

EDTM2020 - Preliminary Advance Program

As of January 29, 2020

Day 1 - Monday, March 16

08:00-08:30 Main Room (Matahari I, II, III)

Opening Remarks

Chair: Samar Saha

08:30-10:45 Main Room (Matahari I, II, III)

Plenary Session 1

Chair: Arokia Nathan

8:30	9:15	PL-1		The Forever Exponential? Moore's Law: Past, Present and Future	Kaizad Mistry	Intel Corporation
9:15	10:00	PL-2		Semiconductor Nanowires for Optoelectronics Applications	Chennupati Jagadish	The Australian National University
10:00	10:45	PL-3		Rapid Yield Improvement Using Intelligent Data Mining	Vivek Jain	Maxim Integrated

10:45-11:15 Main Room (Matahari I, II, III)

Exhibitors Presentation

Chair: Aabid Husain, Tahiruddin Haji Hamdan

11:15-12:15 Rooms Etoile and Grand Ballroom II

Lunch Break

12:15-14:20 Room A (Matahari I)

Session 1A Focus Session 1: Thin-Film Transistor

Chairs: Naoto Horiguchi, Carlo Reita

12:15	12:40	1A-1	Invited	Co-Design Between Semiconductor, Low-Variation Fully-Additive Printed/Flexible Printing and Variation-Tolerant Digital Circuit Design	Joseph Chang	NTU
12:40	13:05	1A-2	Invited	Contact Printed ZnO Nanowires based FET for Large Area Electronics	Ravinder Dahiya	University of Glasgow
13:05	13:30	1A-3	Invited	Printable Low Power Organic Transistor for Highly Customizable IoT Devices	Xiaojun Guo	Shanghai Jiao Tong University
13:30	13:55	1A-4	Invited	Ultralow-Power All-Inkjet-Printed Organic Thin-Film Transistors for Wearables	Chen Jiang	University of Cambridge
13:55	14:20	1A-5	Invited	Systematic Defect Manipulation in Metal Oxide Semiconductors Towards High-Performance Thin-Film Transistors	Yuqing Zhang	Peking University Shenzhen

14:20-14:40 Authors' Interview / Poster Viewing / Coffee Break

12:15-14:20 Room B (Matahari III)

Session 1B Nanotechnology Materials and Manufacturing

Chairs: Anupam Mitra, Bich-Yen Nguyen

12:15	12:40	1B-1	Invited	Engineering Nanomaterials and Nanostructures for Electronic Applications: A Case Study of Carbon Nanotubes for Memory Devices	Rahul Sen	Nantero, Inc.
12:40	13:05	1B-2	Invited	Manufacturing of Super Growth Carbon Nanotubes and Its Aqueous Solution for Electronic Devices	Shigemi Murakawa	Zeon Corporation
13:05	13:30	1B-3		Performance and Reliability Improvement in Ge nMOSFETs with Different Surface Orientations Through Channel Flattening Process	Wen Hsin Chang	National Institute of Advanced Industrial Science and Technology (AIST)
13:30	13:55	1B-4	Invited	Atomic Layer Defect-free Top-down Process for Future Nano-devices	Seiji Samukawa	Tohoku University
13:55	14:20	1B-5		Back Gate Tunable Thin Film a-Si Nanowire BioFET for pH Detection by Compatible CMOS Fabrication Process	Nawaz Shafi	Malaviya National Institute of Technology Jaipur

14:20-14:40 Authors' Interview / Poster Viewing / Coffee Break

12:15-14:20 Room C (Grand Ballroom I)

Session 1C Density Functional Theory-Based Simulation

Chairs: Risho Koh, Dipankar Pramanik

12:15	12:40	1C-1	Invited	RSDFT-NEGF Quantum Transport Simulation of Ultra-Small Field-Effect Transistors	Nobuya Mori	Osaka University
12:40	13:05	1C-2	Invited	Engineering Atom Scale Defects in Materials for Future Electronic Devices	Dipankar Pramanik	DSPAN Solutions
13:05	13:30	1C-3	Invited	Superlattice Based Optoelectronic Analogs for Spintronic Applications	Bhaskaran Muralidharan	IIT Bombay
13:30	13:55	1C-4		Ab-initio Tight Binding Study on Defects in Armchair Silicene Nanoribbon Double Gate Field Effect Transistor	Rajesh Junghare	Visvasvaraya National Institute Of Technology
13:55	14:20	1C-5		Impact of Interface Traps Induced Degradation on Negative Capacitance FinFET	Om Prakash	Karlsruhe Institute of Technology

14:20-14:40 Authors' Interview / Poster Viewing / Coffee Break

12:15-14:20 Room D (Grand Ballroom III)

Session 1D Power and RF Devices

Chairs: Saptarshi Das, Chun-Jung Su

12:15	12:40	1D-1	Invited	Applications of Oxygen Inserted Silicon Devices in Power and RF	Robert J Mears	Atomera Incorporated
12:40	13:05	1D-2		3-Dimensional 4H-SiC MOSFETs for Harsh Environment Electronics	Muhammad Idzdihar Bin Idris	FKEKK
13:05	13:30	1D-3	Invited	Growth-Microstructure-Device Performance Correlations for III-nitride Optoelectronic and Power Devices on Sapphire and Silicon	Srinivasan Raghavan	Indian Institute of Science & Centre for Nano Science and Engineering
13:30	13:55	1D-4		The Benefits of Using SiN as a Buried Oxide in Germanium-On-Insulator Substrate	Sethavut Duangchan	King Mongkut's University of Technology North Bangkok
13:55	14:20	1D-5	Invited	A Microscopic "Toy" Model of Ferroelectric Negative Capacitance	Michael Hoffmann	NaMLab gGmbH/TU Dresden

14:20-14:40 Authors' Interview / Poster Viewing / Coffee Break

Day 1 - Monday, March 16

14:40-16:45 Room A (Matahari I)						
Session 2A GaN and III-V Devices						
Chairs: Tian-Li Wu, Kejun Xia						
14:40	15:05	2A-1		Emerging memory for IoT	Abhinay Sandupatla	Nanyang Technological University
15:05	15:30	2A-2		Low Interface Trap Density in AlGaIn/GaN Metal-Insulator-Semiconductor High-Electron-Mobility Transistors on CVD-Diamond	Kumud Ranjan	Nanyang Technological University
15:30	15:55	2A-3		Change of High-Voltage Conduction Mechanism in Vertical GaN-on-GaN Schottky Diodes at Elevated Temperatures	Abhinay Sandupatla	Nanyang Technological University
15:55	16:20	2A-4		Modeling and Characterization of InAs Quantum-Well Metal-Oxide-Semiconductor Field Effect Transistors on Quartz for 1.0 THz Wave Detection	Tanemasa Asano	Kyushu University
16:20	8C	2A-5		Emerging Memory for IoT	Amol Gaidhane	IIT Kanpur

16:45-17 Sachin Sonkusale, Milan Authors' Interview / Poster Viewing / Coffee Break

14:40-16:45 Room B (Matahari III)						
Session 2B Large Area and Flexible Electronics						
Chairs: Xiaojun Guo, Yao Jen Lee						
14:40	15:05	2B-1	Invited	Performances of Self-Aligned Top-Gate a-IGZO TFTs with Ultrathin PECVD SiO ₂ Gate Dielectric	Yuqing Zhang	Peking University Shenzhen
15:05	15:30	2B-2	Invited	High Performance Printed Electronics on Large Area Flexible Substrates	Mahesh Soni	University of Glasgow
15:30	15:55	2B-3	Invited	Fully Printed Vertical Transport Edge FETs for High Power Oxide Electronics	Subho Dasgupta	Indian Institute of Science (IISc), Bangalore
15:55	16:20	2B-4		Printing Quasi-1D Nanomaterials for Large-Area Flexible UV Photodetectors	Fengyuan Liu	University of Glasgow
16:20	16:45	2B-5		Self-Healing Interconnects for Flexible Electronics	Virendra Parab	Indian Institute of Science

16:45-17:05 Authors' Interview / Poster Viewing / Coffee Break

14:40-16:45 Room C (Grand Ballroom I)						
Session 2C TCAD-1						
Chairs: Yogesh Singh Chauhan, Nobuya Mori						
14:40	15:05	2C-1	Invited	Particle-based Device Modeling	Sima Dimitrijevic	Griffith University
15:05	15:30	2C-2		Growth and Kinetics of Elemental and Binary Semiconducting Nanowires	Dhayalan Shakthivel	University of Glasgow
15:30	15:55	2C-3		Significance of L-valley Charges and a Method to Include It in Electrostatic Model of III-V GAA FETs	Mohit Ganeriwala	Indian Institute of Technology Gandhinagar
15:55	16:20	2C-4		Virtual Process-Based Spacer & Junction Optimization for an Inverter Circuit	Sofiane Guissi	Regional Technical Group of Lam Reserach & Lam Research
16:20	16:45	2C-5	Invited	Electromigration Behavior of First-level Interconnection: Copper Pillar and Copper Stud	Christine Hau-Riege	Qualcomm Technologies, Inc.

16:45-17:05 Authors' Interview / Poster Viewing / Coffee Break

14:40-16:45 Room D (Grand Ballroom III)						
Session 2D Design and Technology						
Chairs: William (Bill) Nehrer, Tomasz Brozek						
14:40	15:05	2D-1	Invited	Technology and Manufacturing Challenges for Si and 2D Material Based Nano-scale Devices and Systems	Irfan Saadat	Khalifa University
15:05	15:30	2D-2		Near Threshold Design Technology Optimization in 12LP Process	Navneet Jain	GlobalFoundries, Inc.
15:30	15:55	2D-3	Invited	An agile and scalable manufacturing model to support 5G growth	Luis Andia	Soitec Microelectronics Singapore Pte. Ltd.
15:55	16:20	2D-4		Yield Estimation of NCFET-based 6-T SRAM	Yuri Hong	Sungkyunkwan University
16:20	16:45	2D-5	Invited	Design Thinking Underlying Fully Integrated Systems	Mitsuhiko Nagata	Azbil Corporation

16:45-17:05 Authors' Interview / Poster Viewing / Coffee Break

Day 1 - Monday, March 16
17:05-18:45 Room A (Matahari I)
Session 3A GaN Power Devices
Chairs: Shreepad Karmalkar, Wai Tung Ng

17:05	17:30	3A-1	Invited	Vertical Gallium Oxide Transistors with Current Aperture Formed Using Nitrogen-Ion Implantation Process	Masataka Higashiwaki	National Institute of Information and Communications Technology
17:30	17:55	3A-2		Quasi-Normally-Off AlGaIn/GaN HEMTs with Strained Comb Gate for Power Electronics Applications	Weichih Cheng	Hong Kong University of Science and Technology
17:55	18:20	3A-3		Study on the Optimization of Off-State Breakdown Performance of p-GaN HEMTs	Fanming Zeng	Southern University of Science and Technology
18:20	18:45	3A-4	Invited	Simulation and Design of Step-Etched Junction Termination Extensions for GaN Power Diodes	Jeremy Dickerson	Sandia National Laboratories

18:45-19:00 Authors' Interview
17:05-18:45 Room B (Matahari III)
Session 3B 2.5/3D Integration
Chairs: Saad Mekhilef, Navab Singh

17:05	17:30	3B-1	Invited	Low Temperature SmartCut™ Enabling 3D Integration	Walter Schwarzenbach	Soitec
17:30	17:55	3B-2	Invited	Advanced Layer Transfer Technology of post-Si Materials for Heterogeneous Integration	Tatsuro Maeda	National Institute of Advanced Industrial Science and Technology (AIST)
17:55	18:20	3B-3		Backstepping Position Control of High Frequency Piezoelectric Actuator Used in Ultrasonically Assisted Manufacturing	Mohammad Salah	The Hashemite University
18:20	18:45	3B-4		The Investigation of Material Modification for SiO ₂ , Si ₃ N ₄ Film and Photo-resist Using High-Dose Ion Implantation Technique	Ryota Wada	Nissin Ion Equipment Co., Ltd.

18:45-19:00 Authors' Interview
17:05-18:45 Room C (Grand Ballroom I)
Session 3C TCAD-2
Chairs: Albert Wang, Victor Moroz

17:05	17:30	3C-1	Invited	Comprehensive Design Solutions for Wide Bandgap Power Electronics	Tao Sun	Singapore & Silvaco SG
17:30	17:55	3C-2		Modeling Thermal Behavior in Multi-layered GaN HEMT-like Structures	K. Nidhin	Indian Institute of Technology Madras
17:55	18:20	3C-3	Invited	Misconception with Pad-Based CDM ESD Protection	Albert Wang	University of California, Riverside
18:20	18:45	3C-4		Simulation and Device Characterization of the P+PN+P Junction Type Pinned Photodiode and Schottky Barrier Photodiode	Yoshiaki Hagiwara	AIPS

18:45-19:00 Authors' Interview
17:05-18:45 Room D (Grand Ballroom III)
Session 3D Advanced Photovoltaic Devices and Detectors
Chairs: Juzar Vasi, Hang Zhou

17:05	17:30	3D-1		Optimization of Electron Transport Layers for High Performance Perovskite Solar Cells	Annie Ng	Nazarbayev University
17:30	17:55	3D-2		Performance Enhancement of Double Quantum Well Solar Cell by Strain-Modulated Piezo-Phototronics Effect	Soumya Ranjan Routray	SRM Institute of Science and Technology
17:55	18:20	3D-3	Invited	S-shape Current-Voltage Characteristics in Quantum Dot Integrated Multi-layer Organic Solar Cells	Upendra Verma	Indian Institute of Technology Roorkee
18:20	18:45	3D-4		A Spectrum-Tunable and Flexible Light-Emitting Device with Ultra-Wide Wavelength Range	Guangya Jiang	Tsinghua University

18:45-19:00 Authors' Interview
19:00-21:00 Equatorial
Poolside Reception

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As of January 29, 2020

Day 2 - Tuesday, March 17

07:30-08:30 Room C (Grand Ballroom I)

Women in Engineering / Young Professional Event

08:30-10:00 Main Room (Matahari I, II, III)

Plenary Session 2

Chair: Samar Saha

8:30	9:15	PL-4		Critical Feature Size of Device Manufacturing for Dominating MOSFET Evolutions	Digh Hisamoto	Hitachi, Ltd.
9:15	10:00	PL-5		Research Toward Monolithic Three-Dimensional Ics	Lance Li	Taiwan Semiconductor Manufacturing Company (TSMC)

10:00-10:15 Main Room (Matahari I, II, III)

Short Break

10:15-12:20 Main Room (Matahari I, II, III)

Session 4M

Focus Session 2: Reliability and DTCO

Chairs: Souvik Mahapatra, Muhammad A Alam

10:15	10:40	4M-1	Invited	Hot Carrier Degradation in Classical and Emerging Logic and Power Electronic Devices: Rethinking Reliability for Next Generation Electronics	Muhammad A Alam	Purdue University, West Lafayette
10:40	11:05	4M-2	Invited	A Model for Hole Trapping-Detrapping Kinetics During NBTI in p-Channel FETs	Souvik Mahapatra	Indian Institute of Technology Bombay
11:05	11:30	4M-3	Invited	Logic Block Level Design-Technology Co-Optimization is the New Moore's Law (Invited)	Victor Moroz	Synopsys
11:30	11:55	4M-4	Invited	Reliability of Advanced FinFET Technology Nodes Beyond Planar	Hyun Chul Sagong	Foundry Business, Samsung Electronics
11:55	12:20	4M-5	Invited	3D-NAND Reliability: Review of key mechanisms and mitigations	Shyam Raghunathan	Micron Technology

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

10:15-12:20 Room C (Grand Ballroom I)

Session 4C

Novel Photodetectors

Chairs: Kasturi Saha, Meenatchi Sundram

10:15	10:40	4C-1	Invited	High Gain Optical Sensors Enabled by Subthreshold Operation of Photodiode-Gated Transistors	Kai Wang	Sun Yet-sen University
10:40	11:05	4C-2	Invited	Optimization of PMMA:PCBM Interlayer for MAPbI ₃ /IGZO Phototransistor	Hang Zhou	Peking University
11:05	11:30	4C-3		TiO ₂ Nanowire /RGO Thin-Film Based Hybrid White Light Photodetector	Jay Chandra Dhar	National Institute of Technology Nagaland
11:30	11:55	4C-4		Fabrication and Characterization of SnO ₂ /CH ₃ NH ₃ PbI ₃ Based Photodetector	Rishibrind Kumar Upadhyay	Indian Institute of Technology (BHU), Varanasi
11:55	12:20	4C-5	Invited	Implantable Fluorescent CMOS Imaging Device	Kiyotaka Sasagawa	Nara Institute of Science and Technology

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

10:15-12:20 Room D (Grand Ballroom III)

Session 4D

Materials for Novel Devices

Chairs: Pei-Wen Li, Paul Berger

10:15	10:40	4D-1		Organic Semiconductor Based Nitric Oxide Detector with Modulated Sensitivity and Selectivity	Govindasamy Madhaiyan	National Chiao Tung University
10:40	11:05	4D-2	Invited	Biopolymer Based Gate Dielectrics for High Performance Organic Thin Film Transistors	Wei Lin Leong	Nanyang Technological University
11:05	11:30	4D-3		Design and Fabrication of Self-Organized Ge Gate/SiO ₂ /Si _{1-x} Ge _x Nanoshell with Raised Source/Drain for Advanced Transistors	I Hsiang Wang	National Chiao Tung University
11:30	11:55	4D-4	Invited	Effect of High Pressure Annealing Temperature on the Ferroelectric Properties of TiN/Hf _{0.25} Zr _{0.75} O ₂ /TiN Capacitors	Sanghun Jeon	Korea Advanced Institute of Science and Technology
11:55	12:20	4D-5	Invited	Applying Viscous Shear Stress to Align Single-Walled Carbon Nanotubes	Min Zhang	Peking University Shenzhen

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

13:20-15:00 Room A (Matahari I)

Session 5A

Reliability 1

Chairs: Mahadeva Iyer Natarajan, Fernando Guarin

13:20	13:45	5A-1	Invited	New Challenges of Design for Reliability in Advanced Technology Node	Changze Liu	Hisilicon
13:45	14:10	5A-2		First Time Enablement of RF Reliability Simulation Using Cadence Relxpert	Rajat Vishnoi	GlobalFoundries India
14:10	14:35	5A-3		Compact Model of Read Disturbance by Hot Carrier Injection in 3D NAND Flash Memory	Jae Yeol Park	Seoul National University
14:35	15:00	5A-4		Reliability Analysis of Gate-All-Around Floating Gate (GAA-FG) with Variable Oxide Thickness for Flash Memory Cell	Nurul Ezaila Alias	Universiti Teknologi Malaysia

15:00-15:20 Authors' Interview / Poster Viewing / Coffee Break

13:20-15:00 Room B (Matahari III)

Session 5B

Compact Modeling

Chairs: Slobodan Mijalkovic, Shahed Reza

13:20	13:45	5B-1		BSIM-IMG: Advanced Model for FDSOI Transistors with Back Channel Inversion	Harshit Agarwal	Indian Institute of Technology Jodhpur
13:45	14:10	5B-2		A Complete Model of Gate Controlled Lateral PNP Devices in CMOS Technology Valid in All Regions of Operation	Wei Zheng Tan	Silterra Malaysia Sdn. Bhd.
14:10	14:35	5B-3	Invited	Tolerance Bound Calculation for Compact Model Calibration Using Functional Data Analysis	Shahed Reza	Sandia National Laboratories
14:35	15:00	5B-4		Compact Modeling of Surface Potential and Drain Current in Multi-layered MoS ₂ FETs	Keshari Nandan	IIT-Kanpur

15:00-15:20 Authors' Interview / Poster Viewing / Coffee Break

Day 2 - Tuesday, March 17

13:20-15:00							Room C (Grand Ballroom I)	
Session 5C							Sensors and Inductors	
Chairs: Roger Booth, Chen Jiang								
13:20	13:45	5C-1	Invited	Integration of Gas Sensors with CMOS Technology	Siegfried Selberherr	Institute for Microelectronics, TU Wien		
13:45	14:10	5C-2		High Performance and Wireless Graphene Earphone Towards Practical Applications	Yuhong Wei	Tsinghua University		
14:10	14:35	5C-3		CMOS Low Power Current Source Based Tunable Inductor for IoT Devices	Selvakumar Mariappan	Universiti Sains Malaysia		
14:35	15:00	5C-4	Invited	Overview of Recent Advances in Flexible Highly Compliant Magneto-electronics	Denys Makarov	Institute of Ion Beam Physics and Materials Research		
15:00-15:20							Authors' Interview / Poster Viewing / Coffee Break	
13:20-15:00							Room D (Grand Ballroom III)	
Session 5D							Materials for Manufacturing	
Chairs: Asrul Nizam, Pei-Wen Li								
13:20	13:45	5D-1		Patterning Platinum by Selective Wet Etching of Sacrificial Pt-Al Alloy	Sebastian Meier	Texas Instruments Incorporated & Technische Universitaet Muenchen		
13:45	14:10	5D-2		Carbon Nanotubes to Enable Advanced Lithography	Marina Y. Timmermans	imec		
14:10	14:35	5D-3	Invited	Printed Graphene Aerosol Gel Micro-Supercapacitors: Towards Flexible Energy Storage Devices	Suprem Das	Kansas State University		
14:35	15:00	5D-4		SnO Thin Films Prepared by Reactive Sputtering for Ambipolar Thin-Film Transistor Applications	Jingyong Huo	Fudan University		
15:00-15:20							Authors' Interview / Poster Viewing / Coffee Break	
15:20-17:00							Room A (Matahari I)	
Session 6A							Reliability 2	
Chairs: Norhayati Binti Soin, Durga Misra								
15:20	15:45	6A-1		Impact and Quantization of Short-Term Relaxation Effect in Analog RRAM	Yue Xi	Tsinghua University		
15:45	16:10	6A-2		Reliability of 2DEG Diamond FET by Harsh-Continuous Stress Voltage Approach	Mohd Syamsul	Institute of Nano Optoelectronics Research and Technology (INOR), USM &		
16:10	16:35	6A-3		Analysis and Failure Modes of Highly Degraded PV Modules Inspected During the 2018 All India Survey of PV Module Reliability	Juzer Vasi	IIT Bombay		
16:35	17:00	6A-4		Hydrogen Proton Induced HTRB Reliability Degradation	David Goh	STMicroelectronics Asia Pacific Pte Ltd		
17:00-17:15							Authors' Interview	
15:20-17:00							Room B (Matahari III)	
Session 6B							Memory Modeling and Interface Trap Modeling	
Chairs: Dondee Navarro, Takeshi Naito								
15:20	15:45	6B-1		Perpendicular STT-MRAM Switching at Fixed Voltage and at Fixed Current	Simone Fiorentini	CDL NOVOMEMLOG, Institute for Microelectronics, TU Wien		
15:45	16:10	6B-2		Extraction of Mobility in 3-D NAND Flash Memory with Poly-Si Based Macaroni Structure	Hyungjun Jo	Seoul National University		
16:10	16:35	6B-3		Improved Lumped Element Model for GaN-based MIS-HEMT Gate Stack in the Spill-Over Regime	Narendra Suresh Rai	Indian Institute of Technology Bombay		
16:35	17:00	6B-4		Impact of Interface Traps and Zn Diffusion on Performance of Lateral Hybrid III-V/Si Photodetectors	Qian Ding	ETH Zurich		
17:00-17:15							Authors' Interview	
15:20-17:00							Room C (Grand Ballroom I)	
Session 6C							Neural Network and NVM 1	
Chairs: Nor Ashidi Mat Isa, Fabrice Meriaudeau								
15:20	15:45	6C-1	Invited	Material Innovation in the Era of Artificial Intelligence - A Case Study of Hf-Zr Systems	Dina H. Triyoso	TEL Technology Center, America, LLC		
15:45	16:10	6C-2	Invited	Enabling High-Performance DNN Inference Accelerators Using Non-Volatile Analog Memory (Invited)	An Chen	IBM Research		
16:10	16:35	6C-3	Invited	A Low Computational Cost Visual Tracking Algorithm Designed for a Multiple Mode Brain-Machine-Interface	Xuecheng Wang	Tsinghua University		
16:35	17:00	6C-4		Resistive Switching Behaviour of PVP/HfOx Hybrid RRAM on Flexible Substrate	Ishan Varun	Indian Institute of Technology Jodhpur		
17:00-17:15							Authors' Interview	
15:20-17:00							Room D (Grand Ballroom III)	
Session 6D							SiC-Power Devices	
Chairs: Qing Zhang, Robert Pan								
15:20	15:45	6D-1		Gen-3 PRESiCE Technology for Manufacturing SiC Power Devices in a 6-Inch Commercial Foundry	Bantval Jayant Baliga	North Carolina State University		
15:45	16:10	6D-2		Charge Sheet Super Junction in 4H-Silicon Carbide	Akshay K	IIT Madras		
16:10	16:35	6D-3		A Novel Snapback-Free Reverse-Conducting IGBT with Si/SiC Heterojunction	Jinping Zhang	University of Electronic Science and Technology of China		
16:35	17:00	6D-4	Invited	Roles of Semiconductor Junctions in Mechanical-Electrical Power Conversion	Qing Zhang	Nanyang Technological University		
17:00-17:15							Authors' Interview	

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Day 3 - Wednesday, March 18

08:30-10:00 Main Room (Matahari I, II, III)

Plenary Session 3

Chair: Jagadheswaran Rajendran

8:30	9:15	PL-6		Nanocarbon Interconnects - from 1D to 3D	Cary Y. Yang	Santa Clara University
9:15	10:00	PL-7		Industrial LED development: From red to UV and from efficient components to smart devices	David Lacey	Osram Opto Semiconductors

10:00-10:15 Main Room (Matahari I, II, III)

Short Break

10:15-12:20 Room A (Matahari I)

Session 7A

Variability Modeling

Chairs: Subhash Rustagi, Paul Lining Zhang

10:15	10:40	7A-1		General Formula to Capture the Impact of Dummy Gates on Layout Dependent Effects Modeling of Multi-finger MOSFETs	Kejun Xia	NXP Semiconductors
10:40	11:05	7A-2		An Accurate Structure Generation and Simulation of LER Affected NWFET	Agam Jain	Indian Institute of Technology Roorkee
11:05	11:30	7A-3		Analysis on Process Variation Effect of 3D NAND Flash Memory Cell Through Machine Learning Model	Jang Kyu Lee	Seoul National University
11:30	11:55	7A-4		Superior Work Function Variability Performance of Horizontally Stacked Nanosheet FETs for Sub-7-nm Technology and Beyond	Akhil Sudarsanan	Indian Institute of Technology Hyderabad

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

10:15-12:20 Room B (Matahari III)

Session 7B

Advanced Transistors

Chairs: Abhisek Dixit, Yukinori Morita

10:15	10:40	7B-1		Process-induced Vt Variability in Nanoscale FinFETs: Does Vt Extraction Methods Have Any Impact	Mandar S. Bhoir	IIT Gandhinagar
10:40	11:05	7B-2		Impact of LER on Mismatch in Nanosheet Transistors for 5nm-CMOS	Chandan Kumar Jha	IIT DELHI
11:05	11:30	7B-3		Possibility of Ultralow Power Rectenna with Super Steep SS "PN-Body Tied SOI FET" and High Impedance Antenna	Ryota Yanagi	Kanazawa Institute of Technology
11:30	11:55	7B-4		Digital Type CMOS-MEMS Cointegrated Pressure Sensor Fabricated Using Cost-Effective Minimal-Fab Process	Yongxun Liu	National Institute of Advanced Industrial Science and Technology (AIST)

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

10:15-12:20 Room C (Grand Ballroom I)

Session 7C

Materials Processing

Chairs: Sanjiv Sambandan, Sanghun Jeon

10:15	10:40	7C-1	Invited	High Volume Semiconductor Manufacturing Using Nanoimprint Lithography	Yukio Takabayashi	CANON Inc.
10:40	11:05	7C-2	Invited	COTS Semiconductor Components for the New Space Industry	Harshad Bokil	Ispace
11:05	11:30	7C-3		Bi-Objective Indirect Optimization of Robotic Transportation Task Assignment Based on Auction Mechanism	Souleymane Moussa Goumeze	Lineact Cesi
11:30	11:55	7C-4	Invited	Switching and Charge Trapping in HfO ₂ -based Ferroelectric FETs: An Overview and Potential Applications	Halid Mulaosmanovic	NaMLab gGmbH
11:55	12:20	7C-5		Ferroelectricity Enhancement in Hf _{0.5} Zr _{0.5} O ₂ Capacitors by Incorporating Ta ₂ O ₅ Dielectric Seed Layers	Venkateswarlu Gaddam	Korea Advanced Institute of Science and Technology

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

10:15-12:20 Room D (Grand Ballroom III)

Session 7D

2D Materials and Devices

Chairs: Suprem Das, Nava Kanta Bhat

10:15	10:40	7D-1	Invited	Metals at the Atomic Limit	Joshua Robinson	The Pennsylvania State University
10:40	11:05	7D-2		Synthesis of MoS ₂ (1-x)Te _{2x} by Sputtering and the Change in the Physical Properties and Structure Depending on the Chalcogen Composition	Yusuke Hibino	Meiji University
11:05	11:30	7D-3	Invited	Inter-layer Charge and Energy Transfer in Layered Heterojunction Devices	Kausik Majumdar	Indian Institute of Science Bangalore India
11:30	11:55	7D-4	Invited	Electric-double-layer MoS ₂ Transistors and Their Neuromorphic Device Applications	Jie Jiang	Central South University

12:20-13:20 Authors' Interview / Lunch Break (Rooms Etoile and Grand BR II)

Day 3 - Wednesday, March 18**13:20-15:00 Room A (Matahari I)**
Session 8A Neural Network and NVM 2
Chairs: Wai Yie Leong, Chetan Arora

13:20	13:45	8A-1		Neural Network Based Design Optimization of 14-Nm Node Fully-Depleted SOI FET for SoC and 3DIC Applications	Hyeok Yun	POSTECH
13:45	14:10	8A-2		Graphene Muscle with Artificial Intelligence	Ning-Qin Deng	Tsinghua University
14:10	14:35	8A-3		Methodology to Predict Random Telegraph Noise Induced Threshold Voltage Shift Using Machine Learning	Eunseok Oh	Seoul National University
14:35	15:00	8A-4		Development of Non-Volatile Tunnel-FET Memory as a Synaptic Device for Low-Power Spiking Neural Networks	Hisashi Kino	Tohoku University

15:00-15:20 Authors' Interview / Coffee Break**13:20-15:00 Room B (Matahari III)**
Session 8B Manufacturing and Characterization
Chairs: Bernard Lim, Keizo Hiraga

13:20	13:45	8B-1	Invited	Metrology and Inspection: Challenges and Solutions for Emerging Technology Nodes	Arun Srivatsa	Applied Materials
13:45	14:10	8B-2		Physical Model for Rapid Thermal Annealing (RTA) Induced Mechanical Stress	Tingyou Lin	Vanguard International Semiconductor Corporation
14:10	14:35	8B-3		Residual Stress Analysis and Structural Parameters Optimization of Corrugated Diaphragms Applied to MEMS Device	Chuying Tang	Wuhan University
14:35	15:00	8B-4		Emerging memory for IoT	Mohd Azizi Chik	UNIMAP & Silterra Malaysia Sdn Bhd

15:00-15:20 Authors' Interview / Coffee Break**13:20-15:00 Room C (Grand Ballroom I)**
Session 8C Emerging Memory for IoT
Chairs: Sachin Sonkusale, Milan Pesic

13:20	13:45	8C-1	Invited	Ferroelectric-HfO ₂ Devices Technology and Manufacturing for Memory and Logic Applications	Shinji Migita	National Institute of Advanced Industrial Science and Technology (AIST)
13:45	14:10	8C-2		Fabrication and Characterization of Ferroelectric HfZrO-based Synaptic Transistors with Multi-state Plasticity	Tianqi Lu	Tsinghua University
14:10	14:35	8C-3		A Novel Capacitor-based Stateful Logic Operation Scheme for In-memory Computing in 1T1R RRAM Array	Wen Sheng Shen	Peking University
14:35	15:00	8C-4		A Novel Bi-Functional Memory-PUF Module Utilizing Adjustable Switching Window of RRAM	Bohan Lin	Tsinghua University

15:00-15:20 Authors' Interview / Coffee Break**13:20-15:00 Room D (Grand Ballroom III)**
Session 8D Focus Session 3: Packaging and Heterogeneous Integration
Chairs: Piyush Gupta, Takafumi Fukushima

13:20	13:45	8D-1	Invited	Laser-Assisted Bonding (LAB), Its Bonding Materials, and Their Applications	Kwang-Seong Choi	Electronics and Telecommunications Research Institute
13:45	14:10	8D-2	Invited	System-level Power Integrity Optimization Based on High-Density Capacitors for Enabling HPC/AI Applications	Sungwook Moon	Samsung Electronics Co. Ltd.
14:10	14:35	8D-3	Invited	Multilithic 3D and Heterogeneous Integration Using Capillary Self-Assembly	Takafumi Fukushima	Tohoku University
14:35	15:00	8D-4	Invited	Surface Planarization of Polymeric Dielectrics for FOWLP Applications	Sungdong Kim	Seoul National University of Science and Technology

15:00-15:20 Authors' Interview / Coffee Break**15:20-19:20 Room A (Matahari I)**
JSAP (JST / CREST)**15:20-17:00 Room B (Matahari III)**
Session 9B RF Device Modeling
Chairs: Harshit Agarwal, Jean-Pierre Raskin

15:20	15:45	9B-1	Invited	SOI Devices and Substrates Towards RF and Millimeter Wave ICs	Jean-Pierre Raskin	Université Catholique de Louvain
15:45	16:10	9B-2		Modeling and Design of SiC-based High-Frequency Photoconductive Switches	Shaloo Rakheja	University of Illinois at Urbana-Champaign
16:10	16:35	9B-3		Geometrical Dimension Impact for Performance of CMOS Based Compatible Circular Shape Aluminum Nitride (AlN) Piezoelectric Micromachined Ultrasonic	Muhammad Naim Haron	Universiti Sains Malaysia
16:35	17:00	9B-4		Non-Quasi-Static Effect on Ge-Body pTFET for Different Source Materials	Sayani Ghosh	Jadavpur University

17:00-17:20 Authors' Interview / Coffee Break**15:20-17:20 Room D (Grand Ballroom III)**
Heterogeneous HRI Road Map Group WS