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Multifunctional high-throughput neural interfacing biochips: from electrical sensing to molecular sensing

Abstract:

With the capability of emerging micro/nano sensors & actuators and microelectronics for data handling, various novel biological signals can be acquired with high throughput for more accurate analysis of the biological behaviors and diagnosis of associated diseases in biochips. In this talk, I will present recent efforts in developing bioelectronic sensors for electrical and chemical readouts of biological systems in multifunctional biochips. Also, microelectronics and signal processing approaches for large data acquisition and handling will be discussed.

Brief Biosketch

Prof. Hongki Kang is an associate professor in the Department of Biomedical Engineering at Seoul National University College of Medicine. He received his MS and PhD in Electrical Engineering from the University of California, Berkeley in 2010 and 2013, respectively. Before joining SNU in 2023, he served as an associate/assistant professor in the Department of Electrical Engineering and Computer Science at DGIST. He also spent several years as a postdoctoral researcher in the Department of Electrical Engineering at Columbia University and in the Department of Bio and Brain Engineering at KAIST. His current research is in flexible transparent bioelectronics, neural engineering, additive micro-manufacturing, and biomedical signal processing. With his interests in multidisciplinary research areas, he is interested in solving engineering problems at the intersection of electrical engineering and life sciences/biomedical engineering.