

## Technical Program of TWHM2017 (tentative)

Invited papers: oral presentation (25 min.)

Contributed papers: short oral presentation (4 min.) & Poster

### Aug. 29 (Tue.)

Session	Time	No.	Title	Speaker	Type
Opening (9:00-9:15)					
1. Plenary (9:15-10:00)	9:15	1-1	Future of III/V Nanowires: Physics or Engineering?	W. Prost	Plen.
Coffee (10:00-10:20)					
2. Emerging Devices I	10:20	2-1	Two-Dimensional (2D) Layered Approaches for Materials and Devices	D. Pavlidis	Inv.
	10:45	2-2	Carbon nanotube based CMOS and optoelectronic devices and circuits	Lian Mao Peng	Inv.
	11:10	2-3	Reduction of EB resist residues on graphene surface in terms of resist adhesion and solubility in developer solution	Xiang Yin	SP
	11:15	2-4	Terahertz light emitting graphene-channel transistor operating under current-injection pumping	Kenta Sugawara	SP
3. GaN Devices I	11:20	3-1	N-Polar GaN HEMT (tentative)	U. Mishra	Inv.
	11:45	3-2	Threshold voltage controllability and stability in InGaN/AlGaIn/GaN MOS HEMTs	D. Gregusová	SP
	11:50	3-3	Highly-controllable etching for AlGaIn/GaN recessed-gate structures utilizing low-damage electrochemical reactions	Keisuke Uemura	SP
	11:55	3-4	Fabrication of GaN-based Depletion Type n-channel MOSFET Using Si Ion-implantation Technique Towards Monolithic Integrated Circuit	H.Okada	SP
	12:00	3-5	Correlation between VTH instability and interface states in Al <sub>2</sub> O <sub>3</sub> /AlGaIn/GaN Structures	Shota Kaneki	SP
	12:05	3-6	Effects of bias annealing on current linearity of Al <sub>2</sub> O <sub>3</sub> /AlGaIn/GaN MOS HEMTs	Kenya Nishiguchi	SP
	12:10	3-7	Influence of growth pressure of carbon-doped GaN layer in AlGaIn/GaN high-electron-mobility transistors on Si substrate	Yuya Yamaoka	SP
Lunch (12:15-13:30)					

4. High Power Devices	13:30	4-1	GaN-on-Silicon transistors with extremely low off-state leakage current up to 3 kilovolts	Farid Medjdoub	Inv.
	13:55	4-2	Recent Progress of Vertical GaN Power Devices on GaN Substrates	Tohru Oka	Inv.
	14:20	4-3	Influence of Gate Characteristics upon UIS Withstanding Capability in High Voltage GaN-HEMTs	Wataru Saito	SP
	14:25	4-4	Multi-level inverter by GaN HEMT on semi-insulating substrate	D. Nakajun	SP
	14:30	4-5	A investigation of Different Barrier Layer thickness in AlGaIn/GaN Schottky Barrier Diode(SBD)	Dong-Long Chiang	SP
5. GaN Devices and Characterization	14:35	5-1	GaN HEMTs on highly-resistive GaN substrates	Masaaki Kuzuhara	Inv.
	15:00	5-2	Extraction of equivalent circuit parameters for buffer traps in AlGaIn/GaN HEMTs by using low frequency output admittance measurement	Toshiyuki Oishi	SP
	15:05	5-3	Direct observation of trapped charges in Schottky gate AlGaIn/GaN HEMT by electric field induced optical second harmonic generation	T. Katsuno	SP
	15:10	5-4	Temperature dependence of the optical response due to the deep trap level in AlGaIn/GaN HFET Devices using Device Simulator	Y. Umezawa	SP
	15:15	5-5	TEM study of dielectric films deposited on the surface of GaN/AlGaIn/GaN MOS heterostructure	L. Tóth	SP
	15:20	5-6	Characterization of GaN epilayers on GaN substrates by a microwave photoconductivity decay method	Masashi Kato	SP
	15:25	5-7	Nondestructive thickness measurement for GaN homo-epitaxial layers on GaN substrates using FT-IR	Fumimasa Horikiri	SP
	15:30	5-8	Analysis of temperature dependent frequency dispersion in C-V curves of Al <sub>2</sub> O <sub>3</sub> /AlGaIn/GaN structures based on the disorder-induced gap-state model	M. Matys	SP
Coffee (15:35-15:55)					
6. Emerging Devices II	15:55	6-1	Semiconductor heterojunctions based on 2D materials	Yasumitsu Miyata	Inv.
	16:20	6-2	Van der Waals Tunneling Devices	Debdeep Jena	Inv.
	16:45	6-3	Type II HfS <sub>2</sub> /MoS <sub>2</sub> heterojunction Tunnel FET	Seiko Netsu	SP
7. Poster (16:50-18:00)	16:50				

**Aug. 30 (Wed.)**

8. Wide Bandgap Materials	9:00	8-1	Recent Progress and challenges in SiC MOSFET for Power Applications	Tomohide Terashima	Inv.
	9:25	8-2	RF Performance of Sub-Micron Ga <sub>2</sub> O <sub>3</sub> FETs	Gregg Jessen	Inv.
	9:50	8-3	Newly evolving wide bandgap devices for power electronics	Srabanti Chowdhury	Inv.
	10:15	8-4	Simulation of improved thermal performance in Ga <sub>2</sub> O <sub>3</sub> power devices with an integrated substrate heat sink	M. H. Wong	SP
	10:20	8-5	The Effects of Top-Gate Ga-doped MgZnO Thin-Film Transistors with Gd <sub>2</sub> O <sub>3</sub> and ZrO <sub>2</sub> High-k Gate Insulators	How-Ting Wang	SP
	10:25	8-6	Epitaxial growth of SnO <sub>2</sub> on m-plane sapphire substrate by mist chemical vapor deposition	Z. Yatabe	SP
	10:30	8-7	(Al <sub>0.2</sub> Ga <sub>0.8</sub> ) <sub>2</sub> O <sub>3</sub> / Ga <sub>2</sub> O <sub>3</sub> Modulation-doped Field Effect Transistor (MODFET) with ID,max = 90 mA/mm	Sriram Krishnamoorthy	SP
	10:35	8-8	Room temperature direct bonding of single crystal diamond and Si substrates for the combination of diamond devices with Si LSI	Jianbo Liang	SP
Coffee (10:40-11:00)					
9. Heterogeneous Integration and More-Moore, More-Than-Moore	11:00	9-1	InP-based Double-Heterojunction Bipolar Transistors with Au Subcollector on SiC Substrate Fabricated by Wafer Bonding Technology	Yuta Shiratori	Inv.
	11:25	9-2	III-V and III-N on CMOS for more-Moore and more-than-Moore	H. Hahn	Inv.
	11:50	9-3	Negative Capacitance Transistors	Sayeef Salahuddin	Inv.
	12:15	9-4	Evaluation of Metal/HfO <sub>2</sub> high-k Gate Stack for InGaAs MOS device Applications	Huy Binh Do	SP
	12:20	9-5	GaN-Channel Nanowire MOSFETs for Low Power Applications	W. Li	SP
	12:25	9-6	InSb-based HEMTs fabricated by using two-step-recessed gate procedure	N. Oka	SP
Excursion	12:30				
Banquet	18:00				

**Aug. 31 (Thu.)**

10. GaN RF Applications and Modeling	9:00	10-1	Concurrent Dual-Band Amplifier Design Technique for 5G Wireless Systems	Kazuhiko Honjo	Inv.
	9:25	10-2	MIT Virtual Source GaNFET (MVSG) model: Physics-based industry-standard modelling to facilitate RF- and HV-circuit design	Ujwal Radhakrishna	Inv.
	9:50	10-3	Challenges in Modeling FET for MM-wave MMIC	I. Angelov	SP
	9:55	10-4	Cavity-gate Structure for Millimeter-wave GaN HEMTs Using MSQ-based Inter-layer Dielectric	Shiro Ozaki	SP
	10:00	10-5	A Scalable Large-Signal Distributed Model for mm-Wave GaN HEMTs	Yutaro Yamaguchi	SP
	10:05	10-6	AlGaN/GaN Field-Effect Diode for High Frequency Rectification	Yuma Ito	SP
	10:10	10-7	Self-heating effects in DC and RF performances of 0.25 $\mu\text{m}$ T-Gate AlGaN/GaN HEMTs on Silicon and CVD-Diamond	K. Ranjan	SP
Coffee (10:15-10:35)					
11. THz Devices	10:35	11-2	Ultrafast MSM-HEMT Varactors and their Applications on THz Switching	Jae-Hyung Jang	Inv.
	11:00	11-3	Bias Stability and Triggering of a Hard-Type Oscillator Using Series-Connected Resonant Tunneling Diodes	K. Maezawa	SP
	11:05	11-4	External synchronization of traveling pulses developed in a network of resonant-tunneling diode transmission lines	K. Narahara	SP
12. Poster (11:10-12:10)	11:10				
Lunch (12:10-13:10)					
13. GaN Novel Process and Reliability	13:10	13-1	n <sup>++</sup> -GaN selective regrowth by PicoSecond Pulsed Deposition with HSQ mask	Romualdo Ferreyra	Inv.
	13:35	13-2	Applications of Epitaxial Transition Metal Nitride Electronic Materials	David Meyer	Inv.
	14:00	13-3	GaN RF FET Ultimate Thermal Management - GaN-on-Diamond Technology	M. Kuball	Inv.
Closing	14:25	14:30			