[Satellite Symposium] 2025 Global Symposium for Neurotechnology in Surgery

Room B [Ruby I, Tower A (3F)] **October 29 (Wed.) / 09:30~12:45**

09:30~09:40 **[Opening Remark]**
Woonggyu Jung
Ulsan National Institute of Science and Technology, Korea

[Invited] 09:40~10:00 **Multimodal monitoring during the Microscopic Neurosurgical Operation**
Jung-Jae Kim
Yonsei University Health System (YUHS), Korea

[Invited] 10:00~10:20 **Advanced Optical Imaging Techniques for Visualizing Neuronal Activity in Zebrafish Brain**
Eunjung Min
Korea Photonics Technology Institute, Korea

[Invited] 10:20~10:40 **Somatic Mutation Profiling of Clonal Hematopoiesis of Indeterminate Potential (CHIP) in Alzheimer's Disease**
Jaejoon Choi
Ulsan National Institute of Science and Technology, Korea

11:00~11:15 **Versatile Digital Histopathology Platform Applied with NIR-QPI and Deep Learning Algorithm**
Hyewon Cho
Ulsan National Institute of Science and Technology, Korea

11:15~11:30 **Optical Coherence Tomography-Integrated Surgical Microscope**
Myungju Kim
Ulsan National Institute of Science and Technology, Korea

11:30~11:45 **Portable QPI for Label-Free Rapid On-Site Evaluation (ROSE)**
Myeonghoon Choi
Ulsan National Institute of Science and Technology, Korea

11:45~12:00 **In vivo Visualization with Surgical OCT through a Spinal Cord Window**
Sunyeong Choi
Ulsan National Institute of Science and Technology, Korea

12:00~12:15 **A 1024-Channel ECoGMapping of Brain Tumors in a Rat Model**
Junseong Kim
Ulsan National Institute of Science and Technology, Korea

12:15~12:30 **An OptogeneticDissection of the Brain-Gut Axis; Cortical Signatures of Neuropathic Pain**
Changjun Lee
Ulsan National Institute of Science and Technology, Korea

12:30~12:45 **Neuron Integrated Biohybrid Neural probes**
YeongSeokYe
Ulsan National Institute of Science and Technology, Korea

[Satellite Symposium] OSK-CSOE Joint Symposium I

Room A [Diamond Hall, Annex (1F)] **October 29 (Wed.) / 13:00~14:00**

[Invited] 13:00~13:15
TBA
Jiao Li
Tianjin University, China

[Invited] 13:15~13:30
TBA
Wenbo Hu
Northwestern Polytechnical University, China

[Invited] 13:30~13:45
Dynamic Optical Coherence Tomography for Label-Free Imaging of Cell Viability and its Application in Drug Screening
Jianbo Tang
Southern University of Science and Technology of China, China

[Invited] 13:45~14:00
TBA
Zhenyue Chen
Tongji University, China

[Satellite Symposium] OSK-CSOE Joint Symposium II

Room A [Diamond Hall, Annex (1F)] **October 29 (Wed.) / 14:15~15:45**

[Keynote] 14:15~14:45
Quantitative and Holistic Superresolution Live-cell Imaging: From Structured Illumination Microscopy to the Sparse Deconvolution
Liangyi Chen
Peking University, China

[Invited] 14:45~15:05
TBA
Hwidon Lee
Pusan National University, Korea

[Invited] 15:05~15:25
TBA
Xueli Chen
Xidian University, China

[Invited] 15:25~15:45
Label-free Photoacoustic Imaging of 3D In Vitro Organoids and Ex Vivo Human Tissue Slices
Byullee Park
Sungkyunkwan University, Korea

[Satellite Symposium] OSK-CSOE Joint Symposium III

Room A [Diamond Hall, Annex (1F)] **October 29 (Wed.) / 16:00~17:30**

[Keynote] 16:00~16:30
Label-Free Multimodal Optical Imaging of Tissue Structure and Function for Clinical Translation
Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[Invited] 16:30~16:50
TBA
Liming Nie
Guangdong Provincial People's Hospital, China

[Invited] 16:50~17:10
TBA
TaeyeonKim
Sungkyunkwan University, Korea

[Invited] 17:10~17:30
TBA
Lei Xi
Southern University of Science and Technology, China

Young Investigator's Award Session I

Room B [Ruby I, Tower A (3F)] **October 29 (Wed.) / 16:00~17:45**

[YIA1-1] 16:00~16:15
Development of Multipath Artifact-Reduction Collimator to Enhance Signal-to-Noise Ratio in Double-Clad Fiber-Based Intravascular Optical Coherence Tomography
Youngeun Cho[1], Jeongmoo Han[1], Yeon Hoon Kim[1], Hyeong Soo Nam[1], Min Woo Lee[2], Young-Jin Kim[1], Jin Won Kim[3], and Hongki Yoo[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Dotter Inc., Korea, [3]Korea University Guro Hospital, Korea

[YIA1-2] 16:15~16:30
Pupil Phase Series: A Fast, Accurate, and Energy-Conserving Model for Forward and Inverse Light Scattering in Thick Biological Samples
Herve Hugonnet[1], Chulmin Oh[1], Juyeon Park[1], and YongKeun Park[1,2]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Tomocube Inc., Korea

[YIA1-3] 16:30~16:45
Intracellular Refractive Index Imaging via Plasmonic Metasurfaces
Doeun Kim, Jiyeong Ma, Gyurin, Kim, JuHyeong Lee, and Hyeon-Ho Jeong
Gwangju Institute of Science and Technology, Korea

[YIA1-4] 16:45~17:00
Correlative Expansion Imaging-driven Deep Learning to Enable High-throughput in Vivo Super-resolution Microscopy
Young Seo Kim, Yunseo Lee, and Taeyun Ku
Korea Advanced Institute of Science and Technology, Korea

[YIA1-5] 17:00~17:15
Diffusion-Based Deep Learning Enhances 3D Multiparametric Photoacoustic Computed Tomography
Hyunsu Jeong[1], Seunghun Oh[1], Seongwook Choi[2], Jiwoong Kim[1], Jinge Yang[3], and Chulhong Kim[1]
[1]Pohang University of Science and Technology, Korea, [2]Stanford University, USA, [3]California Institute of Technology, USA

[YIA1-6] 17:15~17:30
Pupil Plane Multiplexed Fourier Ptychography for Polarization Sensitive Imaging
Hyesuk Chae[1], Kyungwon Lee[1], Yong Guk Kang[2], Hansol Yoon[1,3], Kyung Chul Lee[2], and Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea, [3]Georgia Institute of Technology, USA

[YIA1-7] 17:30~17:45
Wireless Optogenetic Deep Brain Stimulation Implant for Chronic Treatment of Parkinson's Disease
Choong Yeon Kim[1], Gun-Hee Lee[2], Steve Park[1], Daesoo Kim[1], and Jae-Woong Jeong[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Pusan National University, Korea

Young Investigator's Award Session II

Room C [Ruby II, Tower A (3F)] **October 29 (Wed.) / 16:00~17:45**

[YIA2-1] 16:00~16:15
Label-free Morpho-molecular Live-cell Phenotyping Propels Biological Discovery
Arianna Bresci[1], Salvatore Sorrentino[1], Renzo Vanna[2], Dario Polli[2], Peter T. C. So[1], and Jeon Woong Kang[1]
[1]Massachusetts Institute of Technology, USA, [2]Politecnico di Milano, Italy

[YIA2-2] 16:15~16:30
Early and Accurate Automated Identification Platform of Pathogenic Bacterial Species Using Optical Coherence Microscopy and Ensemble Deep-learning Network
Daewoon Seong, Euimin Lee, Seung-Yeol Lee, Hee-Young Jung, Mansik Jeon, and Jeehyun Kim
Kyungpook National University, Korea

[YIA2-3] 16:30~16:45
Chromatic Optical Coherence Tomography for Clear Deep Tissue Imaging
Seung Eon Lee[1], Hyeong Soo Nam[1], Ryeong Hyeon Kim[2], Hyun Jung Kim[2], Jae Yeon Seok[3], Jin Won Kim[2], Young-Jin Kim[1], and Hongki Yoo[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Korea University Guro Hospital, Korea, [3]Yonsei University College of Medicine, Korea

[YIA2-4] 16:45~17:00
Event-based Imaging of Neuronal and Vascular Dynamics in Vivo
Jongmin Yoon[1,2], Soi Kim[3], Seungjae Han[3], Euiheon Chung[4], Kunyoo Shin[1,2], Young-Gyu Yoon[3], and Myunghwan Choi[1,2]
[1]Seoul National University, Korea, [2]The Institute of Molecular Biology and Genetics, Korea, [3]Korea Advanced Institute of Science and Technology, Korea, [4]Gwangju Institute of Science and Technology, Korea

[YIA2-5] 17:00~17:15
Adaptive Optics based on Neural Wavefront Shaping for Two-photon Microscopy
Hyungwon Jin, Seongwon Cho, Jaejun Yoo, and Jung-Hoon Park
Ulsan National Institute of Science and Technology, Korea

[YIA2-6] 17:15~17:30
Diffusion Model for Forward Model Uncertainty in Computational Imaging
Chanseok Lee and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[YIA2-7] 17:30~17:45
Quasi-Ordered Plasmonic Metasurfaces for Optical Security
Gyurin Kim, Doeun Kim, JuHyeong Lee, Young Min Song, and Hyeon-Ho Jeong
Gwangju Institute of Science and Technology, Korea

Keynote Session I: Clinical & Translational Biophotonics

Room A [Diamond Hall, Annex (1F)] **October 30 (Thu.) / 10:30~11:00**

[Keynote 1-1] 10:30~11:00
Monitoring Circulating Melanoma Cells by in Vivo Photoacoustic Flow Cytometry
Xunbin Wei
Peking University, China

[Keynote 1-2] 11:00~11:30
Optical Coherence Tomography Angiography and Its Biomedical Applications
Ruikang K. Wang
University of Washington, USA

[Keynote 1-3] 11:30~12:00
Compact Band-pass Raman Spectroscopy for Non-invasive Continuous Glucose Monitoring
Jeon Woong Kang
Massachusetts Institute of Technology, USA

Keynote Session II: Molecular and Cellular Imaging

Room A [Diamond Hall, Annex (1F)] **October 30 (Thu.) / 13:00~14:30**

[Keynote 2-1] 13:00~13:30
Polar-SIM: Super-resolution Structured Illumination Microscopy in XYZλθT Dimensions
Peng Xi[1,2]
[1]Peking University, China, [2]Airy Technologies Co., Ltd., China

[Keynote 2-2] 13:30~14:00
Light-sheet Fluorescence Microscopy with High Spatiotemporal Resolution
Bingying Chen, Bo-Jui Chang, and Reto Fiolka
UT Southwestern Medical Center, USA

[Keynote 2-3] 14:00~14:30
Elucidating Subcellular Architecture and Dynamics with Super-resolution Microscopy
Yongdeng Zhang
Westlake University, China

Keynote Session III: Optical Tomography and Tissue Optics

Room A [Diamond Hall, Annex (1F)] **October 30 (Thu.) / 15:00~16:30**

[Keynote 3-1] 15:00~15:30
High-speed Optical Tomographic Imaging with the Wavelength-swept HCG-VCSEL Technology
Hsiang-Chieh Lee
National Taiwan University, Taiwan

[Keynote 3-2] 15:30~16:00
Seeing More with Opto-Acoustic Hybrid Imaging
Chengbo Liu
Chinese Academy of Sciences, China

[Keynote 3-3] 16:00~16:30
Behind the Seen: When Microscopes Capture Data, Not Images
Nicolas Christian Richard Pegard
University of North Carolina, USA

Keynote Session IV: Neurophotonics

Room A [Diamond Hall, Annex (1F)] **October 30 (Thu.) / 17:00~18:30**

[Keynote 4-1] 17:00~17:30

Optical Electrophysiology Reveals Associative Plasticity Rules

Pojeong Park[1,4], J. David Wong-Campos[1], Daniel G. Itkis[1], Byung Hun Lee[1], Yitong Qi[1], Liam Paninski[2], Luke D. Lavis[3], Adam E. Cohen[1]
[1]Harvard University, USA, [2]Columbia University, USA, [3]Howard Hughes Medical Institute, USA, [4]Daegu Gyeongbuk Institute of Science and Technology, Korea

[Keynote 4-2] 17:30~18:00

TBA

Kevin Tsia
Hong Kong University, Hong Kong

[Keynote 4-3] 18:00~18:30

Imaging the Brain at Higher Spatial and Temporal Resolutions

Lu Bai, Yujie Zhang, and Kai Wang
Chinese Academy of Sciences, China

Poster Session I

Ruby I & II, Tower A (3F) **October 30 (Thu.) / 18:30~20:00**

[P1-01] Comparative Characterization of Grating-based Imaging Spectrometers for Spectroscopic Nanoscopy
Ki-Hee Song
Korea Atomic Energy Research Institute, Korea

[P1-02] Label-Free 3D Live Imaging of Lipid Droplets in Hepatic Organoids
Jimin Cho[1], Hye-Jin Kim[2], Hoyeon Lee[2], YongKeun Park[1,2]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Tomocube Inc., Korea

[P1-03] Long-term Subcellular Intravital Imaging of eSRRF based Two-photon Microscopy
Saeed Bohlooli Darian[1], Jeongmin Oh[2], and Jun Ki Kim[1,2]
[1]University of Ulsan, College of Medicine, Korea, [2]Asan Medical Center, Korea

[P1-04] A Single-cell Protein Profiling of Organ-scale Tissues
Sehun Kim, Hyeongryool Park, Wonjin Cho, Thananya Charoenpattarawut, and Young-Gyun Park
Korea Advanced Institute of Science and Technology, Korea

[P1-05] Precision-enhanced Multispectral Fluorescence Lifetime Measurement Using Avalanche Photodiode
Seohyoung Jeon, Jeongmoo Han, Soonyong Kwon, Hyeong Soo Nam, and Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[P1-06] Label-free Imaging of Goblet Cells (GCs) and Subepithelial Immune Cells in Conjunctiva
Noseong Park, Suil Jeon, and Ki Hean Kim
Pohang University of Science and Technology, Korea

[P1-07] Image-based Semi-Quantitative Analysis of Multiplex Immunochromatographic Strip for Antibiotic Residues Detection in Milk
Minsuk Lee, SeungKye Go, and Seungrag Lee
Osong Medical Innovation Foundation, Korea

[P1-08] Enhancing obSTORM Imaging Performance via Cubic Spline PSF Modeling
Donghoon Koo, Minchol Lee, Youngseob Lee, and Jeongmin Kim
Seoul National University, Korea

[P1-09] Refractive Index-Matched STORM Imaging Buffer for Immersion Oil Objetives
Youngseop Lee, Yeunho Lee, Minchol Lee, Donghoon Koo, Dongwoo Kim, Hongrae Kim, Kangwon Lee, and Jeongmin Kim
Seoul National University, Korea

[P1-10] High Resolution Live Cell Surface Imaging via Random Illumination Based Nanospeckle Microscopy
Sukhyeon Ka[1], Hajun Yoo[1], Minghao Wang[1], Kwanhwi Ko[1], Sara Ait Abderrahmane[2], and Donghyun Kim[1]
[1]Yonsei University, Korea, [2]University of Limoges, France

[P1-11] Morphological Monitoring of Single Cell Apoptosis and Necrosis Using Multi-modal Full-field Optical Coherence Tomography
Kyeong Ryeol Kim[1], Suyeon Kang[1], Jun Ki Kim[1,2], and Woo June Choi[3]
[1]University of Ulsan, College of Medicine, Korea, [2]Asan Medical Center, [3]Chung-Ang University, Korea

[P1-12] Simultaneous Multiplane Super-Resolution Imaging of Multicolor Fluorescence via Reflector-Assisted Speckle Illumination
Ming-Hao Wang, Hajun Yoo, Kwanhwi Ko, Sukhyeon Ka, Seungwoo Lee, and Donghyun Kim
Yonsei University, Korea

[P1-13] Lipid-selective Photoacoustic Microscopy Using a Pulsed 1720 nm SRS Fiber Amplifier
Sang Min Park, Seongjin Bak, Jeesu Kim, Chang-Seok Kim, and Hwidon Lee
Pusan National University, Korea

[P1-14] 3D easySTED Nanoscopy Illumination Optics for Simplified Beam Alignment
Jiyoon Chung, Ilkyu Park, and Dong-Ryoung Lee
Soongsil University, Korea

[P1-15] A Handheld Contact-mode Imaging Device for Easy Assessment of Human Conjunctival Goblet Cells
Arnab Shil, Jieun Yun, Suil Jeon, Seonghan Kim, and Ki Hean Kim
Pohang University of Science and Technology, Korea

[P1-16] Development of a Preclinical Stress Urinary Incontinence Model for Laser Treatment
Hwarang Shin, Jihye Jo, Myungji Kang, and Hyun Wook Kang
Pukyong National University, Korea

[P1-17] In Vitro Photobiomodulation (PBM) Effects Against Intestinal Inflammation
Myungji Kang, Hwarang Shin, Jihye Jo, and Hyun Wook Kang
Pukyong National University, Korea

[P1-18] AI-assisted Surface Enhanced Raman Spectroscopy (SERS) Monitoring of Hepatic Ischemia-reperfusion Animal Model After Liver Transplantation
Sanghwa Lee[1], Jeongmin Oh[1], Kyeong Ryeol Kim[2], Joonseup Hwang[2], Suyeon Kang[2], Jung-Man Namgoong[3], Jun Ki Kim[1,2,*]
[1]Asan Medical Center, Korea, [2]University of Ulsan, College of Medicine, Korea

[P1-19] Diagnosis of Interstitial Cystitis and Overactive Bladder Disease Using Discriminant Analysis-based Surface-Enhanced Raman Spectroscope (SERS)
Minju Cho[1,2], Seunghee Lee[2], Gayeong Kim[2,3], Jun Ki Kim[1,2]
[1]University of Ulsan, College of Medicine, Korea, [2]Asan Medical Center, Korea, [3]Sookmyeong Women's University. Korea

[P1-20] Non-Invasive Blood Glucose Monitoring on Earlobe: A Comparative Study of MW-SP-NIRS vs. Alternative Sensing Technologies
Jongdeog Kim, Bong Kyu Kim, Hyoyoung Cho, and Chul Huh
Electronics and Telecommunications Research Institute, Korea

[P1-21] Microspectrometer-based Photoplethysmography for High-fidelity Morphological Analysis
Geon-Hui Han, Jung-Woo Park, Jaehyeok Park, Gi Beom Kim, Jongsoo Kim, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P1-22] Non-invasive Glucose Detection Using SWIR Quantum Dot
Beom Kwan Kim[1,2], Ho-Hyun Yang[1,2], Abdallah Karmallawi[1,2,3], Dongeon Kim[2], Se-Woong Baek[2], and In-Ho Bae[1]
[1]Korea Research Institute of Standards and Science, Korea, [2]Korea University, Korea, [3]National Institute of Standards, Egypt

[P1-23] Preclinical Evaluation of Thermal Safety for a Monopolar RF Device
HaeJin Im, ChaeLim Bong, and Young-Seok Seo
WONTECH Co., Ltd., Korea

[P1-24] Characterization of Atherosclerotic Plaque Components via Phasor Analysis of Fluorescence Lifetime Imaging Combined with Optical Coherence Tomography
Jeongmoo Han[1], Sunwon Kim[2,3], Hyeong Soo Nam[1], Dong Oh Kang[2], Jin Won Kim[2], and Hongki Yoo[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Korea University Guro Hospital, Korea, [3]Korea University Ansan Hospital, Korea

[P1-25] Integrated OCT-NIRF-PDT Theranostic Catheter for Precise Diagnosis and Treatment of Atherosclerotic Plaques
Yeon Hoon Kim[1], Jin Hyuk Kim[2], Youngeun Cho[1], Ryeong Hyun Kim[2], Hyun Jung Kim[2], Kyeongsoon Park[3], Jin Won Kim[2], and Hongki Yoo[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Korea University Guro Hospital, Korea, [3]Chung-Ang University, Korea

[P1-26] Depth-sensitive Diffuse Reflectance Spectroscopy for in-vivo Skin Characterization
Jaehyeok Park, Jung-woo Park, Geon-Hui Han, Gi Beom Kim, Jongsoo Kim, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P1-27] Hemodynamic Muscle Activity Monitoring Using Multi-Wavelength Optical Myography

Jongsoo Kim, Jaehyeok Park, and Ki-hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P1-28] Longitudinal In Vivo Visible Light OCT Imaging of Mouse Retina for Early Detection of Alzheimer's Disease

Shuo Wang[1], Songzhi Wu[1], Baihan Li[1], Zi Jin[2], Meixiao Shen[2], and Zhao Wang[1]
[1]University of Electronic Science and Technology of China, China, [2]Wenzhou Medical University, China

[P1-29] Optical Evaluation of Lymphatic Function Restoration via High-Intensity Exercise in a Lymphedema Model

Hwayeong Cheon[1] and Jae Yong Jeon[1,2]
[1]Asan Medical Center, Korea, [2]University of Ulsan, College of Medicine, Korea

[P1-30] Enhanced Acoustic Resolution Photoacoustic Microscopy with Measured Impulse Response-based SAFT

Kisik Kim
Ulsan National Institute of Science and Technology, Korea

[P1-31] Layer-Resolved Quantitative Analysis of Retinal OCTA: A Potential Diagnostic Marker for AMD Treatment Efficacy

Sungwoo Park[1], Seungchan Han[1], Hyunji Lee[2,3], Yeonha Kim[1], Ayun Seol[1], Dayeon Hwang[1], Sangwon Lee[2,3], Younghwa Jung[1], and Tae Joong Eom[1]
[1]Pusan National University, Korea, [2]Korea Research Institute of Standards and Science, Korea, [3]Korea National University of Science and Technology, Korea

[P1-32] Ultrasound-Based Quantification of Dermal Density Changes Following Photobiomodulation

Se Young Lee, Dong Hwan Ko, and Byung Jo Jung
Yonsei University, Korea

[P1-33] 3D Occlusal Surface Reconstruction with a Lensless Imager

Hyo Jun Ahn[1], Hojin Chang[1], Taeyoung Kim[2], Yong Guk Kang[1], Jongho Kim[1], Donggeon Bae[1], Jaewoo Jung[1,2], Nakkyu Baek[2], Joonsik Park[2], Kyung Chul Lee[1], and Seung Ah Lee[1]
[1]Seoul National University, Korea, [2]Yonsei University, Korea

[P1-34] Cross-Device Domain Adaptation via Style Transfer for AI-based Diagnostic Precision of Mobilized Otoscopes in Ear Diseases

Minseok Kwon[1], Hyunmo Yang[1], Nurbolat Aimakov[1], Sanzhar Askaruly[1], Chaerin Hwang[1], Jeong Hun Jang[2], and Woonggyu Jung[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Ajou University School of Medicine, Korea

[P1-35] Development of an Analytical Ray Tracing Model for GRIN Rod Lens Imaging Probe Design

Jin Young Youm[1,2], and Joon-Mo Yang[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Nambu University, Korea

[P1-36] Multifunctional Surgical Microscope-Integrated Optical Coherence Tomography for Real-Time Guidance and Volumetric Histopathological Analysis in Brain Tumor Surgery

Myungju Kim[1], Yeonwoo Baek[1], Eunji Lee[1], Sangjin Lee[1], Geoseong Na[1], Junseong Kim[1], Jung-Jae Kim[2], Youngbin Tchoe[1], and Woonggyu Jung[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Yonsei University College of Medicine, Korea

[P1-37] High-Speed Volumetric Imaging of the Cornea Using Scanning Light Field Microscopy

Jisang Lee, Noseong Park, and Kihean Kim
Pohang University of Science and Technology, Korea

[P1-38] High-resolution High-contrast Phase Imaging of Corneal Nerves and Immune Cells in Mouse Cornea, in Vivo

Suil Jeon[1], Noseong Park[1], Chang Ho Yoon[2], Kyoung Woo Kim[3], Ki Hean Kim[1]
[1]Pohang University of Science and Technology, Korea, [2]Seoul National University Hospital, Korea, [3]Chung-Ang University College of Medicine, Korea

[P1-39] Digital Aberration Correction Using Aberration Matrix and Optical Memory Effect
ChulMin Oh[1], Herve Hugonnet[1], Moosung Lee[1,2], and YongKeun Park[1,3]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Universität Stuttgart, Germany, [3]Tomocube, Inc., Korea

[P1-40] Vector Rytov Approximation for Tomography of Anisotropic Materials
ChulMin Oh[1], Herve Hugonnet[1], Juheon Lee[1], and YongKeun Park[1,2]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Tomocube Inc., Korea

[P1-41] Investigation of Craquelure Patterns in Oil Paintings Using Precise 3D Morphological Analysis for Art Authentication
Soojung Kim, Mihee Park, Hyerin Song, Tae Young Kang, Seunghun Lee, Tae Rim Yoon, Byungsuk Lee, Tuli Anamika Biswas, Seonu Jeong, Seheon Jeong, Yubin Lee, and Kyujung Kim
Pusan National University, Korea

[P1-42] Comparative Assessment of Light-Sheet and Spinning Disk Confocal Microscopy for Optimized 3D Imaging of Cleared Biological Samples
Youngjae Ryu, Sung Rae Kim, and Chang Man Ha
Korea Brain Research Institute, Korea

[P1-43] Development of an OCT–SLO Imaging System for Retinal Studies in Preclinical Animal Models
Hyun-Ji Lee[1,2], Tae Geol Lee[1,2], and Sang-Won Lee[1,2]
[1]Korea Research Institute of Standards and Science, Korea, [2]Korea National University of Science and Technology, Korea

[P1-44] Deep Learning-Enabled Rapid Virtual Staining and Automated Cancer Classification using High-Throughput Digital Slide Scanner
Santanu Misra[1], Sei Na[2], Kyoungsook Park[2], Chiho Yoon[3], Sampa Misra[3], Chulhong Kim[3], Sang Yong Song[1], Hyung Kyung Kim[2], and Byullee Park[1]
[1]Sungkyunkwan University, Korea, [2]Samsung Medical Center, Korea, [3]Pohang University of Science and Technology, Korea

[P1-45] Dual-Contrast Optical Coherence Tomography for Quantitative Assessment of Immune- and Drug-Induced Cytotoxicity in 3-D Tumor Spheroids
Ingyoung Kim[1], Seokgyu Han[2], Baekcheon Seong[1], Woovin Kim[1], Yewon Kim[1], Younghun Kim[1], Chulmin Joo[1], and Sungsu Park[2]
[1]Yonsei University, Korea, [2]Sungkyunkwan University, Korea

[P1-46] Depth of Focus-Enhanced Optical Coherence Tomographic Imaging Using of Chromatic Focal Shifting of Geometric Phase Lens
Hyun Sung Kim, Hye Jun Ma, and Eun Seo Choi
Chosun University, Korea

[P1-47] Deep Learning Solution for Concurrent Speed and SNR Enhancement in Multi-spectrometer SD-OCT of Retinal Images
Ju Hwan Lee[1], Sang Hyuk Suh[1], Yudan Chen[2], Jun Song[2], Myeong Jin Ju[2], and Hee-Jae Jeon[1]
[1]Kangwon National University, Korea, [2]Universitry of British Columbia, Canada

[P1-48] Label-Free Drug Response Evaluation in Organoids via Ultraviolet Photoacoustic Microscopy
Hyunjun Kye[1], Won Jong Yu[1], Jeesu Kim[2], Jong-Chan Park[1], and Byullee Park[1]
[1]Sungkyunkwan University, Korea, [2]Pusan National University, Korea

[P1-49] Geometric Phase Lens-based Compact Circumferential Surface Profiling Probe
Hyun Sung Kim, Hye Jun Ma, and Eun Seo Choi
Chosun University, Korea

[P1-50] In Vivo Observations of Zebrafish Retinal Responses by Light Exposure Using Optical Coherence Tomography
Hang Chan Jo and Dae Yu Kim
Inha University, Korea

[P1-51] Two-photon Oblique Light Sheet Microscopy with Enhanced SNR Using Low Repetition Rate Light Source
Jeonggeun Song, Woojin Lee, Hyeong Soo Nam, Hamin Park, Young-Gyun Park, and Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[P1-52] Multidimensional Assessment of Enamel Microcrack Progression Following Orthodontic Debonding Using OCT Incorporated Image Processing
Sm Abu Saleah, Daewoon Seong, Euimin Lee, Yoonseok Kim, Hayoung Kim, Hyunmo Kim, Hyungseo Jeon, Bosung Kim, Sungbin Yun, Tinaya Wijethunge, Nipun Shantha Kahatapitiya, Jannat Amrin Luna, Shinheon Kim, Sangyeob Han, Mansik Jeon, and Jeehyun Kim
Kyungpook National University, Korea

[P1-53] Data Compression and Resolution Optimization for Hyperspectral Microscopy in H&E Pathology
Do Hyeon Son and Jong Hee Yoon
Ajou University, Korea

[P1-54] Development of a Laser Speckle Imaging Method for Enhanced Nanoparticle Detection in Liquid Media
Jeonggyo Kim and Jonghee Yoon
Ajou University, Korea

[P1-55] Quantitative Analysis of Scattering Properties via Speckle Illumination-Based Spatial Frequency Domain Imaging
Seongmin Jo and Jonghee Yoon
Ajou University, Korea

[P1-56] Color Space Mapping from Hyperspectral Imaging Data for Colorimetric Analysis
Nahyun Lee and Jonghee Yoon
Ajou University, Korea

[P1-57] Rapid and Accurate Antibiotic Susceptibility Testing Method Using Laser Speckle Imaging
Jongseo Lee[1], Seongjoon Moon[1], Donghyeok Kim[1], Kyoungman Cho[2], Changhan Lee[1], and Jonghee Yoon[1]
[1]Ajou University, Korea, [2]The Wave Talk., Inc., Korea

[P1-58] Phase-Resolved Optical Coherence Microscopy Using Wavelength Segmentation of Stretched-Pulse Mode-Locked Laser
Jaeheung Kim[1], Seongjin Bak[1], Gyeong Hun Kim[2], Hwidon Lee[1], and Chang-Seok kim[1]
[1]Pusan National University, Korea, [2]Massachusetts General Hospital and Harvard Medical School, USA

[P1-59] Full-Range OCT with Fourfold Depth Extension Using 4×4 Fiber Coupler and Dual Reference System
Yeongbin Jeon, Jaeheung Kim, Chang-Seok Kim, and Hwidon Lee
Pusan National University, Korea

[P1-60] Spatiotemporal Focusing Through Scattering Medium Using Time-gated Digital Optical Phase Conjugation
Seungmin Lee and Mooseok Jang
Korea Advanced Institution of Science and Technology, Korea

[P1-61] High-Resolution Label-Free Imaging Through Complex Biological Samples Using Visible-Wavelength Reflection Matrix Microscopy
Jaecheol Cho, Eunyoung Seong, Sungsam Kang, and Wonshik Choi
Korea University, Korea

[P1-62] Oblique Back-illumination Microscopy at 1650 nm Wavelength
Yechan Cho, Jin Hee Hong, Wonshik Choi, and Yookyung Jung
Korea University, Korea

[P1-63] Wavelength-segmented Phase Imaging to Extend Axial Range in Full-field Optical Coherence Microscopy
Minju Jeong, Jaeheung Kim, Chang-Seok Kim, and Hwidon Lee
Pusan National University, Korea

[P1-64] Volumetric Quantification of Mouse Spinal Cord with Serial Optical Coherent Tomography and Semi-Supervised Learning for Efficient Segmentation
Eunji Lee, Sangjin Lee, Myungju Kim, SunYeong Choi, Nakyoung Lee, Sang Jin Im, HyungJoon Cho, and Woonggyu Jung
Ulsan National Institute of Science and Technology, Korea

[P1-65] Unexpected High-Frequency Photoacoustic Wave Generation with Long Laser Pulses
Haneul Lee[1], Jin Young Youm[1,2], Yikeun Kim[1], Wonhak Son[1], Minjae Kim[1], Gyeong Tae Kim[1], Sung Chul Bae[1], Joon-Mo Yang[1], and Lihong V. Wang[3]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Nambu University, Korea, [3]California Institute of Technology, USA

[P1-66] Equivalent Test Optical System (ETOS) for Verifying Optical Working Distance of Miniature Imaging Probe
Jin Young Youm[1,2] and Joon-Mo Yang[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Nambu University, Korea

[P1-67] SNR Maximization Strategy by Intended Saturation and Compensation in Swept-Source Optical Coherence Tomography
Gyeongho Kim, Hyeongsoo Nam, Woojin Lee, and Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[P1-68] Attention-Driven Multi-Scale Denoising Network for Full-Field Photoacoustic Displacement Imaging
Muhammad Awais, Minseo Cho, and Byeongha Lee
Gwangju Institute of Science and Technology, Korea

[P1-69] Kilohertz-Rate Dual-Mode Imaging of Neuronal and Vascular Dynamics with an Event-Based Camera
Fatemeh Dehghan Nezhad[1], Yejin Kim[1], Daeun Roh[1], Alazar Tadele Kebede[1], Young Ro Kim[2,3], Hyuk-Sang Kwon[1], and Euiheon Chung[1]
[1]Gwangju Institute of Science and Technology, Korea, [2]Massachusetts General Hospital, USA, [3]Harvard Medical School, USA

[P1-70] Near-infrared Optical Nanoprobes for Dynamic Neurochemical Imaging
Dakyeon Lee, Yunseo Jeong, and Sanghwa Jeong
Pusan National University, Korea

[P1-71] A CNN-based Approach for Real-Time Acute Stroke Diagnosis Using Restingstate NIRS
Seung Hyun Lee, Zephaniah Phillips, ByungJun Park, and Beop-Min Kim
Korea University, Korea

[P1-72] Effects of Obstructive Sleep Apnea on Cerebral Oxygenation in Cognitively Normal Older Adults: A Simultaneous Polysomnography-fNIRS Study
Chang Hyun Park, Hwan Wook Shim, Young-Min Lee, Chang-Seok Kim, and Hwidon Lee
Pusan National University, Korea

[P1-73] Light-field Deep Learning Platform with High Depth-of-view and Cellular Resolution Towards Organoid Imaging
Tien Nhat Nguyen, Youngseung Yoo, An Nazmus Sakib, Akm Ashiquzzaman, Hyuk Sang Kwon, and Euiheon Chung
Gwangju Institute of Science and Technology, Korea

[P1-74] Longitudinal In Vivo Spinal Cord Visualization with Surgical OCT and a Lightweight Miniaturized Window Chamber
SunYeong Choi[1,2], Myungju Kim[1], Eunji Lee[1], Geoseong Na[1], Yeonwoo Baek[1], Nakyung Lee[1], and Woonggyu Jung[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Institute for Basic Science, Korea

Keynote Session V: Nanobiophotonics

Room A [Diamond Hall, Annex (1F)] **October 31 (Fri.) / 09:00~10:30**

[Keynote 5-1] 09:00~09:30
Visualizing Large-scale Biological Conversion Processes in Real-time
Taewook Kang
Sogang University, Korea

[Keynote 5-2] 09:30~10:00
Meta-optic Interfaces for Molecular Sensing and Biomedical Imaging
Haoran Ren
Monash University, Australia

[Keynote 5-3] 10:00~10:30
Spatially Encoded Molecular Spectroscopy with Spectrally Selective Metasurfaces
Andreas Tittl
Ludwig-Maximilians-University Munich, Germany

Keynote Session VI: Biophotonic Enabling Technologies

Room A [Diamond Hall, Annex (1F)] **October 31 (Fri.) / 11:00~12:30**

[Keynote 6-1] 11:00~11:30
Quantitative Combination of Photoacoustic and Ultrasound Imaging
Ivana Falco, Charlotte Constans, Emmanuel Bossy, and Bastien Arnal
Université Grenoble Alpes, CNRS, France

[Keynote 6-2] 11:30~12:00
Nanophotonics for Vibrational Sensing and Imaging
Sang-Hyun Oh
University of Minnesota, USA

[Keynote 6-3] 12:00~12:30
Implantable Optoelectronic Devices for Advanced Neural Interfaces
Xing Sheng
Tsinghua University, China

Keynote Session VII: Computational Optics and AI

Room A [Diamond Hall, Annex (1F)] **October 31 (Fri.) / 14:40~16:10**

[Keynote 7-1] 14:40~15:10
Feature-domain Phase Retrieval for Computational Microscopy
Liangcai Cao
Tsinghua University, China

[Keynote 7-2] 15:10~15:40
Computational Imaging with Randomness
Ryoichi Horisaki
The University of Tokyo, Japan

[Keynote 7-3] 15:40~16:10
Adaptive Optical Correction for in Vivo Fluorescence Microscopy Using Machine Learning
Iksung Kang and Na Ji
University of California, USA

Poster Session II

Ruby I & II, Tower A (3F) **October 31 (Fri.) / 16:30~18:30**

[P2-01] All-in-one Nanoplasmonic Platform for Sequential Photothermal Cell Lysis and RPA-CRISPR/Cas Assay
Eun-Sil Yu, Jaemyeong Kwon, Hyejeong Jeong, Hye-Jin Chang, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-02] Enhanced Backscattering Spectroscopy for the Optical Characterization of Micro- and Nanoplastics
Ik Hwan Kwon, Jun Hui Jeon, Tae Goel Lee, and Sang Won Lee
Korea Research Institute of Standards and Science, Korea

[P2-03] LED-driven Plasmoporation for Cost-effective and Scalable Intracellular Delivery in Suspension Cells
Hamin Na, Chomin Lee, Junhee Han, Young-Gil Cha, Ji-Ho Park, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-04] Selective Neurotransmitter Dynamics Observation Enabled by a Terahertz-Nanodisc Metasurface Sensing Platform
Taeyeon Kim[1,2], Yeon Kyung Lee[1,2], Hyun Seok Song[1,2], and Minah Seo[1,2]
[1]Korea University, Korea, [2]Korea Institute of Science and Technology, Korea

[P2-05] Coincident Fluorescence-Burst Analysis of Actin Cargo Molecules in Secreted Single Diffusing Extracellular Vesicles from Human Induced Pluripotent Stem Cells
Dang Du Nguyen[1], Aleksandr Barulin[3], Won Jong Yu[1], Jong-Chan Park[1], and Inki Kim[1]
[1]Sungkyunkwan University, Korea, [2]Moscow Center for Advanced Studies, Russia

[P2-06] Multifocal Metalens for Image Scanning Microscopy
Yongjae Jo[1], Hyemi Park[1], Seho Lee[1], Hyeyoung Yoon[1,2], Taehoon Lee[1], Gyu Soo Bak[1], Jong-Chan Park[1], and Inki Kim[1]
[1]Sungkyunkwan University, Korea, [2]Korea Institute of Science and Technology, Korea

[P2-07] Decoding NV Center Orientations by Polarization-Modulated Super-Resolution Localization Microscopy
BinChan Joo, DongHee Park, JaeHwan Yoo, and YeonUi Lee
Chungbuk National University, Korea

[P2-08] Excitonically Enhanced Polarization-Resolved Scattering Imaging in Dark-Field Microscopy
Dong Hee Park, Bin Chan Joo, and Yeon Ui Lee
Chungbuk National University, Korea

[P2-09] Ultrasensitive pH Detection in Cell Culture Media via Surface-Enhanced Raman Scattering of Halochromic Phenol Red
Min Chung, Hamin Na, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-10] Development of a Nanocavity SERS Substrate for On-Chip Real-Time Molecular Detection
Sejin Lee and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-11] Super-resolution 3D Photoacoustic Imaging of Human Brain Organoids via 20× Iterative Expansion Microscopy and Chromogenic Absorber
Jungah Kim, Yongjae Jo, and Inki Kim
Sungkyunkwan University, Korea

[P2-12] Wearable Optofluidic Patch for Efficient Sweat Collection and Label-Free Analysis
Jaehun Jeon and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-13] Dielectrophoresis-Assisted SERS Platform for Label-Free Single-Cell Profiling Based on Frequency-Dependent Molecular Signatures
Kwanhwi Ko[1], Hajun Yoo[1], MingHao Wang[1], Ken-Tye Yong[2], and Donghyun Kim[1,3]
[1]Yonsei University, Korea, [2]The University of Sydney, Australia, [3]The Chinese University of Hong Kong, Hong Kong

[P2-14] Therapeutic Effects of Graphene Quantum Dots in Pterygium
Minji Kim[1], Donghoon Koo[1], Hyun Seung Yang[1,2], and Jeongmin Kim[1]
[1]Seoul National University, Korea, [2]Seoul Shinsegae Eye Center, Korea

[P2-15] Chiral and Molecular Identification of Monosaccharides by Surface-Enhanced Raman Spectroscopy
Daedu Lee, Jaehwan Jung, and Yoonsoo Pang
Gwangju Institute of Science and Technology, Korea

[P2-16] Synthesis and Characterization of SiO2-coated BCP: Yb3+, Er3+ Upconversion Phosphors for Biomedical Applications
E. Swetha, W. Kim, S-J. Kim, and G.B. Jung
Chosun University, Korea

[P2-17] Smartphone-based Multiplexed Lateral Flow Assay Using RGB Quantum Beads for Rapid Diagnostics of Respiratory Viruses
Myeonghoon Choi[1], Seungho Lee[2], Yuha Choi[1], Jiwon Seo[1], Geoseong Na[1], Juho Lee[1], Jongnam Park[1,2], and Woonggyu Jung[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]UNIQDOT, Korea

[P2-18] Revealing Chemical Interface Damping in Bimetallic Ag-Coated Au Nanorods Featuring Exposed Au Tips
Geun Wan Kim[1], Seunghyun Lee[2], and Ji Won Ha[1]
[1]University of Ulsan, Korea, [2]Hanyang University, Korea

[P2-19] Spatiotemporally Resolved, High-throughput Lensless Computational Microscopy
Yunhui Gao and Liangcai Cao
Tsinghua University, China

[P2-20] Optimization of Multi-layer Correction in Anti-scattering Structure for Enlarged Isoplanatic Patch
Sechan Park and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-21] Deep Learning Model for Image Quality Enhancement of Sparsely Sampled Raster-Scan Data
Yuon Song and Jeesu Kim
Pusan National University, Korea

[P2-22] Reducing Bias and Enhancing Accuracy in Brain Tumor Diagnosis Using Feedback-Aware Attention System (FAAs) Integrated U-Net
Rostam Aghaei[1], Jeongmin Oh[2], Kyeong Ryeol Kim[1], and Jun Ki Kim[1,2]
[1]University of Ulsan, College of Medicine, Korea, [2]Asan Medical Center, Korea

[P2-23] Computational Analysis of Wall Shear Stress in Atherosclerosis Induced ApoE - KO Mouse Model
Joonseup Hwang[1], Kyeong Ryeol Kim[1], Minju Cho[1], and Jun Ki Kim[1,2]
[1]University of Ulsan, College of Medicine, Korea, [2]Asan Medical Center, Korea

[P2-24] Probabilistic Modeling of EMCCD Noise Using Convolutional Neural Networks in Entangled Two-photon Absorption Microscopy
Minseok A. Jang and Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[P2-25] AI-Powered 3D Virtual H&E Staining of Label-free Thick Colon Tumors
Juyeon Park[1], Su-Jin Shin[2], Geon Kim[1], and YongKeun Park[1,3]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Yonsei University College of Medicine, Korea, [3]Tomocube Inc., Korea

[P2-26] Dielectric Tensor Tomography with Intensity-only Measurements
Woovin Kim, Hongseong Kim, Juwon Choi, Jongmin Kim, and Chulmin Joo
Yonsei University, Korea

[P2-27] Compact Optical Neural Networks Using Turbid Media for Phase- and Polarization-Resolved Imaging

G-Hyun Go and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-28] Graph-based Modeling of Optical System Enables Adaptive Optics with Self-calibration Over Large Field of View

Eun-Seo Cho[1], Joon Park[1], Hyungwon Jin[2], Yoonjae Chung[1], Minho Eom[1], Hyejin Shin[1], Jae-Byum Chang[1], Jung-Hoon Park[2], and Young-Gyu Yoon[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Ulsan National Institute of Science and Technology, Korea

[P2-29] A Two-Stage Deep Learning Framework for Dental Caries Segmentation

Yeong-Su Lim[1], Jihun Kim[2], Dohyun Chun[1], Jong-yeol Lee[3], Jae Hyung Park[4], and Hee-Jae Jeon[1]
[1]Kangwon National University, Korea, [2]Yonsei University, Korea, [3]The One Star Co., Ltd., Korea, [4]Inje Family Dental Clinic, Korea

[P2-30] Learning-based Design of Binary Phase Filters for Depth-enhanced Optical Coherence Tomography

Gyungro Yun, Jinwoo Cho, Younghun Kim, Dambin Cho, Taegyun Moon, and Chulmin Joo
Yonsei University, Korea

[P2-31] Rapid and Automated Screening of Acute Promyelocytic Leukemia from Peripheral Blood Using Holotomography and Deep Learning

Jupyo Hong[1], Hyunji Kim[2], Geon Kim[1], Dohyeon Lee[1], Juyeon Park[1], HeyJung Park[4], YongKeun Park[1,3], and Seongsoo Jang[5]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Seoul National University Bundang Hospital, Korea, [3]Tomocube Inc., Korea, [4]Asan Medical Center, Korea, [5]University of Ulsan College of Medicine, Korea

[P2-32] High-speed Incoherent Holotomography via Sparse Axial Scanning with Minimal Spatial Resolution Degradation

Jupyo Hong[1], Herve Hugonnet[1], Chul Min Oh[1], Weisun Park[1,3], Chungha Lee[1], Chaeyeon Lee[1], Yeon Wook Kim[2], Seung-Mo Hong[3], and YongKeun Park[1,4]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Asan Medical Center, Korea, [3]University of Ulsan College of Medicine, Korea, [4]Tomocube Inc., Korea

[P2-34] Deep Learning Enhancement of Low-Light Fluorescence Lifetime Imaging

Juyeol Eom[1], Jeongmoo Han[1], Hyun Jung Kim[2], Jin Won Kim[2], and Hongki Yoo[1]
[1]Korea Advanced Institute of Science and Technology, Korea, [2]Korea University Guro Hospital, Korea

[P2-35] Large Field-of-view 3D Computational Phase Imaging Using Differential Structured Illumination Microscopy (dSIM)

Alex Matlock[1], Zahid Yaqoob[2], and Peter T.C. So[1]
[1]Massachusetts Institute of Technology, USA, [2]Boston University, USA

[P2-36] Offset Microlens Array Camera for Quantitative Flow Imaging in Biomedical Applications

Hyun-Kyung Kim, Young-Gil Cha, Jae-Myeong Kwon, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-37] Reflection Matrix-Based Analysis of Scattering Media

Hyun-Gyu Woo, Kitae Kim, and Ye-Ryoung Lee
Konkuk University, Korea

[P2-38] Robust Medical Image Segmentation via Uncertainty-Aware Hybrid Mamba

Hyunsu Jeong[1], Boheng Zhang[2], Chiho Yoon[1], Jiwoong Kim[1], Mingjian Sun[2], and Chulhong Kim[1]
[1]Pohang University of Science and Technology, Korea, [2]Harbin Institute of Technology, China

[P2-39] Speckle-based Hyperspectral Imager Using Disordered Metasurface

Dong-gu Lee, Gookho Song, Chunghyung Lee, and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-40] Speckle-Based Hyperspectral Sensing under Practical Constraints

Nahee Kim and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-41] Aberration-Free Multiphoton Super-Resolution Imaging by Dual-Deconvolution
Sumin Lim[1,2], Sungsam Kang[1,2], Jin-Hee Hong[1,2], Youngho Jin[1], Kalpak Gupta[1,2], Moonseok Kim[3], Suhyun Kim[2], Wonshik Choi[1,2], and Seokchan Yoon[4]
[1]Institute for Basic Science, Korea, [2]Korea University, Korea, [3]The Catholic University of Korea, Korea, [4]Pusan National University, Korea

[P2-42] Geometrically Corrected Wave Optics Simulation and Optimization for Complex Hybrid Optical Systems
Yong Guk Kang and Seung Ah Lee
Seoul National University, Korea

[P2-43] Image Stitching for Ultra Wide Field Non-mydriatic Fundus Image
Seung Chan Han[1], Hyung-Wook Kim[2], and Tae Joong Eom[1]
[1]Pusan National University, Korea, [2]Huvitz Co., Ltd., Korea

[P2-45] Multi-view Lensless Imaging using 3D Gaussian Splatting
Jaewoo Jung[1,2], Donggeon Bae[2], Kyung Chul Lee[2], and Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea

[P2-46] Recurrent Attentive Reconstruction Network for Progressive Lensless Imaging
Donggeon Bae[1], Young Guk Kang[1], Joonsik Park[2], Taeyoung Kim[2], Jaewoo Jung[1,2], Hyo Jun Ahn[1], Sangjun Byun[2], Jongho Kim[1], and Seung Ah Lee[1]
[1]Seoul National University, Korea, [2]Yonsei University, Korea

[P2-47] PBST-based Universal Fluorescence Staining and Automated Virtual H&E Generation via YOLO and SACSI-CUT
Junyoung Shin[1], Inkeon Ryu[2], Jinhyeong Lee[1], and Daekeun Kim[1]
[1]Dankook University, Korea, [2]CosmoWorks, Inc., Korea

[P2-48] Speckle Illumination based Stereo Depth Estimation for Textureless Objects
Jiseong Barg, Seungmin Lee, and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-49] Deep Learning Framework for Rapid Aberration Correction in Reflection Matrix Microscopy
Eunyoung Seong[1], Dong-Young Kim[1], Wonshik Choi[1], and Ye-Ryoung Lee[2]
[1]Korea University, Korea, [2]Konkuk University, Korea

[P2-50] End-to-End Neural Framework for PSF-Aware Design in Gray-Scale Maskless Lithography
Joonsik Park[1], Donggeon Bae[2], Young Guk Kang[2], Nakkyu Baek[1], and Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea

[P2-51] Robust 3D Fourier Ptychographic Tomography via Feature-Domain Loss
Chao Tan and Mooseok Jang
Korea Advanced Institute of Science and Technology, Korea

[P2-52] Versatile Digital Histopathology Platform applied with Near Infrared Quantitative Phase Imaging and Deep Learning Algorithm
Hyewon Cho[1], Songyi Choi[2], Nurbolat Aimakov[1], Yeonwoo Baek[1], Sangjin Lee[1], Yerim Kim[1], and Woonggyu Jung[1]
[1]Ulsan National Institute of Science and Technology, Korea, [2]Chungnam National University, Korea

[P2-53] Recovering Information from Aberrated Images to Restore Diffraction Limited Resolution Using a Parallel-algorithm
Soo-Bin Cho, Seong-won Cho, Jae-Jun Yoo, and Jung-Hoon Park
Ulsan National Institute of Science and Technology, Korea

[P2-54] Laser-Induced Photovoltaic Imaging System for Spatial Characterization of Perovskite Solar Cells
Yongjae Jeong, Gyeongho Jeong, Ji-Youn Seo, and Jeesu Kim
Pusan National University, Korea

[P2-55] Frequency-Division Multiplexing based Functional Near-Infrared Spectroscopy for Brain Hemodynamic Response Detection
Dongyoung Jo, Changhyeon Park, Youngmin Lee, Hyung-Hoi Kim, Chang-Seok Kim, and Jeesu Kim
Pusan National University, Korea

[P2-56] Ultrafast Semi-Digitized Plasmonic PCR Using Multi-Chamber Microfluidic Cartridge
Hyejeong Jeong, Jae-Myeong Kwon, Eun-Sil Yu, Hye-Jin Chang, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-57] Split-order Flat-field Lens Grating Microspectrometer for Multiplex Analysis
Gi Beom Kim, Jung-Woo Park, Geon-Hui Han, Hyejeong Jeong, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-58] Compact Wide Field-of-view Camera for Biomedical Imaging
Jae-Myeong Kwon, Yejoon Kwon, Young-Gil Cha, Hyun-Kyung Kim, Min H. Kim, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-59] Facile DNA Matching via Photon Counting based on a Deep UV SiC SPAD
Ho-Hyun Yang[1,2], Beom-Kwan Kim[1,2], Abdallah Karmallawi[1,2,3], Jae-Kuen Yoo[1], Se-Woong Baek[2], adn In-Ho Bae[1]
[1]Korea Research Institute of Standards and Science, Korea, [2]Korea University, Korea, [3]National Institute of Standards, Egypt

[P2-60] Dual-wavelength Wireless Photometry Device for Fluorescence Recording with Isosbestic Control in Freely Moving Animals
Donggi Han and Jae-Woong Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-61] Dual-Modal Photoacoustic and Ultrasound Imaging with Multi-Frequency Analysis
Jincheol Kim and Jeesu Kim
Pusan National University, Korea

[P2-62] Ultrathin Array Camera for Hemispheric Wide-angle Imaging
Young-Gil Cha, Jae-Myeong Kwon, Hyun-Kyung Kim, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-63] Lensless Eye Tracker Based on Polarization-Multiplexed Point Spread Function
Hyeonyong Lee[1], Changyoon Yi[1,2], Taeyoung Kim[1], Yimin Ding[3], Yatong An[3], and Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea, [3]Meta Reality Labs, USA

[P2-64] End-to-End Lensless Gaze Estimation Using Depth-Informed Synthetic Dataset
Changyoon Yi[1,2], Taeyoung Kim[1], Hyeonyong Lee[1], Jaewoo Jung[1,2], Donggeon Bae[2], Yimin Ding[3], Yatong An[3], Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea, [3]Meta Reality Labs, USA

[P2-65] An Investigation of High Refractive Index Silicone as a Light Guiding Material for Optogenetic Applications
Jeffery Low, Quinn Boesley, Daniel McCormick, Poul Nielsen, and Neil Broderick
The University of Auckland, New Zealand

[P2-66] High-Sensitivity Frequency-domain Photoacoustic Microscopy for Functional Imaging Using an Interferometrically Modulated Argon-ion Laser
Yong-Jae Lee and Tae Joong Eom
Pusan National University, Korea

[P2-67] Lensless Wide Field-of-View Imaging Enabled by Refractive Phase Mask Engineering
Nakkyu Baek[1,2,3], Ilya Reshetouski[2], Joonsik Park[1,3], Yong Guk Kang[3], Hideki Oyaizu[2], Kyung Chul Lee[3], Ryuichi Tadano[2], and Seung Ah Lee[3]
[1]Yonsei University, Korea, [2]Sony Semiconductor Solutions Corporation, Japan, [3]Seoul National University, Korea

[P2-68] Rapid Eye Movement Detection via Rolling Shutter Speckle Imaging
Sangjun Byun[1], Changyoon Yi[1,2], Hojin Chang[2], Yong Guk Kang[2], and Seung Ah Lee[2]
[1]Yonsei University, Korea, [2]Seoul National University, Korea

[P2-69] Polarization-Sensitive Reflective Fourier Ptychographic Microscopy for Surface Characterization
Kyungwon Lee[1], Hyesuk Chae[2], Yong Guk Kang[1], Jaewoo Jung[1,2], Hyo Jun Ahn[1], Jongho Kim[1], and Seung Ah Lee[1]
[1]Seoul National University, Korea, [2]Yonsei University, Korea

[P2-70] Development of a Thermochromic Tissue Mimicking Phantom for Optical Property Control and Thermal Visualization
Dong Hwan Ko, Se Young Lee, Hyun Seon Yu, and Byung Jo Jung
Yonsei University, Korea

[P2-71] Compact Lensless Imaging with a Trainable Phase Mask and Multitask Learning
Jongho Kim[1], Taeyoung Kim[2], Jaewoo Jung[1,2], Yong Guk Kang[1], Donggeon Bae[1], Hojin Chang[1], Hyo Jun Ahn[1], and Seung Ah Lee[1]
[1]Seoul National University, Korea, [2]Yonsei University, Korea

[P2-72] Spectrally-Coded Optical Film for Independent Transmission and Reflection on Curved Surface
Hyo Eun Jeong, Ji-Eun Yeo, and Young Min Song
Korea Advanced Institute of Science and Technology, Korea

[P2-73] Nanophotonic Sensing Platform for Non-Invasive Biomarker Monitoring
Ji-Eun Yeo and Young Min Song
Korea Advanced Institute of Science and Technology, Korea

[P2-74] Optical Analysis for Effective Phototherapy in an LED Oral Care Device
Younghoon Shin, Woosub Song, In Hee Shin, and Sun-Hee Ahn
Korea Photonics Technology Institute, Korea

[P2-75] Oblique Mirror Based Reflective Lensless Imaging
Hojin Chang[1], Yong Guk Kang[1], Jongho Kim[1], Donggeon Bae[1], Hyo Jun Ahn[1], Sangjun Byun[2], and Seung Ah Lee[1]
[1]Seoul National University, Korea, [2]Yonsei University, Korea

[P2-76] Optical See-through Near-Eye Display Using Microlens Array
HyeonJun Kim and Hongki Yoo
Korea Advanced Institute of Science and Technology, Korea

[P2-77] Low-Cost Plasmonic Substrates for Ultrafast LED-Driven Photothermal Thermocycling
Hye-Jin Chang, Jae-Myeong Kwon, Eun-Sil Yu, Hyejeong Jeong, and Ki-Hun Jeong
Korea Advanced Institute of Science and Technology, Korea

[P2-78] Design and Optimization of an Animal-Inspired Vision System: Leveraging Vertical Pupil Dynamics for Enhanced Focus and Natural Blurring
Shudha Tasnim Iqbal [1], Sehui Chang[2], Euiheon Chung[1], and Young Min Song[2]
[1]Gwangju Institute of Science and Technology, Korea, [2]Korea Advanced Institute of Science and Technology, Korea