

# International Symposium on Biomedical Imaging

In Conjunction with Joint Symposium by Seoul R&BD Program  
Korea Health 21 R&D Project (FMIC), BK21 Project Team for Biomedical Science

## State of Art Techniques in Biomedical Imaging

: Functional & Metabolic Imaging Technology

: Advanced Medical Imaging Technology

: MR-PET Fusion Imaging Technology

: Molecular Imaging and Spectroscopy

Date: October 10 (Fri.), 2008

Place: The Catholic University of Korea, Catholic Research Institute, The Great Hall

Sponsor: Seoul R&BD Program, Korea Health 21 R&D Project (FMIC), BK21 Project Team for Biomedical Science



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## 오시는 길

### ♣ 가톨릭대학교 가톨릭의과학연구원 대강당

- 지하철 이용 시  
- 지하철 2호선 서초역 또는 3,7호선 고속터미널역 하차 (도보 10분)
- 버스 이용 시  
- 간선버스(파랑) : 142, 149, 540, 642, 730번  
- 지선버스(초록) : 서초 01, 서초13, 서초14, 서초21, 3414, 3420, 4423, 4425, 5413번  
- 광역버스(빨강) : 9400, 9408, 9412번
- 자가용 이용 시  
- 양재역 방향에서 오는 길  
남부순환도로(36번) 예술의 전당 앞까지 직진(1.4km)  
예술의 전당 앞에서 반포로 방향으로 좌회전하여  
서초역 지나 직진하면(2.3km) 가톨릭대학교 성의교정  
- 반포대교 남단에서 오는 길  
반포로(37번) 강남성모병원 앞 사거리를 지나 직진(1.1km)하여  
좌회전하면 가톨릭대학교 성의교정

## Welcome Address

It is our great pleasure to invite you to the 2nd International Symposium on Biomedical Imaging "State of Art Techniques" in The Catholic University of Korea. This International Symposium is conjugated with Seoul R&BD Program, Korea Health 21 R&D Project (FMIC) and BK21 Project Team for Biomedical Science. The field of biomedical imaging has been rapidly developed as an advanced medical technology. Especially, as it enters in the 21st century, the advanced medical imaging technologies such as functional, metabolic, molecular and hybrid-fusion imaging have been dramatically flourished. In this International Symposium, we invited total 14 world-wide distinguished scientists in the field of biomedical imaging, particularly including Prof. Michael Garwood in University of Minnesota as Gold Medalist in 2007 International Society of Magnetic Resonance in Medicine (ISMRM) and Prof. M. Albert Thomas in UCLA as a historical pioneer in 2D MR spectroscopy. We strongly hope that this symposium can provide a fruitful opportunity of exchanging the leading-edge update medical imaging information and that you can join and make this event shiny sparkling and successful.

October, 2008



*Bo-Young Choe*

**Bo-Young Choe, Ph.D.**  
Professor and Chairman  
Department of Biomedical Engineering  
The Catholic University of Korea

*Tae-Suk Suh*

**Tae-Suk Suh, Ph.D.**  
Professor and Director  
Research Institute of Biomedical Engineering  
The Catholic University of Korea



## P•R•O•G•R•A•M

### 09:00 – 09:10 Opening Session

### 09:10 – 10:10 Session I : Functional & Metabolic Imaging Technology

**Chair : Jin-Ho Cho, Ph.D. (Kyung Pook National Univ.)**

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|---------------|--|--|
| 09:10 – 09:30 | Multimodal NeuroImaging for Brain Research   | <i>Hae-Jeong Park, Ph.D. (Yonsei Univ.)</i>  |
| 09:30 – 09:50 | Zoom-in Micro-CT and Its Application to Trabecular Bone Imaging                            | <i>Soo-Yeol Lee, Ph.D. (Kyounghee Univ.)</i> |
| 09:50 – 10:10 | Optimization of Parallel Transmission<br>for (Ultra) High-Field Magnetic Resonance Imaging | <i>Chang-Hyun Oh, Ph.D. (Korea Univ.)</i>    |

10:10 – 10:30 Coffee Break

### 10:30 – 11:50 Special Lectures

**Chair : Deuk-Lin Choi, M.D. (Soon Chun Hyang Univ.)**

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| 10:30 – 11:10 | Detecting Fleeting MRI Signals using FM Radio Waves                               | <i>Michael Garwood, Ph.D. (Univ. of Minnesota)</i> |
| 11:10 – 11:50 | Adding 2nd Spectral Dimension to Single- and Multi-Voxel Based<br>MR Spectroscopy | <i>M. Albert Thomas, Ph.D. (UCLA)</i>              |
| 11:50 – 13:30 | Lunch   |  |

### 13:30 – 14:30 Session II: Advanced Medical Imaging Technology

**Chair : Kun-Wook Kang, M.D. (Seoul National Univ.)**

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|---------------|--|---|
| 13:30 – 13:50 | Current Status of Multi-Layer DOI PET Systems  | <i>Jae-Sung Lee, Ph.D. (Seoul National Univ.)</i> |
| 13:50 – 14:10 | Current Status of Dental CT Techniques in Korea: Cone Beam CT,<br>Fast Reconstruction and Metal Artifact Reduction | <i>Hyoung-Koo Lee, Ph.D. (Catholic Univ.)</i>     |
| 14:10 – 14:30 | Present Status of Our Compton Camera Research and Development  | <i>Ju-Hahn Lee, Ph.D. (Chungang Univ.)</i>        |

### 14:30 – 15:30 Session III: MR-PET Fusion Imaging Technology

**Chair : Soo-Il Kwon, Ph.D. (Kyonggi Univ.)**

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|---------------|---|--|
| 14:30 – 14:50 | PET-MRI Fusion Imaging: Design of PET-MRI System                                    | <i>Hyun-Wook Park, Ph.D. (KAIST)</i>         |
| 14:50 – 15:10 | Design of MR Compatible Brain PET Using Large Size Silicon<br>Photomultiplier Array | <i>Yong Choi, Ph.D. (Sungkyunkwan Univ.)</i> |
| 15:10 – 15:30 | Design of Si-PM for PET-MRI System  | <i>Gyu-Seong Cho, Ph.D. (KAIST)</i>          |
| 15:30 – 15:50 | Coffee Break  |  |

### 15:50 – 16:50 Session IV: Molecular Imaging and Spectroscopy

**Chair : In-One Kim, M.D. (Seoul National Univ.)**

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|---------------|---|--|
| 15:50 – 16:10 | Spectral Editing of Strongly-Coupled Spins in Proton MRS;<br>Illustration with <i>Myo-Inositol</i> and <i>Glutamate</i> | <i>Hyeon-Jin Kim, Ph.D. (Gachon Univ.)</i> |
| 16:10 – 16:30 | MR Cellular and Molecular Imaging of Cell Recruitment   | <i>Kwan-Soo Hong, Ph.D. (KBSI)</i>         |
| 16:30 – 16:50 | Nanomolecular MR Imaging: Early Cancer Detection  | <i>Jin-Suck Suh, M.D. (Yonsei Univ.)</i>   |
| 16:50 – 17:00 | Discussion  |  |

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