113		ThDT18-02.5	69
Zhang, Qiang	ThDT18-02.2	69	Zheng, Guoyan	WeCT7-01.12	17
Zhang, Qichun	FrBT9.1	77	Zheng, Hongna	ThDT18-02.9	69
Zhang, Qing	WeCT4-03.5	13	Zheng, Jiawen	ThDT1-03.4	46
	WeCT4-05.1	14	Zheng, Jing	WeCT10-01.3	22
Zhang, Rumei	WeCT7-01.9	17	Zheng, Mingbin	WeAT13.2	4
Zhang, Ruochong	WeCT14-07.3	29	Zheng, Qianpeng	ThDT4-02.6	51
	SaBT2.2	112	Zheng, Xi	WeCT5-04.1	15
Zhang, Sanyuan	WeCT3-03.5	12	Zheng, Xiao	ThAT14.3	36
Zhang, Shaomin	WeCT8-02.8	19		FrBT2.1	74
Zhang, Shengqian	SaAT17.3	111	Zheng, Xiaosong	WeAT7.3	2
Zhang, Shihao	ThDT13-07.1	63		WeAT7.4	2
Zhang, Shuyang	WeCT2-02.10	11	Zheng, Xiaoxiang	WeCT8-02.8	19
	FrBT11.1	77	Zheng, Yali	ThBT5.5	39
Zhang, Sicong	ThAT8.3	34		ThCT5.4	42
	ThDT1-02.5	46	Zheng, Yineng	FrDT18-05.2	107
	FrBT10.1	77		SaCT18.4	121
Zhang, Song	WeCT9-02.6	21	Zheng, Yuanjin	WeCT14-07.3	29
	WeCT12-01.5	25		SaBT2.2	112
	ThDT18-02.5	69	Zhijia Tang, Zhijia	ThBT8.6	40
Zhang, Tinghe	ThAT10.5	35	Zhong, Liang	ThDT11-01.2	60
Zhang, Wenqing	SaBT2.4	113		ThDT15-01.1	65
Zhang, Xiang	ThDT16-09.1	66		ThDT15-07.1	65
Zhang, Xiao	FrAT6.3	71		FrDT3-07.10	88
Zhang, Xiaodong	FrAT8.3	72		SaBT10.1	115
	FrBT14.6	78	Zhou, Alyssa	WeCT4-05.2	14
Zhang, Xiaolu	ThBT14.4	41	Zhou, Fang	WeCT1-04.5	10
Zhang, Xiaorong	WeAT8.4	2	Zhou, Hucheng	ThCT10.1	44

Zhou, Hui	WeCT10-03.4	23
Zhou, Jiayin	WeCT10-02.1	22
	FrDT3-07.10	88
	SaBT10.1	115
Zhou, Jia-Ying	ThDT10-01.5	59
Zhou, Lingchuan	WeCT5-02.3	14
Zhou, Mi	WeAT7.3	2
	WeAT7.4	2
Zhou, Ming	SaCT4.5	119
Zhou, Peng	ThDT7-01.1	54
	ThDT8-01.4	55
Zhou, Wenjie	ThDT7-02.3	55
Zhou, WenJing	SaCT8.6	119
Zhou, Xiaohu	FrBT11.4	77
Zhou, Xinwen	FrBT14.3	78
Zhou, Xiya	WeCT12-01.5	25
	ThDT18-02.5	69
Zhou, Yanxia	ThAT11.2	35
Zhou, Yi	WeCT3-02.4	12
Zhou, Yixin	WeCT12-01.1	25
Zhou, Yuanyuan	WeCT7-01.9	17
Zhou, Yuxuan	WeBT8.3	6
	WeCT1-01.1	8
Zhou, Zhiyang	WeAT13.3	4
Zhou, Zixuan	SaCT9.4	119
Zhu, Chaozhe	ThBT1.3	38
Zhu, Chuanqing	ThCT13.3	45
Zhu, Danyi	WeCT2-01.10	10
Zhu, Fangshi	ThBT8.1	39
Zhu, Fansan	WeCT12-02.9	25
Zhu, Hong	SaBT8.4	114
Zhu, Hongqing	WeCT3-02.4	12
	FrAT14.4	73
Zhu, Hongyuan	ThDT8-01.6	55
Zhu, Jack	SaAT16.2	111
Zhu, Junyi	ThDT4-01.1	50
Zhu, Mingxing	WeCT8-03.1	19
Zhu, Mingyu	ThDT13-04.1	63
Zhu, Tingting	ThCT10.5	44
	FrDT10-17.2	98
Zhu, Xiangyang	ThAT8.4	35
Zhu, Xiaodong	ThDT15-09.1	65
Zhu, Xiaolei	WeCT2-01.5	10
Zhu, Xin	SaCT11.1	120
	SaCT11.2	120
	SaCT11.3	120
Zhu, Yang	SaBT8.4	114
Zihajehzadeh, Shaghayegh	ThDT4-01.4	50
Zimin, Wang	WeCT4-04.2	13
Zinnat, Syeda Fairose	ThBT13.5	41
Živin, Marko	FrDT9-03.12	95
Zöllner, Frank G.	FrCT3.6	80
Zou, Haiqing	WeCT8-03.1	19
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Zou, Xiaodan	ThCT9.4	43
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