

August 26 (Mon.)

Registration	16:00-
Welcome Reception	18:00-20:00

Invited papers	: Oral presentation (20 min & 5 min Q&A)
Contributed papers (Upgrade)	: Oral presentation (10 min & 5 min Q&A)
Contributed papers	: Short oral presentation (3 min w/o Q&A) & Poster presentation

August 27 (Tue.)

August 16, 2024

Session	Start time	Allotted time(min)	No.	Title	Speaker	Affiliation	Type
Opening	9:00	15					
1. Keynote Elke Meissner Michihiko Suhara	9:15 10:00	45 45	1-1 1-2	Technology of AlN-based power transistors Spintronics Nonvolatile Memory -A metal/insulator heterostructure -	Oliver Hilt Hideo Ohno	Ferdinand-Braun-Institut gGmbH, Germany Tohoku Univ., Japan	keynote keynote
Coffee Break	10:45-11:05						
2. GaN/UWBG RF 1 Toshiharu Kubo David Meyer	11:05	25	2-1	Al-rich AlGaIn alloys for RF and power transistors	Andrew Allerman	Sandia National Labs./Ohio State Univ., USA	invited
	11:30	25	2-2	AlScN/GaN HEMTs: Towards Higher Power and Bandwidth at Millimeter-Wave Frequencies	Sebastian Krause	Fraunhofer IAF/Albert-Ludwig Univ. of Freiburg, Germany	invited
	11:55	3	2-3	Temperature Dependent S-Parameter Measurement of GaN-Based IMPATT Diodes	Patrick Fay	Univ. of Notre Dame, USA	sp
	11:58	3	2-4	Influence of surface treatment on short channel effect in GaN HEMTs	Yasuyuki Miyamoto	Tokyo Tech., Japan	sp
	12:01	3	2-5	Low- and High- Field 2DEG Transport Properties in AlGaIn/GaN at High Temperatures	Yusuke Wakamoto	Univ. of Tokyo/Sumitomo Electric Industries, Ltd., Japan	sp
Lunch	12:05-13:30						
3. High Frequency Yasuyuki Miyamoto Dae-Hyun Kim	13:30	25	3-1	Cryogenic InxGa1-xAs/In0.52Al0.48As quantum-well HEMTs for quantum computing	Dae-Hyun Kim	Kyungpook National Univ., South Korea/Texas Tech. Univ., USA /KAIST, South Korea	invited
	13:55	15	3-2	Double δ -doped Al0.40In0.60Sb/Ga0.22In0.78Sb HEMTs with over 450 GHz-fmax	Ryuto Machida	NICT/Tokyo Univ. of Sci., Japan	upgrade
	14:10	3	3-3	InP-based Double Heterojunction Bipolar Transistors with InP/InAlAs Composite Collector	Takuya Hoshi	NTT Corporation, Japan	sp
	14:13	3	3-4	Enhanced electron mobility in InSb/Ga0.22In0.78Sb composite channel HEMT structures	Tomoki Jinnai	Tokyo University of Sci./NICT, Japan	sp
4. THz Safumi Suzuki Michael Feiginov	14:20	25	4-1	3D Rectification Effect in Grating-Gate InGaAs-Channel HEMT for THz Detection	Akira Satou	Tohoku Univ., Japan	invited
	14:45	15	4-2	Resonant-Tunneling-Diode Oscillators with Double Slot-Ring Antennas for High-Directive and High-Power Terahertz Radiation	Shohei Endo	Tokyo Tech., Japan	upgrade
	15:00	3	4-3	Experimental evaluation of bias-dependent 230-270 GHz oscillation and gain performance in InGaAs/InAlAs triple-barrier resonant tunneling diodes integrated with bowtie antennas	Masato Hatori	Tokyo Metro. Univ./Tokyo Metro Col. of Ind. Tech./NICT, Japan	sp
	15:03	3	4-4	Exploring limitations of slot-antenna resonant-tunnelling-diode oscillators	Michael Feiginov	TU Wien, Austria/Le Quy Don Tech. Univ., Vietnam	sp
	15:06	3	4-5	Anovel method of time domain analysis combining theoretical model of I-V characteristics and quantum transport model for InGaAs/InAlAs triple barrier resonant tunneling diodes	Naoto Sato	Tokyo Metro Col. of Ind. Tech. /Tokyo Metro. Univ., Japan	sp
	15:09	3	4-6	Measurements and analysis of zero bias detection rectennas for 300 GHz band by using GaAsSb/ InGaAs backward diodes with integrated bow-tie or log-spiral antennas	Hijiri Shimokawatoko	Tokyo Metro. Univ./Tokyo Metro Col. of Ind. Tech., Japan	sp
	15:12	3	4-7	300-GHz-Band Optical-to-Wireless CarrierFrequency Down-Conversion by a UTC-PD-Integrated HEMT	Shota Horiuchi	Tohoku Univ., Japan	sp
	15:15	3	4-8	A frequency delta-sigma modulation (FDSM) based scanning near-field THz microscope employing a resonant tunneling diode (RTD) – Proposal and demonstration in microwave frequency range –	Umer Farooq	Univ. of Toyama/Hokuriku Polytechnic Col, Japan	sp
Coffee Break	15:20-15:40						
5. Power 1 Koh Matsumoto Samuel Graham	15:40	25	5-1	Vertical Ga2O3 (010) FinFETs with (100) Sidewalls Treated by Nitrogen Radical Irradiation	Masataka Higashiwaki	Osaka Metro. Univ./ NICT/Tokyo Univ. of Agric. and Tech., Japan	invited
	16:05	25	5-2	Multidimensional Power Devices in GaN and Ga2O3	Yuhao Zhang (Pre-Recorded Video)	Virginia Tech, USA	invited
	16:30	15	5-3	Gallium Oxide Electronics - Advanced Device Designs	Martin Kuball	Univ. of Bristol, UK	upgrade
	16:45	3	5-4	Switching losses and their mitigation in lateral Ga2O3 power MOSFETs with high-permittivity dielectric passivation	Wenpeng Zhou	HKUST, Hong Kong	sp
	16:48	3	5-5	Fast (4.38 ns) dynamic switching operation of NO2-doped p-channel diamond MOSFETs	Tomoki Shiratsuchi	Saga Univ./National Inst. of Tech., Kure Col., Japan	sp
	(withdraw)		5-6	Growth and device fabrication of p-channel Al0.6Ga0.4N/AlN HFETs on single-crystal AlN substrate	Hitoshi Susuki	Nagoya Inst. of Tech., Japan	sp
	16:51	3	5-7	Wider Gate Voltage Range of p-GaN/AlGaN/GaN HFET Employing Dual Dielectric Films for Gate Formation	Min-Gi Jeong	Hongik Univ./ChipsK Corp., South Korea	sp
	16:54	3	5-8	Effect of Negative Gate Bias on the Off-State Blocking Characteristics of p-GaN Gate HEMT	Jiaojiao Song	Peking Univ. China	sp
	16:57	3	5-9	Tri-gate Normally-Off Power MIS-HEMT with different Fin Configuration and Ferroelectric Charge Storage Gate Stack	Rahul Rai	NYCU, Taiwan/IITKanpur, India	sp
	17:00	3	5-10	AlGaN/GaN CAVETs on Si substrates with strained layer superlattice as current blocking layer and δ -doped conductive buffer layer	Toshiharu Kubo	Nagoya Inst. of Tech., Japan	sp
	17:03	3	5-11	Heavy Ion Induced SEB Robustness of Wide-bandgap Semiconductor Vertical Schottky Barrier Diodes	Zhaowen He	Rensselaer Polytechnic Inst., USA	sp
6. Poster Viewing 1	17:10-18:30			No. 2-3, 2-4, 2-5, 3-3, 3-4, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 5-4, 5-5, 5-7, 5-8, 5-9, 5-10, 5-11			

August 28 (Wed.)

Session	Start time	Allotted time(min)	No.	Title	Speaker	Affiliation	Type
7. Power 2 Yoshitsugu Yamamoto Martin Kuball	8:30	25	7-1	High Performance Vertical GaN-on-GaN pn Power Diodes	Wu Lu	Ohio State Univ., USA	invited
	8:55	25	7-2	Die-Level Functional Off-Chip Characterization of Power Devices Using Optical Techniques	Xavier Perpinya	IMB-CNM, Spain	invited
	9:20	15	7-3	High performance fully vertical GaN on Silicon PIN diodes for next generation power devices	Youssef Hamdaoui	CNRS-IEMN, France/Siltronic AG, Germany/Ghent Univ., Belgium	upgrade
	9:35	3	7-4	Fabrication of vertical GaN junction barrier Schottky diodes using Mg ion implantation	Kazuki Kitagawa	Nagoya Univ./Toyota Central R&D Labs, Inc., Japan	sp
Coffee Break	9:40-10:00						
8. GaN Thermal Management, Process Masataka Higashiwaki Xavier Perpinya	10:00	25	8-1	Considerations for the Thermal Design of Ultrawide Bandgap Semiconductor Devices	Samuel Graham	Univ. of Maryland/Univ. of Virginia /Univ. of South Carolina/UCLA /Georgia Tech/Naval Research Lab./Univ. of Notre Dame, USA	invited
	10:25	25	8-2	Heterogenous diamond-GaN integration for device-level thermal management	Mohamadali Malakoutian	Stanford Univ., USA	invited
	10:50	3	8-3	P-type Ohmic Contact with Annealed Mg Process	Min-Jeoung Kim	Hongik Univ./ChipsK Corp., South Korea	sp
	10:53	3	8-4	Fabrication of Recessed-gate AlGaIn/GaN HEMTs utilizing Contactless Photoelectrochemical (CL-PEC) Etching	Naoki Shiozawa	Hokkaido Univ., Japan	sp
	10:56	3	8-5	Photo-electrochemical (PEC) etching and characterization of the damaged GaN surface	Takahiro Shimazaki	Hokkaido Univ., Japan	sp
	10:59	3	8-6	Multi-probe Hall measurements for Ohmic contacts to thin-AlGaIn/GaN heterostructures with no two-dimensional electron gas	Kazuya Uryu	Advantest Laboratories Ltd. /JAIST/Mitsubishi Electric Corp., Japan	sp
	11:02	3	8-7	Novel on-wafer Hall measurement method with ohmic formation using high voltage pulses	K. Kodama	NYCU, Taiwan/Yamamotoogken /Seiken, Japan	sp
	11:05	3	8-8	Simulation study on GaN-based npn HBTs with MQW structured p-base region	Ryosei Inoue	Nagoya Inst. of Tech., Japan	sp
Excursion	11:30-						
Banquet	19:00-21:00						

August 29 (Tue.)

Session	Start time	Allotted time(min)	No.	Title	Speaker	Affiliation	Type
9. GaN/UWBG RF 2 Yohei Otoki Patrick Fay	8:30	25	9-1	Scaling of GaN HEMTs for microwave and millimeter-wave applications: achieving control of short-channel effects, deep levels and reliability	Enrico Zanoni	Univ. of Padova, Italy	invited
	8:55	25	9-2	Transport Properties in GaN under High Electric Field	Takuya Maeda	Univ. of Tokyo, Japan	invited
	9:20	15	9-3	>200 GHz IMAX MBE Grown AlScN/GaN High Electron Mobility Transistors	Kazuki Nomoto	Cornell University, USA	upgrade
	9:35	3	9-4	On the FET Drain-Source Capacitance Compensation Method forMicrowave GaN HEMT Class-E Power Amplifiers	Ritsuki Takahashi	Shibaura Inst. of Tech., Japan	sp
	9:38	3	9-5	Reliability Improvement of AlGaIn/GaN HEMTs for Q-band and V-band Applications	Keiichi Matsushita	WIN Semiconductors Corp., Taiwan	sp
Coffee Break	9:45-10:05						
10. GaN Dielectric Interface Toshi-kazu Suzuki Enrico Zanoni	10:05	25	10-1	MOS interface control for GaN FETs and HEMTs	Tamotsu Hashizume	IMA&S, Nagoya Univ., Japan	invited
	10:30	25	10-2	Engineering of Interface Charges in AlSiO ₂ /AlN/p-type GaN-MOSFETs Toward Improvements of Threshold Voltage Stability and Channel Mobility	Tetsuo Narita	Toyota Central R&D Labs. Inc. /Nagoya Univ., Japan	invited
	10:55	3	10-3	Low-state-density Al ₂ O ₃ /n-GaN interfaces using mist chemical vapor deposited Al ₂ O ₃ gate insulator	Zenji Yatabe	Kumamoto Univ./Hokkaido Univ., Japan	sp
	10:58	3	10-4	Improved device performance in in-situ SiN/AlN/GaN MIS-HEMTs with ex-situ H ₂ O ₂ and Al ₂ O ₃ passivation by atomic layer deposition	Pradip Dalapati	Nanyang Tech. Univ., Singapore	sp
	11:01	3	10-5	Impact of post metallization annealing in EID AlGaIn/GaN MOS-HEMTs	Takuma Nanjo	Mitsubishi Electric Corp./Saga Univ./Nagoya Inst. of Tech., Japan	sp
	11:04	3	10-6	Study on Effects of Mechanical Stress in Normally-off EID AlGaIn/GaN MOS-HEMTs by TCAD Simulation	Toshiyuki Oishi	Saga Univ./Mitsubishi Electric Corp., Japan	sp
11. Poster Viewing 2	11:10-12:10			No. 7-4, 8-3, 8-4, 8-5, 8-6, 8-7, 8-8, 9-4, 9-5, 10-3, 10-4, 10-5, 10-6, 12-4, 12-5			
Lunch	12:10-13:30						
12. Emerging Materials & Devices Naoteru Shigekawa Toshiyuki Oishi	13:30	25	12-1	Textured Solar Arrays for Stratospheric UAV	Noren Pan	Microlink Devices Inc., USA	invited
	13:55	25	12-2	Large-Area Ultra-Heavy Boron-Doped Diamond Films: Advanced Sensing Material for Electrochemical Fingerprinting	Shinya Ohmagari	AIST, Japan	invited
	14:20	25	12-3	Wafer-Scale Heterogeneous Integration of Functional Materials for High-Performance Power, Photonic and RF Devices	Xin Ou	SIMIT, Chinese Academy of Sci., China	invited
	14:45	3	12-4	Wafer-scale single-crystalline GaN-based heterogeneous integration material by ion-cutting technique	Tiangui You	SIMIT, Chinese Academy of Sci., China	sp
	14:48	3	12-5	Effect of external stimulation on 1/f dynamics in 2D cellular automaton	Hazumi Ueda	Hokkaido Univ., Japan	sp
Closing	14:55	15					

	August 26 (Mon)	August 27 (Tue)	August 28 (Wed)	August 29 (Thu)
8:30			8:30-9:40	8:30-9:45
9:00		9:00-9:15 Opening	7. Power 2 Wu Lu Xavier Perpinya	9. GaN/UWBG RF 2 Enrico Zanoni Takuya Maeda
9:30		9:15-10:45 1. Keynote Oliver Hilt Hideo Ohno	9:40-10:00 Coffee Break	9:45-10:05 Coffee Break
10:00			10:00-11:10	10:05-11:10
10:30		10:45-11:05 Coffee Break	8. GaN Thermal Management, Process Samuel Graham Mohamadali Malakoutian	10. GaN Dielectric Interface Tamotsu Hashizume Tetsuo Narita
11:00		11:05-12:05	11:30- Excursion with Lunch Box	11:10-12:20
11:30		2. GaN/UWBG RF 1 Andrew Allerman Sebastian Krause		11. Poster Viewing 2
12:00				
12:30		12:05-13:30 Lunch		12:20-13:30 Lunch
13:00				
13:30		13:30-14:20		13:30-14:55
14:00		3. High Frequency Dae-Hyun Kim		12. Emerging Materials & Devices Noren Pan Shinya Ohmagari Xin Ou
14:30		14:20-15:20		14:55-15:10 Closing
15:00		4. THz Akira Satou		
15:30		15:20-15:40 Coffee Break		
16:00	16:00- Registration	15:40-17:10	19:00-21:00 Banquet	
16:30		5. Power 1 Masataka Higashiwaki Yuhao Zhang		
17:00				
17:30		17:10-18:30 6. Poster Viewing 1		
18:00	18:00-20:00 Welcome Reception			
18:30				
19:00				
19:30				
20:00				
20:30				