2019 19th International Workshop on Junction Technology (IWJT 2019)

Kyoto, Japan 6 – 7 June 2019



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Program/Contents

IWJT2019, Kyoto, Japan, June 6-7, 2019

June 6 (Thursday)

9:00 **Registration**

9:45 **Opening Remarks**

Keynote Speech

- 10:00 KN-1 Reliability Considerations for the Qualification of Leading Edge CMOS Technologies [Keynote] Fernando Guarin / GLOBAL FOUNDRIES and IEEE EDS President@@@@@B
- 10:40 Break (10min)

Session 1 Junction Technology for Novel Devices (1)

- 10:50 S1-1 Withdrawn
- 11:20S1-2
[Invited]Junction technology challenges and solutions for 3D device architecture
Yoshiaki Kikuchi / imec@@@@@6
- 11:50 S1-3 Normally-Off Sputtered-MoS₂ nMISFETs with MoSi₂ Contact by Sulfur Powder Annealing and ALD Al₂O₃ Gate Dielectric for Chip Level Integration Kentaro Matsuura / Tokyo Institute of Technology(000000)

12:10 **Lunch** (committee lunch meeting)

Session 2 Characterization for manufacturing (1)

13:30	S2-1	Review of applications of Defect Photoluminescence Imaging (DPLI) during IC processing
	[Invited]	Lubek Jastrzebski / Semilab00000085
14:00	S2-2	Comprehensive Characterization of B ⁺ Implanted Silicon after Rapid Thermal Annealing Woo Sik Yoo / WaferMasters, Inc.());
14:20	S2-3	Noble Approach to Remove Films Isotropically-Atomistically at Room Temperature by Introducing Rapid Thermal Pulse Sequentially Y. S. Kim / Lam Research Corp
14:40	Break	
Sessio	n 3 Chara	cterization for manufacturing (2)
14:55	S3-1	Three-dimensional dopant imaging in semiconductor crystals using photoelectron holography with chemical state identification
	[Invited]	Tomohiro Matsushita / JASRI00000047
15:25	S3-2	Comparing RTA and Laser SPE & LPE Annealing of Ge-epi with Si, Sn & C Implantation for Well Mobility/Strain Engineering John Borland / JOB Technologies());
15:45	S3-3	Electron Traps at Sidewalls of Vertical n ⁺ -GaAs/n ⁻ -InGaP/p ⁺ -GaAs Diodes Detected with Deep-Level Transient Spectroscopy Hao Yu / imec@@@@@55

16:05	S3-4	Aspects of Highly-channeled MeV Implants of Dopants in Si(100)
[]	[nvited]	Michael Current / Current Scientific

16:35 Break

Session 4 Junction Technology for Novel Devices (2)

16:50	S4-1 [Invited]	Capacitorless memory devices using virtual junctions Francisco Gamiz / University of Granada
17:20	S4-2 [Invited]	NEREID: NanoElectronics Roadmap for Europe: Identification and Dissemination Enrico Sangiorgi / University of Bologna
17:50	S4-3 [Invited]	Advanced Printed Electronics Materials and Junction Technologies Tatsuo Hasegawa / The University of Tokyo())3

18:40 **Banquet**

June 7 (Friday)

Session 5 Doping Technology

9:30	S5-1	Doping of GaN grown on silicon via ion implantation
[[nvited]	Frédéric Mazen / LETI())
10:00	S5-2	Photoluminescence Studies of Sequentially Mg and H Ion-implanted GaN with Various Implantation Depths and Crystallographic Planes Shigefusa F. Chichibu / Tohoku University();
10:20	S5-3	Acceptors activation of Mg-ion implanted GaN by ultra-high-pressure Annealing
[[nvited]	Hideki Sakurai / Nagoya University
10.50	D 1	

10:50 Break

Session 6 Silicide and Contact Technology (1)

11:05	S6-1	Physics of Gap-state Control at Metal/Semiconductor Junctions; Schottky Barrier and Interface Defects
[]	[nvited]	Takashi Nakayama / Chiba University00000087
11:35	S6-2	Low Specific Contact Resistivity Measurements using a New Test Structure and its Reduction to 10 ⁻⁹ ohm-cm ² in p-type SiGe/Metal Contacts using Flash Lamp Annealing Hideaki Tanimura / SCREEN Semiconductor Solutions Co., Ltd.(00000092)
11:55	S6-3	Pre-Amorphization Implants and in-situ Surface Preparation Optimization for Low Co- Silicided Area Density

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Julien Borrel / STMicroelectronics
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12:15 Lunch

Session 7 Silicide and Contact Technology (2)

13:35	S7-1	Ohmic Contacts with low contact resistance for GaN HEMTs
[Invited]	Edward Yi Chang / National Chiao Tung University
14:05	S7-2	Metal/P-type GeSn Contacts with Ultra-low Specific Contact Resistivity
[.	Invited]	Gong Xiao / National University of Singapore(00000000 2

- 14:35S7-3Effects of alloying elements (Pt or Co) on nickel-based contact technology for GeSn layers
Philippe Rodriguez / University. Grenoble Alpes())6
- 14:55 S7-4 **Further reduction of Schottky barrier height of Hf-germanide/n-Ge(001) contacts by forming epitaxial HfGe**₂ Kazuki Senga / Nagoya University(()):
- 15:15 Break

Session 8 Junction Technology for Novel Devices (3)

- 15:35S8-1
[Invited]Fabrication of epitaxial tunnel junction on tunnel field effect transistors
Yukinori Morita /AIST()
- 16:05
 S8-2
 The Role of Impurities on the Reliability of Cu Interconnects-a Challenge for Advanced Packaging Solutions

 [Invited]
 Thomas Beck / Atotech Deutschland GmbH()) 6
- 16:35
 S8-3
 Z²-FET: Application in Image Sensing and Self-aligned Structure for Further Scaling Down

 [Invited]
 Jing Wan / Fudan University(()) 8
- 17:05 **Preparation for Closing and Award Ceremony**
- 17:15 Closing Remarks (Best paper award, Invitation for next workshop)