

## AIS 2025 Abridged Program

	DAY 1	DAY 2	DAY 3	DAY 4	
	29 July 2025	30 July 2025	31 July 2025	1 August 2025	2 August 2025
	(Tuesday)	(Wednesday)	(Thursday)	(Friday)	(Saturday)
	3 August 2025				
	(Sunday)				
Registration	Registration	Plenary Speech	Symposium	Symposium	Free Activities
	Opening Ceremony	3Plenary Speech			
	Plenary Speech 1	4			
	Plenary Speech 2				
		Coffee Break			
	Symposium	Symposium	Symposium	Symposium	
		Lunch Break			
	Symposium	Symposium	Symposium	Symposium	
	Coffee break	Poster Session		Coffee break	
	Symposium	&Coffee break	Social Activity	Symposium	
				Award Ceremony	
		Banquet Dinner			

<b>Symposium</b>	<b>DAY 1 30 July</b>	<b>DAY 2 31 July</b>	<b>DAY 3 1 August</b>	<b>DAY 4 2 August</b>
S1. Lab-on-a-chip (LoC) and MicroTAS		√	√	
S2. Biosensors and Biomedical Devices	√	√		
S3. In-body IoT Sensing Technology, Electroceuticals and Neural Interfaces		√	√	
S4. Nanophotonics and Metasurface	√	√		
S5. Acoustic, RF, THz Metamaterials and AI-Enabled Metamaterials				√
S6. Neuromorphic Computing, In-Memory Computing and Applications	√			
S7. Photonics Integrated Circuits (PIC) and Novel Materials				
S8. Enabling Technology for Photonic Neural Networks (PNN) and Applications				
S9. In-Sensor Computing and Enabling Technology for Edge Computing				
S10. MEMS/NEMS Sensors	√			
S11. Semiconductor Sensors, Photodetectors and CMOS MEMS		√		
S12. Piezoelectric MEMS and Resonators – FBAR, SAW, pMUT				√
S13. Piezoelectric Transducers and Energy Harvesters			√	
S14. Ferroelectric / Perovskite / 2D Materials Thin Film and Applications				
S15. Gas Sensors and Chemosensors				√
S16. Triboelectric Nanogenerators and Self-powered Sensors	√	√		
S17. Energy Harvesting Technology and Applications				√
S18. Flexible, Stretchable and Wearable Sensors			√	√
S19. Wearable AI Sensors			√	
S20. AI-enhanced Tactile Sensors and e-Skin			√	
S21. Haptic Technology and Applications		√		
S22. Advanced Sensors for Robots and Autonomous Systems			√	
S23. Intelligent Sensors and AI-Enhanced Humanoids	√			
S24. Enabling Technology for Digital Twin, Metaverse, and Smart Sensing Systems		√		
S25. AIoT Technology and Applications		√		
S26. Sensors for Applications in Agriculture, Aquaculture, Food Technology (A2FT) and Harsh Environment				√
S27. Industry Forum and Commercialization of Sensors and Transducers				

## AIS 2025 Detailed Program

### Alhambra 1

	<b>DAY 1</b> <b>30 July 2025</b> <b>(Wednesday)</b>	<b>DAY 2</b> <b>31 July 2025</b> <b>(Thursday)</b>	<b>DAY 3</b> <b>1 August 2025</b> <b>(Friday)</b>	<b>DAY 4</b> <b>2 August 2025</b> <b>(Saturday)</b>
	Registration			
8:30-10:00	Opening Ceremony Plenary Speech 1 Plenary Speech 2	Plenary Speech 3 Plenary Speech 4	SYM 1	SYM 12
10:00-10:30	Coffee Break			
10:30-12:00	SYM 2	SYM 1	SYM 1	SYM 12
12:00-13:30	Lunch Break			
13:30-15:30	SYM 2	SYM 2	SYM 1	SYM 5
15:30-16:00	Coffee break			
16:00-18:30	SYM 2	/	/	SYM 5 Award Ceremony

### Alhambra 2

	<b>DAY 1</b> <b>30 July 2025</b> <b>(Wednesday)</b>	<b>DAY 2</b> <b>31 July 2025</b> <b>(Thursday)</b>	<b>DAY 3</b> <b>1 August 2025</b> <b>(Friday)</b>	<b>DAY 4</b> <b>2 August 2025</b> <b>(Saturday)</b>
8:30-10:00	/	/	SYM 13, 14	SYM 17
10:00-10:30	Coffee Break			
10:30-12:00	SYM 4	SYM 24	SYM 13, 14	SYM 17
12:00-13:30	Lunch Break			
13:30-15:30	SYM 4	SYM 4	SYM 13, 14	SYM 17
15:30-16:00	Coffee break			
16:00-18:30	SYM 4	/	/	SYM 17

### Alhambra 3

	<b>DAY 1</b> <b>30 July 2025</b> <b>(Wednesday)</b>	<b>DAY 2</b> <b>31 July 2025</b> <b>(Thursday)</b>	<b>DAY 3</b> <b>1 August 2025</b> <b>(Friday)</b>	<b>DAY 4</b> <b>2 August 2025</b> <b>(Saturday)</b>
8:30-10:00	/	/	SYM S22	SYM 15
10:00-10:30	Coffee Break			
10:30-12:00	SYM 16	SYM 16	SYM S22	SYM 15
12:00-13:30	Lunch Break			
13:30-15:30	SYM 16	SYM 21	SYM 19	SYM 15
15:30-16:00	Coffee break			
16:00-18:30	SYM 16	/	/	SYM 15

## Alhambra 4

	<b>DAY 1</b> <b>30 July 2025</b> <b>(Wednesday)</b>	<b>DAY 2</b> <b>31 July 2025</b> <b>(Thursday)</b>	<b>DAY 3</b> <b>1 August 2025</b> <b>(Friday)</b>	<b>DAY 4</b> <b>2 August 2025</b> <b>(Saturday)</b>
8:30-10:00	/	/	SYM 20	SYM 26
10:00-10:30	Coffee Break			
10:30-12:00	SYM 6, 7, 8, 9	SYM 3	SYM 20	SYM 26
12:00-13:30	Lunch Break			
13:30-15:30	SYM 6, 7, 8, 9	SYM 3	SYM 3	SYM 26, 27
15:30-16:00	Coffee break			
16:00-18:30	SYM 6, 7, 8, 9	/	/	SYM 26, 27

## Al Andalus 1

	<b>DAY 1</b> <b>30 July 2025</b> <b>(Wednesday)</b>	<b>DAY 2</b> <b>31 July 2025</b> <b>(Thursday)</b>	<b>DAY 3</b> <b>1 August 2025</b> <b>(Friday)</b>	<b>DAY 4</b> <b>2 August 2025</b> <b>(Saturday)</b>
8:30-10:00	/	/	SYM 18	SYM 18
10:00-10:30	Coffee Break			
10:30-12:00	SYM 10	SYM 25	SYM 18	SYM 18
12:00-13:30	Lunch Break			
13:30-15:30	SYM 10	SYM 11	SYM 18	SYM 18
15:30-16:00	Coffee break			
16:00-18:30	SYM 23	/	/	SYM 18

# Opening Ceremony And Plenary Speech

**Day 1 (30 July 2025, Wednesday)**

**Alhambra 1**

**Chaired By: Prof. Chengkuo Lee**

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8:30-8:45    **Opening Ceremony**

8:45-9:25	Plenary Speech 1	Optical Nanomaterials as Frequency Converters for Imaging and Sensing <b>Xiaogang Liu</b> (National University of Singapore, Singapore)
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9:25-10:05	Plenary Speech 2	AI Empowered Wearable Ultrasound Technology <b>Sheng Xu</b> (University of California San Diego, San Diego, United States)
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**Day 2 (31 July 2025, Thursday)**

**Alhambra 1**

**Chaired By: Prof. Chengkuo Lee**

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8:30-9:10	Plenary Speech 3	Title: To Be Announced <b>Sang-Woo Kim</b> (Yonsei University, Seoul, Korea)
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9:15-9:55	Plenary Speech 4	Intelligent Soft Electronics for Healthcare Monitoring and VR <b>Xinge Yu</b> (City University of Hong Kong, Hong Kong, China)
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## S1. Lab-On-A-Chip (Loc) And Microtas

**Day 2 (31 July 2025, Thursday)**

**Alhambra 1**

**Chaired By: Prof. Chia-Hung Chen**

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10:30-10:50	Invited Speaker	Chenjie Xu	Development of cryomicroneedles for the transdermal delivery of biologics
10:50-11:10	Invited Speaker	Yan Xu	Pioneering nanofluidics for next-generation chemical and biological sensing
11:10-11:30	Invited Speaker	Hyoungsoo Kim	Improving lipid vesicle stability via controlled solvent evaporation in microfluidic double emulsions
11:30-11:50	Invited Speaker	Kento Yamagishi	On-skin bioelectronic systems with liquid metal microchannels for electrophysiological signal monitoring
11:50-12:05	Oral Presenter	Yuya Ishii	Extracellular potential analysis of neuromuscular system using a microelectrode array

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**Day 3 (1 August 2025, Friday)**

**Alhambra 1**

**Chaired By: Prof. Hiroaki Onoe**

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8:30-9:00	Keynote Speaker	Chia-Hung Chen	Title: to be announced
9:00-9:20	Invited Speaker	Daisuke Yoshino	Design of an organoid chip that mimics the structure of human placenta
9:20-9:40	Invited Speaker	Yong Wang	Flexible and multi-mode acoustofluidics enabled by thin-film acoustic waves
9:40-10:00	Invited Speaker	Yong Ling Kong	Addressing unmet clinical needs with additive manufacturing of bioelectronics
10:00-10:15	Oral Presenter	Daiki Miyashita	Measurement of extracellular potentials using electrode anchors for skeletal muscle tissue

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## S1. Lab-On-A-Chip (Loc) And Microtas

Day 3 (1 August 2025, Friday)

Alhambra 1

Chaired By: Prof. Chia-Hung Chen

10:30-10:50	Invited Speaker	Kenichi Funamoto	Investigation on aerokinesis and aerotaxis of human breast cancer cells by using microfluidic devices
10:50-11:10	Invited Speaker	Yoshikazu Hirai	Microfluidics-guided assembly of fluorescent nanodiamonds for high-sensitivity thermometry
11:10-11:30	Invited Speaker	Yuya Morimoto	Biohybrid system integrating cultured tissues and devices for evaluation of physiological function
11:30-11:45	Oral Presenter	Chaoshan Zhao	A multifunctional microfluidic chip based on single nanoparticle scattering for psa detection
11:45-12:00	Oral Presenter	Mami Akaike	Microfluidic sensor for direct measurement of micro-pressures in micro-tissues in vivo
12:00-12:15	Oral Presenter	Partha Pratim Sarkar	High-throughput and efficient intracellular delivery via parallel-periodic mechanoporation with viscoelastic fluids

Chaired By: Prof. Michinao Hashimoto

13:30-14:00	Keynote Speaker	Hiroaki Onoe	Title: To Be Announced
14:00-14:20	Invited Speaker	Moeto Nagai	Programmable optical toolbox for single-cell manipulation: enabling spatial, temporal presenter, and functional versatility
14:20-14:40	Invited Speaker	Ye Ai	Acoustic microfluidics for biomedical applications
14:40-14:55	Oral Presenter	Haixia Zhao	High-throughput sers-droplet system for label-free, real-time microbial metabolite profiling
14:55-15:10	Oral Presenter	Yuanhao Xie	Machine learning-enabled analysis of reaction processes in microdroplet reactors

## S2. Biosensors And Biomedical Devices

Day 1 (30 July 2025, Wednesday)

Alhambra 1

Chaired By: Prof. Zhou Li

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10:30-11:00	Keynote Speaker	Jian Chen	Single-cell detection and microsensors
11:00-11:20	Invited Speaker	Wataru Iwasaki	Flow control in microfluidic paper-based analytical devices with valve using thermoresponsive polymer
11:20-11:40	Invited Speaker	Piyasak Chaumpluk	Utilization of plant microstructure as a straightforward lab -on-a-chip for rabies virus detection
11:40-11:55	Oral Presenter	Zhaojie Xu	Dual-modal ptnps/pedot-rgo microelectrode arrays reveals synergistic encoding of social-related neurons and dopamine

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Chaired By: Prof. Tamiya Eiichi

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13:30-14:00	Keynote Speaker	Zhou Li	Title: To Be Announced
14:00-14:20	Invited Speaker	David Tsai	Cmos implants for at-scale brain machine interfaces
14:20-14:40	Invited Speaker	Luming Zhao	Enhancing sensitivity of schottky contact biosensor by modulating interface property
14:40-14:55	Oral Presenter	Jinping Luo	Label-free electrochemical aptasensor for sensitive detection of estradiol
14:55-15:10	Oral Presenter	Xinyi Liang	Multifunctional trimer nanoparticles synthesized based on lattice mismatch for multi-mode identification of multiple bacteria
14:10-15:25	Oral Presenter	Xin Wang	Revolutionizing point-of-care diagnostics: a daylight-driven zero-background phosphorescent lateral flow assay enabled by solid silica-encapsulated carbon dots

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## S2. Biosensors And Biomedical Devices

**Day 1 (30 July 2025, Wednesday)**

**Alhambra 1**

**Chaired By: Prof. Arakawa Takahiro**

16:00-16:30	Keynote Speaker	Chang-Po Chao	Predicting blood pressures for pregnant women by ppg and personalized deep learning
16:30-16:50	Invited Speaker	Nur Syakimah Ismail	Development of electrochemiluminescence-based biosensor using nitrogen-doped carbon dots for bisphenol a detection
16:50-17:10	Invited Speaker	Roy Law	Ai-assisted thermoplasmonic nanomaterials for biomedical applications
17:10-17:30	Invited Speaker	Monica Florescu	Nanotechnology-driven biosensors: enhancing sensitivity, selectivity, and sustainability
17:30-17:45	Oral Presenter	Guohao Xi	Engineering conical nanopores via surface modification for enhanced sensing applications
17:45-18:00	Oral Presenter		To be announced
18:00-18:15	Oral Presenter	Qingyu Xu	A fluorescent probe for in situ imaging of hydrogen peroxide and sulfur dioxide in biological oxidative stress models
18:15-18:30	Oral Presenter	Nuha Alekhmimi	Mmp-9 and il-6 biomarkers are detected using a biosensor based on au-ides for the quick diagnosis of sepsis

## S2. Biosensors And Biomedical Devices

Day 2 (31 July 2025, Thursday)

Alhambra 1

Chaired By: Prof. Zhou Li

13:30-14:00	Keynote Speaker	Tamiya Eiichi	Electrochemiluminescent Biosensors Using Printed Electrodes and Mobile Diagnostic Devices and Their Biomedical Applications
14:00-14:30	Keynote Speaker	Zhiwei Huang	Stimulated raman scattering tomography for label-free dynamic and functional imaging of live cells and tissue
14:30-14:50	Invited Speaker	Kenta litani	Enzyme-based fluorometry for gas-imaging applications
14:50-15:10	Invited Speaker	Haitao Zhao	Mechanical metamaterial biosensors for biochemical detection
15:10-15:30	Invited Speaker	Hsiang-chieh Lee	Title: to be announced
15:30-15:45	Oral Presenter	Juntao Liu	Automatic localization of seizure onset zone using directed transfer function on seeg
15:45-16:00	Oral Presenter		To be announced

## S3. In-Body Iot Sensing Technology, Electroceuticals And Neural Interfaces

**Day 2 (31 July 2025, Thursday)**

**Alhambra 4**

**Chaired By: Prof. Sanghoon Lee**

10:30-11:00	Keynote Speaker	Zhengbao Yang	Bio-organic piezoelectric materials and ultrasound energy harvesting for medical implants
11:00-11:20	Invited Speaker	Yiyuan Yang	Wireless implantable optogenetics: revolutionizing neuroscience behavior studies and treatment of neuro-disorders
11:20-11:40	Invited Speaker	Donghee Son	Self-healing and stretchable bioelectronic devices for stable neuroprosthesis
11:40-12:00	Invited Speaker	Hanmin Peng	Controlled drug release method combined with ultrasonic sensing and therapy
12:00-12:15	Oral Presenter	Yu Wang	Chronic flexible probe reveals epileptic spatial coding deficits

**Chaired By: Prof. Yiyuan Yang**

13:30-14:00	Keynote Speaker	Sanghoon Lee	Advanced neuromuscular interface for application in bionic limbs
14:00-14:20	Invited Speaker	Bowen Ji	Minimally invasive implantable flexible brain-computer interface sensors
14:20-14:40	Invited Speaker	Seongjun Park	Next-generation biomedical and neural interfaces using multifunctional thermally drawn fibers with soft materials
14:40-15:00	Invited Speaker	Sukho Song	Minimally invasive soft bioelectronic interfaces enabled by soft robotic technologies
15:00-15:15	Oral Presenter	Jaeu Park	Peripheral nerve coil interface for enhancement of axial direction induced magnetic field gradient
15:15-15:30	Oral Presenter	Shiya Lv	Multimodal biofeedback-guided closed-loop electrical stimulation for cognitive rehabilitation in alzheimer's disease
15:30-15:45	Oral Presenter	Qianli Jia	Tracking of dopamine dynamics and cellular-level electrophysiological activity during different sleep stages
15:45-16:00	Oral Presenter	Yu Liu	Pedot:dss-modified microelectrode arrays for simultaneous recording of neural activity in dual brain regions
16:00-16:15	Oral Presenter	Jong-Hwan Kim	A robust ai gesture classification system for unexpected situations in smart manufacturing using decision transformer

## S3. In-Body Iot Sensing Technology, Electroceuticals And Neural Interfaces

**Day 3 (1 August 2025, Friday)**

**Alhambra 4**

**Chaired By: Prof. Yiyuan Yang**

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13:30-13:50	Invited Speaker	Norihisa Miki	Hybrid renal replacement therapy using implantable artificial kidney
13:50-14:10	Invited Speaker	Joonsoo Jeong	Enhancing microelectronic neural interfaces by versatile 3d structuring, multi-modality, and substrate-electrode materials
14:10-14:25	Oral Presenter	Mixia Wang	An intelligent precision brain function localization system for non-human primates based on microelectrode array
14:25-14:50	Oral Presenter	Jian Miao	High-Stability Microelectrode Arrays for Precise Neural Electrophysiological Monitoring During Sleep-Wake Cycle
14:50-15:05	Oral Presenter	Yilin Song	Design and fabrication of flexible microelectrode array for deep-brain recordings in non-human primates

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## S4. Nanophotonics And Metasurface

**Day 1 (30 July 2025, Wednesday)**

### Alhambra 2

**Chaired By: Prof. Jing Hua Teng and Prof. Danyuan Lei**

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10:30-11:00	Keynote Speaker	Guangya Zhou	Single-pixel imaging for advanced spectroscopy and lidar sensor applications
11:00-11:20	Invited Speaker	Qingfeng Yan	Micro phase retarder based on bottom-up grown quasi-1d fibrous red phosphorus flake
11:20-11:40	Invited Speaker	YanJun Liu	Fabrication and applications of ultrathin suspended chiral metasurfaces
11:40-12:00	Invited Speaker	Tao Wang	Mechanical tunable mid-infrared plasmonic resonance

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**Chaired By: Prof. Guangya Zhou and Prof. Guixi Li**

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13:30-14:00	Keynote Speaker	Danyuan Lei	Electromagnetic asymmetry, optical magnetism and electron tunneling for nonlinear plasmonics based single-molecule quantum sensing
14:00-14:20	Invited Speaker	Ting Mei	Light-controlled antimony sulfide phase change for reconfigurable photonic devices
14:20-14:40	Invited Speaker	Haiyang Zou	Carrier transport modulation via surface and interfacial engineering
14:40-15:00	Invited Speaker	Kai Chen	Hybrid plasmonic antenna arrays for the detection of volatile organic compounds
15:00-15:15	Oral Presenter	Hao Dai	Chalcogenide visible metasurfaces: a new platform for high-performance optical devices
15:15-15:30	Oral Presenter	Xinyuan Hu	Experimental realization of convolution processing in photonic synthetic dimensions

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## S4. Nanophotonics And Metasurface

Day 1 (30 July 2025, Wednesday)

Alhambra 2

Chaired By: Prof. Ting Mei and Yungui Ma

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16:00-16:30	Keynote Speaker	Jing Hua Teng	Tunable optics using phase change and van der waals materials for sensing and imaging
16:30-16:50	Invited Speaker	Bingsheng Li	MOCVD Growth of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Based Heterojunctions for Solar Blind Deep UV Photodetector
16:50-17:10	Invited Speaker	Hong Liu	Printable photonic materials
17:10-17:30	Invited Speaker	Bo Fang	Efficient second-order nonlinear optical effects in lithium niobate microcavities
17:30-17:50	Invited Speaker	Guixin Li	Title: to be announced
17:50-18:05	Oral Presenter	Dongxiao Li	Mid-infrared metasurface with grating-enhanced plasmon resonance for spectral imaging

## S4. Nanophotonics And Metasurface

Day 2 (31 July 2025, Thursday)

Alhambra 2

Chaired By: Prof. Hong Liu and Prof. Yanjun Liu

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13:30-13:50	Invited Speaker	Yungui Ma	Precision beam steering and optical metrology enabled by micro-meta-lens array
13:50-14:10	Invited Speaker	Bing Wang	Light control with synthetic temporal presenter interfaces
14:10-14:30	Invited Speaker	Kun Huang	Nanowire metasurfaces with continuous superconfined modes for ultrabroadband and wide-angle meta-optics
14:30-14:50	Invited Speaker	Qiong He	Light manipulation via near-field coupling control in plasmonic metasurface
14:50-15:10	Invited Speaker	Zhongyu Cai	Title: to be announced
15:10-15:25	Oral Presenter	Chenyu Liu	Chaos-based communication in synthetic temporal presenter lattices
15:25-15:40	Oral Presenter	Yu Kee Ooi	Nanosphere lithography of iii-nitride nanowires
15:40-15:55	Oral Presenter	Cheng Xu	Cmos enabled mid-infrared chiroptic platform for polarization-wavelength multiplexed imaging

## S5. Acoustic, Rf, Thz Metamaterials And Ai-Enabled Metamaterials

### Day 4 (2 August 2025, Saturday)

#### Alhambra 1

Chaired By: Prof. Nan Wang And Prof. Yu-Sheng Lin

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13:30-14:00	Keynote Speaker	Sang-Seok Lee	Mems device fabrication based on printing technology
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14:00-14:30	Keynote Speaker	Yao Zhu	Title: to be announced
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14:30-14:50	Invited Speaker	Linda Shao	Multi-channel metasurface for full-polarization modulation of electromagnetic wavefronts
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14:50-15:10	Invited Speaker	Qinghua Ren	Title: to be announced
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15:10-15:25	Oral Presenter		To be announced
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Chaired By: Prof. Kah Wee Ang

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16:00-16:20	Invited Speaker	Qian Li	Epsilon-near-zero photonics: infinite potentials
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16:20-16:40	Invited Speaker	Hongyan Fu	Metamaterial-enabled integrated photonic devices for advanced spectral-scanning lidar systems
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16:40-16:55	Oral Presenter	Yinpeng Wang	Active learning enabled designs for near-field enhanced thz metamaterial biosensors
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**S6, 7, 8, 9**

**Day 1 (30 July 2025, Wednesday)**

**Alhambra 4**

**Chaired By: Prof. Yiming Ma**

10:30-11:00	Keynote Speaker	Kah Wee Ang	Scalable 2d-cmos heterointegration for energy-efficient compute-in-memory ai hardware
11:00-11:20	Invited Speaker	Kai Liu	Interface engineering of 2d materials for high-efficiency neuromorphic devices
11:20-11:40	Invited Speaker	Zhengjin Weng	High-performance memristors based on two-dimensional transition metal phosphorus trichalcogenides for neuromorphic computing
11:40-12:00	Invited Speaker	Yesheng Li	Title: to be announced

**Chaired By: Prof. Kah Wee Ang**

13:30-14:00	Keynote Speaker	Aaron Danner	Chip-based photonics in barium titanate
14:00-14:20	Invited Speaker	Xingyan Zhao	Integrated photonic devices on thin-film alscn platform
14:20-14:40	Invited Speaker	Akihiko Kasukawa	High power, high efficiency gainasp/inp single mode lasers
14:40-15:00	Invited Speaker	Guanyu Chen	High speed and high power germanium photodetector
15:00-15:20	Invited Speaker	Binbin Wang	All-solid-state beam steering based on the electro-optical effect of thin-film lithium niobate
15:20-15:35	Oral Presenter	Yu-Hsuan Chiang	S-fddft: a few-shot learning framework for real-time motion detection using flexible sensors on edge ai devices

**S6, 7, 8, 9**

**Day 1 (30 July 2025, Wednesday)**

**Alhambra 4**

**Chaired By: Prof. Aaron Danner**

16:00-16:30	Keynote Speaker	Vittorio Passaro	High-performance optical sensing by non-hermitian photonics
16:30-16:50	Invited Speaker	Sanghoon Chae	Novel 2d materials integrated sin waveguides for chip-based photonic processing
16:50-17:10	Invited Speaker	Chun-Nien Liu	Study of high coupling efficiency of taper fiber by uv-curable resin for silicon photonics chip
17:10-17:30	Invited Speaker	Yiming Ma	Denoising-autoencoder-facilitated mems computational spectrometer with high performance
17:30-17:50	Invited Speaker	Xudong Zou	Micro-nano mechanical resonant sensors with in-sensor neuromorphic computing capability
17:50-18:05	Oral Presenter	Koshi Fujimoto	Randomized 2-Dimensional LSPR Gas Sensor using Fluorescent-dyes - Au/Ag NPs coupling
18:05-18:20	Oral Presenter	Yao Wang	Quick and High-Sensitive Gas Detection Using LSPR-SERS Dual-Mode Sensor
18:20-18:35	Oral Presenter		To be announced

**S10. MEMS/NEMS Sensors**  
**Day 1 (30 July 2025, Wednesday)**  
**Al Andalus 1**  
**Chaired By: Prof. Xueyong Wei**

10:30-11:00	Keynote Speaker	Jong Baeg Kim	Transferred carbon nanotubes for sensors and actuators
11:00-11:20	Invited Speaker	Jingui Qian	Acoustofluidic particle localization on piezoelectric resonators for liquid-phase mass sensing
11:20-11:40	Invited Speaker	Chun-Wei Tsai	Electrostatic MEMS-Driven Silicon Photonics Switch with Zero Static Power Consumption
11:40-12:00	Invited Speaker	Jian Zhou	High-frequency surface acoustic wave sensors and their applications
12:00-12:15	Oral Presenter	Wei Guo	Quantum magnetometry based on ensemble nv-centers in integrated mems
12:15-12:30	Oral Presenter	Daojiang Yu	Uniform Metal-assisted Chemical Etching for High-Aspect-Ratio Microstructures Fabrication with Low Cost

**Chaired By: Prof. Jin Xie**

13:30-14:00	Keynote Speaker	Qing-An Huang	Parity-time symmetry for silicon micromechanical resonators
14:00-14:20	Invited Speaker	Mingzhi Yu	Research on mems alkali metal atomic vapor cell and miniature atomic magnetometer
14:20-14:40	Invited Speaker	Hong Zhou	Electrically reconfigurable photonic quasi-bound states in the continuum (bic) platform via mems actuation
14:40-15:00	Invited Speaker	Zhaojun Liu	Wide-temperature-range flexible thin-film temperature sensor
15:00-15:20	Invited Speaker	Qian Zhang	Flexible sensors and soft robotics
15:20-15:40	Invited Speaker	Hang Guo	Title: to be announced

## S11. Semiconductor Sensors, Photodetectors And CMOS MEMS

Day 2 (31 July 2025, Thursday)

Al Andalus 1

Chaired By: Prof. Swee Tiam Tan

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13:30-14:00	Keynote Speaker	Qijie Wang	Mid-infrared detection and spectroscopy with 2d materials
14:00-14:20	Invited Speaker	Wanfeng Xie	Tailoring mxene thickness and functionalization for enhanced room-temperature trace no2 sensing
14:20-14:40	Invited Speaker	Mingfa Peng	Solution-processed quantum dot heterostructure photodetectors and large-scale array integration
14:40-15:00	Invited Speaker	Jicong Zhao	Van der waals mid-wave infrared photodetector linear array
15:00-15:20	Invited Speaker	Azrul Azlan Hamzah	Title: to be announced
15:20-15:40	Invited Speaker	Muhamad Ramdzan Buyong	Title: to be announced
15:40-16:00	Invited Speaker	Kelvin Zhang	Title: to be announced
16:00-16:20	Invited Speaker	Wei-Sea Chang	Title: to be announced
16:20-16:35	Oral Presenter	Saravanan Adhimo	SnS2 nanosheets-Niobium diselenide@C60 hybrid materials-based self-power broadband photodetectors for advanced neuromorphic AI vision systems

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## S12. Piezoelectric Mems And Resonators – FBAR, SAW, pMUT

Day 4 (2 August 2025, Saturday)

Alhambra 1

Chaired By: Prof. Yao Zhu And Prof. Hoe Joon Kim

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8:30-8:50	Invited Speaker	Zhiqiang Mu	Polarity-inverted aluminum scandium nitride resonators and ferroelectric modulations
8:50-9:10	Invited Speaker	Yansong Yang	Mems transducers empower ultrasonic and rf applications
9:10-9:30	Invited Speaker	Zhiran Yi	Piezoelectric mems cooler
9:30-9:50	Invited Speaker	Debarun Sengupta	Highly aligned piezoelectric nanofibers for 3d printed self-powered sensors
9:50-10:10	Invited Speaker	Basudeba Behera	Title: to be announced

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Chaired By: Prof. Aron Woldeghiorgis

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10:30-11:00	Keynote Speaker	Nan Wang	Title: to be announced
11:00-11:20	Invited Speaker	Daniel Chen	Ai-enhanced quantification of abnormally oriented grains in scaln thin films for in-line process monitoring
11:20-11:40	Invited Speaker	Qilin Hua	Submersible soft robotics with ultrasonic echolocation capabilities
11:40-12:00	Invited Speaker	Hemanshu Pota	Title: to be announced
12:00-12:15	Oral Presenter	Hong Zhang	High-Accuracy Simulation Model for Temperature-Frequency Characteristics of Single-Port SAW Resonators Based on Asymptotic Waveform Evaluation

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## S13. Piezoelectric Transducers And Energy Harvesters

## S14. Ferroelectric / Perovskite / 2D Materials Thin Film And Applications

**Day 3 (1 August 2025, Friday)**

**Alhambra2**

**Chaired By: Prof. Bin Yang**

8:30-9:00	Keynote Speaker	Junwen Zhong	Flexible dual-directional electromechanical transducers for human-machine interactive applications
9:00-9:20	Invited Speaker	Fengru Fan	Efficient catalytic conversion of gas molecules based on novel charged interfaces
9:20-9:40	Invited Speaker	Pengcheng Jiao	Ai-informed mechanical piezo-metamaterials for self-powered sensing
9:40-9:55	Oral Presenter	Hangrui Cui	An Intelligent Cube-Designed Piezoelectric Node (iCUPE) with Simultaneous Sensing and Energy Harvesting Capabilities
9:55-10:10	Oral Presenter	Fong-Zhi Chen	NCIR's WS2 2D Material R&D Collaboration and Its Application In Gas Sensors

**Chaired By: Prof. Ying-Hao Chu And Prof. Wee Chen Gan**

10:30-11:00	Keynote Speaker	Huicong Liu	Mems energy harvesting and sensing techniques for health monitoring and fault diagnosis
11:00-11:20	Invited Speaker	Tao Wu	Aln/alscn piezoelectric thin film transducers
11:20-11:40	Invited Speaker	Jia Lu	Electret-based self-powered flexible vibration sensor with high sensitivity and durability
11:40-12:00	Invited Speaker	Shimpei Ono	The advanced functionalities of ions
12:00-12:15	Oral Presenter	Wenning Di	High performance piezoelectric energy harvesting based on 0.71pb(mg1/3nb2/3)o3-0.29pbtio3 (pmn-pt) single crystals

## S13. Piezoelectric Transducers And Energy Harvesters

## S14. Ferroelectric / Perovskite / 2D Materials Thin Film And Applications

**Day 3 (1 August 2025, Friday)**

**Chaired By: Prof. Junwen Zhong And Prof. Huicong Liu**

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13:30-14:00	Keynote Speaker	Ying-Hao Chu	Flexible high entropy nonlinear dielectrics with superior performance
14:00-14:20	Invited Speaker	Sagnik Ghosh	Scaln-based piezoelectric micromachined ultrasound transducers as a multipurpose lead-free solution
14:20-14:40	Invited Speaker	Takashi Nakajima	Vibration energy harvesting for sustainable iot: advances in piezoelectric polymer materials
14:40-15:00	Invited Speaker	Lu Wang	Piezoelectric hybrid energy harvesting wireless system integrating powering, sensing, triggering and actuation
15:00-15:20	Invited Speaker	Yao Wang	Title: to be announced

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## S15. Gas Sensors And Chemosensors

Day 4 (2 August 2025, Saturday)

Alhambra3

Chaired By: Prof. Fei Wang

8:30-9:00	Keynote Speaker	J. Andrew Yeh	Predicting liver function from breath vocs via machine learning with support for isfet sensor integration
9:00-9:30	Keynote Speaker	Kun-Lin Yang	Applications of polymer network-liquid crystals (pnlc) as chemical and gas sensors
9:30-9:50	Invited Speaker	Yanbai Shen	High response and selectivity hydrogen sensors based on sandwich-structured msnx-rgo-sno2 composites
9:50-10:10	Invited Speaker	Arakawa Takahiro	Non-invasive human volatiles detection via a wearable biochemical gas sensor

Chaired By: Prof. Fei Wang

10:30-11:00	Keynote Speaker	Xiaojing Mu	Title: to be announced
11:00-11:30	Keynote Speaker	Sang Sub Kim	Surface functionalization of metal oxide semiconductors for enhanced chemiresistive gas sensing
11:30-11:50	Invited Speaker	Sikai Zhao	Sno2 functionalized mos2 nanostructures for high-performance nh3 sensing
11:50-12:05	Oral Presenter		To be announced



## S15. Gas Sensors And Chemosensors

Day 4 (2 August 2025, Saturday)

Alhambra3

Chaired By: Prof. Inkyu Park

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13:30-14:00	Keynote Speaker	Fei Wang	Mems gas sensors with wafer level fabrication and testing techniques
14:00-14:20	Invited Speaker	Fang Xu	Study of alcohol selectivity of a room temperature operated gas sensor based on tio2
14:20-14:40	Invited Speaker	Lin Xu	Title: to be announced
14:40-15:00	Invited Speaker	Dae-Sik Lee	Nano-chemical sensors technology for diet-monitoring/cancer-screening systems using exhaled breath
15:00-15:15	Oral Presenter	Jianwei Chen	Ultra-sensitive ndir gas sensor for early detection of lithium-ion battery thermal runaway via real-time emission monitoring
15:15-15:30	Oral Presenter		To be announced

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Chaired By: Prof. Dae-Sik Lee

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16:00-16:30	Keynote Speaker	Xuhui Sun	Artificial olfaction platform based on mems gas sensor array
16:30-16:50	Invited Speaker	Seong Chan Jun	Title: to be announced
16:50-17:05	Oral Presenter	Tianshu Chu	Space confinement strategy and nano sensing performance of mxene materials

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## S16. Triboelectric Nanogenerators And Self-Powered Sensors

Day 1 (30 July 2025, Wednesday)

Alhambra3

Chaired By: Prof. Xiong Pu

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10:30-11:00	Keynote Speaker	Yunlong Zi	Tribo-photonics: an emerging field toward fully-self-powered wireless sensing
11:00-11:30	Keynote Speaker	Chi Zhang	Triboelectric nanogenerators for weak mechanical energy harvesting and self-powered microsystems
11:30-11:50	Invited Speaker	Jicang Si	A self-powered gas sensing system based on triboelectric vibration energy harvesting for highly sensitive and selective nh3 detection in engine rooms of ammonia-powered ships
11:50-12:10	Invited Speaker	Yi Xi	Study on interface electrical properties of tribodielectric materials

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Chaired By: Prof. Minyi Xu

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13:30-14:00	Keynote Speaker	Xiong Pu	Mechano-iontronic effects for flexible electronics
14:00-14:30	Keynote Speaker	Zhen Wen	Triboelectric tactile sensors
14:30-15:00	Keynote Speaker	Kean C. Aw	Harvesting energy with electromagnetic, piezoelectric, and triboelectric technologies
15:00-15:20	Invited Speaker	Xuelian Wei	Sensory Evolution of Intelligent Robots: Innovative Exploration of Triboelectric Sensing for Object Identification
15:20-15:40	Invited Speaker	Mengwei Wu	Stretchable Rope-Shaped Triboelectric Sensor for Multi-Scenario Monitoring

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## S16. Triboelectric Nanogenerators And Self-Powered Sensors

**Day 1 (30 July 2025, Wednesday)**

**Alhambra3**

**Chaired By: Prof. Xiaojing Mu And Prof. Ying-Chih Lai**

16:00-16:30	Keynote Speaker	Minyi Xu	Deep-learning-assisted triboelectric whisker for near field perception and online state estimation of underwater vehicle
16:30-16:50	Invited Speaker	Yina Liu	An Ultrasensitive Triboelectric Pressure Sensor for Multimodal Healthcare Applications
16:50-17:10	Invited Speaker	Min-Hsin Yeh	Enhancing self-induced polarization of pvdf-based triboelectric film by introducing functional g-c3n4 layers for ultrasensitive triboelectric pressure sensors
17:10-17:30	Invited Speaker	Mang Gao	Abrasive wear detection for metal-polymer plain bearing based on triboelectric effect under dry and boundary working condition
17:30-17:50	Invited Speaker	Xinkai Xie	Self-powered triboelectric neuromorphic devices for bioinspired tactile perception
17:50-18:05	Oral Presenter	Delong Han	An antifreeze gel as strain sensors and machine learning assisted intelligent motion monitoring of triboelectric nanogenerators in extreme environments
18:05-18:20	Oral Presenter		To be announced
18:20-18:35	Oral Presenter	Sabyrzhan khan	Smart gripper with triboelectric sensors and data-driven machine learning for object classification

**Day 2 (31 July 2025, Thursday)**

**Alhambra3**

**Chaired By: Prof. Zhen Wen**

10:30-11:00	Keynote Speaker	Ying-Chih Lai	Untethered, autonomously self-healable, and self-powered actively-perceiving and energy-harvesting triboelectric skins and their applications in soft robotics
11:00-11:30	Keynote Speaker	Wenzhuo Wu	Title: to be announced
11:30-11:50	Invited Speaker	Po-Kang Yang	Recent advances in functional wearable design using layered nanomaterials
11:50-12:10	Invited Speaker	Chen-Kuei Chung	Laser processing and molding of flexible polymer for unique triboelectric nanogenerator and self-powered sensor application

## S17. Energy Harvesting Technology And Applications

Day 4 (2 August 2025, Saturday)

Alhambra2

Chaired By: Prof. Xuhui Sun

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8:30-9:00	Keynote Speaker		To be announced
9:00-9:20	Invited Speaker	Zhihui Lai	Research on a self-powered rolling bearing fault diagnosis method with vibration energy harvesters for self-sensing
9:20-9:40	Invited Speaker	Junlei Wang	Energy concentration pipe based on passive jet control for enhancing flow-induced vibration energy harvesting
9:40-10:00	Invited Speaker	Cailiang Zhang	Dynamics analysis of a hybrid piezoelectric-dielectric harvester

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Chaired By: Prof. Xuhui Sun

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10:30-11:00	Keynote Speaker	Shengxi Zhou	Mechanical energy harvesters for powering wireless sensors in rail transit infrastructure
11:00-11:20	Invited Speaker	Siowling Soh	Triboelectric charge separation and transfer at interfaces of matter
11:20-11:40	Invited Speaker	Yang Kuang	Track-borne magnetic field energy harvesters for electrified railways
11:40-12:00	Invited Speaker	Xuejie Gao	3d printing applied in li metal batteries: from liquid to solid
12:00-12:15	Oral Presenter	Shuang Xiao	Reactive crystallization of halide perovskites for high-performance solar cells

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## S17. Energy Harvesting Technology And Applications

Day 4 (2 August 2025, Saturday)

Alhambra2

Chaired By: Prof. Shengxi Zhou

13:30-14:00	Keynote Speaker	Chenguo Hu	Achieving high output performance and efficient energy utilization of teng
14:00-14:20	Invited Speaker	Ruqi Sun	Ocean wave energy harvesting with pendulum-like structures
14:20-14:40	Invited Speaker	Hiroko Yamada	Development of microbial fuel cells using waste cutting fluids
14:40-15:00	Invited Speaker	Dongmei Huang	Design and analysis of galloping energy harvesters
15:00-15:20	Invited Speaker	Guobiao Hu	Equivalent circuit modeling methods and their applications in vibration energy harvesting and control
15:20-15:40	Invited Speaker	Zhongjie Li	Title: to be announced

Chaired By: Prof. Shengxi Zhou

16:00-16:20	Invited Speaker	Yongpeng Lei	Atomically dispersed dual-sites for rechargeable zinc-air batteries
16:20-16:40	Invited Speaker	Guozhi Zhang	Ultrasonic and rf pulse sensing multimodal sensing technology for partial discharge of power equipment
16:40-17:00	Invited Speaker	Kai Tao	Title: to be announced
17:00-17:20	Invited Speaker	Huliang Dai	Title: to be announced

## S18. Flexible, Stretchable And Wearable Sensors

Day 3 (1 August 2025, Friday)

Al Andalus 1

Chaired By: Prof. Wenzhuo Wu

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8:30-9:00	Keynote Speaker	Michinao Hashimoto	Title: to be announced
9:00-9:20	Invited Speaker	Jungwook Choi	Design, manufacturing, and applications of carbon nanomaterial-based physical sensors
9:20-9:40	Invited Speaker	Bingpu Zhou	Flexible and wearable magnetized interface
9:40-10:00	Invited Speaker	Wei Zhai	Tough and strong soft materials for flexible electronics

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Chaired By: Prof. Wenzhuo Wu

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10:30-11:00	Keynote Speaker	Jae Yeong Park	Wearable biosensor patches for digital healthcare and medical applications
11:00-11:20	Invited Speaker	Xianjie Pu	Wearable triboelectric sensor and its output enhancement
11:20-11:40	Invited Speaker	Jungil Choi	Soft, skin-conformal multifunctional microfluidic platforms for precise monitoring of sweat biomarkers and temperature
11:40-12:00	Invited Speaker	Yan Wang	Electronic skins for continuous health monitoring
12:00-12:15	Oral Presenter	Wenlong Xu	Machine learning assisted gel-based flexible sensors and human-machine interaction

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Chaired By: Prof. Tomoyuki Yokota

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13:30-14:00	Keynote Speaker	Tomoyuki Yokota	Sheet-type image sensor
14:00-14:20	Invited Speaker	Junseong Ahn	All-inorganic nanoribbon yarns for wearable transducers
14:20-14:40	Invited Speaker	Da Wan Kim	Multilayered bio-adhesive architectures for sensor interfaces: reversible skin attachment and structured suction layers
14:40-14:55	Oral Presenter	Gangsheng Chen	Shear force enabled liquid metal circuits with hierarchical embedded structure for paper electronics

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## S18. Flexible, Stretchable And Wearable Sensors

Day 4 (2 August 2025, Saturday)

### AI Andalus 1

Chaired By: Prof. Wei Zhai

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8:30-9:00	Keynote Speaker	Inkyu Park	Micro/nano-enabled wearable/flexible sensors for smart healthcare and medical applications
9:00-9:20	Invited Speaker	Min-Ho Seo	Three synchronized, miniaturized, wireless imu sensors for automated gait and balance analysis system
9:20-9:40	Invited Speaker	Shipeng Zhang	Ultra-thin stretchable multifunctional wearable sensor for on-skin smart healthcare monitoring
9:40-9:55	Oral Presenter	Heng Zhang	Jellyfish-like gold nanowires as flexosers sensors for sweat analysis
9:55-10:10	Oral Presenter	Min Xu	Elastic nanoparticle-reinforced, conductive structural color hydrogel with super stretchability, self-adhesion, self-healing as electrical/optical dual-responsive visual electronic skins

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Chaired By: Prof. Chuanfei Guo

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10:30-11:00	Keynote Speaker	Jianyong Ouyang	Flexible sensors for food processing and food digestion monitoring
11:00-11:20	Invited Speaker	Kai Wu	Deformation/fracture behavior and electromechanical response of metal films
11:20-11:40	Invited Speaker	Tian Li	Bioinspired Hierarchical Soft Materials for Sensing Under Mechanical Stress
11:40-11:55	Oral Presenter	Myrto Patagia Bakaraki	Ai-enhanced wearable sensor systems for monitoring and optimizing neurorehabilitation in post-stroke patients
11:55-12:10	Oral Presenter	Tian-run Lv	Harnessing built-in electric fields for enhanced electron transfer in biosensor for precise digital health assessment

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## S18. Flexible, Stretchable And Wearable Sensors

Day 4 (2 August 2025, Saturday)

### AI Andalus 1

Chaired By: Prof. Chuanfei Guo

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13:30-14:00	Keynote Speaker	Chuanfei Guo	Artificial skin for accurate measurement of pressure and vibration
14:00-14:20	Invited Speaker	Chengyi Hou	Sensing & interactive fiber electronic
14:20-14:40	Invited Speaker	Yanhao Yu	Soft electronic packaging
14:40-14:55	Oral Presenter	Dengke Song	Regulating anti-freezing properties of gels by adjusting polymer monomer ratios for object recognition via flexible sensors
14:55-15:10	Oral Presenter	Bismark Asiedu Asante	WAND v2: seamless indoor and outdoor navigation using gps and imu data fusion
15:10-15:25	Oral Presenter		To be announced
15:2-15:40	Oral Presenter	Jinying Zhang	Flexible 1-3-type composite transducer for targeted neuromodulation

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Chaired By: Prof. Jae Yeong Park

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16:00-16:30	Keynote Speaker	Ting Zhang	Wearable flexible sensing devices and applications
16:30-16:50	Invited Speaker	Junlong Yang	Synergistic interface integration in multi-layered systems for a resilient and adaptive electronic skin
16:50-17:10	Invited Speaker	Sunghoon Lee	Skin-attachable next-generation wearable electronics

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## S19. Wearable Ai Sensors

Day 3 (1 August 2025, Friday)

Alhambra3

Chaired By: Prof. Ting Zhang

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13:30-14:00 Keynote Speaker Chwee Teck Lim Title: to be announced

14:00-14:20 Keynote Speaker Mehmet Rasit Yuce Title: to be announced

14:20-14:40 Invited Speaker Kai Xiao Neuromorphic iontronic devices for brain-machine hybrid intelligence

14:40-14:55 Oral Presenter Shengxin Xiang A stretchable, self-assembled janus structured electronic skin for gesture recognition in deep learning

14:55-15:10 Oral Presenter Xiao Wei Fiber-based tactile sensor for intelligent human-machine interaction

15:10-15:25 Oral Presenter To be announced

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## S20. Ai-Enhanced Tactile Sensors And E-Skin

Day 3 (1 August 2025, Friday)

Alhambra4

Chaired By: Prof. Jun Wu

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8:30-9:00	Keynote Speaker	Jun Wu	Flexible tactile devices and intelligent systems
9:00-9:20	Invited Speaker	Yan Wang	Deep learning-assisted triboelectric smart mats for personnel comprehensive monitoring toward maritime safety
9:20-9:40	Invited Speaker	Cheol Song	Optical force sensing for precision epidural injections
9:40-9:55	Oral Presenter		To be announced
9:55-10:10	Oral Presenter	Jingfeng Xu	Edge-ai enhanced multimodal tactile glove with in-sensor computing

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Chaired By: Prof. Jun Wu

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10:30-11:00	Keynote Speaker	Po-Liang Liu	First-principles investigation of work function modulations induced by co-adsorption of no, no <sub>2</sub> , co, co <sub>2</sub> , h <sub>2</sub> s, and o <sub>3</sub> on znga <sub>2</sub> o <sub>4</sub> (111) for gas sensing
11:00-11:20	Invited Speaker	Yang Li	hybrid wearable device based on integrated pressure sensing and visualization
11:20-11:40	Invited Speaker	Tao Jin	Multimodal sensors enabled soft robotic system aiming at intelligent manipulation
11:40-11:55	Oral Presenter		To be announced

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## S21. Haptic Technology and Applications

Day 2 (31 July 2025, Thursday)

Alhambra3

Chaired By: Prof. Lim Chwee Teck and Prof. Xinge Yu

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13:30-13:50	Invited Speaker	Dengfeng Li	Wearable robotic haptic feedback technologies
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13:50-14:10	Invited Speaker	Zhuang Zhang	Origami-based structures for multimodal soft actuation and high-fidelity haptics
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14:10-14:30	Invited Speaker	Yitian Shao	Wide bandwidth tactile sensing of human and embodied intelligence
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14:30-14:50	Invited Speaker	Yuan Ma	Developing advanced human-machine mechanical interfaces
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14:50-15:10	Invited Speaker	Gang Wang	Title: to be announced
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15:10-15:25	Oral Presenter		To be announced
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15:25-15:40	Oral Presenter	Lei Shi	A Machine Learning-Based Knee Brace System for Walking Gait Analysis
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15:40-15:55	Oral Presenter		To be announced
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## S22. Advanced Sensors For Robots And Autonomous Systems

Day 3 (1 August 2025, Friday)

Alhambra3

Chaired By: Prof. Bo Lu and Prof. Haoyong Yu

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8:30-9:00	Keynote Speaker	Chee Kong Chui	Cyber-physical systems with edge computing for robotic automation in chemical development
9:00-9:20	Invited Speaker	Dongsheng Li	Perception and interaction for minimally invasive surgical robots
9:20-9:35	Oral Presenter	Juan Augusto Heins Herrera Ollachica	Human presence detection for rescue applications by using ultra-wideband radar and deep neural network: a framework for drone integration
9:35-9:50	Oral Presenter	Sungho Son	Analyzing camera recognition under simulated visual contamination with real-world validation
9:50-10:05	Oral Presenter	Xichen Hu	Magnetically-gated mechanosensing with adaptive sensitivity enabled by machine learning

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Chaired By: Prof. Minglu Zhu and Prof. Chee Kong Chui

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10:30-11:00	Keynote Speaker	Haoyong Yu	Title: to be announced
11:00-11:20	Invited Speaker	Bo Lu	Title: to be announced
11:20-11:35	Oral Presenter	Ketan Sahu	A neuro-adaptive multi-pack grey wolf optimizer for resilient multi-rover path-planning in lunar-style terrains
11:35-11:50	Oral Presenter		To be announced
11:50-12:05	Oral Presenter	Md Ali Haider	A fault-tolerant framework for dynamic task reassignment in multi-robot systems

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## S23. Intelligent Sensors And Ai-Enhanced Humanoids

Day 1 (30 July 2025, Wednesday)

AI Andalus 1

Chaired By: Prof. Qiongfeng Shi

16:00-16:30	Keynote Speaker	Qiongfeng Shi	Intelligent tactile sensors for multimodal perception and robotic e-skins
16:30-16:50	Invited Speaker	Long Liu	Self-powered human-robot interaction sensing system as a dexterous teaching platform for embodied artificial intelligence learning
16:50-17:10	Invited Speaker	Qian Zhang	Harnessing the shadow-effect: advanced energy harvesting and smart sensing for artificial intelligence systems
17:10-17:30	Invited Speaker	Huimin Hao	A High-Sensitivity Trace Sebum Gas Sensor for Ultra-Early Diagnosis of Parkinson's Disease
17:30-17:50	Invited Speaker	Jianxiong Zhu	Ai-augmented wearable triboelectric human-machine interface in motion identification
17:50-18:10	Invited Speaker	Jiaqing Xiong	Fiber-based soft actuators with autonomous perceptivity
18:10-18:25	Oral Presenter	Ya Tang Yang	Optical flow based obstacle avoidance of autonomous nano quadcopter using on board computing
18:25-18:10	Oral Presenter		To be announced

## S24. Enabling Technology For Digital Twin, Metaverse, And Smart Sensing Systems

**Day 2 (31 July 2025, Thursday)**

**Alhambra2**

**Chaired By: Prof. Siva Kumar Balasundram**

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10:30-11:00	Keynote Speaker	Minglu Zhu	Sensing and feedback fusion for mutual perception in metaverse and robotics
11:00-11:20	Invited Speaker	Xuan Li	Fully printable hybrid feedback interfaces for adaptive exoskeleton teleoperation systems
11:20-11:40	Invited Speaker	Cong Yang	Title: to be announced
11:40-11:55	Oral Presenter	Cheng-Lun Kan	In-situ measurement of residual stress and parameter optimization in laser drilling
11:55-12:10	Oral Presenter	Priyanshu Srivastava	AIoT-Driven Natural Language Communication for Smart Device Interaction and Maintenance

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## S25. AIoT Technology And Applications

Day 2 (31 July 2025, Thursday)

AI Andalus 1

Chaired By: Prof. Yang Kuang

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10:30-11:00	Keynote Speaker	Hailing Fu	Title: to be announced
11:00-11:15	Oral Presenter		To be announced
11:15-11:30	Oral Presenter	Syafar Hidayat	Integration of IoT, LoRa, and Machine Learning for Temperature and Humidity Monitoring in Hydroponic Greenhouse Farming.
11:30-11:45	Oral Presenter	Zixuan Zhong	Diffraction-Integrated AOM-Based $\Phi$ -OTDR Achieves 1.5 m Spatial Resolution for Distributed Acoustic Sensing over 50 km range
11:45-12:00	Oral Presenter	Fan-Jie Kung	Enhancing Speech Localization and Separation with Convolutional Neural Network -Based Voice Activity Detection in Noisy Acoustic Scenarios
12:00-12:15	Oral Presenter	Uzair Hussain Bhatti	An Integrated AIoT and Generative AI Framework for Predictive Maintenance and Automated Resource Planning

## S26. Sensors For Applications In Agriculture, Aquaculture, Food Technology (A2Ft) And Harsh Environment

**Day 4 (2 August 2025, Saturday)**

**Alhambra4**

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

8:30-9:00	Keynote Speaker	Toshihiro Itoh	Wearable bioacoustic devices for animal health monitoring
9:00-9:20	Invited Speaker	Xuming Zhang	Fiber-optic marine sensors for dual-parameter measurement of salinity and temperature
9:20-9:40	Invited Speaker	Michitaka Yamamoto	Development of molecular weight measurement method using whistle acoustic signals for remote sensing of cattle-emitted gases
9:40-9:55	Oral Presenter		To be announced

**Chaired By: Prof. Toshihiro Itoh**

10:30-11:00	Keynote Speaker	Xiaoxing Zhang	Insulation monitoring of power equipment and green electrical technology
11:00-11:20	Invited Speaker	Naoki Shiraishi	Weight-detectable resonant sensors for monitoring volatile fatty acids (vfas) in the rumen of cows
11:20-11:40	Invited Speaker	Noriko Tsuruoka	Microperfusion needle for minimally invasive monitoring of biological components of individual plants
11:40-11:55	Oral Presenter		To be announced



## S26. Sensors For Applications In Agriculture, Aquaculture, Food Technology (A2Ft) And Harsh Environment

## S27. Industry Forum and Commercialization of Sensors and Transducers

**Day 4 (2 August 2025, Saturday)**

**Alhambra 4**

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

13:30-14:00	Keynote Speaker	Siva Kumar Balasundram	Title: to be announced
14:00-14:20	Invited Speaker	Tadao Matsunaga	Automatic light environment measurement system for plant cultivation utilizing fine-cut optic fiber
14:20-14:40	Invited Speaker	Jian Lu	Fabrication and optimization of ionic liquid-gated graphene fets for environmental monitoring and precision agriculture applications
14:40-14:55	Oral Presenter	Sarika Yadav	Enhanced taste and quality analysis of soft drinks and milk samples using a single-channel hybrid e-tongue with an unsupervised machine learning approach
14:55-15:10	Oral Presenter		To be announced
15:10-15:25	Oral Presenter		To be announced
15:25-15:40	Oral Presenter	Shih-Yi Yeh	Integrated Micro-LED Light Module and MEMS Mirror on a Chip for Visible Light Communication Application

**Chaired By: Prof. Zhiting Ye and Prof. Prof. Chun-Wei Tsai**

16:00-16:20	Invited Speaker	Hirofumi Nogami	Non-wearable pulse rate measurement system using laser doppler flowmetry and load sensor for masked palm civet (parguma larvata) during husbandry training
16:20-16:40	Invited Speaker	Tomoaki Kageyama	Development of maintenance-friendly water quality sensing devices: approaches using isfet and wifi-csi
16:40-17:00	Invited Speaker	ZingWay Pei	Carrier Multiplication-Enabled Ultra-High Response Ge Photodetector for 1550 nm Photodetection and Assessment for the LiDAR Application

17:00-17:15	Oral Presenter	Miheung Choe	Marine Environment Observation using an Acoustic Tomography System with Multi-Channel Acoustic Sensors and an Efficient Phase Correlation Signal Processing Algorithm
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