

## AIS 2026 Abridged Program

2 August Sunday	DAY 1 3 August Monday <i>Registration</i>	DAY 2 4 August Tuesday <i>Registration</i>	DAY 3 5 August Wednesday <i>Registration</i>	DAY 4 6 August Thursday <i>Registration</i>	7 August Friday
	<b>Opening Ceremony</b> Plenary Speech 1 Plenary Speech 2	Symposium	Plenary Speech 3 Plenary Speech 4	Symposium	
	<i>Coffee Break</i>				
Registration	Symposium	Symposium	Symposium	Symposium	Free Activities
	<i>Lunch Break</i>				
	Symposium	<u>Poster Session</u>	Symposium	Symposium	
	<i>Coffee Break</i>		<u>Poster Session &amp;</u>	<i>Coffee Break</i>	
	Symposium	<b>Social Activity</b>	Symposium	<b>Award Ceremony</b>	

Symposium	DAY 1	DAY 2	DAY 3	DAY 4
	3 August Monday	4 August Tuesday	5 August Wednesday	6 August Thursday
SYM 1. Metasurface and Metaoptics				✓
SYM 2. AI-Accelerated Design for Materials and Sensors	✓			
SYM 3. AI-Driven Biomedical Imaging and Diagnostics	✓	✓		
SYM 4. AI-Enhanced Bioelectronics	✓			
SYM 5. AI-Driven Bio/Chemical Sensors			✓	
SYM 6. AI Sensors for Smart Healthcare Applications			✓	
SYM 7. Microfluidics, Lab-on-a-Chip and MicroTAS		✓	✓	✓
SYM 8. Advanced Sensors for Robots and Autonomous Systems			✓	
SYM 9. Soft Sensors and Actuators for Human-Machine Interface	✓	✓		
SYM 10. Soft Robotics Technologies				✓
SYM 11. Flexible, Stretchable and Wearable Sensors			✓	✓
SYM 12. Nanogenerators and Self-Powered Sensors	✓	✓		
SYM 13. Energy Harvesting Technology and Intelligent Sensing Applications			✓	✓
SYM 14. Sensing Technology for Natural and Harsh Environment				✓
SYM 15. IoT Sensors and System Integration	✓			
SYM 16. Remote Sensing and Its Applications				✓
SYM 17. Smart Cities Sensing Technologies		✓		
SYM 18. Cross Data for Sensing Applications				✓
SYM 19. MEMS/NEMS Sensors	✓	✓		
SYM 20. Wearable and Flexible Ultrasound Electronics		✓		
SYM 21. Optical MEMS and Photonic NEMS &				
SYM 22. Fiber Optics for Biosensing, Environmental Sensing, and Wearable Applications		✓	✓	
SYM 23. Si Photonics for Sensing and Edge Computing		✓		
SYM 24. 2D Material-Enabled Nanosensors, Neuromorphic Computing and Applications	✓			
SYM 25. Nanomaterials and Gas/Chemical Sensors			✓	✓
SYM 26. Smart Gas Sensors and Artificial Olfactory				✓

Day	Time	SamdaA	SamdaB	300	301A	301B	302	303A	303B
<b>DAY 1</b> <b>3 August</b> <b>Monday</b>	11:00-12:30	SYM 19	SYM 4	SYM 24	SYM 3	SYM 15	SYM 12	SYM 2	SYM 9
	14:00-15:30	SYM 19	SYM 4	SYM 24	SYM 3	SYM 15	SYM 12	SYM 2	SYM 9
	16:00-18:00	SYM 19	SYM 4	SYM 24	SYM 3	SYM 15	SYM 12	SYM 2	SYM 9
<b>DAY 2</b> <b>4 August</b> <b>Tuesday</b>	9:00-10:30	SYM 19	SYM 7	SYM 23	SYM 3	SYM 17	SYM 12	SYM 20	SYM 9
	11:00-12:30	SYM 19	SYM 7	SYM 23	SYM 21&22	SYM 17	SYM 12	SYM 20	SYM 9
<b>DAY 3</b> <b>5 August</b> <b>Wednesday</b>	11:00-12:30	SYM 25	SYM 7	/	/	SYM 6	SYM 13	SYM 11	/
	14:00-15:30	SYM 25	SYM 7	SYM 21&22	SYM 5	SYM 6	SYM 13	SYM 11	SYM 8
	16:30-18:00	SYM 25	SYM 7	SYM 21&22	SYM 5	SYM 6	SYM 13	SYM 11	SYM 8
<b>DAY 4</b> <b>6 August</b> <b>Thursday</b>	9:00-10:30	SYM 25	SYM 7	/	SYM 14	SYM 16	SYM 13	SYM 11	SYM 1
	11:00-12:30	SYM 25	SYM 26	/	SYM 14	SYM 16	SYM 13	SYM 11	SYM 1
	14:00-16:30	SYM 25	SYM 26	/	SYM 14	SYM 18	SYM 10	SYM 11	SYM 1

## Opening Ceremony and Plenary Speech

### DAY 1 (3 August, Monday)

**ROOM: Halla**

**Chaired By: Prof. Chengkuo Lee**

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9:00-9:15	Opening Ceremony	
9:15--9:55	Plenary Speech 1	<b>Wei Gao</b> Body-Interfaced Biosensors California Institute of Technology Engineering Living Systems for Biohybrid Sensing, Actuation, and Robotics
9:55-10:35	Plenary Speech 2	<b>Shoji Takeuchi</b> The University of Tokyo

### DAY 3 (5 August, Wednesday)

**ROOM: Samda A**

**Chaired By: Prof. Chengkuo Lee**

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9:00-9:40	Plenary Speech 3	<b>Mo Li</b> Steering Light with Sound: Integrated Acousto-Optic Systems University of Washington
9:45-10:25	Plenary Speech 4	<b>Hyunhyub Ko</b> Biomimetic Structures and Functions for Soft Sensors Ulsan National Institute of Science and Technology

# S1. Metasurface and Metaoptics

DAY 4 (6 August, Thursday)

ROOM: 303 B

## Chaired By Prof. Jinghua Teng

9:00-9:30	Keynote Speaker	Hongsheng Chen	Intelligent metamaterials and metamaterials intelligence
9:30-9:50	Invited Speaker	Ching Eng Png	To be Announced
9:50-10:10	Invited Speaker	Giorgio Adamo	Raman scattering in a photonic metamaterial time crystal
10:10-10:30	Invited Speaker	Longqing Cong	High Efficiency Active Terahertz Membrane Metasurfaces
10:30-10:45	Oral Presenter	Guangfeng You	Nonlinear Metasurface Computing with Temporal Encoding

## Chaired By Prof. Junsuk Rho

11:00-11:30	Keynote Speaker	Jinghua Teng	Metasurfaces for Sensing, Imaging and Photodetection
11:30-11:50	Invited Speaker	Sunae So	Multicolor 3D Metasurface Holography and Meta-Grating Waveguide Combiners for AR Displays
11:50-12:10	Invited Speaker	Kun Huang	Lensless Lithography Based on Computer-Generated Holography
12:10-12:30	Invited Speaker	Taotao Zhuang	Chiral optoelectronic sensors
12:30-12:45	Oral Presenter	Zhenyang Cui	A Lithography-Free Approach To Polaritonic Luneburg Lenses

## Chaired By Prof. Jinghua Teng and Prof. Junsuk Rho

14:00-14:20	Invited Speaker	YanJun Liu	Reconfigurable Circularly Polarized Luminescence Based on Cholesteric Liquid Crystals or Chiral Metasurfaces
14:20-14:40	Invited Speaker	Zeng Wang	Deep-UV flat optics (DUVFO) for lithography and spectroscopy applications
14:40-15:00	Invited Speaker	Inki Kim	Metasurface-Enabled Biophotonic Systems for Precision Healthcare
15:00-15:20	Invited Speaker	Son Tung Ha	From Metasurfaces to Metadevices: A New Era of Optoelectronics
15:20-15:40	Invited Speaker	Zhongyu Cai	Two-Dimensional Photonic Crystal Gel Sensors: From Concept and Principle to Sensor Devices and Portable Systems
15:40-15:55	Oral Presenter	Yuhan Wang	Dual-Band High-Dissymmetry Circularly Polarized Luminescence From Cholesteric Liquid Crystals Overlaid A Gold Cluster Film
15:55-16:10	Oral Presenter	Changseop Byeon	Origami-Based Tunable Acoustic Metamaterial For Ventilated Broadband Sound Attenuation Via Fano-Like Interference
16:10-16:25	Oral Presenter	Ran An	Chemically Programmable Fano Resonances via Colloidal Nanocrystal-ligand Chemistry for Ultra-sensitive Ion Detection
16:25-16:40	Oral Presenter	Junjie Yang	Dual-Window Directional Asymmetric Thermal Emitter Based On Nonlocal Guided Modes

## S2. AI-Accelerated Design for Materials and Sensors

**DAY 1 (3 August, Monday)**

**ROOM: 303 A**

**Chaired By Prof. Po-Liang Liu**

11:00-11:30	Keynote Speaker	Ying-Hao Chu	AI-Accelerated Design and Epitaxial Growth of High-Entropy Piezoelectric Oxides for Smart Sensors
11:30-11:50	Invited Speaker	Cheng-Tang Pan	NCIR's Advancing Interdisciplinary Development for Multifunctional EUV Mask Inspection and Process System
11:50-12:10	Invited Speaker	Xian Qin	AI-Enabled Perovskite Grain Analysis: Correlating Surface Defects and Grain Morphology with Photovoltaic Performance
12:10-12:30	Invited Speaker	Shao-Yu Wang	Lightweight AI-Integrated Vision Sensing for Real-Time UAV-Based Photovoltaic Inspection with Feature Convolution Module Optimization
12:30-12:45	Oral Presenter	Shu Chuang	Using Nano Copper Materials to Enhance the Performance of Infrared Sensors

**Chaired By Prof. Cheng-Tang Pan**

14:00-14:30	Keynote Speaker	Po-Liang Liu	AI-Accelerated Surface and Interface Engineering for Intelligent Gas Sensing Materials
14:30-14:50	Invited Speaker	Chiao-Chi Lin	Electrodeposited Measuring Scales for High-Performance Long-Stroke Linear Magnetic Encoders
14:50-15:10	Invited Speaker	Zaifa Zhou	An Efficient Strategy for MEMS Optimization and Yield Analysis Based on Deep Neural Network Method
15:10-15:30	Invited Speaker	Pengcheng Jiao	AI-driven multi-functional intelligent metamaterials for the cross-field integration of physics and information

**Chaired By Prof. Po-Liang Liu**

16:00-16:20	Invited Speaker	Zingway Pei	Design of Quantum-Dot Materials for High-Performance OLED Optoelectronic Devices
16:20-16:40	Invited Speaker	Yansong Yang	AI Acceleration in Design and Measurement of MEMS Resonators
16:40-17:00	Invited Speaker	Ming-Chan Lee	Piezoelectric Fibers with nanoparticles via Near-Field Electrospinning for Wearable Pulse Sensing
17:00-17:15	Oral Presenter	Dongxiao Li	Physics-Informed AI for Inverse Design of Metasurface-Enhanced Infrared Molecular Sensors
17:15-17:30	Oral Presenter	Ullah Kalim	Hybrid MLP-GA Optimization Framework for accurate Thermal Conductivity Measurement
17:30-17:45	Oral Presenter	Hee Yeoun Kim	AI-Assisted Hierarchical Process Optimization for Sub-Micron W2W Hybrid Bonding in Next-Generation Sensor Applications
17:45-18:00	Oral Presenter	Imran Ullah	Uncertainty-Aware Inverse Design of MEMS Seebeck Structures via Bayesian Cascaded Deep Learning

## S3. AI-Driven Biomedical Imaging and Diagnostics

**DAY 1 (3 August, Monday)**

**ROOM: 301 A**

**Chaired By Prof. Sanyang Han**

11:00-11:30	Keynote Speaker	Xiaogang Liu	The Chemistry of Lanthanide Nanomaterials
11:30-11:50	Invited Speaker	Libing Zhang	Programmable DNA Nanomaterials for Biosensing and Bioimaging
11:50-12:10	Invited Speaker	Yiming Wu	Controlling Lanthanide Optical Dynamics for Advanced X-Ray Detection
12:10-12:30	Invited Speaker	Yu-Cheng Chen	To be Announced
12:30-12:45	Oral Presenter	Qinzhi Li	Exploiting Intrinsic Disorder for Full-Stokes Polarimetric Imaging with Natural Anisotropic Metasurfaces

**Chaired By Prof. Prof. Hong Liu**

14:00-14:30	Keynote Speaker	Zhiwei Huang	AI-Driven SRS Microscopy Enables Label-Free Phenotyping of Lipid Droplets Motility in Living Cells
14:30-14:50	Invited Speaker	Honghui He	AI-assisted polarization optics for biomedical and clinical applications
14:50-15:10	Invited Speaker	Yidong Hou	Ultra-Sensitive Chiral Plasmonic Biosensor Based on Superchiral Field
15:10-15:25	Oral Presenter	Jialin Chen	Can Excitation-Wavelength Optimization Enhance the Stability of Single-Particle Thermometry?

**Chaired By Prof. Xiaogang Liu**

16:00-16:20	Invited Speaker	Zewei Quan	High-pressure luminescent materials
16:30-16:50	Invited Speaker	Xiyan Li	Sublattice-reconstructed UVC memission for bright-field-compatible all-optical neuromorphic vision and imaging
16:50-17:10	Invited Speaker	Zichao Luo	An Engineered Triple-Functional Nanoplatfrom for Sepsis Therapy via Macrophage-Targeted PLK1 Inhibition
17:10-17:30	Invited Speaker	Zonghai Sheng	To be Announced
17:30-17:50	Invited Speaker	Peiwu Qin	To be Announced
17:50-18:05	Oral Presenter	Maozhong Sun	Dual Signals of Chiral and Fluorescent Copper Sulphide Nanoparticles Boost Tumor Cell Autophagy
18:05-18:20	Oral Presenter	Saran Phosuwan	Elliptic Operator-Based Mathematical Modeling and Spectral Analysis for AI-Enhanced Tomographic Brain Tumor Imaging

**DAY 2 (4 August, Tuesday)**

**ROOM: 301 A**

**Chaired By Prof. Qiushui Chen**

9:00-9:20	Invited Speaker	Fan Wang	Sub-femtonewton force sensing and super-resolved temperature measuring
9:20-9:40	Invited Speaker	Renren Deng	Dye-coupled lanthanide nanocrystals for advanced optical biosensing and photodynamic therapy
9:40-10:00	Invited Speaker	Hongyu Bian	Nanocrystal Scintillators for Radiation Detection
10:00-10:20	Invited Speaker	Long Bai	AI-Empowered Bone Organoid Fabrication: Principles and Applications

## S4. AI-Enhanced Bioelectronics

**DAY 1 (3 August, Monday)**

**ROOM: Samda B**

**Chaired By Prof. Zhuo Liu**

11:00-11:30	Keyote Speaker	Zhou Li	Design and Applications of Self-Powered Medical Devices
11:30-11:50	Invited Speaker	Xun Chen	Artifact Removal in EEG for Brain-Computer Interfaces
11:50-12:10	Invited Speaker	Xiaohui Zhang	Magnetic Flexible Sensors for Wearable and Implantable Health Monitoring
12:10-12:30	Invited Speaker	Qilin Hua	Neuro-inspired artificial sensory systems for embodied intelligence
12:30-12:50	Invited Speaker	Kai Qian	A Smart Sensing Gradient Bio-inspired Scaffold for Precision Rehabilitation Therapy

**Chaired By Prof. Zhou Li**

14:00-14:20	Invited Speaker	Zhuo Liu	Electromechanical Coupling Implantable Bioelectronic Devices
14:20-14:40	Invited Speaker	Ah-Hyoung Lee	Wireless Distributed Bioelectronic Microstimulators Toward Closed-Loop Neuromodulation
14:40-15:00	Invited Speaker	Bowen Ji	MRI-COMPATIBLE 3D CARBON ELECTRODE ARRAY FOR ECOG ACQUISITION IN VIVO
15:00-15:20	Invited Speaker	Ting Wang	Intelligent perception of biomolecules on soft tissues
15:20-15:40	Invited Speaker	Weiyang Ren	AI-Based Wearable Plantar Pressure System for Rehabilitation Assessment of Tibial Fractures

**Chaired By Prof. Ting Zhang**

16:00-16:20	Invited Speaker	Xuecheng Qu	Tactile Function Compensation and Rehabilitation: From Perception Reconstruction to Closed-Loop Neuromodulation
16:20-16:40	Invited Speaker	Xuwen Wang	Flexible Sensing Electronics Towards Extreme Environment Application
16:40-17:00	Invited Speaker	Xili Ding	Myofibroblast Regulation in Vascular Tissue Engineering for Regeneration
17:00-17:20	Invited Speaker	Zhengyang Huo	Self-powered floating capsule for decentralized water detection and disinfection
17:20-17:40	Invited Speaker	Aixue Li	Integrating Artificial Intelligence with Electrochemical Biosensors for Enhanced Detection in Agriculture
17:40-18:00	Invited Speaker	Peng Li	To be Announced
18:00-18:15	Oral Presenter	Yuhan Peng	AI-Empowered Elucidation of Olfactory Spatiotemporal Coding Mechanisms and Brain-Computer Interface Applications

## S5. AI-Driven Bio/Chemical Sensors

DAY 3 (5 August, Wednesday)

ROOM: 301 A

Chaired By Prof. Sanghoon Lee

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14:00-14:20	Invited Speaker	Hong Zhou	Artificial Intelligence-Driven Hyperspectral Imaging for Biosensing
14:20-14:40	Invited Speaker	Jianghong Wu	An electrochemical sensor platform for rapid nucleic acid detection of Influenza A
14:40-14:55	Oral Presenter	Jinsung Park	Machine Learning-Enabled SERS Diagnosis Of CSF Rhinorrhea On Au@Ag Nanopillars
14:55-15:10	Oral Presenter	Natalia Arango Devia	Accessible Dengue Detection Using A Label-Free Electrochemical Biosensor With An In-House Monoclonal Antibody
15:10-15:25	Oral Presenter	Hemant Kumar	Machine Learning-Assisted Electrical Impedance Spectroscopy Sensor for Rapid Milk Adulteration Detection.

Chaired By Prof. Hong Zhou

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16:30-16:50	Invited Speaker	Jihun Lee	Ultra-Miniaturized Wireless Neural Implants with AI-Based Neural Decoding for Scalable Brain Interfaces
16:50-17:10	Invited Speaker	Jiyeon Kang	AI-Enabled Biomechanical Sensing for Passive Functional Diagnostics in Aging and Neurorehabilitation
17:10-17:30	Invited Speaker	Song Wang	To be Announced
17:30-17:45	Oral Presenter	Yu-Hsuan Chiang	Silent Speech Recognition Using Triboelectric Nanogenerator Sensors with Efficient Conformer Model Compression
17:45-18:00	Oral Presenter	Dhanunjaya Munthala	Extended Gate Field Effect Transistor for Biosensing Application and Detection of the TNF- $\alpha$ Antigen

## S6. AI Sensors for Smart Healthcare Applications

DAY 3 (5 August, Wednesday)

ROOM: 301 B

### Chaired By Prof. Inkyu Park

11:00-11:30	Keynote Speaker	Wen Jung Li	Sphygmopalpation Using E-Skin Tactile Sensory Feedback to Reveal Fundamental TCM Pulse Patterns
11:30-11:50	Invited Speaker	Jungrak Choi	Thermoformed 3D Sensing Systems for Smart Healthcare Applications
11:50-12:10	Invited Speaker	Kenta Iitani	Electrospinning of enzyme-containing water-soluble polymers for solvent-free biosensing applications
12:10-12:25	Oral Presenter	Youngbok (Abraham) Kang	The Smart Neuro-Ankle-Foot Home Trainer (SNAFT) To Improve Gait And Balance
12:25-12:40	Oral Presenter	Sanjay Kher	Investigation of AI-Based RADAR Technology for Control of Drug Abuse
12:40-12:55	Oral Presenter	Yu Huang	Multichannel Gesture Signal Data Fusion via 1D-CNN for Data Glove-Based Sign Language Recognition

### Chaired By Prof. Inkyu Park

14:00-14:30	Keynote Speaker	Kuniharu Takei	Edge computing multimodal healthcare sensor patch toward telediagnosis
14:30-14:50	Invited Speaker	Edward Park	AI-Enabled Wearable Sensors for the Future of Continuous and Connected Healthcare
14:50-15:05	Oral Presenter	Jeong A Han	Ecoflex-Based Coil TENG Sensor for Wireless SCG Monitoring toward Cuff-Less Blood Pressure Estimation
15:05-15:20	Oral Presenter	Qiang Jing	Machine Learning-Assisted Exhaled Breath Analysis Using Ultrasensitive Gas Sensors for the Diagnosis and Monitoring of Lung Cancer and Chronic Diseases
15:20-15:35	Oral Presenter	Razieh Zamani	AI-Assisted Mass Spectrometric Chemical Sensing via Regioselective Ion-Molecule Reactions for Isomer Classification of Aromatic Compounds

### Chaired By Prof. Inkyu Park

16:30-16:50	Invited Speaker	Junseong Ahn	Nanotransfer-Printed SERS Sensor with AI-Assisted Spectral Analysis for Real-Time Food Quality Monitoring
16:50-17:10	Invited Speaker	Min-Ho Seo	Motion-Artifact-Reduced Wearable PPG Sensor via Photoelectric-Efficiency-Enhanced Miniaturized Optical Module Engineering
17:10-17:30	Invited Speaker	Yong Suk Oh	To be Announced
17:30-17:45	Oral Presenter	Shuhan He	An Artificial Intelligence Enhanced Piezoelectric Tactile Sensor Array For Surgical Applications
17:45-18:00	Oral Presenter	GoEun Choi	AI-Integrated Multiplexed Colorimetric Wound Monitoring Band for Smart Healthcare Applications
18:00-18:15	Oral Presenter	Mami Akaike	In Vivo Measurement Of Intraventricular Pressure In Mouse Embryos Using A Miniaturized Pressure Sensor System
18:15-18:30	Oral Presenter	Kassem Saleh	Ethical Governance of Multi-Pattern AI Sensor Systems in Smart Healthcare: A Closed-Loop Cardiac Monitoring Case Study

## S7. Microfluidics, Lab-on-a-Chip and MicroTAS

### DAY 2 (4 August, Tuesday)

#### ROOM: Samda B

##### Chaired By Prof. Michinao Hashimoto

9:00-9:30	Keynote Speaker	Sung Jae Kim	Deep Learning-Assisted Label-free Molecular Diagnosis Platform Mediated by dCas9 and Multiplexed Nanoelectrokinetic Selective Preconcentration
9:30-9:50	Invited Speaker	Hnin Y. Y. Nyein	Biomolecular Detection and Quantification Enabled by Non-Invasive Biosensors for Health Monitoring
9:50-10:10	Invited Speaker	Yoshikazu Hirai	Microfluidic Platforms for Real-Time Single-Molecule Analysis of Ion-Channel Dynamics
10:10-10:30	Invited Speaker	Yang Ye	A Microperfusion-Based Approach for Long-Term, Minimally Invasive Sampling and Analysis of Phloem Sap and Xylem Sap
10:30-10:45	Oral Presenter	Yemin Han	Microfluidic electrochemical microarray platform: Integrated rapid screening of pathogens

##### Chaired By Prof. Chia-Hung Chen

11:00-11:20	Invited Speaker	Zhugen Yang	Origami-Paper Microfluidic Devices for Point-of-Care Diagnostics
11:20-11:40	Invited Speaker	Yun Jung Heo	Boronic-acid based fluorescent glucose sensors for continuous monitoring
11:40-12:00	Invited Speaker	Tiantian Kong	Coacervate Microdroplets as Programmable Compartments for Chemistry and Biochemistry
12:00-12:20	Invited Speaker	Wen Zeng	Research on the Principles of Picoliter Droplet Digital PCR for Non-Invasive Prenatal Testing
12:20-12:35	Oral Presenter	Jing Jin	Emerging Paradigms in Liquid Marble Microsystems: From Intelligent Droplet Sensing to Reconfigurable 3D Soft Robotics
12:35-12:50	Oral Presenter	Rahni Hossain	Network Pharmacology, Molecular Docking, and In Vitro Insights into the Potential of <i>Mitragyna speciosa</i> for Alzheimer's Disease

### DAY 3 (5 August, Wednesday)

#### ROOM: Samda B

##### Chaired By Prof. Yun Jung Heo

11:00-11:30	Keynote Speaker	Hiroaki Onoe	X-ray-visible MSC-encapsulating hydrogel microtube carrier for intravascular cell therapy
11:30-11:50	Invited Speaker	Kyung-A Hyun	Integrated Microfluidic Electrochemical Platform for Biomarker Enrichment and High-Sensitivity Detection in Liquid Biopsy
11:50-12:10	Invited Speaker	Jiyoon Bu	Microfluidic and Biosensing Platforms for Cancer Immunotherapy: Toward Personalized Cell-Based Therapies
12:10-12:30	Invited Speaker	Daiki Tanaka	UV Laser-Assisted Synthesis of Dinuclear Zinc(II) Complexes in a Microfluidic Platform
12:30-12:45	Oral Presenter	Yi Zhang	Implantable Microfluidics to Unlock Brain Chemistry

### Chaired By Prof. Chia-Hung Chen

14:00-14:20	Invited Speaker	Moeto Nagai	VPP 3D-Printed Molds for Open PDMS Microfluidic Devices: SlipChip and DIW Nozzles
14:20-14:40	Invited Speaker	Kenichi Funamoto	Microfluidic analysis of vascular endothelial cell responses to inflammation and hypoxia
14:40-15:00	Invited Speaker	Matiar Howlader	Liquid Neural Networks for Multimodal Bio-Sensor Data Analysis
15:00-15:15	Oral Presenter	Jaehun Jeon	Wearable Self-guided Optofluidic Patch for Rapid Chronological Analysis of Glucose and pH in Sweat
15:15-15:30	Oral Presenter	Jiyun Kim	Continuous and High-Throughput PRP (Platelet-Rich Plasma) Preparation using a Multi-Stage Spiral Inertial Microfluidic Platform

### Chaired By Prof. Michinao Hashimoto

16:30-17:00	Keyote Speaker	Michinao Hashimoto	To be Announced
17:00-17:20	Invited Speaker	Taek Lee	Rapid electrical and electrochemical aptasensors for disease detection: recent advances
17:20-17:40	Invited Speaker	Yong Lin Kong	Near-field microwave printing of bioelectronics
17:40-18:00	Invited Speaker	Jean (Jeeyeon) Lee	A Gut Microbiome-on-a-Chip Platform to Unravel Microbial Dynamics Underlying Disease and Therapeutic Intervention
18:00-18:15	Oral Presenter	Manman Lv	A Programmable Nucleic Acid-Encoded Universal Array For Multiplex Pathogen Biosensing
18:15-18:30	Oral Presenter	Zhixian Zhu	Cascading Inertial Microfluidics For High-Throughput, Multi-Scale Enrichment Of Tumor Cells And Intact Clusters Towards Enhanced Malignancy Diagnosis

## DAY 4 (6 August, Thursday)

### ROOM: Samda B

### Chaired By Prof. Yun Jung Heo

9:00-9:30	Keyote Speaker	Chia-Hung Chen	High-Throughput, Sensitive Metabolic Analysis Using Microfluidic Living Cell Membrane&ndash;Anchored Molecular Sensors
9:30-9:50	Invited Speaker	Joo H. Kang	Microfluidic strategies for tissue engineering and regenerative medicine
9:50-10:10	Invited Speaker	Da Som Yang	Soft Microfluidic Sweat-Sensing Platform for Point-of-Care Diagnostics
10:10-10:30	Invited Speaker	Daisuke Yoshino	A rapidly prototyped low-cost modular microfluidic flow cytometer for integrated forward-scatter and fluorescence detection

## S8. Advanced Sensors for Robots and Autonomous Systems

**DAY 3 (5 August, Wednesday)**

**ROOM: 303 B**

**Chaired By Prof. Huicong Liu**

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14:00-14:30	Keyote Speaker	Huicong Liu	MEMS Sensing Technologies Empowering the Development of Robotics and Intelligent Equipment
14:30-14:50	Invited Speaker	Mang Gao	Self-powered smart screen-printed metal-polymer plain bearing
14:50-15:10	Invited Speaker	Yonggang Jiang	Bio-inspired flexible touch, flow and acoustic sensors for robotic sensing
15:10-15:30	Invited Speaker	Xiangguang Han	Research on Key Technologies of Robotic Mechanical Sensors

**Chaired By Prof. Huicong Liu**

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16:30-16:50	Invited Speaker	Cheng Hou	To be Announced
16:50-17:10	Invited Speaker	Jia Zhang	Flexible Electronic Skins and its Application in Human-Robot Collaboration
17:10-17:30	Invited Speaker	Shiqiang Liu	A Smart Headband for Multimodal Physiological Monitoring in Human Exercises
17:30-17:50	Invited Speaker	Qijing Lin	To be Announced
17:50-18:05	Oral Presenter	Jianlong Hong	Biomimetic hairy affective-touch sensory AI interface
18:05-18:20	Oral Presenter	Yao Liu	A Lightweight Perception and Localization Framework for Monocular Visual Sensors in Dynamic Environments
18:20-18:35	Oral Presenter	Anbumalar Murugan	Effective Resolution Enhancement Using Adaptive Weighted Interpolation and Multi-Radar Fusion for In-Cabin Radar Applications
18:35-18:50	Oral Presenter	Simeon Ogunbunmi	Trust-Aware Adaptive Sensor Fusion for Secure Edge Navigation: A Hardware-in-the-Loop Implementation

## S9. Soft Sensors and Actuators for Human-Machine Interface

**DAY 1 (3 August, Monday)**

**ROOM: 303 B**

**Chaired By Prof. Xinge Yu**

11:00-11:30	Keyote Speaker	Mingjun Zhang	Embodied Intelligence Brain-machine Interfaces for Predicting and Preventing Neurological Disorders
11:30-11:50	Invited Speaker	Lin Xu	Multimodal Sensing Platforms for Intelligent Health Monitoring
11:50-12:10	Invited Speaker	Yoonseok Park	Magnetically Actuated Functional Materials for Intelligent Systems
12:10-12:30	Invited Speaker	Jaeyoung Yoo	Intelligent Medical Solution using Multimodal Electronics and Control Networks
12:30-12:45	Oral Presenter	Muhammad Umair Khan	MXene Electrode Self-Rectifying Memristors for Neuromorphic Human-Machine Interfaces and Photosensing

**Chaired By Prof. Yiming Liu**

14:00-14:30	Keyote Speaker	Xinge Yu	To be Announced
14:30-14:50	Invited Speaker	Yu Song	Wearable bioelectronics for machine learning-powered personalized healthcare
14:50-15:10	Invited Speaker	Minglu Zhu	Haptic rendering and tactile communication: from gross to fine teleoperation
15:10-15:25	Oral Presenter	Meng Cui	An Ultrasonic Microrobot Enabling Ultrafast Bidirectional Navigation in Confined Tubular Environments
15:25-15:40	Oral Presenter	Rito Maswanganyi	Impact of Cognitive Alteration on Classification Performance in EEG Brain Computer Interface

**Chaired By Prof. Sang Min Won**

16:00-16:20	Invited Speaker	Yiming Liu	Wearable Olfaction Interface Systems for VR/AR/MR
16:20-16:40	Invited Speaker	Mingyu Sang	Au-Doped Silicon Nanomembrane Temperature Sensors for Multimodal Brain-Machine Interface Applications
16:40-17:00	Invited Speaker	Zhuang Zhang	Multimodal Active-Passive Mechanical Haptics for High-Fidelity Digital-Physical Interaction
17:00-17:20	Invited Speaker	Minjeong Ha	Field-Programmed Anisotropy of Micro/Nanomaterials for Selective Sensing and Adaptive Actuation in Soft Robotics
17:20-17:35	Oral Presenter	Fan Wu	Implantable Olfactory Brain-Computer Interface: From Neural Coding of Odor Recognition to Artificial Olfactory Perception Reconstruction
17:35-17:50	Oral Presenter	Jong Uk Kim	Si Nanomembrane-based Strain Gauge Sensors for Decoupled Bio-signal Acquisition
17:50-18:05	Oral Presenter	Nan Jiang	Biohybrid Organoid-Robot System for Brain-Like Olfaction
18:05-18:20	Oral Presenter	Nurzada Amangeldy	A Data-Driven End-to-End Computational Pipeline for High-Fidelity Sign Language Generation using Inertial Motion Capture

## DAY 2 (4 August, Tuesday)

ROOM: 303 B

### Chaired By Prof. Yiming Liu

9:00-9:30	Keynote Speaker	Sang Min Won	From Flexible Sensor units to Intelligent Bioelectronic Systems
9:30-9:50	Invited Speaker	Minqiang Wang	Wearable Bioelectronics for Personalized Medicine
9:50-10:10	Invited Speaker	Hnin Y. Y. Nyein	Engineering Soft Wearables for Continuous Physiological Monitoring
10:10-10:25	Oral Presenter	Chengbo Tian	Monolithic PVC Gel Active Skin with Structure-Governed Sensing and Actuation for Bidirectional Tactile
10:25-10:40	Oral Presenter	Wai Yie Leong	AI-Based Soft Transducers for Human–Machine Interaction in Industry 5.0

### Chaired By Prof. Sang Min Won

11:00-11:30	Keynote Speaker	Xinming Li	To be Announced
11:30-11:50	Invited Speaker	Cui Ye	Flexible Wearable Electronic Sensors for Proactive Health Management
11:50-12:10	Invited Speaker	You Yu	The rise of multimodal sensing electronics and activating soft interfaces
12:10-12:30	Invited Speaker	Jihye Kim	Soft Bioelectronics for Physiological Fluid Monitoring
12:30-12:45	Oral Presenter	Wei Chen	Toward Performance Breakthrough of Soft Muscle-Like Actuators

## S10. Soft Robotics Technologies

### DAY 4 (6 August, Thursday)

ROOM: 302

### Chaired By Prof. Zhigang Wu and Prof. Yunlong Zi

14:00-14:30	Keynote Speaker	Li Zhang	Magnetic microrobot platform for endoluminal biofilm eradication
14:30-14:50	Invited Speaker	Sukho Song	Bio-inspired Adhesive Fibrillar Structures for Soft Robotic Applications
14:50-15:10	Invited Speaker	Guimin Chen	Multistable Mechanisms and Multistable Robots
15:10-15:30	Invited Speaker	Mengmeng Sun	Modular iontronic microrobots enable on-demand electrostimulation to accelerate intestinal wound healing
15:30-15:50	Invited Speaker	Yongrok Jeong	Flexible Sensors and Actuators Through Rational Design of Microstructures
15:50-16:10	Invited Speaker	Eojin Rho	Bridging Physical AI and Soft Wearable Systems
16:10-16:30	Invited Speaker	Tao Jin	Multimodal Sensors Enabled Soft Robotic Manipulation
16:30-16:45	Oral Presenter	Ziyuan Wang	Wireless Frequency-Selective Actuation for Bidirectional Crawling Soft Robots via Resonant Energy Routing

## S11. Flexible, Stretchable and Wearable Sensors

**DAY 3 (5 August, Wednesday)**

**ROOM: 303 A**

**Chaired By Prof. Jun Wu**

11:00-11:30	Keyote Speaker	Amine Bermak	Enhancing Health and Fitness: Development of Low-Cost Printed Soft Wearable Sensor Systems
11:30-12:00	Keyote Speaker	Qiongfeng Shi	Intelligent Tactile E-Skins: from Multimodal Sensing to Emotion Perception
12:00-12:20	Invited Speaker	Qian Zhang	Harnessing the Shadow-Effect: Smart Sensing for Artificial Intelligence Systems
12:20-12:35	Oral Presenter	Tsung-Ting Hou	Lead-free High Entropy Relaxor Ferroelectric Thin Films

**Chaired By Prof. Qiongfeng Shi**

14:00-14:30	Keyote Speaker	Jianyong Ouyang	Applications of Intrinsically Conductive Polymers as Conformal Electrodes for Bioelectronics and Scanning Electron Microscopy
14:30-14:50	Invited Speaker	Yao Wang	Stretchable thermoelectric devices for wearable power generation and thermal haptic applications
14:50-15:10	Invited Speaker	Hyeok Kim	Energy Efficient Wearable Biomedical Sensors
15:10-15:25	Oral Presenter	Yuhao Hu	Shadow-Effect Enabled Smart Sensing Platform: From Chemical Reaction Monitoring to Non-Contact Human-Machine Interaction
15:25-15:40	Oral Presenter	Seong Ju Lee	Battery-Free NFC-Enabled Multisensing Platform for Wireless Wound Monitoring

**Chaired By Prof. Yang Li**

16:30-17:00	Keyote Speaker	Wenlong Cheng	Gold Nanomaterials for Soft Wearable Bioelectronics
17:00-17:20	Invited Speaker	Bingpu Zhou	Visualization of Vibration in Flexible Systems for Tactile Perception
17:20-17:40	Invited Speaker	Yan Wang	Electronic skins for continuous health monitoring
17:40-17:55	Invited Speaker	Lei Liu	Dual-Modal Flexible Perceptual Devices Based On Molecular Ferroelectric Composites For Synergetic Acoustic-Optical High-Security Encryption
17:55-18:10	Oral Presenter	Jing Bai	A Novel Design of Electronic Skin Sensor System for Contact Pressure Measurement During Colonoscopy
18:10-18:25	Oral Presenter	Yadong Xu	Strain-Resilient Stretchable Bioelectronics

## DAY 4 (6 August, Thursday)

### ROOM: 303 A

#### Chaired By Prof. Jun Wu

9:00-9:30	Keyote Speaker	Kean C. Aw	Soft and Wearable Sensors for Rehabilitation
9:30-9:50	Invited Speaker	Long Liu	Advancing Multimodal Human–Machine Interfaces: From Hybridized Energy Harvesting to Embodied Artificial Intelligence
9:50-10:05	Oral Presenter	Fan Zhang	Theoretical Modeling and Intelligent Sensing Signal Transduction Mechanism of Floating-Gate Organic Electrochemical Transistors
10:05-10:20	Oral Presenter	Jidong Shi	Interfacial Design Of Flexible Electromechanical Sensors For On-Skin Analytical Physiological Monitoring
10:20-10:35	Oral Presenter	Will Skene	Sustainable Wearable Sensors By Integrating Both Renewable And Biodegradable Materials

#### Chaired By Prof. Yang Li

11:00-11:30	Keyote Speaker	Do Hwan Kim	Sustainable Solid-State Gel Electronics for Neuromorphic e-SKIN
11:30-11:50	Invited Speaker	Chaoyu Chen	To be Announced
11:50-12:05	Oral Presenter	Yafei Wang	Triboelectric Nanogenerator-based Stretch Sensor
12:05-12:20	Oral Presenter	Wen-Hsi Lee	Development of GCPW and 77 GHz Microstrip Antenna Array on LCP Flexible Substrate Using Additive Copper Process for Medium-to-Long Range Automotive Radar Applications
12:20-12:35	Oral Presenter	Xiao Zhao	Soft Bioelectronics Embedded With Self-Confined Tetrahedral DNA Circuit For High-Fidelity Chronic Wound Monitoring

#### Chaired By Prof. Qiongfang Shi

14:00-14:30	Keyote Speaker	Inkyu Park	To be Announced
14:30-14:50	Invited Speaker	Zhilu Ye	A Stretchable Battery-Free Wireless Sensing Platform for Sensitive and Multiplexed Wearable Monitoring
14:50-15:10	Invited Speaker	Huimin Hao	A High-Sensitivity Trace Sebum Gas Sensor for Ultra-Early Diagnosis of Parkinson's Disease
15:10-15:25	Oral Presenter	Tong Zheng	Highly-Conductive And Ultra-Robust Elastic Conductors For Stretchable Electronics
15:25-15:40	Oral Presenter	Jiachen Liu	3D-Printed Iontronic Hydrogel via Gradient Structure and Modulus Design for Neuromorphic E-Skin
15:40-15:55	Oral Presenter	Pinzhen Chen	A Multi-Dimensional Force Data Glove For Micro-Gesture Interaction
15:55-16:10	Oral Presenter	Zhao Yao	Flexible Sensors based on Hydrogel for Health Monitoring and Brain-Machine Interface

## S12. Nanogenerators and Self-Powered Sensors

DAY 1 (3 August, Monday)

ROOM: 302

### Chaired By Prof. Zhen Wen

11:00-11:20	Invited Speaker	Han Kim	Virotronics: A Model System for Bioelectricity
11:20-11:40	Invited Speaker	Hanjun Ryu	Triboelectric nanogenerators for self-powered wound management
11:40-12:00	Invited Speaker	Kyungwho Choi	Water Drop Energy Harvesting Nanogenerator and Electronic Tongue
12:00-12:20	Invited Speaker	Xiya Yang	Self-Powered Triboelectric Smart Buoys for Sustainable Marine IoT

### Chaired By Prof. Ju-Hyuck Lee

14:00-14:20	Invited Speaker	Yi Xi	Research on the Enhancement Mechanism of Electrical Properties of Dielectric Materials in Triboelectric Nanogenerators
14:20-14:40	Invited Speaker	Yina Liu	Micro-Triboelectric Sensors for Long-Term Accurate Healthcare Electronics
14:40-15:00	Invited Speaker	Po-Kang Yang	Nanomaterials-Enabled Functional Wearables for Sustainable and Intelligent Healthcare
15:00-15:20	Invited Speaker	Younghoon Lee	Sensing based on ionic materials
15:20-15:35	Oral Presenter	Kaiyu Li	In Vitro Force Sensing Using Triboelectric Nanogenerators for a Swallowing Simulator

### Chaired By Prof. Min-Hsin Yeh

16:00-16:30	Keynote Speaker	Yunlong Zi	Multimodal Tactile Sensing enabled by Triboelectricity
16:30-16:50	Invited Speaker	Minsoo Kim	Dielectric-Polarization Engineering of Nanostructured Polymer Dielectrics for High-Performance Triboelectric Devices
16:50-17:10	Invited Speaker	Fei Liang	Liquid-Solid Interface Energy Harvesting and Self-Powered Sensing
17:10-17:25	Oral Presenter	Joonmin Chae	Ultra-thin Polymer Coating on Micro/Nanofibers for Durable Self-powered TENG Sensors and AI-assisted Pulse Classification under Motion Artifacts
17:25-17:40	Oral Presenter	Alibek Kakim	Self-Powered Triboelectric Tactile Sensor Array with Surface-Engineered PTFE/Ecoflex Composite for Dexterous Robotic Manipulation

## DAY 2 (4 August, Tuesday)

**ROOM: 302**

### Chaired By Prof. Min-Hsin Yeh

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9:00-9:20	Invited Speaker	Chen-Kuei Chung	Enhancing output performance of AI-PDMS triboelectric nanogenerator with micropowders addition for self-powered sensing application
9:20-9:40	Invited Speaker	Dong-Myeong Shin	Contact electrification with ionomers to boost ionic inter-material charge transfer, and its application for a smart e-skin
9:40-10:00	Invited Speaker	Xinkai Xie	Self-Powered Neuromorphic Devices for In-Sensor Perception and Computing
10:00-10:20	Invited Speaker	Jia Lu	An Integrated Electret-Electromagnetic Hybrid Generator for Vibration Sensing and Energy Harvesting
10:20-10:35	Oral Presenter	Youngwook Chung	High-Performance Ultrasound Energy Harvesting via Hermetically Sealed Triboelectric Nanogenerators for Implantable Bioelectronics

### Chaired By Prof. Ju-Hyuck Lee

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11:00-11:20	Invited Speaker	Hong-Joon Yoon	Acoustic Impedance Mismatching to Induce Triboelectricity under Ultrasound
11:20-11:40	Invited Speaker	Xuelian Wei	Multi-Triboelectric Perceptual Systems: Interfacial Mechanisms and Advanced Liquid Identification
11:40-12:00	Invited Speaker	Ying-Chih Lai	Self-powered triboelectric skins
12:00-12:15	Oral Presenter	Shih-Min Huang	A Sustainable and Eco-friendly Biomechanical Sensor Design based on Triboelectrification
12:15-12:30	Oral Presenter	Yu-seop Kim	Triboelectric Artificial Mechanoreceptor Integrated With Mechanical Bifurcation Kresling Origami for Intelligent Human-Robot Interaction

## S13. Energy Harvesting Technology and Intelligent Sensing Applications

**DAY 3 (5 August, Wednesday)**

**ROOM: 302**

**Chaired By Prof. Shengxi Zhou**

11:00-11:30	Keynote Speaker	Hong Liu	Wireless Localized Electrical Stimulation via External Physical Fields: Enhancing Stem Cell-Mediated Neurodegenerative Disease Therapy
11:30-11:50	Invited Speaker	Shitong Fang	Magnet-Mechanical-Electric Energy Harvesting and Self-Sensing Mechanism and Integration Method for the Power Internet of Things
11:50-12:10	Invited Speaker	Jiawen Xu	Piezoelectric vibration energy harvester powered wireless sensing and intelligent health monitoring
12:10-12:30	Invited Speaker	Haigang Tian	Enhanced performance of piezoelectric energy harvester incorporating surface protrusions

**Chaired By Prof. Junlei Wang**

14:00-14:20	Invited Speaker	Ruqi Sun	Self-powered electromagnetic transducers for intelligent maritime transportation
14:20-14:40	Invited Speaker	Zhihui Lai	A magnetic rolling pendulum-based multi-stable electromagnetic generator with dual-path transition mechanism
14:40-15:00	Invited Speaker	Takashi Nakajima	Self-Powered Sensing Platforms Using Piezoelectric Polymers for Disaster Prevention and Infrastructure Monitoring
15:00-15:20	Invited Speaker	Ying Hong	Three-dimensional Structured Piezoelectric Ceramics and Their Applications in Sensing and Energy Harvesting
15:20-15:40	Invited Speaker	Chaoyang Zhao	Design and Modeling of Triboelectric Energy Harvesters from Dynamic Perspective

**Chaired By Prof. Zhihui Lai**

16:30-16:50	Invited Speaker	Bin Bao	Broadband Energy Harvesting via Nonlinear Magnetic Pendulums
16:50-17:10	Invited Speaker	Hiroko Yamada	Bacterial biofilm formation suitable for microbial fuel cells using waste cutting fluids
17:10-17:30	Invited Speaker	Jun Dong	Total-Current Nanogenerators: From Liquid-Solid Interface Mechanism to Self-Powered Intelligent Sensing
17:30-17:50	Invited Speaker	Zhiyuan Li	Dynamic Evolution to Energy Conversion: Mechanisms in Nonlinear Flow-Induced Vibration Energy Harvesting
17:50-18:05	Oral Presenter	Xukun Su	Non-optimal energy conversion due to phase difference in vibrational electromagnetic energy harvesters
18:05-18:20	Oral Presenter	Jaehyun Han	Corning Ribbon Ceramic: A Roll-to-Roll, Continuous Sintering Platform for Ultrathin Ceramic-Based Energy Harvesting and Sensor Applications

## DAY 4 (6 August, Thursday)

**ROOM: 302**

### Chaired By Prof. Junlei Wang

9:00-9:30	Keynote Speaker	Shengxi Zhou	Wearable Electromagnetic and Piezoelectric Energy Harvesters Driven by Low-Frequency Human Motion
9:30-9:50	Invited Speaker	Yang Kuang	A Magnetic Field Energy Harvesting Approach for Traction Return Currents in High-Speed Railway
9:50-10:10	Invited Speaker	Haitao Xu	Weak signal enhancement based on stochastic resonance of nonlinear system
10:10-10:30	Invited Speaker	Yilong Wang	A Low-Profile Quasi-Zero-Stiffness Structural Design for Simultaneous Vibration Isolation and Piezoelectric Energy Harvesting

### Chaired By Prof. Zhihui Lai

11:00-11:20	Invited Speaker	Shimpei Ono	Electric Double-Layer Electrets Based on Polymerized Ionic Liquids
11:20-11:40	Invited Speaker	Zehao Hou	Energy harvesting backpack: mechanism design and human-machine coupling
11:40-12:00	Invited Speaker	Wan Sun	Wind velocity driven mode transition based piezoelectric energy harvesting utilizing fork-shaped configuration
12:00-12:20	Invited Speaker	Cailiang Zhang	To be Announced
12:20-12:35	Oral Presenter	Yunlong Xu	Biomimetic Self-Powered Sensing for Enhanced Motion Perception

## S14. Sensing Technology for Natural and Harsh Environment

DAY 4 (6 August, Thursday)

ROOM: 301 A

Chaired By Prof. Ryutaro Maeda

9:00-9:30	Keynote Speaker	Toshihiro Itoh	Wireless Passive Sensing for Cryogenic Structural Health Monitoring
9:30-9:50	Invited Speaker	Tadao Matsunaga	Microfabricated Optical Fiber Sensors for Multi-Directional Light Monitoring in Smart Agriculture
9:50-10:10	Invited Speaker	Michitaka Yamamoto	Recent Studies on Wearable Devices for Human and Animal Monitoring
10:10-10:30	Invited Speaker	Noriko Tsuruoka	Minimally Invasive Monitoring of Plant Biomolecules Using a Microperfusion Needle for Environmental Sensing

Chaired By Prof. Toshihiro Itoh

11:00-11:20	Invited Speaker	Hirofumi Nogami	Non-wearable Pulse Rate Measurement System Using Laser Doppler Flowmetry and Load Sensor for masked palm civet ( <i>Parguma larvata</i> ) during husbandry training
11:20-11:40	Invited Speaker	Guozhi Zhang	Reliability Analysis and High sensitivity Regulation of Transformer-embedded Acoustic-magnetic Multimodal Sensors
11:40-12:00	Invited Speaker	Tetsuo Sasaki	Development of High-Resolution Terahertz Chemical Sensing Technology
12:00-12:15	Oral Presenter	Rei Yamaguchi	Development and Analysis of a Bird Repellent System Using Light and a Horizontal Platform Mechanism
12:15-12:30	Oral Presenter	Qiyuan Zhang	An Underwater Acoustic Wave Cross-medium Detection Scheme with improved sinusoidal phase modulation interferometer and signal demodulation scheme
12:30-12:45	Oral Presenter	Bruce Mellado	Transfer Learning-Based Spatiotemporal PM2.5 Forecasting Using Cost-Effective Sensor Networks: Cross-Region Validation from South Africa to the UK

Chaired By Prof. Xueyong Wei

14:00-14:20	Invited Speaker	Xin Liu	Performance Improvement of Optical Fiber Sensing based on Random Number Code
14:20-14:40	Invited Speaker	Naoki Shiraishi	Development of Ionic Liquid-Gated Graphene FET Sensors for monitoring Nitrogen Cycle in agricultural field
14:40-15:00	Invited Speaker	Jungwook Choi	Design and Manufacturing Strategies for Nanomaterial-Based Sensors in Electric Vehicle Battery Monitoring
15:00-15:15	Oral Presenter	Xueju Wang	Soft Ocean-Sensing Platform for Real-Time Underwater Monitoring and Acoustic Communication
15:15-15:30	Oral Presenter	Yidan Zhang	History-Guided Temporal Conditional Diffusion for LiDAR Semantic Scene Completion
15:30-15:45	Oral Presenter	Futo Shimoda	Investigation of Polybutadiene Coated QCM for Volatile Fatty Acid Sensing Toward Long-Term In Situ Rumen Monitoring
15:45-16:00	Oral Presenter	Yuhang Qiao	Research on Mechanism and Method of Oscillating Soft Contact Triboelectric Current Sensin

## S15. IoT Sensors and System Integration

DAY 1 (3 August, Monday)

ROOM: 301 B

### Chaired By Prof. Zaifa Zhou

11:00-11:30	Keynote Speaker	Joshua Yang	Integration of Efficient Sensing, Encoding, and Learning via Memristive Dynamics
11:30-12:00	Keynote Speaker	Xiaohong Wang	Key Technologies in Self-Powered, Fully Integrated Sensor Chips
12:00-12:20	Invited Speaker	Lu Wang	Multisource Energy Harvesting and Wireless Sensing System in Power Grid
12:20-12:40	Invited Speaker	Sungtek Kahng	ITRC(In-Situ Testing of Radio Communication) on Wearable IoT Devices Embedding Metamaterial RF Sensors

### Chaired By Prof. Huicong Liu

14:00-14:30	Keynote Speaker	Fei Wang	Energy Harvesting from Ultra-Low Frequency Vibrations: From Resonant to Rotational Conversion for IoT Self-Powered Sensing
14:30-14:50	Invited Speaker	Lei Dong	Enhancing sensitivity of LC sensors by nonlinear Parity-Time symmetry
14:50-15:05	Oral Presenter	Ke Li	Biomimetic Olfactory System Based on Temperature-Modulated Sensor Arrays for Detecting Trace Volatile Semiochemicals of Plants
15:05-15:20	Oral Presenter	Ziyue Kong	A Flexible Wearable System with Quantized On-Device Inference for Energy-Efficient Daily Activity Monitoring
15:20-15:35	Oral Presenter	Yuki Sakurai	Thin PVDF Floor Sensor for Gait Detection With Crosstalk Suppression Using Linear Programming

### Chaired By Prof. Zaifa Zhou

16:00-16:30	Keynote Speaker	Riyanarto Sarno	IoT for Optimizing Palm Oil Mill Effluent Bioremediation using Microalgae
16:30-16:50	Invited Speaker	Quan Wen	To be Announced
16:50-17:05	Oral Presenter	Yunlong Bai	Label-Free Human Activity Pattern Discovery with an In-Sensor Neuromorphic MEMS Accelerometer
17:05-17:20	Oral Presenter	Uzair Bhatti	A Generative AI Augmented Agentic AIOT Framework for Autonomous Predictive Maintenance of Petrochemical Rotating Equipment
17:20-17:35	Oral Presenter	Xin Li	ViPSN 2.0: A Reconfigurable Battery-free IoT Platform for Vibration Energy Harvesting

## S16. Remote Sensing and Its Applications

DAY 4 (6 August, Thursday)

ROOM: 301 B

Chaired By Prof. Wenjiang Huang

9:00-9:30	Keyote Speaker	Shimshon Belkin	Remote sensing of buried landmines by microbial bioreporters: a decade-long quest
9:30-9:50	Invited Speaker	Weihong Qin	The application of remote sensing in Low-altitude economic industries
9:50-10:05	Oral Presenter	Xingchen Liu	Robust Building Facade Segmentation via Depth-Guided Cross-modal Consistency in Complex Urban Environments
10:05-10:20	Oral Presenter	Liming Fan	Magnetic Anomaly Detection Using a Generative Adversarial Network Training on Magnetic Noise
10:20-10:35	Oral Presenter	Xiaohan Bai	Enhanced Small Target Detection in UAV Remote Sensing Imagery via Attention-Guided RT-DETR

Chaired By Prof. Wenjiang Huang

11:00-11:30	Keyote Speaker	Wenjiang Huang	Remote Sensing & AI Application for vegetation growth and pest management
11:30-11:45	Oral Presenter	Shuo Gao	Shadow-Aware Gaussian Splatting for Multi-Date Satellite Image-Based 3D Reconstruction
11:45-12:00	Oral Presenter	Florian Thürkow	AI-Based Detection of European Hamster Burrows from UAS Imagery
12:00-12:15	Oral Presenter	Zemeng Xu	LiDAR-Guided 3D Gaussian Splatting for Robust Large-Scale Remote Sensing Reconstruction
12:15-12:30	Oral Presenter	Yaokui Cui	AI and Satellite-Ground Synergy Approach to Improve Terrestrial Evapotranspiration Estimation Accuracy
12:30-12:45	Oral Presenter	Alireza Farahmand	Machine Learning-Based High-Resolution Mapping of River Habitat and Geomorphic Features with UAVs for Improved Hydraulic Modeling
12:45-13:00	Oral Presenter	Haoran Gao	LOD-Based Gaussian Splatting for Detail-Preserving and Efficient Orthophoto Generation
13:00-13:15	Oral Presenter	Rana Waqar Aslam	Multi-Sensor Remote Sensing Integration for Wetland Degradation Assessment in Semi-Arid Ecosystems: A SAR-Optical Fusion Framework for Environmental Monitoring

## S17. Smart Cities Sensing Technologies

**DAY 2 (4 August, Tuesday)**

**ROOM: 301 B**

**Chaired By Prof. Sang-Seok Lee**

9:00-9:30	Keynote Speaker	Xuming Zhang	AI-Empowered Biomimetic Compound Eyes for Panoramic Imaging Sensors
9:30-9:50	Invited Speaker	Donghwi Cho	3D Nanoarchitected Chalcogenide Semiconductor Gas Sensors for Low-Power, Room-Temperature Air Quality Monitoring in Smart Cities
9:50-10:10	Invited Speaker	Jianxiong Zhu	Data-Driven Physics-Informed Fusion for Washing Machines Clothing Material AI Sensing in Smart Home
10:10-10:25	Oral Presenter	Xintai Zhang	Boundary-Aware Point Cloud Super-Resolution for Low-Beam LiDAR in Autonomous Driving

**Chaired By Prof. Jianxiong Zhu and Prof. Xingyi Zhu**

11:00-11:30	Keynote Speaker	Sang-Seok Lee	Restroom Dirtiness Prediction System Based on AI and Sensing Technology
11:30-11:50	Invited Speaker	Xiaohong Zhou	Structural health monitoring of drainage pipes based on distributed fiber optic vibration sensing system
11:50-12:10	Invited Speaker	Yi Chiu	Smart Sensing via Reservoir Computing in Nonlinear MEMS Devices
12:10-12:25	Oral Presenter	Elmy Nahida Othman	AI-Driven Sensor Fusion and Spatiotemporal Tracking for Proactive Headways Management in Public Transit
12:25-12:40	Oral Presenter	Jixu Zhou	Intelligent Control Strategy for Energy-Efficient Driving of Metro Trains Under Diverse and Complex Line Conditions

## S18. Cross Data for Sensing Applications

**DAY 4 (6 August, Thursday)**

**ROOM: 301 B**

**Chaired By Prof. Lei Shu**

14:00-14:30	Keynote Speaker	Lei Shu	Dataset of Gold and Silver Artifacts from the Mausoleum of Prince Liang Zhuangwang Based on a LoRA Diffusion Model for Feature-Enhanced Generation
14:30-14:50	Invited Speaker	Qing Bai	Image Processing-Empowered 110-km BOTDR Distributed Temperature Sensor
14:50-15:10	Invited Speaker	Chengcheng Chen	Dataset of Laser-Targeted Light Formulas for Enhancing Soybean Seed Vitality
15:10-15:25	Oral Presenter	Minhee Jun	State-Centric Sensing: Toward a Representation-Oriented Paradigm for AI-Enabled Sensor Systems
15:25-15:40	Oral Presenter	Pengwei Guo	Long Range Distributed Acoustic Sensing Based on Butterfly-Optimized Poly-Phase Constant-Modulus Coding
15:40-15:55	Oral Presenter	Weidong Bai	Phase-Modulated Continuous Wave Distributed Fiber Acoustic Sensing Technology
15:55-16:10	Oral Presenter	Wei Zan	Spectral-Reshaped BOTDR for Brillouin Frequency Shift Accuracy Enhancement
16:10-16:25	Oral Presenter	Yelei Chen	To be Announced

## S19. MEMS/NEMS Sensors

DAY 1 (3 August, Monday)

ROOM: Samda A

### Chaired By Prof. Bin Yang

11:00-11:30	Keyote Speaker	Jian Chen	High-Throughput Single-Cell Analysis and Quantitative Flow Cytometry
11:30-11:50	Invited Speaker	Yanling Liu	Nanomesh Electrodes for Basement Membrane Mimicking and Cell Monitoring
11:50-12:10	Invited Speaker	Mingzhi Yu	High-Performance MEMS Piezoresistive Accelerometer with a Purely Axial Deformation Piezoresistive Beam
12:10-12:25	Oral Presenter	Zheng Zhang	Real-Time Sensing and Feedback Synchronization in Duffing MEMS Resonators for Chaos-based Encryption
12:25-12:40	Oral Presenter	Jie Gu	Temperature Drift Suppression of Differential MEMS Resonant Accelerometers Utilizing a LSTM Model With Multi-Scale EMA Features

### Chaired By Prof. Jian Chen

14:00-14:30	Keyote Speaker	Bin Yang	Flexible Piezoelectric MEMS sensors and microrobotics based on high performance PZT film
14:30-14:50	Invited Speaker	Wei-Mong Tsang	Analytical Electromechanical Model of Curved Piezoelectric Heterogeneous Bimorph Beams
14:50-15:10	Invited Speaker	Huawei Liu	To be Announced
15:10-15:25	Oral Presenter	Ye Tian	Acousto-Dielectric Modulation of Barrier Height: Harnessing Ultrasonic Waves in Quantum Tunneling
15:25-15:40	Oral Presenter	Hao Jia	MEMS Sensors for Differential Thermal Analysis

### Chaired By Prof. Nan Wang

16:00-16:20	Invited Speaker	Xining Zang	Orthopedic Micro Electromechanical Systemes(Ortho-MEMS)
16:20-16:40	Invited Speaker	Zhikang Li	Key Technologies and Applications of MEMS Ultrasonic Transducers
16:40-17:00	Invited Speaker	Zhiran Yi	Piezoelectric MEMS cooling for AI Chip
17:00-17:20	Invited Speaker	Zhiqiang Mu	Single Crystal Aluminum Nitride Resonators for 6G Applications
17:20-17:40	Invited Speaker	Tong Zhou	To be Announced
17:40-17:55	Oral Presenter	Dongze Lv	A Dual-Electrode PMUT Micro-Gesture Recognition System Using a Hybrid CNN-MF-LSTM Network

## DAY 2 (4 August, Tuesday)

ROOM: Samda A

### Chaired By Prof. Nan Wang

9:00-9:30	Keynote Speaker	Yipeng Lu	AI-Assisted Design and Application of Piezoelectric MEMS Acoustic Transducers for Next-Generation Sensing
9:30-9:50	Invited Speaker	Xudong Zou	MEMS Resonator based High Performance Inertial Sensors
9:50-10:10	Invited Speaker	Linxi Dong	A MEMS Self-Calibrating Tactile Sensor Based on Precision Force Source Drive Technology
10:10-10:25	Oral Presenter	Qingbo Chu	Robust Dynamic Identification of MEMS Accelerometer Parameters Based Model Reference Adaptive Algorithm
10:25-10:40	Oral Presenter	Haoqi Lyu	An All-Thin-Film AlScN/FeGaB Magnetolectric MEMS/NEMS Resonator for Multimode Weak Magnetic-Field Detection

### Chaired By Prof. Jian Chen

11:00-11:30	Keynote Speaker	Nan Wang	To be Announced
11:30-11:50	Invited Speaker	Liuqing Zhuang	Bioelectronic Nose and Nose-Machine Interface for Olfactory Perception Reconstruction
11:50-12:10	Invited Speaker	Xingzhao Wang	MEMS-Based Long-Range Intravascular Neural Electrode with Functional Column-Oriented Architecture
12:10-12:25	Oral Presenter	Kunfeng Wang	Noise characteristics and optimization of MEMS resonant accelerometer based on DPLL

## S20. Wearable and Flexible Ultrasound Electronics

### DAY 2 (4 August, Tuesday)

ROOM: 303 A

### Chaired By Prof. Lin Zhang

9:00-9:30	Keynote Speaker	Hyunjoo Jenny Lee	Flexible Ultrasound Transducers for Therapeutic Ultrasound
9:30-10:00	Keynote Speaker	Hongjie Hu	Wearable Ultrasound Imaging Technologies
10:00-10:20	Invited Speaker	Yiyuan Yang	Wearable Ultrasonic Patch for Intelligent Trans-Biofilm Drug Delivery in Chronic Wound Treatment
10:20-10:40	Invited Speaker	Chang Peng	Flexible Wearable Ultrasound Systems: From Device Innovation to Medical Applications

### Chaired By Prof. Hongjie Hu

11:00-11:30	Keynote Speaker	Lin Zhang	Conformable Ultrasound Electronics in Healthcare: From Design Strategies to AI analysis
11:30-11:50	Invited Speaker	He Xu	Ultrasound-Activated Piezoelectric Biointerfaces for Deep-Tissue Regeneration
11:50-12:10	Invited Speaker	Jiaqi Liu	Merging Bio-integrated Materials and Devices with Ultrasound
12:10-12:25	Oral Presenter	Syed Turab Haider Zaidi	Acoustic Layer Engineering and Preclinical Validation of a Flexible PMN-PT Ultrasonic Array for Continuous Wearable Blood Pressure Monitoring

## S21. Optical MEMS and Photonic NEMS &

## S22. Fiber Optics for Biosensing, Environmental Sensing, and Wearable Applications

### DAY 2 (4 August, Tuesday)

#### ROOM: 301 A

##### Chaired By Prof. Yu-Cheng Chen

11:00-11:30	Keynote Speaker	Kohji Mitsubayashi	Non-invasive biofluorometric gas-sensing & -imaging of human volatiles from blood vessels
11:30-11:50	Invited Speaker	Yu Wang	Research on optical pulse coding fading-free distributed optical fiber acoustic sensor
11:50-12:05	Oral Presenter	Jonathan Christopher	Growth Stimulation in Tomato Using Low-Intensity Near-Infrared Light: Noninvasive Evaluation by Biospeckle Optical Coherence Tomography
12:05-12:20	Oral Presenter	Siddharthan Kathiravan	Laser Biospeckles in Quality Evaluation of Cheese and Fermented Milk Products
12:20-12:35	Oral Presenter	Zhejun Xu	Influence of EDTA Coverage Density on Optical Fiber Sensor for Heavy Metal Ion Detection

### DAY 3 (5 August, Wednesday)

#### ROOM: 300

##### Chaired By Prof. Guangya Zhou

14:00-14:30	Keynote Speaker	Huikai Xie	A MEMS Micromirror-based Fourier Transform NIR Spectrometer and Its Applications
14:30-14:50	Invited Speaker	Feng Tian	Dynamic Control of Spontaneous Emission in a Silicon Hybrid Optomechanical cQED System
14:50-15:10	Invited Speaker	Youmin Wang	MEMS scanning indirect time-of-flight (iTOF) eye tracking
15:10-15:30	Invited Speaker	Tong Lin	Chip-scale spectrometers empowered by advanced algorithms
15:30-15:45	Oral Presenter	Ting-Yu Liao	Design and Fabrication of a 3D-Printed Waveguide Bend Module for Coupling a VCSEL to a Fiber Array

##### Chaired By Prof. Hongbin Yu

16:30-17:00	Keynote Speaker	Guangya Zhou	Optical MEMS Based Programmable Light Spectrum Generator and Its Applications in Spectroscopic Sensors
17:00-17:20	Invited Speaker	Peng Shi	Dynamically Tunable Bound States in Continuum
17:20-17:40	Invited Speaker	Yiming Ma	High-Resolution and Power-Efficient MEMS Computational Spectrometers on Silicon Photonic Chips
17:40-17:55	Oral Presenter	Zhiting Ye	Optimizing the Quantum Well Structure of AlGaIn-Based Deep-UV LEDs to Improve Internal Quantum Efficiency
17:55-18:10	Oral Presenter	Jeongeun Mo	Interface-Engineered VO <sub>2</sub> (B)/V <sub>2</sub> O <sub>5</sub> Heterostructures for Uncooled Broadband Photodetection from Visible to FIR
18:10-18:25	Oral Presenter	Hao Hu	An Ultra-High Precision 3D Measurement Sensor Based on Linear Spectral Confocal Technology
18:25-18:40	Oral Presenter	Yiming Li	Structural Optimization of MEMS Scanning Mirrors Based on Genetic Algorithms

## S23. Si Photonics for Sensing and Edge Computing

DAY 2 (4 August, Tuesday)

ROOM: 300

Chaired By Prof. Yunfeng Xiao

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9:00-9:30	Keyote Speaker	Jin Liu	High-performance sources of multidimensionally engineered quantum light based on monolithic microcavity-metalens interfaces
9:30-9:50	Invited Speaker	Shilun Feng	A Compact Fluorescence Biosensing System Based on a Silicon Nitride Photonic Chip for Point-of-Care Testing
9:50-10:10	Invited Speaker	Yi Zou	Coupling manipulation enabled high-performance devices
10:00-10:30	Invited Speaker	Daquan Yang	Optical Microcavity-Enhanced Intelligent Sensing Technology

Chaired By Prof. Shilun Feng

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11:00-11:30	Keyote Speaker	Yunfeng Xiao	Microcavity-enhanced optical sensing
11:30-11:50	Invited Speaker	Shuijing Tang	Single-cell photoacoustic mechanical spectroscopy and microscopy using optical microcavities
11:50-12:10	Invited Speaker	Binbin Wang	All-solid-state beam steering chips based on thin-film lithium niobate
12:10-12:25	Oral Presenter	Yong-Zun Wang	Optimization and Numerical Analysis of a High-Sensitivity Acetone Gas Sensor Based on Graphene Oxide-Enhanced Slot Microring Resonators

## S24. 2D Material-Enabled Nanosensors, Neuromorphic Computing and Applications

DAY 1 (3 August, Monday)

ROOM: 300

Chaired By Prof. Wu Shi

11:00-11:30	Keynote Speaker	Zhirun Hu	Printable 2D Material Ink Architectures for Battery-Free Wireless Nanosensor Platforms on Flexible Substrates
11:30-11:50	Invited Speaker	Wu Shi	Integrating Ferroelectricity with 2D Materials for Neuromorphic Electronics and Advanced Optoelectronics
11:50-12:10	Invited Speaker	Cheng Zhang	Interfacial engineering-enabled giant bulk photovoltaic effect in van der Waals heterostructures
12:10-12:30	Invited Speaker	Xutao Zhang	To be Announced
12:30-12:45	Oral Presenter	Jinkun He	Building a Data-Driven Transfer Agent for 2D van der Waals Heterostructures

Chaired By Prof. Wu Shi

14:00-14:20	Invited Speaker	Kai Liu	Doping Engineering of 2D Materials for High-Efficiency Neuromorphic Devices
14:20-14:40	Invited Speaker	Lin Wang	Intelligent Iodide-Based Two-Dimensional Semiconductors for Next-Generation Optoelectronics
14:40-15:00	Invited Speaker	Xiang Yuan	Giant Circular Dichroism from Particle-Hole Asymmetry in Magnetic Weyl Semimetal MnBi <sub>2</sub> Te <sub>4</sub>
15:00-15:15	Oral Presenter	Guangsheng Jiang	Planar Optical Antenna-Driven Brightness Enhancement of Interface-Confined Hexagonal Boron Nitride Single-Photon Arrays for Scalable Room-Temperature Quantum Chips
15:15-15:30	Oral Presenter	Hyeon Yeong Lee	Wafer-Scale Integration of Suspended Two-Dimensional Molybdenum Disulfide Membranes for Piezoelectric Acoustic Sensors

Chaired By Prof. Wu Shi

16:00-16:20	Invited Speaker	Yu Ye	Interface Coupling between WSe <sub>2</sub> Excitons and Flat-Band Mott Insulator Nb <sub>3</sub> Cl <sub>8</sub> : Towards 2D Material-Enabled Nanosensing of Strongly Correlated Phenomena
16:20-16:40	Invited Speaker	Hu Long	To be Announced
16:40-17:00	Invited Speaker	Hai Huang	Two-Dimensional Thiophosphate Semiconductors for In-Sensor computing Photodetectors
17:00-17:20	Invited Speaker	Xiaoxi Li	An AI-driven robotic system for two-dimensional hetero-assemblies
17:20-17:35	Oral Presenter	Guangliang Li	Template Quality Dependent Conversion Synthesis of Boron Nitride Coated Graphene Hybrid Aerogels for Ultrasensitive and Selective Ammonia Sensing
17:35-17:50	Oral Presenter	Baoning Wang	2D Metal-Organic Framework-Powered Metamaterial-Free Terahertz Sensing Platform for Pesticide Recognition

## S25. Nanomaterials and Gas/Chemical Sensors

**DAY 3 (5 August, Wednesday)**

**ROOM: Samda A**

### Chaired By Prof. Sang Sub Kim

11:00-11:30	Keyote Speaker	Alexander Star	Carbon Nanotube Biosensors for Monitoring Vaccine-Induced Immunity and Detecting Opioid Exposure
11:30-11:50	Invited Speaker	Seon-Jin Choi	Smart Chemical Sensors: From Molecular Receptor Design to AI-driven Sensing Data Analysis
11:50-12:10	Invited Speaker	Yanbai Shen	From Interfacial Sensitization to Array-Level Recognition: Selective H <sub>2</sub> /CH <sub>4</sub> Detection Using Noble-Metal-Loaded SnO <sub>2</sub> Nanospheres
12:10-12:25	Oral Presenter	Hai Xiao	Multi-laser Fabrication of Nanocrystalline Nanonetwork SnO <sub>2</sub> Gas Sensors
12:25-12:40	Oral Presenter	Abdullah Aljaafari	Micro Gold Electrode-Integrated SnO <sub>2</sub> Nanowires for Highly Selective Sensor

### Chaired By Prof. Zhen Yuan

14:00-14:20	Invited Speaker	Jeong Min Baik	Sensing the Future: Innovations in Gas and Self-Powered Sensors
14:20-14:40	Invited Speaker	Incheol Cho	Ultra-Low-Power Intelligent Gas Sensors for Mobile and IoT Applications
14:40-15:00	Invited Speaker	Young-Moo Jo	Light-Activated Gas Sensing with Electrically Conductive Metal–Organic Frameworks
15:00-15:20	Invited Speaker	Young-Seok Shim	Advanced Nanoarchitectures for Next-Generation Gas Sensor: Photo-activated Electronic Detection and Colorimetric Visual Monitoring
15:20-15:35	Oral Presenter	Yanyan Li	Mechanism-informed Design Framework of Nanocrystalline Semiconductor Chemiresistors Enabling Room Temperature, ppb-Level, Dual Redox Gas Sensing

### Chaired By Prof. Sang Sub Kim

16:30-16:50	Invited Speaker	Dong-Ha Kim	Development of chemical sensor arrays with functional composite nanomaterials
16:50-17:10	Invited Speaker	Yeon Tae Yu	Study on improving the selectivity of semiconductor gas sensors using metal@MOS core-shell structured nanoparticles
17:10-17:30	Invited Speaker	Qiuni Zhao	Research on Hazardous Gas Sensing for Mining and Metallurgical Safety Applications
17:30-17:45	Oral Presenter	Hyoungwon Park	Selective Sensing Behavior of Self-Assembled Monolayer-Modified SnO <sub>2</sub> Nanowire Gas Sensors Modulated by Molecular Structure and Grafting Density
17:45-18:00	Oral Presenter	Sareh Sadat Moshirian-Farahi	Integrated On-Chip Chemiresistive Sensor Array for Ultrasensitive Multi-Gas Detection
18:00-18:15	Oral Presenter	Chengcheng Li	CoMn-PBA with strong Jahn–Teller effect for rapid and Intelligent Identification of respiratory viruses
18:15-18:30	Oral Presenter	Sikai Zhao	Activating Lattice Oxygen via Ni Doping in SnO <sub>2</sub> for High-Performance Hydrogen Sensing

## DAY 4 (6 August, Thursday)

### ROOM: Samda A

#### Chaired By Prof. Zhen Yuan

9:00-9:30	Keyote Speaker	Sang Sub Kim	Advanced Surface Modification Strategies for High-Performance Chemiresistive Gas Sensors
9:30-9:50	Invited Speaker	Joan Daniel Prades	Integrated light for distributed gas sensing (and metrology)
9:50-10:10	Invited Speaker	Fang Xu	A Flexible and Porous Polystyrene-block-poly(acrylic acid) Film for Selective and Room-Temperature-operated Ammonia Detection in Health and Food Monitoring
10:10-10:25	Oral Presenter	Xiang Li	Smart Sieving Meets Confined Catalysis: Hydroxy-Tuned Core-Shell Covalent Organic Frameworks with Type-II Heterojunction for Efficient Antibiotic Removal

#### Chaired By Prof. Zhen Yuan

11:00-11:20	Invited Speaker	Seong-Yong Jeong	Bilayer Oxide Semiconductors with Catalytic Overlayers for High-Performance Gas Sensors
11:20-11:40	Invited Speaker	Ji-Wook Yoon	Humidity-Enhanced NO <sub>2</sub> Sensing in WO <sub>3</sub> via Zn Doping and Visible-Light Activation: Mechanistic Elucidation and Application to Breath Analysis
11:40-12:00	Invited Speaker	Daejong Yang	Chemical detection in water via capillary and thermo-fluidic flow using a metal oxide gas sensor
12:00-12:15	Oral Presenter	Lei Yuan	Portable Olfactory Visual Colorimetric Sensing Equipment for Rapid Identification and Detection of Key Environmental Factors in Laying Hen Farming
12:15-12:30	Oral Presenter	Jinlong Ma	In Situ Laser-Induced Synthesis of 3D Highly Porous MoO <sub>2</sub> Network on Microheater Platform for Low Power CO Detection

#### Chaired By Prof. Sang Sub Kim

14:00-14:20	Invited Speaker	Hyungtak Seo	Nano-Hybrid Materials-Based Multi-modal Sensing of Hydrogen Detection
14:20-14:40	Invited Speaker	Sun-Woo Choi	Strategy for humidity-immune oxide nanofiber gas sensors using rare-earth-elements doping
14:40-15:00	Invited Speaker	Lei Zhu	Design of electrospun one-dimensional sensitive materials and research on environmental/new energy safety gas detection
15:00-15:20	Invited Speaker	Heedae Kim	Enhanced Hydrogen Sensing via Synergistic Pd/ZnO Catalytic Structures on Mesoporous Silicon
15:20-15:35	Oral Presenter	Rong-Yao Wang	Plasmonic Nanosensors for Detecting Molecular Chirality Recognition at Nanoscale Interfaces
15:35-15:50	Oral Presenter	Lan Yang	Rapid Identification and Quantitative Detection of Volatile Aldehydes Using a Metal Organic Framework Based Colorimetric Array Sensor
15:50-16:05	Oral Presenter	Tian-tian Song	Synergistic Interface Topological Engineering Enables Ultrasensitive and Stable Detection of Allergen-specific Immunoglobulin E in Human Serum
16:05-16:20	Oral Presenter	Jie Xu	Size-Dependent Redox Driving Force Regulation in CdS Quantum Dots Enables Highly Selective Photocatalytic Conversion of Lactic Acid to Alanine

## S26. Smart Gas Sensors and Artificial Olfactory

DAY 2 (4 August, Tuesday)

ROOM: Samda B

Chaired By Prof. Xuhui Sun

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11:00-11:30	Keynote Speaker	Tie Wang	Artificial Olfactory Intelligent Sensors Based on Nanoassembly
11:30-11:50	Invited Speaker	Liang Feng	Atomic-Scale Built-in Electric Fields: A New Paradigm for Room-Temperature Gas Sensing
11:50-12:10	Invited Speaker	Xiaogan Li	Study of Pt-SnSe <sub>2</sub> /In <sub>2</sub> O <sub>3</sub> and SnSe <sub>2</sub> /In <sub>2</sub> S <sub>3</sub> microflower heterojunction based sensors for efficient ppb-level room-temperature NO <sub>2</sub> sensing
12:10-12:25	Oral Presenter	Qiaoyuan Yang	An In-Situ Microcantilever-FTIR Platform for Optimizing COF Gas-Sensing Materials
12:25-12:40	Oral Presenter	Angdi Li	A Copper Oxide-Based MEMS Sensor and CNN-LSTM Network for Early Detection of Electrolyte VOCs in Lithium-Ion Batteries

Chaired By Prof. Liang Feng and Prof. Zhi Yang

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14:00-14:30	Keynote Speaker	Fangmeng Liu	N/A
14:30-15:00	Keynote Speaker	Xuhui Sun	Artificial Olfaction Platform and Applications Based on MEMS Gas Sensor Array
15:00-15:20	Invited Speaker	Rui You	Design and Applications of Advanced MEMS Sensors Based on Typical Micro/Nano Structures
15:20-15:35	Oral Presenter	Xiaoyu Liu	Decoding Volatile Metabolic Phenotype Enables Ultra-Early Non-Invasive Embryonic Sexing
15:35-15:50	Oral Presenter	Wenhui Geng	Bio-inspired Olfactory Sensors Based on Sub-10nm Gold Island Films for Ultra-sensitive VOC Detection
15:50-16:05	Oral Presenter	Ming Li	Microcalorimetric Principle-Based High-Performance MEMS Hydrogen Sensors
16:05-16:20	Oral Presenter	Dan Han	Modulation of Oxygen Species Induces Selectivity Switching of GaN-Based Sensors for Multi-Gas Detection in Non-Invasive Exhaled Breath Diagnosis



The 3rd International Conference on AI Sensors and Transducers

## Posters

DAY 2 - 4 August (Tuesday) | 14:00 - 15:30

DAY 3 - 5 August (Wednesday) | 15:30-16:30

The detailed arrangement will be announce soon.

