

Title: Novel Technologies for Monitoring Chemical Neurotransmission/Neuromodulation

September 6th (Sunday), 09:35-11:30

Conference Hall, Daejeon Convention Center, Daejeon, Korea

Registration KSBNS2026.org

Organizer (and speaker)



Sanghwa Jeong

School of Biomedical Convergence Engineering, Pusan National University
"Systematic selection of near-infrared optical nanoprobes for realtime neurochemical imaging"

Description

: Neural signal consists of electrical transmission and chemical transmission. Although the monitoring techniques for electrical signal has advanced, the monitoring techniques of various neurochemicals has not been elucidated. We will discuss and explore the cutting-edge technologies revolutionizing neurochemical monitoring at this interdisciplinary symposium. Topics span from real-time detection methods including advanced genetically-encoded protein sensors, exogenous artificial optical nanosensors, optogenetic tools, and electrochemical probes for tracking dopamine, serotonin, and other neuromodulators.

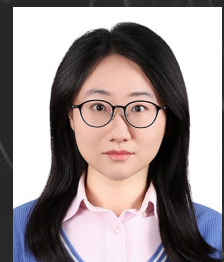
Speakers



Yulong Li

State Key Laboratory of Membrane Biology, School of Life Sciences, Peking University, China
"Spying on neuromodulator dynamics in vivo by constructing multi-color GRAB sensors"

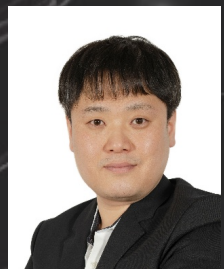
Prof. Yulong Li at Peking University is a world-leading pioneer in genetically encoded fluorescent sensors for neurochemical signaling, best known for developing the GRAB sensor family that has transformed how neurotransmitters are visualized in vivo. His lab has produced an unparalleled toolkit of sensors for dopamine, acetylcholine, and neuropeptides—now used worldwide to dissect the spatiotemporal dynamics of brain chemistry with subsecond, subcellular precision.



Jiesi Feng

State Key Laboratory of Membrane Biology, School of Life Sciences, Peking University, China
"Visualizing norepinephrine and beyond: advanced GRAB sensors illuminate neuromodulators in vivo"

Dr. Jiesi Feng is a research professor in the Yulong Li Lab at Peking University. She is best known as the lead developer of the GRAB norepinephrine sensor family tools that have since been adopted by leading labs worldwide to dissect noradrenergic dynamics in learning, attention, and aversive processing.



Kwang Lee

Department of Brain Sciences, DGIST, Korea
"Multifunctional photometry technique with high SNR"

Prof. Kwang Lee leads the Neural Dynamics Laboratory at the interface of neural engineering, electrophysiology, and circuit neuroscience. His group develops optical-electrical hybrid neural probes that simultaneously record action potentials and neurochemical dynamics in vivo, which redefined the contribution of physiological dopamine signaling to subsecond striatal activity.