[MA1] A. Biosensors (Biorecognition & Diagnostics)-1	
Session Date	November 09 (Mon.), 2026
Session Time	13:00-14:05
Session Room	Room A (Conference Room 517)
Session Chairs	Prof. Takeshi Onodera (Kyushu University), Dr. Chii-Wann Lin (National Health Research Institutes)

[MA1-1] [Invited] **13:00-13:25**

An EIS Biosensing Platform Using Co-Immobilized, Indigenous, Target-Specific Bacteriophages for Dual-Pathogen Detection

Jasmine Claire D. Abarca, Christine Hazel M. Balanag, Sean Patrick J. Cruz, Kathrina Andrea M. Dobles, Claire Layne Y. Tenedero, Destine Gill D. Yam, Mark Dominic A. Casais, Donna May D. Papa, and Jose H. Bergantin Jr.

University of Santo Tomas, Philippines

[MA1-2] [Invited] **13:25-13:50**

A Microwell-Based 3D Electrorotation Platform for High-Throughput, Label-Free Single-Cell Analysis

Masato Suzuki, Ichiha Miya, Megumi Bando, Yushi Isozaki, and Tomoyuki Yasukawa

University of Hyogo, Japan

[MA1-3] **13:50-14:05**

Electrochemical Detection of Viable Bacteria Using Galvanic Current based on Hydrogen Sulfide Production

Hiroaki Sakamoto[1], Momoka Nakai[1], Fitrah Basimah Binti Zulfikri[1], and Michiyo Nakatsu[2]

[1]University of Fukui, Japan, [2]Industrial Technology Center of Fukui Prefecture, Japan

[MB1] B. Gas Sensors (Materials & Sensing Mechanisms)-1	
Session Date	November 09 (Mon.), 2026
Session Time	13:00-14:25
Session Room	Room B (Conference Room 515)
Session Chairs	Prof. Seon-Jin Choi (Hanyang University), Prof. Taro Ueda (Nagasaki University)

[MB1-1] [Invited] **13:00-13:25**

Semiconductor Gas Sensor Materials for Selective Detection of Volatile Organic Compounds: From Materials Design to Sensing Mechanisms

Tetsuya Kida

Kumamoto University, Japan

[MB1-2] **13:25-13:40**

Selectivity in Chemiresistive Gas Sensing: From Chemical Criteria to Rational Materials Design

Wu Wang and Fan Dong

University of Electronic Science and Technology of China, China

[MB1-3] **13:40-13:55**

Ultrasensitive ppt-Level NO_2 MEMS Sensors Based on Au-Sensitized SnO_2/Graphitized-Nanodiamond Heterojunctions

Jiusheng Cai, Xishuang Liang, and Geyu Lu

Jilin University, China

[MB1-4] **13:55-14:10**

Tunable Metal Organic Chalcogenolates Semiconductors for Selective Room-Temperature NO_2 Gas Sensing

Pimpan Leangtanom[1], Achawee Dangkongko[1], Viruntachar Kruefu[2], and Watcharaphol Paritmongkol[1]

[1]Vidyasirimedhi Institute of Science and Technology, Thailand, [2]Maejo University, Thailand

[MB1-5] **14:10-14:25**

Controlling Ni Distribution in PdNi Nanoalloys Decorated onto ZnO for Rapid and Robust ppb-Level H_2S Sensing

Kang Yang, Fengmin Liu, and Geyu Lu

Jilin University, China

[MC1] C. Gas Sensors (Devices & System Application)-1	
Session Date	November 09 (Mon.), 2026
Session Time	13:00-14:25
Session Room	Room C (Conference Room 516)
Session Chairs	Prof. Hua-Yao Li (Huazhong University of Science and Technology), Prof. Takeo Hyodo (Nagasaki University)

[MC1-1] [Invited] **13:00-13:25**

Smart Environmental Monitoring by Low-Power and Self-Powered Gas Sensors and Artificial Intelligence

Inkyu Park

Korea Advanced Institute of Science and Technology, Korea

[MC1-2] **13:25-13:40**

Ferroelectric Transistors based on α-In_2Se_3 for Bionic Olfaction

Yaxin Liang, Xinyi Chen, Peng Yu, Hua-Yao Li, and Huan Liu

Huazhong University of Science and Technology, China

[MC1-3] **13:40-13:55**

Acoustic–Olfactory Gas Sensing Using Receptor-Coated Microphones

Tanju Yildirim[1], Meng-Qun Feng[1], Thuc Anh Ngo[2], Kosuke Minami[1], Kota Shiba[1], and Genki Yoshikawa[1,2]

[1]National Institute for Materials Science, Japan, [2]University of Tsukuba, Japan

[MC1-4] **13:55-14:10**

AI-Enhanced Low-Power Gas Sensor System for Addressing Measurement Challenges of Dynamic Range in Portable Applications

Soo-Bin Yang, Hyun-Woo Jin, Min-Gyeong Song, Hyun-Woo Jung, and Hyeon-June Kim

Seoul National University of Science and Technology, Korea

[MC1-5] **14:10-14:25**

Inverted Type Gas Sensor based on AAO Architecture for Enhanced Gas Selectivity

Tongchao Wang, Chen Wang, Peng Sun, and Geyu Lu

Jilin University, China

[MD1] D. Biosensors (Integrated & Wearable Systems)-1	
Session Date	November 09 (Mon.), 2026
Session Time	13:00-14:10
Session Room	Room D (Conference Room 519)
Session Chairs	Prof. Yu-Jui Fan (National Yang Ming Chiao Tung University), Prof. Chih-Chia Huang (National Cheng Kung University)

[MD1-1] [Invited] **13:00-13:25**

Micro/nano Biosensing Technologies towards Point-of-Care Testing and In-Vitro Drug Evaluation

Hao Wan

Zhejiang University, China

[MD1-2] **13:25-13:40**

Synergistic Mechano-Electric Coupling Enables Contraction-Guided Wound Healing

Xuenan Ma, Xiaoteng Jia, and Geyu Lu

Jilin University, China

[MD1-3] **13:40-13:55**

Real-Time Monitoring of Oxygen Consumption and Microenvironmental Acidification in Cancer Spheroids Using an O_2/pH Biosensing Chip

Ping-Feng Yang, Kuei-Yang Hsiao, and Ching-Chou Wu

National Chung Hsing University, Taiwan

[MD1-4] **13:55-14:10**

Olfactory Sensing of Sulfides and Dynamic Electrophysiological Responses Using Engineered HL-1 Cardiomyocytes

Shimeng Mou[1], Jianguo Wu[1], Changming Chen[1], Yingying Xue[1,2], Hao Wan[1], and Ping Wang[1]

[1]Zhejiang University, China, [2]Chinese Academy of Sciences, China

[ME1] E. Other Sensors (Emerging Sensor Technologies)-1	
Session Date	November 09 (Mon.), 2026
Session Time	13:00-14:25
Session Room	Room E (Conference Room 522)
Session Chairs	Prof. Sooyeon Cho (Sungkyunkwan University), Prof. Hyoungwon Park (Chung-Ang University)

[ME1-1] [Invited] **13:00-13:25**

Next-Generation Neuromorphic Devices for Bioinspired Sensory Perception

Shu-Ping Lin[1,2] and Advaita Ghosh[1]

[1]National Yang Ming Chiao Tung University, Taiwan, [2]National Chung Hsing University, Taiwan

[ME1-2] **13:25-13:40**

FEM-to-Oscillator Co-Design of a Planar Spiral Magnetic Sensor

Jung-Cheng Liao[1], Min-Yen Hsieh[1], Ya-Fu Liou[1], Hua-En Shih[1], Yu-Wei Chiang[1], and Chii-Wann Lin[1,2,3]

[1]National Taiwan University, Taiwan, [2]University of Tsukuba, Japan, [3]National Health Research Institutes, Taiwan

[ME1-3] **13:40-13:55**

Versatile Paste-Press Packing for Fabricating Through-Hole Electrode Arrays and Micro-/Nano-Rods

Kumi Y. Inoue, Koki Kubota, and Ayane Endo

University of Yamanashi, Japan

[ME1-4] **13:55-14:10**

Effects of Anodization Conditions on Oil Deterioration Sensing Using Pt/TiO_2 Diode Devices

I. Onoda[1], K. Kawashima[1], T. Tsugawa[1], T. Ueda[1], M. Kasai[2], and T. Hyodo[1]

[1]Nagasaki University, Japan, [2]Idemitsu Kosan Co., Ltd., Japan

[ME1-5] **14:10-14:25**

Tape-Assisted Subtractive Nanoimprint Lithography of Aluminum Nanohole Metasurfaces for Chip- Scale Spectral Sensing

Yu-Heng Hung[1], Tzu-Yu Lin[1], Hsiang-Yu Chung[1], Tsai-Yu Hsieh[1], Wen-Huei Chang[2], and Chun-Hung Lin[1]

[1]National Cheng Kung University, Taiwan, [2]National Pingtung University, Taiwan

[MA2] A. Biosensors (Biorecognition & Diagnostics)-2	
Session Date	November 09 (Mon.), 2026
Session Time	14:40-16:05
Session Room	Room A (Conference Room 517)
Session Chairs	Prof. Masato Suzuki (University of Hyogo), Prof. Jose H. Bergantin (University of Santo Tomas)

[MA2-1] [Invited] **14:40-15:05**

Self-Assembled Interfaces Using Biomolecular Receptors for Detection and Visualization of Low-Molecular-Weight Substances

Takeshi Onodera

Kyushu University, Japan

[MA2-2] **15:05-15:20**

Cannabinoid Receptor-Based Surface Acoustic Wave Sensor for Synthetic Cannabinoids Detection

Li Sin Wong, Yanran Xia, Xiaojing Zhang, Hongyang Guo, Ping Wang, and Liujing Zhuang

Zhejiang University, China

[MA2-3] **15:20-15:35**

Enhanced Lead Ion Detection Using Molecular Sieve-Functionalized DNA Linkers in BioFETs via Temperature Profile

Guan-Cheng Zeng, Ching-Yao Lan, She Yi-Te, and Yu-Lin Wang

National Tsing Hua University, Taiwan

[MA2-4] **15:35-15:50**

A MBene-Based Electrochemical Aptasensor for Label-Free Detection of EpCAM-Overexpressing Cancer Cells

Min Li, Dongxin Liang, Miaomiao Wang, Yuqi Chen, Liping Du, Qiling Li, and Chunsheng Wu

Xi'an Jiaotong University, China

[MA2-5] **15:50-16:05**

Advancing BNCT Precision Medicine Through AI-Enhanced Aptamer Discovery and High-Sensitivity FET Biosensing of BPA

Yi-Fang Wu, Yi-Te She, and Yu-Lin Wang

National Tsing Hua University, Taiwan

[MB2] B. Gas Sensors (Materials & Sensing Mechanisms)-2	
Session Date	November 09 (Mon.), 2026
Session Time	14:40-16:20
Session Room	Room B (Conference Room 515)
Session Chairs	Prof. Hyoun Woo Kim (Hanyang University), Prof. Tetsuya Kida (Kumamoto University)

[MB2-1] [Invited] **14:40-15:05**

Control of Gas Diffusion and Reactivity in Porous Metal-Oxide Gas Sensors Prepared by Ultrasonic Spray Pyrolysis

Taro Ueda and Takeo Hyodo

Nagasaki University, Japan

[MB2-2] **15:05-15:20**

YSZ-Based Mixed-Potential H_2S Sensors with La_2CeMO_7 (M = Ni, Mn, Fe) Sensing Electrodes for Sewer Environment Monitoring

Jing He, Zuorong Huang, Lei Wu, Sitong Feng, Jiusheng Cai, JiaJia Zheng, Yue Zhang, Xishuang Liang, Fengmin Liu, and Geyu Lu

Jilin University, China

[MB2-3] **15:20-15:35**

Metal Oxide Gas Sensors for Smart Agriculture: From Material Design to Practical Applications

Viruntachar Kruefu[1], Pimpan Leangtanom[2], Montawat Wiboon[1], Chatchawan Sammana[1], Salintip Jongpongsa[1], Siwakorn Bunnak[1], Sirorat Moollor[1], Anurat Wisitsoraat[3], Narong Chanlek[4], and Kata Jaruwongrungse[5]

[1]Maejo University, Thailand, [2]Vidyasirimedhi Institute of Science and Technology, Thailand, [3]National Science and Technology Development Agency, Thailand, [4]Synchrotron Light Research Institute, Thailand, [5]National Electronics and Computer Technology Center, Thailand

[MB2-4] **15:35-15:50**

Self-Assembled Monolayer Engineering of SnO_2 Nanowires for Selective Gas Sensing

Hyoungwon Park

Chung-Ang University, Korea

[MB2-5] **15:50-16:05**

Adsorption/Combustion-Type Gas Microsensors: Effects of Catalyst Supports (Aluminas) on VOC- Sensing Properties and Mechanism

Takeo Hyodo[1], Yuma Matsuura[1], Genki Inao[1,2], Takahiko Sasahara[2], Yasuhiro Shimizu[1], and Taro Ueda[1]

[1]Nagasaki University, Japan, [2]Yazaki Energy System Corporation, Japan

[MB2-6] **16:05-16:20**

Synergistic Morphological and Orbital Engineering of MOF-Derived Co_3O_4 via g-C_3N_4 Templating for Triethylamine Detection

Guoxuan Gu, Yuan Gao, and Geyu Lu

Jilin University, China

[MC2] C. Gas Sensors (Devices & System Application)-2	
Session Date	November 09 (Mon.), 2026
Session Time	14:40-16:20
Session Room	Room C (Conference Room 516)
Session Chairs	Prof. Ji-Wook Yoon (Jeonbuk National University), Prof. Inkyu Park (Korea Advanced Institute of Science and Technology)

[MC2-1] [Invited] **14:40-15:05**

From FET Gas Sensors to Intelligent Machine Olfaction Microsystems

Hua-Yao Li, Huanhuan Zhang, Yan Bai, Sha Zhang, and Huan Liu

Huazhong University of Science and Technology, China

[MC2-2] **15:05-15:20**

Sensitive and Accurate Gas Sensing Enabled by Electrical Modulation

Jianxin Yi and Siyu Wu

University of Science and Technology of China, China

[MC2-3] **15:20-15:35**

Research on Infrared Methane Sensing based on Metasurface-Enhanced Lead Selenide Detectors

Xingwang Ao, Peng Chen, Jiayi Wang, Ren Sun, Ning Gan, Huayao Li, and Huan Liu

Huazhong University of Science and Technology, China

[MC2-4] **15:35-15:50**

Interfacial Engineering and Machine Learning for High-Performance 2D Material-Quantum Dot Gas Sensors

Utkarsh Kumar[1], Kuang Yao Lo[2], and Chiu-Hsien Wu[1]

[1]National Chung Hsing University, Taiwan, [2]National Cheng Kung University, Taiwan

[MC2-5] **15:50-16:05**

A Multi-Contact Electrode Architecture for High-Dimensional Gas Sensing

Xinmu Zhang and Jianxin Yi

University of Science and Technology of China, China

[MC2-6] **16:05-16:20**

MOSFET-Based Gas Sensors for Trace Level NO_2 Detection Enabled by Capacitive Coupling Effect

Huanhuan Zhang, Yan Bai, Hua-Yao Li, and Huan Liu

Huazhong University of Science and Technology, China

[MD2] D. Biosensors (Integrated & Wearable Systems)-2

Session Date	November 09 (Mon.), 2026
Session Time	14:40-15:50
Session Room	Room D (Conference Room 519)
Session Chairs	Prof. Hao Wan (Zhejiang University), Prof. Tomoyuki Yasukawa (University of Hyogo)

[MD2-1] [Invited] **14:40-15:05**

Integration of Preconcentration Chip with the Field Effect Transistor (FET) Biosensor for Biomarker Detection

Yu-Chuan Chang[1], I-Lin Tsai[2], Chun-Jen Huang[2], Yi-Chiung Hsu[3], Horm-Jiunn Sheen[1], Kuang-Chong Wu[1], and Yu-Jui Fan[4]

[1]National Taiwan University, Taiwan, [2]Taipei Medical University, Taiwan, [3]National Central University, Taiwan, [4]National Yang Ming Chiao Tung University, Taiwan

[MD2-2] **15:05-15:20**

Tumor Microenvironment-Activated Zn//MnO_2 Battery for Sustained and Local Electrochemical Immunotherapy

Xiaoran Ding, Xiaoteng Jia, and Geyu Lu

Jilin University, China

[MD2-3] **15:20-15:35**

Wristband-Type Multi-Parameter Intelligent Sweat Monitoring System for Chronic Management of Hyperuricemia

Yuzi Zeng[1], Xinwei Guo[1], Ivana Murković Steinberg[2], and Hao Wan[1]

[1]Zhejiang University, China, [2]University of Zagreb, Croatia

[MD2-4] **15:35-15:50**

A Unique 3D-2D Integrated Microelectrode Microfluidic Platform Enabling Dynamic Electrical Signal Monitoring of Taste Organoids

Yuqi Chen, Miaomiao Wang, Zhiyao Wang, Liping Du, and Chunsheng Wu

Xi'an Jiaotong University, China

[ME2] E. Other Sensors (Emerging Sensor Technologies)-2	
Session Date	November 09 (Mon.), 2026
Session Time	14:40-16:20
Session Room	Room E (Conference Room 522)
Session Chairs	Prof. Shu-Ping Lin (National Yang Ming Chiao Tung University) Prof. Tatsuo Yoshinobu (Tohoku University)

[ME2-1] [Invited] **14:40-15:05**

Hamiltonian-Guided Design of Artificial Molecular Recognition for Multidimensional Chemical Information Transfer

Sooyeon Cho

Sungkyunkwan University, Korea

[ME2-2] **15:05-15:20**

Real-Time Tunable Chemical Sensing Array Platform Activated by Blue Micro-Light-Emitting Diodes

Gi Baek Nam and Ho Won Jang

Seoul National University, Korea

[ME2-3] **15:20-15:35**

Optimization of Organic Light Addressable Potentiometric Sensors Photocurrent Uniformity with Deposition Process Temperature

Aravind Satheesh[1], Leung Sze Tsui[1], Yu Chou[1], Chia-Ming Yang[1], Bing-Huang Jiang[2], and Chih-Ping Chen[1,2]

[1]Chang-Gung University, Taiwan, [2]Ming-Chi University of Technology, Taiwan,

[ME2-4] **15:35-15:50**

A Three-Dimensional Integrated Flexible Electronic System with Advanced Thermal Management

Haoyang Xu, Jingqiu Chen, Hua-Yao Li, Hegeng Li, and Huan Liu

Huazhong University of Science and Technology, China

[ME2-5] **15:50-16:05**

Non-Contact Dielectric Sensor for Real-Time Electrolyte Monitoring

Ya-Fu Liou[1], Hua-En Shih[1], Yu-Wei Chiang[1], Jung-Cheng Liao[1], Min-Yen Hsieh[1], Sheng-Yu Peng[2], and Chii-Wann Lin[1,3,4]

[1] National Taiwan University, Taiwan, [2] National Yang Ming Chiao Tung University, Taiwan, [3] University of Tsukuba, Japan, [4] National Health Research Institutes, Taiwan

[ME2-6] **16:05-16:20**

A High-Sensitivity PbS Colloidal Quantum Dot Field-Effect Transistor Sensor with Monolithically Integrated Heterogeneous Gating

Yan Bai, Huanhuan Zhang, Sha Zhang, Hua-Yao Li, and Huan Liu

Huazhong University of Science and Technology, China

[TA1] A. Biosensors (Biorecognition & Diagnostics)-3

Session Date	November 10 (Tue.), 2026
Session Time	10:40-12:05
Session Room	Room A (Conference Room 517)
Session Chairs	Dr. Yusuke Fuchiwaki (National Institute of Advanced Industrial Science and Technology), Prof. Ping Wang (Zhejiang University)

[TA1-1] [Invited] **10:40-11:05**

From Bench to Bedside: Electrochemical Biosensors for Rapid Alzheimer's Disease Screening

Shang-Chi Chien[1] and Jung-Chih Chen[1,2]

[1]National Yang Ming Chiao Tung University, Taiwan, [2]Catholic Mercy Medical Foundation, Taiwan

[TA1-2] **11:05-11:20**

Progress in AI-Supported Resonant-Based Bio-Sensing Technologies

Chii-Wann Lin[1,2,3]

[1]National Health Research Institutes, Taiwan, [2]National Taiwan University, Taiwan, [3]University of Tsukuba, Japan

[TA1-3] **11:20-11:35**

Nanohole Array-Enhanced Localized Surface Plasmon Resonance Biosensor for Highly Sensitive Detection of Cyfra21-1 in Saliva

Xinwei Guo, Guangqing Ren, Ping Wang, and Hao Wan

Zhejiang University, China

[TA1-4] **11:35-11:50**

A Nanopore Biosensor Based on Insect MhOR1 Olfactory Receptor for the Sensitive Detection of Odorant Molecules

Yanzhen He, Yao Ma, Miaomiao Wang, Yuqi Chen, Liping Du, and Chunsheng Wu

Xi'an Jiaotong University, China

[TA1-5] **11:50-12:05**

Target-Regulated AuNP Nanozyme Activity via PolyA-Triblock Aptamer for Colorimetric Interferon-γ Detection

Hsuan Lu and Chia-Chen Chang

Chang Gung University, Taiwan

[TB1] B. Gas Sensors (Materials & Sensing Mechanisms)-3	
Session Date	November 10 (Tue.), 2026
Session Time	10:40-12:20
Session Room	Room B (Conference Room 515)
Session Chairs	Prof. Ammar Zakaria (Universiti Malaysia Perlis), Prof. Seong-Yong Jeong (Jeonbuk National University)

[TB1-1] [Invited] **10:40-11:05**

Wearable Gas Sensors based on Conductive Metal-Organic Frameworks

Tianshuang Wang

Jilin University, China

[TB1-2] **11:05-11:20**

Humidity-Dependent VOC Sensing Mechanism of SnO_2 Nanorods

Koichi Suematsu[1], Tobias Köninger[2], Udo Weimar[2], and Nicolae Barsan[2]

[1]Kyushu University, Japan, [2]University of Tübingen, Germany

[TB1-3] **11:20-11:35**

The Enhancing Effect of Two-Dimensional Ultrathin Pd Metallene in Gas Sensing

Ziyu Liu, Tianrun Zheng, Fengmin Liu, and Geyu Lu

Jilin University, China

[TB1-4] **11:35-11:50**

Hybrid Polymer–Clay Hydrogels with Tunable Ionic Conduction for Highly Selective Room-Temperature Gas Sensing

Tanay Saha and Paramesh Gadige

Sri Sathya Sai Institute of Higher Learning, India

[TB1-5] **11:50-12:05**

Anisotropic Growth of Vertically Aligned Quasi-2D SnO Nanoflakes via High-Temperature Glancing Angle Deposition for High-Performance Gas Sensing

Jae Han Chung, Do Yeong An, Seungbeom Jeong, Yun-Gyu Lee, Seong Been Yun, Eunsol Lee, and Young-Seok Shim

Korea University of Technology and Education, Korea

[TB1-6] **12:05-12:20**

Multidimensional Tuning of Nanoalloy-Sensitized Oxide Gas Sensors: From Spatial Distribution to Compositional Optimization

Fengmin Liu and Geyu Lu

Jilin University, China

[TC1] C. Gas Sensors (Devices & System Application)-3

Session Date	November 10 (Tue.), 2026
Session Time	10:40-12:05
Session Room	Room C (Conference Room 516)
Session Chairs	Prof. Zi-Long Tang (Tsinghua University), Prof. Ji-Soo Jang (Sungkyunkwan University)

[TC1-1] [Invited] **10:40-11:05**

High Performance Gas Sensors and Biomimetic Olfactory Systems Based on Ordered Nanotube Array Structures

Chen Wang, Peng Sun, and Geyu Lu

Jilin University, China

[TC1-2] **11:05-11:20**

Highly Selective and Stable Dual-Dielectric-Layer-Enabled TFT Gas-Sensing Chips

Rongyu Mao[1], Yanting Tang[1,2], Huanhuan Zhang[1], Yingying Xing[1], Jingqi Hu[1], Xu Zhang[1], Hua-Yao Li[1,2], Hegeng Li[1], and Huan Liu[1,2]

[1]Huazhong University of Science and Technology, China, [2]Beijing Polytechnic University, China

[TC1-3] **11:20-11:35**

Low-Temperature Monolithic Artificial Olfactory Neuron for Temporal Hydrogen Monitoring

Yi Lu, Fengmin Liu, and Geyu Lu

Jilin University, China

[TC1-4] **11:35-11:50**

Development of a Personal Contamination Detection Module for CBRN Gas Detection

Minkyung Lee, Jungho Lee, and Jiyun Seo

Agency for Defense Development, Korea

[TC1-5] **11:50-12:05**

Fabrication and Organic Solvent Vapor Response of Tin Oxide Inverse Opal Photonic Crystals

Satomi Oda, Ichiro Hattori, and Takeshi Onodera

Kyushu University, Japan

[TD1] D. Biosensors (Integrated & Wearable Systems)-3

Session Date	November 10 (Tue.), 2026
Session Time	10:40-12:05
Session Room	Room D (Conference Room 519)
Session Chairs	Prof. Ching-Chou Wu (National Chung Hsing University), Prof. Bor-Ran Li (National Yang Ming Chiao Tung University)

[TD1-1] [Invited] **10:40-11:05**

Plant Wearable Pesticide Biosensor for Smart Agriculture

Xu Yan and Geyu Lu

Jilin University, China

[TD1-2] **11:05-11:20**

Decodable Odor Representations at a Human Organoid–Host Olfactory Neural Interface

Xiangyu Ye, Qifei Wang, Yajie Zhang, Shunuo Shang, Xin Dong, Ping Wang, and Liujing Zhuang

Zhejiang University, China

[TD1-3] **11:20-11:35**

Efficient Luminescent Stable Chichibabin Diradicaloid for Near-Infrared Imaging and Photothermal Therapy

Ting Liu, Xiaomin Liu, and Geyu Lu

Jilin University, China

[TD1-4] **11:35-11:50**

Functionalization-Free Graphene Transistors for Peritoneal Functional Phenotyping

Wanshuo Gao and Wangyang Fu

Tsinghua University, China

[TD1-5] **11:50-12:05**

Odor Decoding and Electrical Stimulation Modulation in the Olfactory Bulb based on Flexible Implantable Neural Electrodes

Fan Wu, Yuhan Peng, Bingqian Yu, Yajie Zhang, Ping Wang, and Liujing Zhuang

Zhejiang University, China

[TE1] E. Other Sensors (Emerging Sensor Technologies)-3	
Session Date	November 10 (Tue.), 2026
Session Time	10:40-11:50
Session Room	Room E (Conference Room 522)
Session Chairs	Prof. Zhengjun Zhang (Tsinghua University), Prof. Wan-Young Chung (Pukyong National University)

[TE1-1] [Invited] **10:40-11:05**

Low-Dimensional Materials for Sensors and Radiation-Hardened Electronics

Yeonhoo Kim

Korea Research Institute of Standards and Science, Korea

[TE1-2] **11:05-11:20**

Phase-Shifted Balanced Maximum-Entropy m-Sequence Modulation for Synchronous Multi-Wavelength In Situ Fluorescence Sensing

Tingkai Zhang, Yee Lyn Sim, Zhejia Li, Jianchao Luo, and Shuming Ye

Zhejiang University, China

[TE1-3] **11:20-11:35**

High-Sensitivity In Situ Chlorophyll a Fluorescence Sensing based on Balanced Maximum-Entropy m-Sequence Modulation

Tingkai Zhang, Yee Lyn Sim, Zhejia Li, Jianchao Luo, and Shuming Ye

Zhejiang University, China

[TE1-4] **11:35-11:50**

Omnidirectional 3-D Antenna for Ambient RF Energy Harvesting in Battery-Less Sensor Systems

Huu-Tam Nguyen, Yudi April Nando, Mubarok Rizki Akbar, and Wan-Young Chung

Pukyong National University, Korea

[TA2] Special Session: AI-based Receptor and Biosensor Standardization	
Session Date	November 10 (Tue.), 2026
Session Time	13:30-14:45
Session Room	Room A (Conference Room 517)
Session Chairs	Prof. Hyung-Gi Byun (Kangwon National University), Prof. Tai Hyun Park (Ewha Womans University)

[TA2-1] **13:30-13:45**

Human Olfactory Receptor-Based Bioelectronic Nose Standardization

Tai Hyun Park

Ewha Womans University, Korea

[TA2-2] **13:45-14:00**

Bio-Inspired Nanomaterials for Biosensor Standardization

Krishna C. Persaud

The University of Manchester, United Kingdom

[TA2-3] **14:00-14:15**

Building Platform of Algorithmic Scent Creation

Takamichi Nakamoto

Institute of Science Tokyo, Japan

[TA2-4] **14:15-14:30**

Standardized Signal Processing Framework for OR-Based Bioelectronic Nose

Hyung-Gi Byun

Kangwon National University, Korea

[TA2-5] **14:30-14:45**

Recent Trends in Biosensor Related International Standardization in IEC and ISO

Joon-Shik Park

Korea Electronics Technology Institute, Korea

[TB2] B. Gas Sensors (Materials & Sensing Mechanisms)-4	
Session Date	November 10 (Tue.), 2026
Session Time	13:30-15:00
Session Room	Room B (Conference Room 515)
Session Chairs	Prof. Young-Seok Shim (Korea University of Technology and Education), Prof. Koichi Suematsu (Kyushu University)

[TB2-1] **13:30-13:45**

Interfacial Engineering Enables Fast Hydrogen Detection

Neeraj Dhariwal[1], Tatsuki Tsugawa[1], Taro Ueda[1], Takeo Hyodo[1], Preety Yadav[2], and Vinod Kumar[2]

[1]Nagasaki University, Japan, [2]Netaji Subhas University of Technology, India

[TB2-2] **13:45-14:00**

Light-Activated VOC Gas Sensors Using Doped Metal Oxides

Papitchaya Khunjan, Soki Yoneda, Muhammad Fadil, Varisara Phuaran, Yusuke Inomata, and Tetsuya Kida

Kumamoto University, Japan

[TB2-3] **14:00-14:15**

UV-Assisted Au–ZnO Gas Sensor for Room-Temperature Ethylene Detection

Siwaporn Khemphet[1], Tanakorn Osotchan[2], and Rawat Jaisutti[1]

[1]Thammasat University, Thailand, [2]Mahidol University, Thailand

[TB2-4] **14:15-14:30**

Pt-WO_3 Interfaces Promote Near-Surface Lattice-Oxygen Redox for Enhanced Ethanol Sensing

Soki Yoneda[1], Muhammad Sohail Ahmad[1], Yusuke Inomata[1], and Tetsuya Kida[1,2]

[1]Kumamoto University, Japan, [2]Chulalongkorn University, Thailand

[TB2-5] **14:30-14:45**

Au Nanoparticle-Functionalized Zn/Co Bimetallic Oxide Hollow Dodecahedra Derived from Zeolitic Imidazolate Framework for Trace N-Butanol Detection

Junxiang Liu, Ranjun Li, Pengcheng Li, Yongjiao Sun, and Jie Hu

Taiyuan University of Technology, China

[TB2-6] **14:45-15:00**

Crystallographic Facet-Controlled NiO Nanostructures via HT-GLAD for Enhanced Gas Sensing Performance

Eunsol Lee, Jae Han Chung, and Young-Seok Shim

Korea University of Technology and Education, Korea

[TC2] C. Gas Sensors (Devices & System Application)-4	
Session Date	November 10 (Tue.), 2026
Session Time	13:30-15:25
Session Room	Room C (Conference Room 516)
Session Chairs	Dr. In-Sung Hwang (SENTECH GMI), Prof. Young-Moo Jo (Kyungpook National University)

[TC2-1] [Invited] **13:30-13:55**

Rational Design of Sensing Materials for Optimizing Highly Accurate Artificial Olfactory Systems

Ji-Soo Jang

Sungkyunkwan University, Korea

[TC2-2] **13:55-14:10**

Chemical Sensor System for Micro UAV Chemical Reconnaissance

Jong-Seon Kim, Min-Kyung Lee, Jungho Lee, Hyunwoo Nam, and Young Jin Koh

Agency for Defense Development, Korea

[TC2-3] **14:10-14:25**

Freestanding LED Membranes for Epidermal VOC Sensing

Jun Min Suh

Seoul National University, Korea

[TC2-4] **14:25-14:40**

Research and Application of Intelligent Gas Sensors for Energy Storage Systems/Environmental Safety

Lei Zhu, Jingyun Sun, and Yan Wei

Xi'an Jiaotong University, China

[TC2-5] **14:40-14:55**

Conformal Hydrogen Leakage Visualization Using Air-Compatible Deformable Gasochromic Membranes

Zion Park, Doyeon Kim, Doyeong An, and Young-Seok Shim

Korea University of Technology and Education, Korea

[TC2-6] **14:55-15:10**

A Memristive Electronic Nose Circuit with First-Spike and Rate Fusion Coding for Spiking Neural Networks

Xu Zhang, Zezheng Gong, Rongyu Mao, Hegeng Li, Huayao Li, and Huan Liu

Huazhong University of Science and Technology, China

[TC2-7] **15:10-15:25**

Drift-Adaptive Correlation Matrix Estimation for Time-Series Multi-Channel Gas Sensor Data

Seungmin Jang, Seongwoo Lee, Jihwan Lee, Minji Kim, Heesoo Jung, Jiwoong Heo, Seung Jung Yu, and Jiyun Seo

Agency for Defense Development, Korea

[TD2] D. Biosensors (Integrated & Wearable Systems)-4

Session Date	November 10 (Tue.), 2026
Session Time	13:30-14:40
Session Room	Room D (Conference Room 519)
Session Chairs	Prof. Gyuweon Jung (Seoul National University), Prof. Chang Kyu Jeong (Jeonbuk National University)

[TD2-1] [Invited] **13:30-13:55**

Personalized Sweat Glucose Platform for Blood Glucose Estimation

Bor-Ran Li

National Yang Ming Chiao Tung University, Taiwan

[TD2-2] **13:55-14:10**

Array-Based Electrochemical Sensing Platform for Discriminating Benzodiazepines Using Multi-Functional Materials

Miaomiao Wang, Yating Chen, Beenish Noureen, Zhiyao Wang, Yuqi Chen, Liping Du, and Chunsheng Wu

Xi'an Jiaotong University, China

[TD2-3] **14:10-14:25**

Ultrasensitive Liquid Biopsy for Pancreatic Cancer Synergistically Sensitized by Nanoconfinement and CRISPR Autocatalysis

Zihan Jin, Xianyou Sun, Ping Wang, and Hao Wan

Zhejiang University, China

[TD2-4] **14:25-14:40**

A Biofluorometric Gas Sensor with Diol-Dehydrogenase for Diacetyl in Human Scalp Gas

Yi Jiang[1], Ayumi Kyuka[2], Kenta Iitani[1], Geng Zhang[1], Takeshi Hara[2], Yasunari Miyazaki[1], and Kohji Mitsubayashi[1]

[1]Institute of Science Tokyo, Japan, [2]Mandom Corporation, Japan

[TE2] E. Other Sensors (Emerging Sensor Technologies)-4

Session Date	November 10 (Tue.), 2026
Session Time	13:30-15:10
Session Room	Room E (Conference Room 522)
Session Chairs	Dr. Yeonhoo Kim (KRISS), Prof. Chii-Wann Lin (National Taiwan University)

[TE2-1] [Invited] **13:30-13:55**

Surface-Enhanced Raman Scattering for Molecules with Interactions

Zhengjun Zhang

Tsinghua University, China

[TE2-2] **13:55-14:10**

Biomimetic Potentiometric Sensor for Methylparaben Based on an Electrosynthesized Polypyrrole / Carbon Nanotube-Modified Pencil Graphite Electrode

Helena Kaye A. Secillano, Jose H. Bergantin Jr., and Fortunato B. Sevilla III

University of Santo Tomas, Philippines

[TE2-3] **14:10-14:25**

A Non-Contact CMOS LC Oscillator-Based Complex Dielectric Sensor for Real-Time Monitoring of Oil–Water Emulsion Stability

Yu-Wei Chiang[1], Ya-Fu Liou[1], Hua-En Shih[1], Sheng-Yu Peng[2], and Chii-Wann Lin[1,2,3]

[1]National Taiwan University, Taiwan, [2]National Yang Ming Chiao Tung University, Taiwan, [3]National Health Research Institutes, Taiwan

[TE2-4] **14:25-14:40**

A Flexible Multichannel Miniaturized Electrochemical Workstation with Edge Algorithm Deployment

Yun Chen, Jingqiu Chen, Hua-Yao Li, Hegeng Li, and Huan Liu

Huazhong University of Science and Technology, China

[TE2-5] **14:40-14:55**

Electrosynthesized Molecularly Imprinted Polypyrrole-Based Impedimetric Sensor for Catechin Using a Screen-Printed Electrode

Jamila B. Santiago, Jose H. Bergantin, and Fortunato B. Sevilla III

University of Santo Tomas, Philippines

[TE2-6] **14:55-15:10**

Smartphone-Based Colorimetric Sensing for the Chemometric Differentiation of Honey based on Geographic Origin

Marc Frederick R. Simpao and Fortunato B. Sevilla III

University of Santo Tomas, Philippines

[TA3] A. Biosensors (Biorecognition & Diagnostics)-4	
Session Date	November 10 (Tue.), 2026
Session Time	15:45-17:35
Session Room	Room A (Conference Room 517)
Session Chairs	Mr. Shang-Chi Chien (National Yang Ming Chiao Tung University), Dr. Dae-Sik Lee (ETRI)

[TA3-1] [Invited] **15:45-16:10**

Smart ELISA for Real-World Applications: From Clinical Diagnostics to Food Safety

Yusuke Fuchiwaki

National Institute of Advanced Industrial Science and Technology, Japan

[TA3-2] [Invited] **16:10-16:35**

M13 Bacteriophage-Based Colorimetric Electronic Noses for Complex VOC Discrimination toward Humanoid Olfactory Display

Yujin Lee and Jin-Woo Oh

Pusan National University, Korea

[TA3-3] **16:35-16:50**

Self Developed Intelligent Breathomics Platform Based on In_2O_3 Nanocubes for Real-Time Non-Invasive Screening of Lung Cancers

Bailing Li[1], Jiuyu Li[1], Zhenyang Zhang[1], Yan Liu[1,2], Ruihua Zhao[1], and Jianping Du[1]

[1]Taiyuan University of Technology, China, [2]Shanxi Institute of Energy, China

[TA3-4] **16:50-17:05**

Photo-Assisted Electrochemical Sensing based on TiO_2-Based Nanostructures for the Detection of Biomolecules in Human Fluids

Han-Wei Chang, Ming-Hong Li, and Yan-Hua Chen

National United University, Taiwan

[TA3-5] **17:05-17:20**

Probe-Density-Tunable Lateral Flow Detection of microRNA via DSN-Mediated Target Recycling and SSB Capture Using ssDNA/PEG–AuNPs Nanoprobes with Freezing-Assisted Assembly

Guangqing Ren, Xinwei Guo, Zihan Jin, Ping Wang, and Hao Wan

Zhejiang University, China

[TA3-6] **17:20-17:35**

An Aptamer-Functionalized Organic Electrochemical Transistor-Biosensor for the Label-Free Detection of Methamphetamine

Zhiyao Wang, Miaomiao Wang, Yuqi Chen, Yanzhen He, Liping Du, and Chunsheng Wu

Xi'an Jiaotong University, China

[TB3] B. Gas Sensors (Materials & Sensing Mechanisms)-5

Session Date	November 10 (Tue.), 2026
Session Time	15:45-17:10
Session Room	Room B (Conference Room 515)
Session Chairs	Prof. Jun Min Suh (Seoul National University), Prof. Tianshuang Wang (Jilin University)

[TB3-1] [Invited] **15:45-16:10**

Spatial Atomic Layer Deposition of Metal Oxide Nanofilm and Noble Metal Catalysts for Gas-Sensing Applications

Nguyen Van Hieu, Nguyen Viet Chien, Phan Hong Phuoc, Nguyen Ngoc Viet, Nguyen Viet Huong, and Bui Van Hao

Phenikaa University, Vietnam

[TB3-2] **16:10-16:25**

Lattice-Oxygen-Mediated Gas Sensing under Oxygen-Free Conditions in $YMnO_3$

Nan Ma[1], Mao Huang[1,2], Nan Meng[1,2], Chuying Yu[2], Kengo Shimanoe[3], and Alexey Vasiliev[4]

[1]Shanghai Institute of Ceramics, Chinese Academy of Sciences, China, [2]Hunan University, China, [3]Kyushu University, Japan, [4]Dubna State University, Russia

[TB3-3] **16:25-16:40**

Engineering a Quantum Dot/Binder Sensor for Room-Temperature Selective Ethyl Acetate Detection

Lanpeng Guo, Liuyanlin Zhang, Yuxin Peng, Wenjian Zhang, Hegeng Li, Hua-Yao Li, Houjin Zhang, and Huan Liu

Huazhong University of Science and Technology, China

[TB3-4] **16:40-16:55**

Light-Assisted Chemiresistive and Photoluminescence Gas Sensing in Nanostructured Oxides

Jaroslav Otta[1,2], Tea Avarmaa[1], Raivis Eglītis[3], Valter Kiisk[1], Martin Hruška[2], Michal Novotný[2], Martin Vrňata[2], Andris Šutka[3], and Raivo Jaaniso[1]

[1] University of Tartu, Estonia, [2] University of Chemistry and Technology, Prague, Czechia, [3] Riga Technical University, Latvia

[TB3-5] **16:55-17:10**

Interfacial Hydrogen Spillover on Au/Mn-In_2O_3 with Oxygen Vacancies Boosts Hydrogen Sensing with Ultrafast Response

Yongjie Zhang[1], Hong Zhang[1], Xi Wang[2], Yanfeng Sun[1], and Geyu Lu[1]

[1]Jilin University, China, [2]Jiangsu University of Technology, China

[TC3] C. Gas Sensors (Devices & System Application)-5	
Session Date	November 10 (Tue.), 2026
Session Time	15:45-17:25
Session Room	Room C (Conference Room 516)
Session Chairs	Prof. Soohwan Jang (Dankook University), Prof. Chen Wang (Jilin University)

[TC3-1] [Invited] **15:45-16:10**

Electrically Conductive MOF-Based Gas Sensors: Recent Advances, Mechanistic Insights, and Future Prospects

Young-Moo Jo

Kyungpook National University, Korea

[TC3-2] **16:10-16:25**

Construction of Hierarchical Ca-HHTP/CaFe-LDH Composites for Selective and Enhanced H_2S Detection at Room-Temperature

Yongjiao Sun[1], Wenyuan Zhao[1], Junxiang Liu[1], Koichi Suematsu[2], Kengo Shimanoe[1], and Jie Hu[1]

[1]Taiyuan University of Technology, China, [2]Kyushu University, Japan

[TC3-3] **16:25-16:40**

Ag Incorporated NiO/ZnO Heterostructure Films for Ammonia Gas Sensing

Upesh Kumar Appikonda and Paramesh Gadige

Sri Sathya Sai Institute of Higher Learning, India

[TC3-4] **16:40-16:55**

Wide-Temperature-Range Acetone Sensing based on an AlGaN/GaN HEMT with Bismuth Ferrite Gate Sensing Layer

Chenming Yang, Xinyi Chen, Haowen Li, Hua-Yao Li, and Huan Liu

Huazhong University of Science and Technology, China

[TC3-5] **16:55-17:10**

Hybrid Nanostructured Materials for High-Performance Hydrogen and Ammonia Gas Sensors toward Safety Monitoring

Tran Tung, Md A Jalil, Anh T T Tran, and Dusan Losic

Adelaide University, Australia

[TC3-6] **17:10-17:25**

Structural Engineering of Indium Oxide for Formaldehyde Gas Recognition

Yan Liu[1,2], Jiuyu Li[1], Zhenyang Zhang[1], Zhengxu Jiao[1], Guoli Liu[1], Yuxuan Du[1], Bailing Li[1], and Jianping Du[1]

[1]Taiyuan University of Technology, China, [2]Shanxi Institute of Energy, China