AIS 2026 Abridged Program

2 August Sunday	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday	7 August Friday
	Registration	Registration	Registration	Registration	
	Opening Ceremony **Plenary Speech 1** **Plenary Speech 2**	**Symposium**	**Plenary Speech 3** **Plenary Speech 4**	**Symposium**	
		Coffee Break			
	Symposium	**Symposium**	**Symposium**	**Symposium**	Free Activities
		Lunch Break			
Registration	**Symposium**	**Poster Session A**	**Symposium**	**Symposium**	
	Coffee Break	**Social Activity**	**Poster Session B** *&* *Coffee Break*	**Award Ceremony**	
	Symposium		**Symposium** Banquet Dinner		

Symposium	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 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	Samda A	Samda B	300	301 A	301 B	302	303 A	303 B
DAY 1 3 August Monday	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
DAY 2 4 August Tuesday	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
DAY 3 5 August Wednesday	11:00-12:30	SYM 25	SYM 7	/	/	SYM 6	SYM 13	SYM 11	/
	14:00-15:30	SYM 25	SYM 7	SYM 5	SYM 21&22	SYM 6	SYM 13	SYM 11	SYM 8
	16:30-18:00	SYM 25	SYM 7	SYM 5	SYM 21&22	SYM 6	SYM 13	SYM 11	SYM 8
DAY 4 6 August Thursday	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

AIS 2026 Detailed Program

ROOM: Halla

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	**Opening Ceremony Plenary Speech 1 Plenary Speech 2**	/	**Plenary Speech 3 Plenary Speech 4**	/
10:30-11:00		*Coffee Break*		
11:00-12:30	/	/	/	/
12:30-14:00		*Lunch Break*		
14:00-15:30	/	/	/	/
15:30-16:00		*Coffee Break*		
16:00-18:00	/	/	/	/

ROOM: Samda A

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 19	/	SYM 25
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 19	SYM 19	SYM 25	SYM 25
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 19	/	SYM 25	SYM 25
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 19	/	SYM 25	Award Ceremony

ROOM: Samda B

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 7	/	SYM 7
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 4	SYM 7	SYM 7	SYM 26
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 4	/	SYM 7	SYM 26
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 4	/	SYM 7	/

ROOM: 300

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 23	/	/
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 24	SYM 23	/	/
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 24	/	SYM 5	/
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 24	/	SYM 5	/

ROOM: 301 A

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 3	/	SYM 14
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 3	SYM 21&22	/	SYM 14
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 3	/	SYM 21&22	SYM 14
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 3	/	SYM 21&22	/

ROOM: 301 B

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 17	/	SYM 16
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 15	SYM 17	SYM 6	SYM 16
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 15	/	SYM 6	SYM 18
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 15	/	SYM 6	/

ROOM: 302

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 12	/	SYM 13
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 12	SYM 12	SYM 13	SYM 13
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 12	/	SYM 13	SYM 10
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 12	/	SYM 13	/

ROOM: 303 A

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 20	/	SYM 11
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 2	SYM 20	SYM 11	SYM 11
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 2	/	SYM 11	SYM 11
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 2	/	SYM 11	/

ROOM: 303 B

	DAY 1 3 August Monday	DAY 2 4 August Tuesday	DAY 3 5 August Wednesday	DAY 4 6 August Thursday
9:00-10:30	/	SYM 9	/	SYM 1
10:30-11:00		*Coffee Break*		
11:00-12:30	SYM 9	SYM 9	/	SYM 1
12:30-14:00		*Lunch Break*		
14:00-15:30	SYM 9	/	SYM 8	SYM 1
15:30-16:00		*Coffee Break*		
16:00-18:00	SYM 9	/	SYM 8	/

Opening Ceremony and Plenary Speeches

DAY 1 (3 August, Monday)

ROOM: Halla

Chaired By: Prof. Chengkuo Lee

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

DAY 3 (5 August, Wednesday)

ROOM: Halla

Chaired By: Prof. Chengkuo Lee

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

S1. Metasurface and Metaoptics

DAY 4 (6 August, Thursday)

ROOM: 303 B

Chaired By Prof. Jinghua Teng and Prof. Kun Huang

9:00-9:30	Keynote Speaker	Hongsheng Chen	Intelligent metamaterials and metamaterials intelligence
9:30-9:50	Invited Speaker	Ching Eng Png	AI-powered single layer metalens achromaticity - recent design results
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. Yanjun Liu and Prof. Son Tung Ha

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	Oral Presenter	Zhenyang Cui	A Lithography-Free Approach To Polaritonic Luneburg Lenses

Chaired By Prof. Png Ching Eng

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	Son Tung Ha	From Metasurfaces to Metadevices: A New Era of Optoelectronics
15:00-15:20	Oral Presenter	Yuhan Wang	Dual-Band High-Dissymmetry Circularly Polarized Luminescence From Cholesteric Liquid Crystals Overlaid A Gold Cluster Film
15:20-15:35	Oral Presenter	Changseop Byeon	Origami-Based Tunable Acoustic Metamaterial For Ventilated Broadband Sound Attenuation Via Fano-Like Interference
15:35-15:50	Oral Presenter	Ran An	Chemically Programmable Fano Resonances via Colloidal Nanocrystal-ligand Chemistry for Ultra-sensitive Ion Detection

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-Ting 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 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	Yansong Yang	AI Acceleration in Design and Measurement of MEMS Resonators

Chaired By Prof. Po-Liang Liu

16:00-16:30	Keynote Speaker	Julia W. P. Hsu	Bayesian Optimization of Synaptic Thin-film Transistor Operation for Accurate Encoding of Time-series Data
16:30-16:50	Invited Speaker	Zingway Pei	Design of Quantum-Dot Materials for High-Performance OLED Optoelectronic Devices
16:50-17:10	Invited Speaker	Ming-Chan Lee	Piezoelectric Fibers with nanoparticles via Near-Field Electrospinning for Wearable Pulse Sensing
17:10-17:25	Oral Presenter	Dongxiao Li	Physics-Informed AI for Inverse Design of Metasurface-Enhanced Infrared Molecular Sensors
17:25-17:40	Oral Presenter	Hee Yeoun Kim	AI-Assisted Hierarchical Process Optimization for Sub-Micron W2W Hybrid Bonding in Next-Generation Sensor Applications
17:40-17:55	Oral Presenter	Imran Ullah	Uncertainty-Aware Inverse Design of MEMS Seebeck Structures via Bayesian Cascaded Deep Learning
17:55-18:10	Oral Presenter	Kalim Ullah	Hybrid MLP-GA Optimization Framework for accurate Thermal Conductivity Measurement

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	Luminescent Nanocrystals for Biomedical Imaging and Sensing
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
12:10-12:25	Oral Presenter	Qinzhi Li	Exploiting Intrinsic Disorder for Full-Stokes Polarimetric Imaging with Natural Anisotropic Metasurfaces

Chaired By Prof. Sanyang Han

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	Renren Deng	Dye-coupled lanthanide nanocrystals for advanced optical biosensing and photodynamic therapy
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	Personalized Metallo-Hydrogel Vaccine for Postoperative Immunotherapy
17:10-17:30	Invited Speaker	Taotao Zhuang	Chiral optical imaging and sensing

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	Zewei Quan	High-pressure luminescent materials
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	Keynote 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

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	Weiyan 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	Research on the Application of Self-Powered Electronic Technology in Intelligent Rehabilitation and Cardiovascular Theranostics
16:20-16:40	Invited Speaker	Xili Ding	Toward Intelligent Vascular Grafts: Engineering, Mechanism, and Biosensing
16:40-17:00	Invited Speaker	Aixue Li	Integrating Artificial Intelligence with Electrochemical Biosensors for Enhanced Detection in Agriculture
17:00-17:15	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: 300

Chaired By Prof. Sanghoon Lee

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	Dhanunjaya Munthala	Extended Gate Field Effect Transistor for Biosensing Application and Detection of the TNF-α Antigen

Chaired By Prof. Hong Zhou

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
17:10-17:25	Oral Presenter	Yu-Hsuan Chiang	Silent Speech Recognition Using Triboelectric Nanogenerator Sensors with Efficient Conformer Model Compression

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
11:50-12:05	Oral Presenter	Youngbok Kang	The Smart Neuro-Ankle-Foot Home Trainer (SNAFT) To Improve Gait And Balance

Chaired By Prof. Junseong Ahn

14:00-14:30	Keynote Speaker	Kuniharu Takei	Edge computing multimodal healthcare sensor patch toward telediagnosis
14:30-14:50	Invited Speaker	Edward J. 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

Chaired By Prof. Kuniharu Takei

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	Battery-Free, Wireless Multimodal Sensing Platforms for Biomedical Applications
17:30-17:45	Oral Presenter	Shuhan He	An Artificial Intelligence Enhanced Piezoelectric Tactile Sensor Array For Surgical Applications

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

Chaired By Prof. Chia-Hung Chen

11:00-11:20	Invited Speaker	Wen Zeng	Research on the Principles of Picoliter Droplet Digital PCR for Non-Invasive Prenatal Testing
11:20-11:40	Invited Speaker	Yun Jung Heo	Boronic-acid based fluorescent glucose sensors for continuous monitoring
11:40-11:55	Oral Presenter	Jing Jin	Emerging Paradigms in Liquid Marble Microsystems: From Intelligent Droplet Sensing to Reconfigurable 3D Soft Robotics
11:55-12:10	Oral Presenter	Rahni Hossain	Network Pharmacology, Molecular Docking, and In Vitro Insights into the Potential of Mitragyna speciosa for Alzheimer's Disease
12:10-12:25	Oral Presenter	Yemin Han	Microfluidic electrochemical microarray platform: Integrated rapid screening of pathogens

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	Taek Lee	Rapid electrical and electrochemical aptasensors for disease detection: recent advances
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. Michinao Hashimoto

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	Yong Lin Kong	Near-field microwave printing of bioelectronics
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. Chia-Hung Chen

16:30-17:00	Keynote Speaker	Michinao Hashimoto	Additive Manufacturing of Vascularized, Cell-Laden Hydrogels
17:00-17:20	Invited Speaker	Jiyoon Bu	Microfluidic and Biosensing Platforms for Cancer Immunotherapy: Toward Personalized Cell-Based Therapies
17:20-17:40	Invited Speaker	Jean (Jeeyeon) Lee	A Gut Microbiome-on-a-Chip Platform to Unravel Microbial Dynamics Underlying Disease and Therapeutic Intervention
17:40-18:00	Invited Speaker	Thanh Duc Nguyen	Biodegradable Piezoelectric Polymers at Small Scales for Medical Applications
18:00-18:20	Invited Speaker	Mami Akaike	In Vivo Measurement Of Intraventricular Pressure In Mouse Embryos Using A Miniaturized Pressure Sensor System
18:20-18:35	Oral Presenter	Manman Lv	A Programmable Nucleic Acid-Encoded Universal Array For Multiplex Pathogen Biosensing

DAY 4 (6 August, Thursday)

ROOM: Samda B

Chaired By Prof. Yun Jung Heo

9:00-9:30	Keynote Speaker	Chia-Hung Chen	High-Throughput, Sensitive Metabolic Analysis Using Microfluidic Living Cell Membrane–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

14:00-14:30	Keynote Speaker	Huicong Liu	MEMS Sensing Technologies Empowering the Development of Robotics and Intelligent Equipment
14:30-14:50	Invited Speaker	Yonggang Jiang	Bio-inspired flexible touch, flow and acoustic sensors for robotic sensing
14:50-15:05	Oral Presenter	Anbumalar Murugan	Effective Resolution Enhancement Using Adaptive Weighted Interpolation and Multi-Radar Fusion for In-Cabin Radar Applications
15:05-15:20	Oral Presenter	Yingzhi Wang	A Quadruped Soft Robot Based on Piezoelectric Actuation and Electroadhesive Pads for Adaptive Terrain Locomotion

Chaired By Prof. Shiqiang Liu

16:30-16:50	Invited Speaker	Shiqiang Liu	A Smart Headband for Multimodal Physiological Monitoring in Human Exercises
16:50-17:10	Invited Speaker	Cheng Hou	Research on MEMS-based Force/Slip Perception Recognition Methods for the End Effector of Surgical Robots
17:10-17:25	Oral Presenter	Jianlong Hong	Biomimetic hairy affective-touch sensory AI interface
17:25-17:40	Oral Presenter	Yao Liu	A Lightweight Perception and Localization Framework for Monocular Visual Sensors in Dynamic Environments

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	Keynote 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

Chaired By Prof. Yiming Liu

14:00-14:30	Keynote Speaker	Xinge Yu	Skin-interfaced air and sweat permeable electronics for biomedical applications
14:30-15:00	Keynote Speaker	Xinming Li	Artificial Tactile Perception Systems for Embodied AI
15:00-15:20	Invited Speaker	Yu Song	Wearable bioelectronics for machine learning-powered personalized healthcare

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	Minjeong Ha	Field-Programmed Anisotropy of Micro/Nanomaterials for Selective Sensing and Adaptive Actuation in Soft Robotics
17:00-17:15	Oral Presenter	Meng Cui	An Ultrasonic Microrobot Enabling Ultrafast Bidirectional Navigation in Confined Tubular Environments
17:15-17:30	Oral Presenter	Fan Wu	Implantable Olfactory Brain-Computer Interface: From Neural Coding of Odor Recognition to Artificial Olfactory Perception Reconstruction
17:30-17:45	Oral Presenter	Jong Uk Kim	Si Nanomembrane-based Strain Gauge Sensors for Decoupled Bio-signal Acquisition
17:45-18:00	Oral Presenter	Nan Jiang	Biohybrid Organoid-Robot System for Brain-Like Olfaction
18:00-18:15	Oral Presenter	Jing Bai	A Novel Design of Electronic Skin Sensor System for Contact Pressure Measurement During Colonoscopy

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	You Yu	The rise of multimodal sensing electronics and activating soft interfaces
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

11:00-11:20	Invited Speaker	Minglu Zhu	Haptic rendering and tactile communication: from gross to fine teleoperation
11:20-11:40	Invited Speaker	Cui Ye	Flexible Wearable Electronic Sensors for Proactive Health Management
11:40-12:00	Invited Speaker	Hnin Y. Y. Nyein	Engineering Soft Wearables for Continuous Physiological Monitoring
12:00-12:20	Invited Speaker	Jihye Kim	Soft Bioelectronics for Physiological Fluid Monitoring
12:20-12:35	Oral Presenter	Muhammad Umair Khan	MXene Electrode Self-Rectifying Memristors for Neuromorphic Human–Machine Interfaces and Photosensing

S10. Soft Robotics Technologies

DAY 4 (6 August, Thursday)
ROOM: 302

Chaired By Prof. Mengmeng Sun

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	Keynote Speaker	Amine Bermak	Extreme Edge Intelligence: Moving Artificial Intelligence closer to Sensors
11:30-12:00	Keynote 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

Chaired By Prof. Jun Wu

14:00-14:30	Keynote 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
14:50-15:05	Oral Presenter	Yuhao Hu	Shadow-Effect Enabled Smart Sensing Platform: From Chemical Reaction Monitoring to Non-Contact Human-Machine Interaction
15:05-15:20	Oral Presenter	Seong Ju Lee	Battery-Free NFC-Enabled Multisensing Platform for Wireless Wound Monitoring

Chaired By Prof.Qiongfeng Shi

16:30-17:00	Keynote Speaker	Inkyu Park	Mechanics-based Design of Flexible/Stretchable Sensors for Healthcare and Human-Machine-Interface Applications
17:00-17:20	Invited Speaker	Bingpu Zhou	Visualization of Vibration in Flexible Systems for Tactile Perception
17:20-17:40	Invited Speaker	Zhilu Ye	A Stretchable Battery-Free Wireless Sensing Platform for Sensitive and Multiplexed Wearable Monitoring
17:40-17:55	Oral Presenter	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	Yadong Xu	Strain-Resilient Stretchable Bioelectronics

DAY 4 (6 August, Thursday)
ROOM: 303 A

Chaired By Prof. Yang Li

9:00-9:30	Keynote Speaker	Kean C. Aw	Soft and Wearable Sensors for Rehabilitation
9:30-9:50	Invited Speaker	Huimin Hao	A High-Sensitivity Trace Sebum Gas Sensor for Ultra-Early Diagnosis of Parkinson's Disease
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

Chaired By Prof. Yang Li

11:00-11:30	Keynote Speaker	Do Hwan Kim	Sustainable Solid-State Gel Electronics for Neuromorphic e-SKIN
11:30-11:45	Oral Presenter	Yafei Wang	Triboelectric Nanogenorator-based Stretch Sensor
11:45-12:00	Oral Presenter	Xiao Zhao	Soft Bioelectronics Embedded With Self-Confined Tetrahedral DNA Circuit For High-Fidelity Chronic Wound Monitoring

Chaired By Prof. Qiongfeng Shi

14:00-14:30	Keynote Speaker	Wenlong Cheng	Gold Nanomaterials for Soft Wearable Bioelectronics
14:30-14:45	Oral Presenter	Tong Zheng	Highly-Conductive And Ultra-Robust Elastic Conductors For Stretchable Electronics
14:45-15:00	Oral Presenter	Jiachen Liu	3D-Printed Iontronic Hydrogel via Gradient Structure and Modulus Design for Neuromorphic E-Skin
15:00-15:15	Oral Presenter	Pinzhen Chen	A Multi-Dimensional Force Data Glove For Micro-Gesture Interaction

S12. Nanogenerators and Self-Powered Sensors

DAY 1 (3 August, Monday)

ROOM: 302

Chaired By Prof. Xinkai Xie

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. Xuelian Wei

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	Xinkai Xie	Self-Powered Neuromorphic Devices for In-Sensor Perception and Computing
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. Xinkai Xie

16:00-16:20	Invited Speaker	Minsoo Kim	Dielectric-Polarization Engineering of Nanostructured Polymer Dielectrics for High-Performance Triboelectric Devices
16:20-16:40	Invited Speaker	Fei Liang	Liquid-Solid Interface Energy Harvesting and Self-Powered Sensing
16:40-17:00	Invited Speaker	Xuelian Wei	Multi-Triboelectric Perceptual Systems: Interfacial Mechanisms and Advanced Liquid Identification
17:00-17:15	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
17:15-17:30	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

9:00-9:20	Invited Speaker	Chen-Kuei Chung	Enhancing output performance of Al-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	Yina Liu	Micro-Triboelectric Sensors for Long-Term Accurate Healthcare Electronics
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

11:00-11:20	Invited Speaker	Hong-Joon Yoon	Acoustic Impedance Mismatching to Induce Triboelectricity under Ultrasound
11:20-11:35	Oral Presenter	Shih-Min Huang	A Sustainable and Eco-friendly Biomechanical Sensor Design based on Triboelectrification
11:35-11:50	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. Junlei Wang and Prof. Cailiang Zhang

11:00-11:30	Keynote Speaker	Shengxi Zhou	Wearable Electromagnetic and Piezoelectric Energy Harvesters Driven by Low-Frequency Human Motion
11:30-11:50	Invited Speaker	Zhihui Lai	A magnetic rolling pendulum-based multi-stable electromagnetic generator with dual-path transition mechanism
11:50-12:10	Invited Speaker	Haigang Tian	Enhanced performance of piezoelectric energy harvester incorporating surface protrusions

Chaired By Prof. Junlei Wang and Prof. Xukun Su

14:00-14:20	Invited Speaker	Ruqi Sun	Self-powered electromagnetic transducers for intelligent maritime transportation
14:20-14:40	Invited Speaker	Cailiang Zhang	Energy harvesting technology in offshore wind power applications
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

Chaired By Prof. Zhihui Lai and Prof. Cailiang Zhang

16:30-16:50	Invited Speaker	Jiawen Xu	Piezoelectric vibration energy harvester powered wireless sensing and intelligent health monitoring
16:50-17:10	Invited Speaker	Jun Dong	Total-Current Nanogenerators: From Liquid-Solid Interface Mechanism to Self-Powered Intelligent Sensing
17:10-17:30	Invited Speaker	Shimpei Ono	Electric Double-Layer Electrets Based on Polymerized Ionic Liquids
17:30-17:45	Oral Presenter	Xukun Su	Non-optimal energy conversion due to phase difference in vibrational electromagnetic energy harvesters
17:45-18:00	Oral Presenter	Tsung-Ting Hou	Entropy-Tuned Electromechanical Responses in Lead-Free Ferroelectric Films

DAY 4 (6 August, Thursday)

ROOM: 302

Chaired By Prof. Junlei Wang and Prof. Haigang Tian

9:00-9:20	Invited Speaker	Bin Bao	Broadband Energy Harvesting via Nonlinear Magnetic Pendulums
9:20-9:40	Invited Speaker	Yang Kuang	A Magnetic Field Energy Harvesting Approach for Traction Return Currents in High-Speed Railway
9:40-10:00	Invited Speaker	Yilong Wang	A Low-Profile Quasi-Zero-Stiffness Structural Design for Simultaneous Vibration Isolation and Piezoelectric Energy Harvesting
10:00-10:20	Invited Speaker	Hiroko Yamada	Bacterial biofilm formation suitable for microbial fuel cells using waste cutting fluids

Chaired By Prof. Zhihui Lai and Prof. Haigang Tian

11:00-11:20	Invited Speaker	Zehao Hou	Energy harvesting backpack: mechanism design and human-machine coupling
11:20-11:40	Invited Speaker	Shitong Fang	Magnet-Mechanical-Electric Energy Harvesting and Self-Sensing Mechanism and Integration Method for the Power Internet of Things
11:40-12:00	Invited Speaker	Haitao Xu	Weak signal enhancement based on stochastic resonance of nonlinear system

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	Guozhi Zhang	Reliability Analysis and High sensitivity Regulation of Transformer-embedded Acoustic-magnetic Multimodal Sensors
11:20-11:40	Invited Speaker	Tetsuo Sasaki	Development of High-Resolution Terahertz Chemical Sensing Technology
11:40-11:55	Oral Presenter	Rei Yamaguchi	Development and Analysis of a Bird Repellent System Using Light and a Horizontal Platform Mechanism
11:55-12:10	Oral Presenter	Qiyuan Zhang	An Underwater Acoustic Wave Cross-medium Detection Scheme with improved sinusoidal phase modulation interferometer and signal demodulation scheme

Chaired By Prof. Guozhi Zhang

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
11:30-11:50	Invited Speaker	Lu Wang	Multisource Energy Harvesting and Wireless Sensing System in Power Grid
11:50-12:10	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
16:30-16:45	Oral Presenter	Yunlong Bai	Label-Free Human Activity Pattern Discovery with an In-Sensor Neuromorphic MEMS Accelerometer
16:45-17:00	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	Keynote 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	Keynote 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	Haoran Gao	LOD-Based Gaussian Splatting for Detail-Preserving and Efficient Orthophoto Generation

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	Xiaohong Zhou	Structural health monitoring of drainage pipes based on distributed fiber optic vibration sensing system
10:10-10:25	Oral Presenter	Xintai Zhang	Boundary-Aware Point Cloud Super-Resolution for Low-Beam LiDAR in Autonomous Driving
10:25-10:40	Oral Presenter	Jixu Zhou	Intelligent Control Strategy for Energy-Efficient Driving of Metro Trains Under Diverse and Complex Line Conditions

Chaired By Prof. Jianxiong Zhu and Prof. Sang-Seok Lee

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	Yi Chiu	Smart Sensing via Reservoir Computing in Nonlinear MEMS Devices
11:50-12:10	Invited Speaker	Jianxiong Zhu	Data-Driven Physics-Informed Fusion for Washing Machines Clothing Material AI Sensing in Smart Home
12:10-12:25	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

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	High-Tech Warfare in Farmlands
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 Physical AI with AIoT and Human Demonstrations
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	Dataset of Gold and Silver Artifacts from the Mausoleum of Prince Liang Zhuangwang Based on a LoRA Diffusion Model for Feature-Enhanced Generation

S19. MEMS/NEMS Sensors

DAY 1 (3 August, Monday)

ROOM: Samda A

Chaired By Prof. Bin Yang

11:00-11:30	Keynote 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
11:50-12:05	Oral Presenter	Zheng Zhang	Real-Time Sensing and Feedback Synchronization in Duffing MEMS Resonators for Chaos-based Encryption
12:05-12:20	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	Keynote 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	Hao Jia	MEMS Sensors for Differential Thermal Analysis
15:10-15:25	Oral Presenter	Ye Tian	Acousto-Dielectric Modulation of Barrier Height: Harnessing Ultrasonic Waves in Quantum Tunneling

Chaired By Prof. Nan Wang

16:00-16:30	Keynote Speaker	Hyunjoo Jenny Lee	Flexible Ultrasound Transducers for Therapeutic Ultrasound
16:30-16:50	Invited Speaker	Xining Zang	Orthopedic Micro Electromechanical Systemes(Ortho-MEMS)
16:50-17:10	Invited Speaker	Zhiran Yi	Piezoelectric MEMS cooling for AI Chip
17:10-17:30	Invited Speaker	Zhiqiang Mu	Single Crystal Aluminum Nitride Resonators for 6G Applications
17:30-17:45	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

9:00-9:20	Invited Speaker	Linxi Dong	A MEMS Self-Calibrating Tactile Sensor Based on Precision Force Source Drive Technology
9:20-9:35	Oral Presenter	Qingbo Chu	Robust Dynamic Identification of MEMS Accelerometer Parameters Based Model Reference Adaptive Algorithm
9:35-9:50	Oral Presenter	Wuhao Yang	An All-Thin-Film AlScN/FeGaB Magnetoelectric MEMS/NEMS Resonator for Multimode Weak Magnetic-Field Detection

Chaired By Prof. Jian Chen

11:00-11:30	Keynote Speaker	Nan Wang	High-Q Piezoelectric MEMS Resonators based on Wave-Interference Anchor Loss Reduction
11:30-11:50	Invited Speaker	Liujing 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	Hongjie Hu	Wearable Ultrasound Imaging Technologies
9:30-9:50	Invited Speaker	Yiyuan Yang	Wearable Ultrasonic Patch for Intelligent Trans-Biofilm Drug Delivery in Chronic Wound Treatment
9:50-10:10	Invited Speaker	Chang Peng	Flexible Wearable Ultrasound Systems: From Device Innovation to Medical Applications
10:10-10:25	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

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

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. Guangya Zhou

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 Christoper	Growth Stimulation in Tomato Using Low-Intensity Near-Infrared Light: Noninvasive Evaluation by Biospeckle Optical Coherence Tomography
12:05-12:20	Oral Presenter	Siddarthan 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: 301 A

Chaired By Prof. Guangya Zhou

14:00-14:20	Invited Speaker	Yiming Ma	High-Resolution and Power-Efficient MEMS Computational Spectrometers on Silicon Photonic Chips
14:20-14:40	Invited Speaker	Youmin Wang	MEMS scanning indirect time-of-flight (iTOF) eye tracking
14:40-15:00	Invited Speaker	Tong Lin	Chip-scale spectrometers empowered by advanced algorithms
15:00-15:20	Invited Speaker	Feng Tian	Dynamic Control of Spontaneous Emission in a Silicon Hybrid Optomechanical cQED System
15:20-15:35	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. Tong Lin

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
17:20-17:35	Oral Presenter	Jeongeun Mo	Interface-Engineered VO2(B)/V2O5 Heterostructures for Uncooled Broadband Photodetection from Visible to FIR
17:35-17:50	Oral Presenter	Hao Hu	An Ultra-High Precision 3D Measurement Sensor Based on Linear Spectral Confocal Technology
17:50-18:05	Oral Presenter	Yiming Li	Structural Optimization of MEMS Scanning Mirrors Based on Genetic Algorithms
18:05-18:20	Oral Presenter	Zhiting Ye	Optimizing the Quantum Well Structure of AlGaN-Based Deep-UV LEDs to Improve Internal Quantum Efficiency

S23. Si Photonics for Sensing and Edge Computing

DAY 2 (4 August, Tuesday)

ROOM: 300

Chaired By Prof. Yunfeng Xiao

9:00-9:30	Keynote 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
10:10-10:30	Invited Speaker	Daquan Yang	Optical Microcavity-Enhanced Intelligent Sensing Technology

Chaired By Prof. Shilun Feng

11:00-11:30	Keynote 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	Yu Ye	Interface Coupling between WSe2 Excitons and Flat-Band Mott Insulator Nb3Cl8: Towards 2D Material-Enabled Nanosensing of Strongly Correlated Phenomena
11:50-12:10	Invited Speaker	Cheng Zhang	Interfacial engineering-enabled giant bulk photovoltaic effect in van der Waals heterostructures
12:10-12:25	Oral Presenter	Jinkun He	Building a Data-Driven Transfer Agent for 2D van der Waals Heterostructures

Chaired By Prof. Yu Ye

14:00-14:20	Invited Speaker	Kai Liu	Doping Engineering of 2D Materials for High-Efficiency Neuromorphic Devices
14:20-14:40	Invited Speaker	Wu Shi	Integrating Ferroelectricity with 2D Materials for Neuromorphic and Optoelectronic Devices
14:40-15:00	Invited Speaker	Xiaoxi Li	An AI-driven robotic system for two-dimensional hetero-assemblies
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. Cheng Zhang

16:00-16:20	Invited Speaker	Hai Huang	Two-Dimensional Thiophosphate Semiconductors for In-Sensor computing Photodetectors
16:20-16:35	Oral Presenter	Guangliang Li	Template Quality Dependent Conversion Synthesis of Boron Nitride Coated Graphene HybridAerogels for Ultrasensitive and Selective Ammonia Sensing
16:35-16:50	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	Keynote 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_2/CH_4 Detection Using Noble-Metal-Loaded SnO_2 Nanospheres
12:10-12:25	Oral Presenter	Sikai Zhao	Activating Lattice Oxygen via Ni Doping in SnO_2 for High-Performance Hydrogen Sensing

Chaired By Prof. Dong-Ha Kim

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. Young-Moo Jo

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	Daejong Yang	Chemical detection in water via capillary and thermo-fluidic flow using a metal oxide gas sensor
17:30-17:45	Oral Presenter	Hyoungwon Park	Selective Sensing Behavior of Self-Assembled Monolayer-Modified SnO_2 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

DAY 4 (6 August, Thursday)

ROOM: Samda A

Chaired By Prof. Ji-Wook Yoon

9:00-9:30	Keynote 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. Joan Daniel Prades

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 NO2 Sensing in WO3 via Zn Doping and Visible-Light Activation: Mechanistic Elucidation and Application to Breath Analysis
11:40-11:55	Oral Presenter	Lei Yuan	Portable Olfactory Visual Colorimetric Sensing Equipment for Rapid Identification and Detection of Key Environmental Factors in Laying Hen Farming
11:55-12:10	Oral Presenter	Tian-tian Song	Synergistic Interface Topological Engineering Enables Ultrasensitive and Stable Detection of Allergen–specific Immunoglobulin E in Human Serum
12:10-12:25	Oral Presenter	Jie Xu	Size-Dependent Redox Driving Force Regulation in CdS Quantum Dots Enables Highly Selective Photocatalytic Conversion of Lactic Acid to Alanine

Chaired By Prof. Seong-Yong Jeong

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	Heedae Kim	Enhanced Hydrogen Sensing via Synergistic Pd/ZnO Catalytic Structures on Mesoporous Silicon
15:00-15:15	Oral Presenter	Rong-Yao Wang	Plasmonic Nanosensors for Detecting Molecular Chirality Recognition at Nanoscale Interfaces
15:15-15:30	Oral Presenter	Lan Yang	Rapid Identification and Quantitative Detection of Volatile Aldehydes Using a Metal Organic Framework Based Colorimetric Array Sensor
15:30-15:45	Oral Presenter	Yuqing Li	Label-Free Electrochemical Genosensor Based on an Electroactive CoFe PBA@rGO Composite for Influenza A Target DNA Detection

S26. Smart Gas Sensors and Artificial Olfactory

DAY 4 (6 August, Thursday)

ROOM: Samda B

Chaired By Prof. Xuhui Sun

11:00-11:20	Invited Speaker	Liang Feng	Atomic-Scale Built-in Electric Fields: A New Paradigm for Room-Temperature Gas Sensing
11:20-11:40	Invited Speaker	Xiaogan Li	Study of Pt-$SnSe_2$/In_2O_3 and $SnSe_2$/In_2S_3 microflower heterojunction based sensors for efficient ppb-level room-temperature NO_2 sensing
11:40-11:55	Oral Presenter	Qiaoyuan Yang	An In-Situ Microcantilever–FTIR Platform for Optimizing COF Gas-Sensing Materials
11:55-12:10	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

14:00-14:30	Keynote Speaker	Fangmeng Liu	Bio-inspired Olfactory Sensors and Integration Technologies
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
15:20-15:40	Invited Speaker	Ming Li	Microcalorimetric Principle-Based High-Performance MEMS Hydrogen Sensors
15:40-15:55	Oral Presenter	Xiaoyu Liu	Decoding Volatile Metabolic Phenotype Enables Ultra-Early Non-Invasive Embryonic Sexing
15:55-16:10	Oral Presenter	Wenhui Geng	Bio-inspired Olfactory Sensors Based on Sub-10nm Gold Island Films for Ultra-sensitive VOC Detection

Poster Sessions

Poster Session A, DAY 2 - 4 August (Tuesday) | 14:00 - 15:30
Poster Session B, DAY 3 - 5 August (Wednesday) | 15:30-16:30

- Regardless of whether your poster is assigned to **Session A or Session B**, please **post** your poster from **08:00** to **10:00** on **4 August**.
- Materials including scissors, tape and other supplies will be provided on site.
- All posters must be **removed** between **16:30** and **22:00** on **5 August**. Posters left unattended after the deadline will be removed by conference staff. The conference organizers do not guarantee safe custody or return of such posters.

Poster Session A, DAY 2 - 4 August (Tuesday) | 14:00 - 15:30

No.	Name	Title
1	**Po-Liang Liu**	First-Principles Investigation of Work Function Changes Induced by CO, CO2, and H2S Co-Adsorption on SnO2(110) Surface for Gas Sensors
2	**Rui-Cian Weng**	An Integrated Hardware-Software Framework for High-Precision Environmental Gas Monitoring
3	**Qiushui Chen**	AI-Assisted High-Resolution X-ray Imaging with Solution-Processed Scintillators
4	**Mingjiang Zhang**	Processable circularly polarized luminescent materials for intelligent optical sensing and interaction
5	**Seungmin Kim**	Non-invasive Prediction of Fetal Lung Maturity via AI-Enabled EV Spectral Sensing of Vaginal Fluid
6	**Sivaramakrishnan Ganesan**	AI-Driven Label-Free Optical Biosensor for Multiplexed Autoimmune Disease Diagnostics
7	**Zhenzhen Zhang**	Shallow-Trap Perovskite Scintillators for High-Resolution,Ghosting-Free X-Ray Imaging
8	**Xiaofeng Chen**	Ultrahigh-Loading, Flexible Scintillator Films for High-Resolution X-Ray Imaging
9	**Lili Xie**	A wearable colorimetric sensor for ultraviolet monitoring via radical-triggered gold nanoparticle clustering
10	**Mukta Sharma**	A Patient-Level Deep Learning Framework for Oral Cancer Classification Using Spectroscopic Data from Tissue, Serum, and Urine
11	**Xiaogang Liu**	Mapping and Monitoring Internal Food Spoilage using a Portable Ratiometric Nanoprobe Device
12	**Jahui Lee**	All-Printed Flexible Electrochemical Biosensor for Non-Invasive Salivary Glucose Monitoring
13	**Kattika Kaarj**	Development of a Smartphone-based Sensor for Detecting Bacterial Contamination in Meat Products
14	**Si Won Park**	Flexible MWCNT/PDMS Pulse-Wave Sensor with Cross-Modality Deep Learning for Wearable Stress Monitoring
15	**Yinghui Zhou**	Adaptive Windowing and Mutual-Information Feature Selection for Human Activity Recognition Using Wearable Sensors
16	**Yoorim Loh**	Miniaturized multimodal sensors for continuous measurements of pressure, shear force, and temperature in infant helmet therapy
17	**Hongxuan Wang**	An integrated wearable infrared sensing platform for real-time and deep-tissue monitoring
18	**Jinho Jeong**	Spatially Controlled Multilayer Electrospun Web on Wearable Microneedles for Precision Chronotherapeutic Delivery
19	**Seungyeop Ryu**	Smart Food Monitoring Based on Nanostructured SERS Sensor
20	**Edward J. Park**	On-device Intelligence for Cuffless Blood Pressure Monitoring in Resource-constrained Systems
21	**Aigerim Yerimbetova**	Sign Language Translation for Kazakh Sign Language with RLHF Optimization Based on Transformer-Based Architectures

22	**Dong Wook Kim**	Performance Verification and Safety Evaluation of a Novel Laser-Based Respiratory Monitoring Sensor for Radiation Therapy
23	**Abdul Karim**	A Lightweight AI Framework for Smart Patient Monitoring and Early Risk Stratification Using MIMIC-IV Data
24	**Lina Anskienė**	Genomic influence on milk biosensor traits, linking genetic merit with milk composition in Holstein cows
25	**Monika Šidlauskaitė**	Seasonal and Genetic Determinants of Biosensor-Derived Udder Health Indicators: A Data-Driven Evaluation in Lithuanian Holstein Cows
26	**Alessandro Leone**	A Real-Time Personalized Immersive-Proprioceptive Seat Driven by Explainable Artificial Intelligence
27	**Chia-Hung Chang**	Wireless and noncontact radar system for thoracoabdominal asynchrony detection
28	**Sijian Tao**	Engineering structured micro-droplet system for interventional embolization .
29	**Sheng-Yu Peng**	A CMOS LC-Resonator System for Non-Invasive, Real-Time Complex Dielectric Constant Sensing
30	**Joan Daniel Prades**	Vision Model Quantization in Holographic Microscopy for In-sensor Edge AI Cell Detection
31	**Yao-Nan Wang**	Numerical Simulation and Experimental Investigation of Laser Polymerase Chain Reaction System
32	**Aigerim Yerimbetova**	Development of an Audio-to-Gesture Synthesis System for Kazakh Sign Language Using Deep Learning Architectures with Squeezeformer and Transformer Decoder
33	**Ziheng Wang**	AI-Driven Multi-Modal Sensor Fusion of 3D Vision and 6D Force Transducers for Flexible Robotic Assembly
34	**Songeun Lee**	A study on high-temperature onboard heating for high-efficiency automatic straightening of shipboard flat blocks
35	**Han Hee Jung**	Flexible All-in-One Neural Interface for Real-Time Dopamine Monitoring in Parkinsonian Models
36	**Hayato Hamashima**	Improving the Performance of Fully Printed CNT Thin-Film Sensors through Surfactant Removal
37	**Lei Jing**	Durability Assessment of Conductive Yarn-Based E-Textiles for Wearable Applications
38	**Haruya Okawa**	Piezoelectric Properties of Drawn Cellulose Derivatives
39	**Biao Wang**	Bio-inspired multi-scale interlocked triboelectric tactile sensor for hand gesture recognition and wireless robotic control
40	**Yukito Kon**	Design of a photo-thermoelectric transducer-type carbon nanotube camera device with broadband photo-absorbing properties and application of a wearable device with excellent stretch durability for resistance-sensing.
41	**Biao Qi**	Magnetoelastic Systems Based on Eigenfrequency for High-Capacity Wearable Human-Machine Interactions
42	**Yuanzhe Liang**	A Magnetized Joystick with Dual-Anisotropy for High-Capacity Wearable Human-Machine Interactions
43	**Dan Fang**	A Self-Powered Wearable Patch with Direction-Sensitive In-Plane Force Detection for Single-Channel Human–Machine Interaction
44	**Wu Qinxia**	Probing Energy-Funneling Kinetics in Nanocrystal Sublattices for Flexible X-Ray Imaging
45	**Xuan Zhao**	An Interfacial Fusion Strategy for Ultra-Linear and Sensitive Ionic Fabric Sensor

46	**Min-Hsin Yeh**	Enhancing Self-Induced Polarization of PVDF-Based Triboelectric Film By Introducing Functional g-C3N4 layers for Ultrasensitive Triboelectric Pressure Sensors
47	**Xindan Hui**	Acoustically Enhanced Triboelectric Stethoscope for Ultrasensitive Cardiac Sounds Sensing and Disease Diagnosis
48	**Kean Aw**	Omnidirectional Liquid-Solid Triboelectric Nanogenerator for Wave Energy Harvesting
49	**Ying Chin Chao**	Fiber-based Piezoelectric Sensor Design based on Lead-free Perovskites
50	**Kuan-Chih Kao**	An Eco-Friendly Piezoelectric Nanogenerator Design based on Lead-Free Hybrid Perovskites
51	**Yue Hou**	Wearable Thermoelectric Smart Mask for Closed-Loop Pulmonary Monitoring, COPD Screening, and VR-Assisted Rehabilitation
52	**Daiki Asamoto**	Evaluation of a Double-sided Carbon Nanotube Photo-sensor for Multi-wavelength Identification in Non-destructive Inspection Across Visible-light, Infrared, and Terahertz ranges
53	**Xinxin Zhang**	On-Site spray-coatable Flexible Photosensors Based on Selectively Integrated Carbon Nanotube and Conductive Polymer Films
54	**Hayato Kanno**	Fundamental Characterization of Printed Carbon Nanotube Photo-Thermoelectric Sensors through Dispersion-State Control
55	**Ke Li**	Lattice-confined ruthenium single atoms enable surface activity-tuned exhaled hydrogen sulfide sensing
56	**Xia Gong**	Hierarchical Chemiresistive Sensor Array for Real-Time Spatiotemporal VOCs Mapping Toward Molecular Diagnostics
57	**Zhipeng Guan**	Au nanocluster-decorated ZnO hollow microspheres for trace BTX detection at room temperature under UV light modulation
58	**Shu-Ting Chuang**	Analysis of the Properties of Nano Copper Materials with Graphene Structure
59	**Gayoung Kim**	Bioinspired nanograss hybridized with thuja fruit-like nanoparticles SERS substrate for ultrasensitive thiram sensing
60	**Eunseul Hur**	A SERS Sensor Platform Using Bimetallic Nanoparticle-Decorated Silver Nanopillars for Trace Detection of Thiabendazole
61	**Jae Han Chung**	Quasi-2D SnO Nanoflake-Based Chemical Sensing via HT-GLAD
62	**Myung Hyun Oh**	Optical Hydrogen Sensors Based on Pd-Coated Avalanche Photodiodes
63	**SuA Kim**	Flexible OLED-Integrated Ammonia Gas Sensors for Room-Temperature Operation
64	**Hyoun Woo Kim**	WSe_2/MWCNT Composites Enriched with Edge Sites for Highly Selective, Humidity-Independent NO_2 Detection
65	**Bo Liang**	Dual-Site Synergistic Tandem Effect on Pt Single-Atoms and CeOx Nanoclusters for Boosted Electrocatalytic Sensing Performance of Cr(VI)
66	**Xuyin Ding**	Hierarchical Sensor Array for Molecular Imaging of Breast Cancer via VOC Detection and Mapping
67	**Ming Tsung Chao**	Photoacoustic Ammonia Sensing with Machine Learning-Based Humidity Interference Decoupling

68	**Hyoun Woo Kim**	Highly Selective NO_2 Gas Sensing Using Microwave-Assisted Synthesized SnO_2 $Ti_3C_2T_x$ Nanocomposites
69	**Yi-Rong Wu**	Edge-Intelligence-Based Detection and Localization of Vehicle Littering Events for Urban Surveillance Sensing

Poster Session B, DAY 3 - 5 August (Wednesday) | 15:30-16:30

No.	Name	Title
70	Ting-Yu Liao	Optical and Electrical Characterization of Monolithic 12V High-Voltage MicroLEDs for Automotive Interior Lighting Applications
71	Heeeun Kang	Planar Heterojunction Architecture for Low-Dark-Current Organic Photoconductors
72	Mansik Jeon	Whole-Directional 3D Imaging Using an Integrated Quad-Scanner Optical Coherence Tomography Approach
73	Youling Chen	Nanoparticle detection scheme based on an electrically-pumped semiconductor microlaser
74	Chang Kyu Jeong	Piezoelectric Sensor Patch with Biomimetic Interfaces for Teleoperation Robotics
75	Lama Alsubaie	Transformer-Based Acoustic Sensing for UAV Detection in Autonomous Security Applications
76	Biao Wang	6-DOF Active Vibration Isolation System with Bionic Bird Leg Negative Stiffness Toward the VC-G Level
77	Mimi Nathiratul Athriyah Ahmad	Adaptive Vision-Based AI Sensors with Continual Learning for Smart Transportation Systems
78	Qi Wang	OmniDefocus-Net: Spatially Variant Defocus Deblurring for Catadioptric Omnidirectional Vision Sensors
79	ShuoYu Zhang	Space Target Identification Based on Micro-Motion Analysis via Multi-Level Attention in Deep-Space Environments
80	Jan Sonntag	Staged Evaluation of Wireless Communication Technologies for Sensor Networks in Flooded Mines
81	Jang-Yeol Kim	A Study on Magnetic Sensor and AI API Applications for Wireless Communications in Harsh Environments
82	Song Hao	High-Efficiency Capture of Indoor Particulate Matter by a Triboelectric Organ Curtain Composed of Honeycomb-Structured PVDF-PAN/TiO_2 Electrospun Nanofibers
83	Junmin Jing	Dual-Resonator AT-Cut Quartz Pressure Sensor with Orthogonal Force Transfer Beams for High-Temperature Harsh Environments
84	Wai Yie Leong	Energy-Efficient AI Sensors for Carbon-Aware Smart Farming Systems
85	Lan Zhang	Dual-Layer Printed Capacitive Sensors for Real-Time Moisture and Liquid Detection
86	HoHyun Kim	AIoT-Based Integration of Environmental Hazard Monitoring and Health Impact Prediction for Autonomous Indoor Environment Control
87	GeonYeong Min	Real-Time AI-Based Contactless Gesture Recognition Using an Integrated Ultrasonic Planar Sensor Array
88	Jonathan Christoper	A proposal of Dual wavelength system for Free Space Optical Communication and Power Beaming For IoT Devices
89	Eunsik Noh	Acoustic Chamber System for Simultaneous Evaluation of Vibration Level and Electrostatic Voltage Sensing Performance of a Tuning-Fork-Type Electrostatic Voltmeter Sensor

90	**Hongming Lu**	A Continuous Risk Index Model Based on Multi-physics Information Fusion for Early-stage Weak Anomaly Detection in Energy Storage Systems
91	**Xingchen Liu**	Scalable Low-Cost True Facade Orthophoto Generation for Urban Mapping via 3D Gaussian Splatting
92	**James Earl Cubillas**	A Hybrid Framework Combining Physics-Informed and Data-Driven Machine Learning for Earthquake-Induced Landslide Susceptibility Mapping in North Cotabato, Philippines
93	**James Earl Cubillas**	A QGIS Plugin for Earthquake-Induced Landslide Susceptibility Mapping Using Physics-Informed Neural Networks
94	**Stefano Bona**	Optimizing hyperspectral dimensionality reduction for crop nitrogen monitoring: a comparison of PCA and band selection
95	**Zhenjie Zheng**	Synchronized truck-drone routing with adaptive fleet planning for heterogeneous monitoring tasks
96	**Joon-Boo Yu**	Monitoring ethylene and decay-associationgas emissions from apples using metal oxide semiconductor sensors
97	**Lei Shu**	UAV-Based Multi-Source Dataset for Solar Insecticidal Lamp Detection: Flight Altitude Trade-off Analysis for Precision Agricultural Sensing
98	**Tao Chen**	Latent Spatiotemporal Binding: Cross-Modal Fusion of Asynchronous Vision-Force Data in Robotic Micro-Manipulation
99	**Xiaodong Wang**	In-Situ Time-Series Dataset of Lettuce Potassium Ion Signals with Optimized Transformer Prediction Model
100	**Youngil Kim**	RF Plasma-Induced Surface Roughness Control of Mo Bottom Electrodes for Enhanced Sc-AlN Piezoelectric Performance
101	**Youngil Kim**	Enhancement of c-axis Orientation in Sc0.3Al0.7N Thin Films on Amorphous SiO2 via In-situ Seed Layer Engineering for MEMS Applications
102	**Jonghyun Eom**	Development of an Intelligent Non-Contact Precision Vibration Measurement System for Vibration Analysis of Power Engines
103	**Lukang Wang**	High-Temperature Pressure–Temperature Integrated Sensor Based on SiC Piezoresistive Effect and PN Diode Thermometry
104	**Hakseon Lee**	An Eight-Channel Antenna-Coupled MEMS Bolometer Array for 290 GHz imaging
105	**Kyung-won Kim**	Planar Coil Integrated Orthogonal Fluxgate Sensors Based on CoNbZr Thin Films
106	**Youngjin Lee**	Biomimetic PMN-PT Cantilever Cochlea Arrays for Wideband Acoustic Detection and AI-Enhanced Sound Classification
107	**Joon-Shik Park**	Recent Trends in MEMS Standardization within IEC SC 47F
108	**GoEun Choi**	AI-Integrated Multiplexed Colorimetric Wound Monitoring Band for Smart Healthcare Applications
109	**Nurzada Amangeldy**	A Data-Driven End-to-End Computational Pipeline for High-Fidelity Sign Language Generation using Inertial Motion Capture