



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

Poster Session 1	
Date / Time	November 9 (Mon.), 2026 / 16:30-18:00
Place:	Multi-Purpose Room (B1F)

[MP-1]

Thickness-Tunable cMOF Thin Films for Photoactivated Gas Sensing Using an Ultra-Low-Power Micro-LED Platform

Seo-Hyeon Lee¹, Kichul Lee², Myung Sung Sohn³, Yun Chan Kang³, Inkyu Park², and Young-Moo Jo¹

¹Kyungpook National University, Korea, ²Korea Advanced Institute of Science and Technology, Korea,

³Korea University, Korea

[MP-2]

Conductive MOF Functionalization Enables Sensitive, Selective Oxide Chemiresistors through Charge Redistribution and Tunable Gas Affinity

Minyeop Kim, Seyoung Lee, and Young-Moo Jo

Kyungpook National University, Korea

[MP-3]

Hollow and Hierarchical Co₃(HHTP)₂ Films with Enhanced Gas Accessibility for Room-Temperature NH₃ Sensing

Seyoung Lee and Young-Moo Jo

Kyungpook National University, Korea

[MP-4]

Dopant-Controlled Selectivity Toward H₂S and NH₃ in Ni- and W-Doped Cu₂O Heterostructures at Room Temperature

Seohyeon Kim, Yeonji Yuk, and Sanghan Lee

Gwangju Institute of Science and Technology, Korea

[MP-5]

Highly Sensitive Hydrogen Sensing of Cs_{0.33}WO₃ Synthesized via a Water-Controlled Release Solvothermal Process

Qiuyu Jin¹, Lei Miao^{1,2}, and Shu Yin¹

¹Tohoku University, Japan, ²Nagoya Institute of Technology, Japan

[MP-6]

Intelligent Light Source Recognition Enabled by NIL-Defined Broadband ZnS@ZnO Nanorod Photodetectors

Jyun-Jie Chen¹, Yi-Sheng Chen¹, Ming-Hsien Li², Chun-Hung Lin¹, and Hsiang Chen³

¹National Cheng Kung University, Taiwan, ²National Sun Yat-sen University, Taiwan, ³National Chi Nan University, Taiwan



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-7]

Response-Behavior Selectivity and Methods for Its Modulation

LEI MIAO^{1,2} and SHU YIN¹

¹Tohoku University, Japan, ²Nagoya Institute of Technology, Japan

[MP-8]

Block Copolymer-Templated Porous Metal Oxide Hollow Frameworks for High-Performance Chemical Sensing

Sungyoon Woo¹, Mingyu Sagong¹, Sang-Joon Kim², and Il-Doo Kim¹

¹Korea Advanced Institute of Science and Technology, Korea, ²Chungnam National University, Korea

[MP-9]

Humidity-Corrected Visible-Light-Activated NO₂ Detection via Conformal Polymeric Bilayer Coating

Minhyun Kim, Booseok Jeong, Sung Gap Im, and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-10]

Stabilizing Single Atom Catalysts on Metal Oxides with Tunable Lewis Acidity

Sungyoon Woo and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-11]

Flash Thermal Alloying of MoS₂/WS₂ Nanoflakes for Room-Temperature NO₂ Gas Sensing via Intense Pulsed Light

Minsu Kim, Euichul Shin, and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-12]

Integration of Ga-Doped In₂O₃/ZnO with a MEMS Platform for Low-Power NO₂ Sensing

Se Jeong Park¹, Joon-Shik Park¹, and Hyung Mo Jeong²

¹Korea Electronics Technology Institute, Korea, ²Sungkyunkwan University, Korea

[MP-13]

Ni-Assisted Fe Exsolution from La-Sr Ferrite via Intense Pulsed Light for Stable Gas Sensing

Hyeongmin Joo, Sungyoon Woo, and Il-doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-14]

Systematic Modulation of Dimethyl Sulfide Gas Selectivity in LnFeO₃ through Lanthanide Contraction

Seon Woo Ji, Dong Hyuk Kwak, and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-15]

Ultrafast Active-Site Engineering of MoS₂ with Single Atoms by Flash Thermal Synthesis for High-Performance Gas Sensing

Euichul Shin¹, Dong-Ha Kim², and Il-Doo Kim¹

¹Korea Advanced Institute of Science and Technology, Korea, ²Hanyang University-ERICA, Korea

[MP-16]

Light-Gated NO₂ Sensing in Dye-Sensitized Bi-Doped In₂O₃ Nanofibers

Jieun Heo, Minhyun Kim, and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-17]

SnO₂ / High-Entropy Oxide Composites for Improved Ethanol Gas Sensing

Donghyuk Kwak and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-18]

ZIF-L-Functionalized In₂O₃ Nanowire Arrays for Photoactivated Gas Sensing with Enhanced Gas Response

Jaehyeon Park, Minhyun Kim, and Il-Doo Kim

Korea Advanced Institute of Science and Technology, Korea

[MP-20]

Enhanced NO₂ Sensing of SnO₂ Nanowires by Ion Beam Irradiation

Taek Heon Kim, Yongseong You, and Hyoun Woo Kim

Hanyang University, Korea

[MP-21]

Paper-Based Carbon Nanotube Sensor for Detection of Toxic Chemicals

Young jin Koh, Seongwoo Lee, Jihwan Lee, Heesoo Jung, Dong Ha Kah, and Jae Hwan Lee

Agency for Defense Development, Korea

[MP-22]

Precision-Engineered Chemistry-Specific Catalytic Materials for Highly Selective and Sensitive Gas Sensing

Byung-Dong Hahn, Jong-Jing Choi, Chul-Woo Ahn, Hyun-Ae Cha, and Young Kook Moon

Korea Institute of Materials Science, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-23]

Investigation of Sputtered Cuprous Oxide for Electrolyte-Insulator-Semiconductor Structures in pH Sensing

Li-Hsiang Chou, Leung Sze Tsui, and Chia-Ming Yang
Chang Gung University, Taiwan

[MP-24]

A High-Entropy Strategy for Rapid and Selective Chemoresistive Ethanol Sensing

Hyun Seong Kim, Gi Baek Nam, and Ho Won Jang
Seoul National University, Korea

[MP-25]

Humidity-Independent Gas Sensing Using Bilayer Oxide Chemiresistors with Hydrophobic Tb₄O₇ Overlayer

Sang-Myeong Lee^{1,2}, Seong-Young Yoon², Jung-Hoo Seo², and Seong-Yong Jeong^{1,2}
¹*Jeonbuk National University, Korea*, ²*Kongju National University, Korea*

[MP-26]

Highly Selective Xylene Sensing with Low-Resistance Sb-Doped SnO₂ Hollow Spheres

Jung-Hoo Seo¹, Seong-Young Yoon¹, Sang-Myeong Lee^{1,2}, and Seong-Yong Jeong^{1,2}
¹*Kongju National University, Korea*, ²*Jeonbuk National University, Korea*

[MP-27]

Quantitative Colorimetric Analysis of D-Amino Acid Compositions Using a Chiral Poly(Phenylacetylene) Chemosensor

Ryosuke Sakai¹, Hokuto Ishimaru¹, Satoshi Umeda¹, Katsuyuki Tsuda¹, and Toshifumi Satoh²
¹*National Institute of Technology, Asahikawa College, Japan*, ²*Hokkaido University, Japan*

[MP-28]

Exploring Bis-Amide Functionalization of CNTs for Selective DMMP Detection

Jungho Lee, Minkyung Lee, Jongseon Kim, Young jin Koh, and Jae Hwan Lee
Agency for Defense Development, Korea

[MP-29]

Electrochemically Modulated Phase, Defect, and Surface Chemistry in Metal Oxides for Sensitive and Humidity-Tolerant Hydrogen Sulfide Gas Sensing

Shin Joon Kang¹, Hyung Mo Jeong², and Joon-Shik Park¹
¹*Korea Electronics Technology Institute, Korea*, ²*Sungkyunkwan University, Korea*

[MP-30]

Ultrasensitive Detection of Ethylene Using Bilayer Films Comprising a Catalytic CuO Overlayer and a Pd-In₂O₃ Sensing Layer

Cheyeon Kim¹, Chan Woong Na², and Ji-Wook Yoon¹
¹*Jeonbuk National University, Korea*, ²*Korea Institute of Industrial Technology, Korea*



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-31]

Room-Temperature Solution Oxidation for the Fabrication of Porous CuBr Films

Min-Jeong Goo and Ji-Wook Yoon

Jeonbuk National University, Korea

[MP-32]

Ferroelectric Ti-doped WO₃ Nanospheres for Selective Breath Acetone Sensing

Byeong-Hun Yu and Ji-Wook Yoon

Jeonbuk National University, Korea

[MP-33]

NASICON-Based Electrochemical CO Sensors Using Bi₂O₃-Added Noble-Metal Electrodes for Room Temperature Operation

Koki Akiba, Taro Ueda, Tatsuki Tsugawa, Kentaro Kawashima, Hirotochi Yamada, and Takeo Hyodo

Nagasaki University, Japan

[MP-34]

Microneedle Electrochemical Biosensor Enhanced with Graphite Ink and Multi-Walled Carbon Nanotube for Sensitive Glucose Detection

Huizi Zhang, Ling Ding, Toru Nohgi, and Jun Kameoka

Waseda University, Japan

[MP-35]

Visible-Light-Activated Zn-Doped WO₃ Nanoparticles for Humidity-Assisted Breath NO₂ Detection

Nguyen Thao Trinh Do, Byeong-Hun Yu, Sang-Won Lee, and Ji-Wook Yoon

Jeonbuk National University, Korea

[MP-36]

V-Doping-Enabled Reversible Pt–MoO₃ Colorimetric Sensor for Hydrogen Detection

Seungwoo Park, Jiho Park, and Ji-Wook Yoon

Jeonbuk National University, Korea

[MP-37]

Thickness-Controlled Ti_{0.87}O₂ Nanosheet Stack for Highly Sensitive NO₂ Detection

Sang-Won Lee and Ji-Wook Yoon

Jeonbuk National University, Korea

[MP-38]

Rh-Doped In₂O₃ Gas Sensors for Portable α-Pinene Monitoring Toward Forest Therapy Applications

Junha Hwang, Byeong-Hun Yu, and Ji-Wook Yoon

Jeonbuk National University, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-39]

Room-Temperature Potentiometric Ethanol Sensing Using Conductive MOF Electrodes on a Proton-Conducting Graphene Oxide Membrane

Toma Kiyozawa, Mana Yamaguchi, Muhammad Sohail Ahmad, Yusuke Inomata, and Tetsuya Kida
Kumamoto University, Japan

[MP-40]

Label-Free Detection of Small Molecule Using Electrorotation of Aptamer-Functionalized Microrods

Kiku Agario, Yushi Isozaki, Masato Suzuki, and Tomoyuki Yasukawa
University of Hyogo, Japan

[MP-41]

VOC Sensing Properties of Cu₂O Nanoparticles Synthesized by Thermal Decomposition of Cu-Based MOF

Shumpei Goto, Soki Yoneda, Muhammad Sohail Ahmad, Yusuke Inomata, and Tetsuya Kida
Kumamoto University, Japan

[MP-42]

Hierarchical NbS₂/Cu₃(HHTP)₂ Hybrids for Chemiresistive H₂S Sensing: Unraveling Sensing Mechanisms by In-Situ Raman Spectroscopy

Jae-Woo Seo, Joon-Seok Lee, Dong-Hee Lee, and Seon-Jin Choi
Hanyang University, Korea

[MP-43]

A Colorimetric Hydrogen Sensor Using Pt-Based Combustion Catalysis and Thermochromic Dye

Thi Dung Nguyen and Yong Shin Kim
Hanyang University, Korea

[MP-44]

Enhanced NO₂ Gas Sensing Performance of ZnO–Ti₃C₂T_x MXene Nanocomposites via Microwave Assistance

Hyoun Woo Kim, You Yongseong, Eun Bi Kim, Sungjoon Moon, and Taek Heon Kim
Hanyang University, Korea

[MP-45]

Development of Highly Sensitive Solid-Electrolyte Type Gas Sensors Using Porous Pr-Doped CeO₂ Sensing Electrode

Ryoga Tsukahara, Taro Ueda, Kentaro Kawashima, Tatsuki Tsugawa, and Takeo Hyodo
Nagasaki University, Japan



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-46]

Evaluation of the Adsorption Properties of the Sol–Gel Molecularly Imprinted Silica Prepared Using Nonanal as a Template

Haruga Isayama, Aoi Minami, and Takeshi Onodera

Kyushu University, Japan

[MP-47]

Chemiresistive Trimethylamine (TMA) Sensor Using Pd-Doped Cu₃(HHTP)₂

Suwan Yamada¹, Soki Yoneda¹, Kanna Shibata¹, Yuto Ohata¹, Shotaro Kubo¹, Yusuke Inomata¹, Tetsuya Kida¹, and Ho Won Jang²

¹*Kumamoto University, Japan*, ²*Seoul National University, Korea*

[MP-48]

Highly Sensitive and Selective Detection of Nerve Agent Simulants Using Phosphorus-Doped SnO₂ Nanoparticle Gas Sensors

Shibata Kanna, Soki Yoneda, Yusuke Inomata, and Tetsuya Kida

Kumamoto University, Japan

[MP-49]

Sensing Characteristics of ZrN Thin Films Deposited by DC Magnetron Sputtering for EGFET pH Sensors

Cheng-Hua Liu and Chia-Ming Yang

Chang Gung University, Taiwan

[MP-50]

A Colorimetric Silicone Tape Incorporating BCG and PEG for Visual Ammonia Detection

Thuy-Ngan Thi Dang and Yong Shin Kim

Hanyang University, Korea

[MP-51]

Hydrogen Sensing with α -Phase Ga₂O₃ Based Schottky Diode for Harsh Environments

Minsang Yu¹, Jaeun Shin¹, Soohwan Jang¹, and Kwang Hyeon Baik²

¹*Dankook University, Korea*, ²*Hongik University, Korea*

[MP-52]

Ag-Modified Cr₂O₃ Nanoarchitectures for Mechanism-Driven H₂S Sensing

Seungbeom Jeong, Jae Han Chung, Do Yeong An, Doyeon Kim, and Young-Seok Shim

Korea University of Technology and Education, Korea

[MP-53]

Nanoarchitectural Design of ALD-Derived ZnO Hollow Nanofiber–Thin Film Hybrids for NO₂ Sensing

Nguyen Viet Chien, Nguyen Viet Huong, Nguyen Ngoc Viet, and Nguyen Van Hieu

Phenikaa University, Vietnam



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-54]

Selective Detection of Dopamine Using Boronic Acid-Modified Screen-Printed Carbon Electrodes

Rikuto Sato, Satomi Onuki, and Yuko Ueno

Chuo University, Japan

[MP-55]

Squaramide-Linked Porphyrin-Based Covalent Organic Framework@NbS₂ for Chemiresistive NO₂ Detection

Dong-Hee Lee, Jae-Woo Seo, and Seon-Jin Choi

Hanyang University, Korea

[MP-56]

Engineering Mn³⁺/Mn⁴⁺ Redox-Coupled Oxygen Vacancies in Mn₂O₃-Decorated SnO₂ Nanoarchitectures for Highly Sensitive Acetone Detection

Doyeon Kim, Baek Song, Woo-Hyeok Jang, and Young-Seok Shim

Korea University of Technology and Education, Korea

[MP-57]

Enhancement of Oxygen Reduction Reaction Reactivity by Incorporating Pyridinic Nitrogen Molecules into the Ink for Screen-Printed Graphene Electrode

Kosuke Ohashi, Niwa Osamu, and Yuko Ueno

Chuo University, Japan

[MP-58]

Development and Field Evaluation of a Wide-Range MEMS Thermal-Conductivity Hydrogen Sensor Module for Safety and Process Monitoring

Tae-un Kim, Chanhoo Park, Yurim Park, Kyungdeog Nam, Hun Woo Kim, Sang-Do Han, and Inho Kim

Innoteco Inc, Korea

[MP-59]

Detection of Oral Cancer-Related miRNAs by Amplification and Diffusion Analysis Using Multi-Key RCA

Airi Yanagihara¹, Neo Kinoshita¹, Thi Thanh Huong Pham², Han-Sheng Chuang², and Hiroaki Sakamoto¹

¹University of Fukui, Japan, ²National Cheng Kung University, Taiwan

[MP-60]

Electrochemical Monitoring Cortisol Using Photocrosslinkable Signal Probe-Aptamer Complexes

Aoi Morita, Rina Uchida, Eiichiro Takamura, and Hiroaki Sakamoto

University of Fukui, Japan

[MP-61]

Mechanically Scratched SnO₂ Thin Films Decorated with CuS-Ag₂S Heterostructures for Enhanced Acetone Sensing

Jiyeon Shin^{1,2}, Jeong-O Lee¹, and Donghwi Cho¹

¹Korea Research Institute of Chemical Technology, Korea, ²Sungkyunkwan University, Korea

[MP-62]

Chemoresistive and Catalytic Dual-Signal Pd-WO₃ MEMS Sensor for Reliable H₂ Monitoring

Seon Ju Park¹, Soo Min Lee¹, Sung Hwan Cho¹, Hee Ryeong Kwon¹, Youngmin Kim¹, Do Joon Yoo², In-Sung Hwang^{2,3}, and Ho Won Jang¹

¹Seoul National University, Korea, ²Sentech Korea Co., Ltd., Korea, ³SENTECH GMI Co., Ltd., Korea

[MP-63]

Battery-Free, Wireless Pressure Injury Monitoring System Using a CuS Foam-Based Room-Temperature NH₃ Sensing Platform

Hyeonbin Park^{1,2}, Sunwoo Lee¹, Jeong-O Lee¹, and Dongwhi Cho¹

¹Korea Research Institute of Chemical Technology, Korea, ²Sungkyunkwan University, Korea

[MP-64]

Artificial Olfactory Intelligence Sensor Array for Detecting Chemical and Biological Agents

Minhyeok An^{1,2}, Hyunsu Ra¹, Seong-Young Yoon³, Juhyun Kang⁴, Sungman Lee⁴, Seong-Yong Jeong², Young-Seok Shim⁵, Yejin Jang¹, Donghwi Cho¹, and Jeong-O Lee¹

¹Korea Research Institute of Chemical Technology, Korea, ²Jeonbuk National University, Korea, ³Kongju National University, Korea, ⁴Sensor Tech Co., Ltd., Korea, ⁵Korea University of Technology and Education, Korea

[MP-65]

Physisorption-Engineered 3D Sb₂Se₃ Nanoarchitectures for Activation-Free Room-Temperature NO₂ Sensing

SunwooLee^{1,2}, HwanseokChang², Jeong-OLee¹, MyungwooChoi^{3,4}, and DonghwiCho^{1,4}

¹Korea Research Institute of Chemical Technology, Korea, ²Korea University, Korea, ³Korea Electrotechnology Research Institute, Korea, ⁴University of Science and Technology, Korea

[MP-66]

Low-Power Artificial Olfaction with Vertical Two-Dimensional MOF Heterostructures

Seowoo Yun, Youngmin Kim, and Ho Won Jang

Seoul National University, Korea

[MP-67]

Olfactory Intelligence via In-Sensor Computing for Edge Systems Using Metal–Organic Framework Thin Films

Youngmin Kim, Seowoo Yun, and Ho Won Jang

Seoul National University, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-68]

SERS Imaging of Glycosylated Au@2ATP@PGlyco-Ce₆ Nanoparticles for Spatially Resolved Photodynamic and Macrophage–Cancer Cell Responses

Chih-Chia Huang¹, Mei-Yi Liao², Ting-Yu Cheng¹, and Sz-Syuan Wu¹

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

[MP-69]

Real-Time Detection of Small Aliphatic Compounds in Alcohol by Surface Plasmon Resonance Using N Doped Graphene

Seungwon Choi and Ho Won Jang

Seoul National University, Korea

[MP-70]

CMOS-Compatible Gas Source Distance Estimation

Wooseong Roh, Hunhee Shin, Jonghyun Ko, Kangwook Choi, Donghee Kim, Minsun Kim, Jeseung Jeong, Jongho Lee, and Gyuweon Jung

Seoul National University, Korea

[MP-72]

Electrochemically Functionalized Graphene for Ultrafast NO₂ Detection at Room Temperature

Jaeyeon Oh^{1,2}, Hyeon Kim², Dongwha Lee³, and Yeonhoo Kim¹

¹Korea Research Institute of Standards and Science, Korea, ²Seoul National University, Korea, ³Pohang University of Science and Technology, Korea

[MP-73]

Transducer-Architecture Diversification as a Design Axis for Electronic Noses

Cheoljin Park, Jaehyeon Kim, Yujeong Jeong, Donghee Kim, Kangwook Choi, Hunhee Shin, Jong-Ho Lee, and Gyuweon Jung

Seoul National University, Korea

[MP-74]

Bias-Independent Threshold-Voltage Readout for FET-Type Gas Sensors Based on a Source-Follower Configuration

Kangwook Choi, Hunhee Shin, and Jong-Ho Lee

Seoul National University, Korea

[MP-75]

Compact Micro-Gas Chromatography–Metal Oxide Chemiresistor Platform for Selective Detection of Volatile Organic Compounds

Seong-Young Yoon¹, Jung-Hoo Seo¹, Sang-Myeong Lee^{1,2}, and Seong-Yong Jeong^{1,2}

¹Kongju National University, Korea, ²Jeonbuk National University, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-76]

Thermally Coupled FET-Type Gas Sensor Array with Integrated Polysilicon Micro-Heaters for Power-Efficient Operation

Hunhee Shin, Kangwook Choi, Gyuweon Jung, and Jong-Ho Lee

Seoul National University, Korea

[MP-77]

Highly Selective and Sensitive Graphene-Based Electronic Tongue Functionalized with Nafion, Au Nanoparticles, Calix[4]arene, and Aptamer

Hyuk Jin Kim, Jun Uh Hyun, and Ho Won Jang

Seoul National University, Korea

[MP-78]

MXene-Based Microfluidic Platform: Advanced pH Sensing for E-Tongue

Jun Uh Hyun, Hyuk Jin Kim, and Ho Won Jang

Seoul National University, Korea

[MP-79]

Quantitative Determination of Equilibrium Binding Affinity for Anti-Morphine Antibody Using Quartz Crystal Microbalance

Minji Jeon, Junsub Kim, Yeon Hwa Kwak, and Kunnyun Kim

Korea Electronics Technology Institute, Korea

[MP-80]

Controlled Single-Cell/Substrate Contact and Interaction Analysis Using Dielectrophoresis and Electrorotation

Yuki Imou, Yushi Isozaki, Masato Suzuki, and Tomoyuki Yasukawa

University of Hyogo, Japan

[MP-81]

Rapid Detection of Illicit Drugs in Complex Beverage Matrices Using a Surface Acoustic Wave Sensor

Junsub Kim¹, Minji Jeon¹, Sunghwan Baek², Hongkoo Jung², Kunnyun Kim¹, and Yeon Hwa Kwak¹

¹Korea Electronics Technology Institute, Korea, ²Ranix Inc., Korea

[MP-82]

Self-Powered Smart Sensor Node Based on Energy Harvester and Environmental Sensor

S. E. Moon¹, J. P. Im¹, J. H. Kim¹, S. I. Cha², H. R. Hwang³, I. J. Park⁴, and Y. H. Cho⁵

¹Electronics and Telecommunications Research Institute, Korea, ²Korea Electrotechnology Research Institute, Korea, ³Wise, Korea, ⁴Corechips, Korea, ⁵Yeungnam University, Korea



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-83]

Highly Sensitive and Stretchable Cellulose/Hybrid Fillers Hydrogels with Low Hysteresis for Strain Sensing Technologies

Carene Illahi Fauzan and Yong Hyun Kim

Pukyong National University, Korea

[MP-85]

Noninvasive Monitoring of Exercise Associated Metabolic Changes Using Breath Sensor Arrays and Blood Ketone Estimation

Byeongju Lee¹, Junyeong Lee¹, Young Ki Hahn², Junyeob Yeo², and Dae-Sik Lee¹

¹Electronics and Telecommunications Research Institute, Korea, ²Kyungpook National University, Korea

[MP-86]

Squaramide-Functionalized Porphyrin Scaffold as a Multivalent PFAS Selector for Electrochemical Sensing

Dong-Hee Lee, Jae-Woo Seo, and Seon-Jin Choi

Hanyang University, Korea

[MP-87]

Acoustic Enhancement of a Flexible PMN-PT 1-3 Composite Ultrasound Array with Matching and Soft Backing Layers

Syed Turab Haider Zaidi^{1,2}, Jin Soo Park³, Young Jin Lee¹, Muhammad Ali Shah¹, Byung Chul Lee^{2,3}, and Shin Hur^{1,2}

¹Korea Institute of Machinery and Materials, Korea, ²University of Science and Technology, Korea, ³Korea Institute of Science and Technology, Korea

[MP-88]

Molecular Packing Engineering of PTB7-Th for NH₃ Sensing Toward Real-Time Food Freshness Monitoring

Yeonji Yuk, Yejoon Kim, and Sanghan Lee

Gwangju Institute of Science and Technology, Korea

[MP-89]

MOS Gas Sensor Array-Based Non-Destructive Monitoring of Apple Quality during Storage Using PCA and KNN

Joon-Boo Yu and Hyung-Gi Byun

Kangwon National University, Korea

[MP-90]

Preliminary Design and Implementation of an Integrated Signal Processing and Monitoring System for Fiber-Optic Hydrogen Sensors

Chanho Park¹, Tae-un Kim¹, Yurim Park¹, Kyungdeog Nam¹, Inhun Cho^{2,3}, Seungjae Gong^{2,3}, Yong-



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

Won Song^{2, 4}, Yunseok Kim⁵, and Inho Kim¹

¹Innoteco Inc, Korea, ²Korea Institute of Science and Technology, Korea, ³Korea University, Korea,

⁴University of Science and Technology, Korea, ⁵Lasernics Inc., Korea

[MP-91]

RGB Micro-LED Platform for Photo-Activated Gas Sensors

Sung Jin Seo and Ho Won Jang

Seoul National University, Korea

[MP-92]

Full-Scale Electric Vehicle Validation of Hydrogen as a Precursor to Battery Thermal Runaway

Min-Jae Kim, Min-Gi Kim, Hyun-Sook Lee, and Wooyoung Lee

Yonsei University, Korea

[MP-93]

Hydrogen Evolution Feature Mapping for Quantitative Crack Diagnosis across Cycling Conditions in Cylindrical Lithium-Ion Batteries

Kyung-Ho Park, Yeonhong Kim, Hyun-Sook Lee, and Wooyoung Lee

Yonsei University, Korea

[MP-94]

Development of Surface-Enhanced Raman Spectroscopy Substrate Using Melt-Blown Nonwoven Fabrics with Ag Nanoflower Particles

Koshi Nishikura and Yosuke Tahara

Shinshu University, Japan

[MP-95]

Quantitative Safety Diagnostics of Lithium-Ion Batteries via Early Hydrogen Evolution under Variable Heating Conditions

Mingi Kim, Min-Jae Kim, Hyun-Sook Lee, and Wooyoung Lee

Yonsei University, Korea

[MP-96]

Portable Dual-Sensor Electronic Nose for Rapid On-Site Assessment of Halitosis

Sicheng Fan, Shimeng Mou, Weijie Yu, and Ping Wang

Zhejiang University, China

[MP-97]

Sensitive and Affordable Method Using Hg-Free Electrodes for On-Site Heavy Metals Measurement based on Stripping Voltammetry

Nguyen Huu Diep¹, Yusuke Koizumi¹, Taketo Okumura¹, Tran Dinh Trinh², Kazuma Mawatari³, and Hiromitsu Hachiya¹

¹DKK-TOA CORPORATION, Japan, ²Vietnam National University, Vietnam, ³Waseda University, Japan



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-98]

NiO-Functionalized Graphene Micropatterns for Highly Selective and Flexible Chemical Sensor

Seungsoo Kim and Ho Won Jang

Seoul National University, Korea

[MP-99]

Lab-on-Paper Optical Sensor for Volatile Acids in Heritage Libraries based on Smartphone Colorimetry

Joseph Ryan Reyes and Fortunato Sevilla III

University of Santo Tomas, Philippines

[MP-100]

Four Channel Multifrequency Noninvasive Glucose Measurement Platform based on Dielectric Loss and Differential Thermometry

Jinwoo Song, Jooran Yang, and Hyungpyo Kim

Kyungpook National University, Korea

[MP-101]

Open/Close Switchable Solid-Phase-Extraction Microfluidic Device with One-Drop Anodic Stripping Voltammetry for On-Site Heavy Metal Analysis in River Water

Chi Thi Kim Tran¹, Ryoichi Ohta¹, Kazuma Mawatari¹, Tra Huong Nguyen², Huyen Minh Nguyen¹, Trinh Dinh Tran², Ngoc Minh Ha², and Noi Van Nguyen²

¹Waseda University, Japan, ²Vietnam National University, Vietnam

[MP-102]

A Rapid Label-Free Electrochemical Aptasensor Based on NH₂-MIL-101(Fe) for Detection of *Vibrio* Harveyi

Rajesh Kumar Raghav, Chia-Yu Hsieh, and Ching-Chou Wu

National Chung Hsing University, Taiwan

[MP-103]

Performance Evaluation of an All-Solid-State Metal-Electrode pH Sensor in Tap Water Environments

Hinako Inao and Shinji Okazaki

Yokohama National University, Japan

[MP-104]

Laser-Engineering Approach to Oxide-Film Gas Sensor Array Intensifying Arrays for Enhanced Sensing Performance Monitoring Food Freshness and Human Safety

Qisong Jia, Chen Wang, Peng Sun, and Geyu Lu

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ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-105]

Noise-Aware Few-Shot Calibration of a Bio-Inspired Spiking Neural Network for Robust Gas Recognition

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[MP-106]

Physics-Constrained Deep Learning for Super-Resolution Raman Spectroscopy of Environmental Nanoplastics

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[MP-107]

Nanocane Array Electronic Nose for Simultaneous Identification and Quantification of Multi-Component Gases

Do Yeong An, Jae Han Chung, Eunsol Lee, Doyeon Kim, Seungbeom Jeong, and Young-Seok Shim
Korea University of Technology and Education, Korea

[MP-108]

Zeolite-Involved Triboelectric Effects for Self-Powered Metal Ions Sensors

Rayyan Ali Saukat, Yebin Lee, Taeuk Eom, and Chang Kyu Jeong
Jeonbuk National University, Korea

[MP-109]

Hierarchical Wall Engineering in Guar Gum Derived Carbon-based Aerogel for Strong and Broadband Electromagnetic Wave Absorption

Xuan Wang, Yamin Xu, Bo Hu, Han Ding, Xijiang Han, and Yunchen Du
Harbin Institute of Technology, China

[MP-110]

Low-Load MXene Nanosheet/Melamine Composite Sponges for Enhanced Electromagnetic Interference Shielding

Yuqi Yang and Zhimin Fan
Harbin Institute of Technology, China

[MP-111]

Nanoporous Silver Films Prepared by Plasma Oxidation–Reduction for Surface-Enhanced Raman Scattering-Based Sensing

Liping Fan, Chengcheng Yuan, Dan Zhang, and Yang Gan
Harbin Institute of Technology, China



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-112]

Solid-Phase Synthesis of Titanium-Oxo Clusters and Their Unprecedented Catalytic Performance in Oxidative Desulfurization of Fuel Oil

Xinchun Liu and Yinyong Sun

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[MP-113]

The Role of Li-Rich Disordered Domain in Li-Rich Cathodes

Gui-Jing Xu¹, Jia-Ji Tang¹, Wang Ke¹, Fu-Da Yu², Yun-Shan Jiang³, Nian Zhang⁴, Zhong-Miao Liao⁵, Liang Deng¹, Lei Zhao¹, and Zhen-Bo Wang¹

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[MP-114]

Decoupling Chemo-Mechanical Failure for Robust Li-rich Cathodes

Gui-Jing Xu¹, Jia-Ji Tang¹, Zhong-Miao Liao², Wang Ke¹, Fu-Da Yu³, Yuan-Guang Xia^{4,5}, Wen Yin^{4,5}, Xuan He⁶, Xiao-Kang Ju⁶, Liang Deng¹, Lei Zhao¹, Gang Sun⁷, and Zhen-Bo Wang¹

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[MP-115]

Synergistic Electron Density and Oxygen Defect Regulation in Fluorite High-Entropy Oxides for Superior Ionizing Radiation Shielding

Xiangjie Duan¹, Zhipeng Li¹, Tian Bo², Xingyi He³, and Yunchen Du¹

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[MP-116]

Adhesive BSA-Crosslinked Hydrogel for Bladder Strain Sensing and Electrical Stimulation

Rui Zhang and Dianpeng Qi

Harbin Institute of Technology, China

[MP-117]

Highly Sensitive Humidity Sensor based on NaCl-BiFeO₃ for Noncontact Sensing

Jifeng Pan¹, Yunsong Li¹, Tian Tian², Zilong Tang³, Zichao Lian¹, and Nan Ma²



ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

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³Tsinghua University, China

[MP-119]

Tear-Film-Inspired Interfacial Polymerization Engineering Nanofiltration Membrane Architecture for Highly Efficient Antibiotic Desalination

Liufu Zhang and Lu Shao

Harbin Institute of Technology, China

[MP-120]

Room-Temperature Acetone Detection Using a NU-1000 Metal–Organic Framework/MXene Composite

Anh-Duy Nguyen and Sang Sub Kim

Inha University, Korea

[MP-121]

Indium-Gallium-Zinc Oxide Negative Capacitance Field-Effect Transistor for NO₂ Gas Sensing

Thi Hong Nhung Nguyen, Soo Yeon Kim, Seo Yeon Kim, and Incheol Cho

Tech University of Korea, Korea

[MP-122]

On-Liquid Nanostructure for Multimodal Sensing Applications

Byung-Ho Kang¹, Yeongjae Kwon², Sohee Jeon², Soon Hyoung Hwang², Junseong Ahn³, Jun-Ho Jeong², and Inkyu Park¹

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[MP-123]

High-Throughput and Highly-Reproducible Gas Sensor for ML Processing based on Nanoimprint Lithography and MEMS Fabrication

Yeongjae Kwon and Inkyu Park

Korea Advanced Institute of Science and Technology, Korea

[MP-124]

Programmable 3D Smart Systems for Dynamic Energy Management

Ho Jun Jin and Bong Hoon Kim

Daegu Gyeongbuk Institute of Science and Technology

[MP-125]

Laser-Mediated Assembly of High- χ Block Copolymers for Controlled Nanostructure Formation on Silicon

Jimin Lee¹, Hyeong Min Jin², and Bong Hoon Kim¹

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ACCS 2026

November 08(Sun.) – 11(Wed.), 2026
Seoul National University, Seoul, Republic of Korea

[MP-126]

Ultrasonically Active Piezoelectric Textiles for Antifouling and Viral Inactivation

Seung Woo Han and Bong Hoon Kim

Daegu Gyeongbuk Institute of Science and Technology

[MP-127]

Multimodal Wearable Sensing Enabled by MoS₂/PLA Composite Fibers

Min Seok Choi, Jun Hyun Park, and Bong Hoon Kim

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[MP-128]

Performance Evaluation of Resource-Efficient Approaches to Materials Processing and Characterization

Simon Kim and Bong Hoon Kim

Daegu Gyeongbuk Institute of Science and Technology, Korea