

## AWAD 2025 Program Day 1 — Thursday, July 3

Kinsho hall, 1F, Todai-ji culture center

10:00	10:15	Opening Remarks	
SPECIAL SESSION 1: Plenary			
co-chair		Tatsuya Usami (Rapidus), Il Hwan Cho (Myongji Univ.)	
10:15	10:45	S-1	Hitoshi Wakabayashi   Institute of Science Tokyo Advanced Semiconductor Device Technologies and Their Human-resource Development Activities
SESSION 1: Power electronic devices & Compound semiconductor and wide bandgap devices			
co-chair		Hiroshi Okada (Toyohashi Univ. of Technol.), Sangwon Yoon (Seoul National Univ.)	
10:45	11:05	I-1	Mitsuaki Kaneko   Kyoto University Performance Improvement of SiC Complementary JFETs for High-Temperature Integrated Circuits
11:05	11:25	I-2	Munetaka Noguchi   Mitsubishi Electric Corporation Impact of Nitrided and Phosphorus-doped Gate Oxides on Inversion Layer Mobility of 4H-SiC MOSFETs
11:25	11:45	I-3	Okhyun Nam   Tech University of Korea Recent Advancement in AlGaN channel HEMTs
11:45	12:00	O-1	A Yeong Choi   Seoul National University Electrical and Thermo-Mechanical Analysis of 650V GaN Power Modules with Symmetric and Unsymmetric Lateral Layout using Power Cycling FEA Simulation
12:00	13:30	Lunch break	
SESSION 2: Optoelectronics, displays, imagers and sensors			
co-chair		Taizoh Sadoh (Kyushu Univ.), Sangwan Kim (Sogang Univ.)	
13:30	13:50	I-4	Youngmin Kim   Kookmin University Development of Group-IV Semiconductor Nanowire Lasers Towards The Realization of Photonic-Integrated Circuits
13:50	14:05	O-2	Shunsuke Enoki   Osaka Institute of Technology Fabrication and Characterization of Amorphous GaO <sub>x</sub> Thin Film UV-C Photodetectors on Quartz Glass
14:05	14:20	O-3	Xuncheng Shi   Nanyang Technological University Enhancement of Photoluminescence of Ge by Multiple-Quantum-Well Structuring for Group-IV Light Source in Si Optical Interconnect
14:20	14:30	Break	
SESSION 3: MOS logic and memory devices			
co-chair		Takuji Hosoi (NIMS), Myounggon Kang (Univ. of Seoul)	
14:30	14:50	I-5	Nobuya Mori   Osaka University Simulation of MOSFET subthreshold characteristics at cryogenic temperatures
14:50	15:10	I-6	Shota Seki   Aixtal Statistical analysis of random dopant-induced threshold voltage variation by combining machine learnings and device simulations
15:10	15:25	O-4	Jaemin Yeom   Seoul National University Logic-in-Memory Using a Single Ferroelectric-Tunnel-FET
15:25	15:40	O-5	Kyouichiro Suzuki   Kanazawa Institute of Technology Investigation of Device Parameters on Steep Subthreshold Slope "GCCl SOI-Tr"
15:40	15:50	Break	

SESSION 4: Emerging Experts' highlight talks				
co-chair		Takuya Futase (Sandisk), Joon Young Kwak (Ewha Womans Univ.)		
15:50	16:20	O-6	Shuma Akiyoshi	Kyushu University
			Solid-Phase Crystallization of Sn-Doped Si Thin Films on Insulator	
		O-7	Takuto Watanabe	Kyushu University
			Passivation of Defects in Sn-Doped Ge Thin Films on Insulator by Post-Annealing	
		O-8	Ryo Kawano	Osaka Institute of Technology
			Nonlinear Electron Transport Properties in InAs/GaxIn1-xAs/InAs Low-Barrier Heterostructure Diodes	
		O-9	Kazuki Sudo	Tokyo Metropolitan University
			A novel method for well-defined estimation of detection sensitivity for a monolithic rectenna operating in terahertz range	
O-10	Jun Iwai	Tokyo Metropolitan University		
	Investigation of homogeneous and inhomogeneous resonant energy level broadenings in InGaAs/InAlAs triple-barrier resonant tunneling diodes toward zero bias detection of terahertz wave			
O-11	Takuma Mori	Toyohashi University of Technology		
	Si implantation doping into AlGaIn/GaN heterostructure having thin AlGaIn layer for enhancement transistor			
16:20	16:35	O-12	Haruto Kubota	Nagoya University
			Electron Transport Properties of Multiple-Stacked Si Nanodots	
		O-13	Yun-Jae Oh	Micron (Taiwan)
			A Novel Self-Aligned Fabrication Method for the Extended Integration Density of 3D NAND Flash Memory	
O-14	Ikhyeon Kwon	University of California, Davis		
	A Simulation Study of Two-Terminal Thyristor Random Access Memory with Localized Partial Insulator for High-Temperature operation			
16:35	16:45	O-15	Yi Yu	Nanyang Technological University
			Effects of SiGe Buffer Layer and Post-Annealing Processing on Photoluminescence of Ge/Si Heterostructures for Light Source Application in Optical Interconnect	
		O-16	Sara Pouladi	University of Houston
		High-Power 940nm n-p Junction Vertical-Cavity Surface-Emitting Laser Arrays with Tunnel Junction		
16:45	16:50	O-17	Nam-In Kim	University of Houston
			Highly Flexible Biocompatible III-N Thin Film Piezoelectric Sensors for Monitoring of Human Skin Deformation	
16:50	18:20	Poster Session (Small hall)		
co-chair		Hiroshi Okada (Toyohashi Univ. of Technol.), Donghwan Ahn (Kookmin Univ.)		
18:20	18:30	Break		
18:30	20:30	Networking Session (Halftime, Nara National Museum)		

## AWAD 2025 Program Day 2 — Friday, July 4

Kinsho hall, 1F, Todai-ji culture center

SPECIAL SESSION 2 : Keynote			
co-chair		T. Usami (Rapidus), Il Hwan Cho (Myongji Univ.)	
9:00	9:30	S-2	Jungwoo Oh   Yonsei University Innovative Pathways in Semiconductor Processing Using ALD BeO and MacEtch
SESSION 5: Advanced semiconductor technologies & Nano, 2D materials			
co-chair		T. Futase (Sandisk), Junseok Heo (Ajou Univ.)	
9:30	9:50	I-7	Toshifumi Irisawa   National Institute of Advanced Industrial Science and Technology (AIST) 2D materials CMOS technologies toward 1nm node and beyond
9:50	10:10	I-8	Takamasa Kawanago   National Institute of Advanced Industrial Science and Technology (AIST) Fabrication of n-type and p-type WSe <sub>2</sub> field-effect transistors and their low voltage CMOS inverter
10:10	10:30	I-9	Takashi Matsumoto   Tokyo Electron Study of multilayer graphene interconnects by using of microwave plasma CVD
10:30	10:40	Break	
10:40	11:00	I-10	Munehiro Tada   Keio University Fine-Pitched Superconducting Interconnects for Cryo-CMOS and Superconducting Digital Logic Applications
11:00	11:15	O-18	Haekyun Bong   Yonsei University Oxidant-Free MACE of Si Using Ultrathin Ni Catalyst: Smooth Etching and Wafer-Scale Uniformity
11:15	11:30	O-19	Jaeho Lee   Seoul National University Low-Voltage Ferroelectric Field-Effect Transistor with a Two-Dimensional Channel for CMOS Back-End-of-Line Integration
11:30	13:00	Lunch break	
SESSION 6: Quantum devices and computing technologies & Neuromorphic devices, Wearable devices			
co-chair		H.Ikeda (Sizuoka Univ.), Seongjae Cho (Ewha Womans Univ.)	
13:00	13:15	O-20	Harish Santhanakrishnan   SRM Institute of Science and Technology Interface-Tuned Ag <sub>2-x</sub> Sn <sub>x</sub> S Grown on Carbon Fabric for Next-Generation Wearable Thermoelectric Generators
13:15	13:30	O-21	Hyoto Yamaguchi   Hokkaido University Study on Artificial Kinesthetic Sensory for Ground Condition Perception in An Amoeba-inspired Four-legged Walking Robot
13:30	13:45	O-22	Hyunsik Woo   Kyunghee University Strategical Multi-Gate Configurations for HfO <sub>2</sub> Electrolyte Synaptic Transistors Facilitating Spatiotemporal Signal Processing and Synaptic Modulation
13:45	14:00	O-23	Dae Kyu Lee   Korea Institute of Science and Technology Enhancing Threshold Switching Performance of Electrochemical Metallization-Based Memristors for Reservoir Computing
14:00	14:10	Break	
14:10	14:30	I-11	Sin-Hyung Lee   University of Seoul Tactile Near-Sensor Computing Systems Using an Organic Memristive Framework
14:30	14:50	I-12	Donguk Nam   Korea Advanced Institute of Science and Technology (KAIST) On-chip light source for quantum photonic integrated circuits
14:50	15:10	I-13	Ken Takeuchi   The University of Tokyo Memory-Centric Computing for AI Applications
15:10	15:30	Closing Remarks, Award Ceremony	