TWHM 2019 Program at a glance

	Mon. 26, Aug.	Tue. 27, Aug	Wed. 28, Aug.	Thu. 29, Aug.
8:30			8:30-9:34 8. GaN Device Technologies J-T. Chen	8:30-9:43 10. THz Devices & Emerging Technologies M. Asada
8:45		8:45-9:00 Opening		
9:00		9:00-9:45 1. Plenary Session G. Meneghesso		
9:30		9:45-10:05 Coffee	9:31-9:50 Coffee	9:43-10:05 Coffee
10:00		10:05-11:07 2. WBG Materials & Devices 1 T. Paracios, H. G. Xing	9:50-11:05 9. RF and High Speed Device Technologies 2 Y-K. Chen, S. Shinjo, J. S. Moon	10:05-11:06 11. Nobel Process & Characterization F. Horikiri
10:30				
11:00		11:10-12:06 3. WBG Devices and Materials 2 S. Rajan, K. Kaneko	11:05-18:50 Excursion with Lunch Box	11:06-12:20 12. Poster Viewing
11:30				
12:00		12:06-13:20 Lunch		12:20-13:40 Lunch
12:30				
13:00		13:20-14:37 4. GaN MOS/MIS & Related Technologies T. Hosoi, K. Ueno		
13:30				13:40-15:20 13. GaN Power Devices M. Uren, E. Missner, P. Parikh, H. Handa
14:00				
14:30		14:37-15:00Coffee		
15:00		15:00-15:59 5. WBG Materials & Devices 3 T. Taniguchi, S. Ohmagari		
15:30				15:20-15:30 Closing
16:00	16:00~18:00 Registration	15:59-16:20 Coffee		
16:30		16:20-17:06 6. RF and High Speed Device Technologies 1 D-H. Kim		
17:00		17:06-18:20 7. Poster Viewing		
17:30				
18:00	18:00~20:00 Welcome Reception			
18:30				
19:00			19:00-21:00 Banquet	
19:30				
20:00				
20:30				
21:00				

Technical Program of TWHM2019

Invited papers : oral presentation (25 min.)

Contributed papers (Upgraded) : oral presentation (15 min)

Contributed papers : short oral presentation (3 min.) & Poster

Aug.27 (Tue.)

Session	Time	No.	Title	Speaker	Affiliation	Type
Opening	8:45					
1. Plenary (9:00 - 10:45)	9:00	1-1	Reliability of GaN HEMTs	G. Meneghesso	Univ. of Padova, Italy	Plenary
Coffee Break (9:45 - 10:05)						
2. WBG Devices and Materials 1 (10:05 - 11:07)	10:05	2-1	GaN Fin FET Technology for Power and RF Applications	T. Palacios	MIT, USA	Invited
	10:30	2-2	Power Electronics Based on GaN and Ga2O3 Bulk Substrates	H. G. Xing	Cornell Univ., USA	Invited
	10:55	2-3	Performance projections of vertical natural polarization superjunction (PSJ) devices in AlGaAs/GaAs and AlGaN/GaN heterostructures	X. Zhou	Rensselaer Polytechnic Inst., USA	SP
	10:58	2-4	High-Performance Quasi-Vertical GaN Schottky Barrier Diode on Silicon Substrate with Post-Etch Sidewall High Temperature Oxidation	Y. Li	Peking Univ., China	SP
	11:01	2-5	Investigation of channel electric field distribution in AlGaN/GaN multi nanochannel high electron mobility transistors	M. Matys	Nagoya Univ., Japan	SP
	11:04	2-6	GaN-on-GaN HEMTs with High Breakdown Critical Fields	A. Aoai	Univ. of Fukui, Japan	SP
3. WBG Devices and Materials 2 (11:10 - 12:06)	11:10	3-1	Material and Device Engineering for Gallium Oxide Electronics	S. Rajan	Ohio State Univ. USA	Invited
	11:35	3-2	P-type α-(Ir,Ga)2O3 thin films in Gallium Oxide Electronics	K. Kaneko	Kyoto Univ., Japan	Invited
	12:00	3-3	Aperture size engineering of current aperture vertical Ga_2O_3 MOSFETs	M. H. Wong	NICT, Japan	SP
	12:03	3-4	Thermal Management Strategies for β-Ga2O3 MOSFETs	J. W. Pomeroy	Univ. of Bristol, UK	SP
Lunch (12:06 - 13:20)						
4. GaN MOS/MIS and Related Technologies (13:20 - 14:37)	13:20	4-1	Gate stack engineering for GaN power MOSFETs	T. Hosoi	Osaka Univ., Japan	Invited
	13:45	4-2	MOSFETs on Mg implanted GaN and the application to vertical DIMOSFETs	K. Ueno	Fuji Electric, Japan	Invited
	14:10	4-3	Light-emitting ICs with integrated vertical LED/quasi-vertical power UMOSFET in GaN	Z. Guo	Rensselaer Polytechnic Inst., USA	Upgraded
	14:25	4-4	Effects of forming gas annealing depending on gate electrode materials in ALD-Al2O3/AlGaN MIS-HEMT	N. Yoshida	Nagoya Inst. of Tech. , Japan	SP
	14:28	4-5	Improved gate controllability of Al2O3-gate AlGaN/GaN HEMTs grown on GaN substrates	R. Ochi	Hokkaido Univ., Japan	SP
	14:31	4-6	Fabrication of AlGaN/GaN transistors with SiO2 gate insulator formed by atomic oxygen at ground state extracted from a surface-wave generated plasma	H. Okada	Toyohashi Univ. of Tech., Japan	SP
	14:34	4-7	characterization of AlxTi1-xOy thin films synthesized using mist-CVD	Z. Yatabe	Kumamoto Univ., Japan	SP
Coffee brake (14:37 - 15:00)						

Session	Time	No.	Title	Speaker	Affiliation	Type
5. WBG Materials and Devices 3 (15:00 - 15:59)	**15:00**	5-1	Single Crystalline Hexagonal Boron Nitride for Far UV Emission and Substrate for 2D Opto-Electric Devices	T. Taniguchi	NIMS, Japan	Invited
	15:25	5-2	Dislocation reduction in diamond by metal-assisted termination (MAT) and their improvements in Schottky barrier diode characteristics	S. Ohmagari	AIST, Japan	Invited
	15:50	5-3	Diamond MOSFETs with ALD-Al2O3 Exhibiting RF Power Density of 3.8 W/mm and Carrier Velocity of 1.0 × 107 cm/s on Polycrystalline Diamond	H. Kawarada	Waseda Univ., Japan	SP
	15:53	5-4	Diamond Cascode Application for Diamond p-FET GaN n-FET Half-Bridge Complementary Inverter.	T. Bi	Waseda Univ., Japan	SP
	15:56	5-5	Vertical-Type 2-Dimensional Hole Gas Diamond MOSFET with IDS: ~10000 A/cm2 and specific RON: 3.2 mΩcm2	M. Iwataki	Waseda Univ., Japan	SP
Coffee brake (15:59-16:20)						
6. RF and High Speed Device Technologies 1 (16:20 - 17:06)	**16:20**	6-1	Ultra High-Speed InP based HEMTs (tentative)	D-H. Kim	Kyungpook National Univ., Korea	Invited
	16:45	6-2	Photonic Double-Mixing by UTC-PD-Integrated-HEMT for Optical to MMW Carrier Frequency Down-Conversion	K. Nishimura	Tohoku Univ., Japan	SP
	16:48	6-3	Fabrication and characterization of rectenna integrated with a GaAsSb/ InGaAs backward diode and a log-spiral antenna for zero bias detection	X.Liu	Tokyo Metropolitan Univ., Japan	SP
	16:51	6-4	GaInSb n-Channel HEMTs with High AlInSb Barrier	K. Osawa	Tokyo Univ. of Sci., Japan	SP
	16:54	6-5	Optimum Frequency in a Millimeter-wave Wireless Power Transfer System for Wearable Terminals Using InGaAs HEMTs	M. Hanaoka	Tokyo Univ. of Sci., Japan	SP
	16:57	6-6	Evaluation of fabrication method of InGaAs nanosheet	M. Kitamura	Tokyo Tech, Japan	SP
	17:00	6-7	Calculating charge relaxation time distribution in a transistor device from noise spectrum	Z. Yatabe	Kumamoto Univ. Japan	SP
	17:03	6-8	Device Approaches for Vacuum Nanoelectronics	E. Bellotti	Boston Univ, USA	SP
7. Poster Viewing (17:06 - 18:20)	**17:06**					

Aug. 28						
Session	**Time**	**No.**	**Title**	**Speaker**	**Affiliation**	**Type**
8. GaN Device Technologies (8:30 - 9:31)	**8:30**	8-1	Progress in buffer-free GaN-on-SiC HEMT heterostructures for RF and power devices.	J-T. Chen	SweGaN, Sweden	Invited
	8:55	8-2	Fully passivated InAlN/GaN HEMTs on silicon with fT/fMAX of 144/141 GHz	K. Nomoto	Cornell Univ. USA	Upgraded
	9:10	8-3	Effect of T-gate Geometry on the AlGaN/GaN HEMT Device for High Frequency Application	C. Wang	National Chiao Tung Univ., Taiwan	SP
	9:13	8-4	Performance Projection of W-band GaN IMPATT Diodes Based on Measured Impact Ionization Characteristics	L. Cao	Univ. of Notre Dame, USA	SP
	9:16	8-5	Characteristics of Thin Barrier AlGaN/GaN HFETs with PECVD SiNx as Passivation Layer	H-S. Kim	Hongik Univ., Korea	SP
	9:19	8-6	Effects of Cat-CVD SiNx Dielectric Thickness on AlGaN/GaN MIS-HFETs	M-J. Kang	Seoul National Univ., Korea	SP
	9:22	8-7	Low sheet resistance with enhanced electron mobility in InAlGaN/GaN high-electron-mobility transistor structures	A. Yamada	Fujitsu Labs., Japan	SP
	9:25	8-8	Reduction in ohmic contact resistance for AlGaN-channel HFETs with a quaternary AlGaInN barrier layer	S. Saito	Nagoya Inst. Tech., Japan	SP
	9:28	8-9	The substrate off-angle dependence on the Al content of an AlGaN barrier layer of a GaN-on-GaN HEMT structure	N. Fukuhara	Sciocs Co. Ltd., Japan	SP
Coffee Brake (9:31 - 9:50)						
9. RF and High Speed Device Technologies 2 (9:50 - 11:05)	**9:50**	9-1	Advanced mm-Wave Power Electronics	Y-K. Chen	DARPA, USA	Invited
	10:15	9-2	Recent Advancement of GaN HEMT Power Amplifiers for 5G Mobile Wireless System	S. Shinjo	Mitsubishi Electric. Co., Japan	Invited
	10:40	9-3	High-speed graded channel GaN HEMTs for linear millimeter-wave applications	J-S. Moon	HRL, USA	Invited
Excursion	**11:05**					
Banquet	**19:00**					

Aug. 29

Session	Time	No.	Title	Speaker	Affiliation	Type
10. THz Devices and Emerging Technologies (8:30 - 9:43)	8:30	10-1	Recent progress on terahertz sources using resonant tunneling diodes and applications	M. Asada	Tokyo Tech., Japan	Invited
	8:55	10-2	Wireless injection locking of a free running RTD-based THz oscillator	K. Arzi	Univ. Duisburg-Essen, Germany	Upgraded
	9:10	10-3	Low-Frequency Noise in Modulation Doped GaN Nanowire MOSFETs	H. Ye	Univ. of Notre Dame, USA	Upgraded
	9:25	10-4	Application of Fermi-level managed barrier diodes to wireless communications in 300-GHz and 600-GHz bands	L. Yi	Osaka Univ., Japan	SP
	9:28	10-5	Rotating waves in resonant-tunneling-diode oscillator lattice for submillimeter-wave multiphase oscillation	S. Sawai	Kanagawa Inst. of Tech., Japan	SP
	9:31	10-6	34 Gbit/s QPSK Wireless Transmission Using Resonant Tunneling Diode Receiver	T. Yamamoto	Osaka Univ., Japan	SP
	9:34	10-7	Theoretical studies on triple-barrier resonant tunneling diodes and integrated structures towards a realization of terahertz wireless communication as terminal devices of RoF systems	K.Aikawa	Tokyo Metropolitan Univ., Japan	SP
	9:37	10-8	Spurious Free Oscillations of the Resonant Tunneling Hard-Type Oscillators Having a Simple Capacitor Coupled Trigger Input	T. Ito	Univ. of Toyama, Japan	SP
	9:40	10-9	Resonant Tunneling Delta-Sigma Modulation Ultrasound Sensors Using A Suspended Microstrip Disk Resonator	K. Maezawa	Univ. of Toyama, Japan	SP
Coffee Brake (9:43 - 10:05)						
11. Novel Process and Characterization (10:05 - 11:06)	10:05	11-1	GaN wet etching process	F. Horikiri	Sciocs Co. Ltd, Japan	Invited
	10:30	11-2	GaN-on-Diamond –Achieving Low Thermal Resistance Interfaces using AlN Interlayers	M. Kuball	Univ. of Bristol, UK	Upgraded
	10:45	11-3	Photo-electrochemical etching optimized for high-doped n-type GaN	K. Miwa	Hokkaido Univ., Japan	SP
	10:48	11-4	Characterization of processing-damage induced on n-GaN surface utilizing electrochemical methods	K. Takeda	Hokkaido Univ., Japan	SP
	10:51	11-5	Low damage atomic layer etching of AlGaN using BCl3 and Cl2 gas	Il-H. Hwang	Seoul National Univ., Korea	SP
	10:54	11-6	Interfacial characterization of GaN/diamond heterostructures prepared by room temperature bonding for high power device applications	J. Liang	Osaka City Univ., Japan	SP
	10:57	11-7	Fabrication of GaAs/Diamond direct bonding for high power device applications	Y. Nakamura	Osaka City Univ., Japan	SP
	11:00	11-8	High quality ZnO film fabricated by room temperature atomic layer deposition	K. Yoshida	Yamagata Univ. Japan	SP
	11:03	11-9	Low-temperature yttria atomic layer deposition on flexible PET films	K. Saito	Yamagata Univ. Japan	SP
12. Poster Viewing (11:06 - 12:20)	11:06					
Lunch (12:20 - 13:40)						
13. GaN Power Device Technologies (13:40 - 15:20)	13:40	13-1	Device Instabilities in GaN/AlGaN HEMTs – the Key Role of Leakage	M. Uren	Univ of Bristol, UK	Invited
	14:05	13-2	Materials defects in power HEMT structures and their consequences on the electrical performance of the devices	E. Meissner	Fraunhofer IISB, Germany	Invited
	14:30	13-3	Qualified GaN Transistor Technology for Automotive Applications (tentative)	P. Parikh	Transphorm Inc., USA	Invited
	14:55	13-4	Next Generation GaN Power Devices using GaN Substrates	H. Handa	Panasonic Corp., Japan	Invited
Closing (15:20 - 15:30)						