

Opening Session

Session Chair: Hiromi Yuasa, Chair, Program Committee
Satoshi Iwamoto, Chair, Steering Committee

Plenary Session

9:40 PL-01

Molecular engineering of interfaces for high performance perovskite solar cells
Tsutomu Miyasaka, Toin University of Yokohama

10:25 PL-02

Present and Future Challenges of HBM
Myeong-Jae Park, SK hynix

11:10 PL-03

The Science Policy of France and Japan collaboration through CNRS
Bruno Le Pioufle, CNRS Office for North-East Asia

Lunch					
Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-1:CFET Technology (13:30-15:15) Session Chair: Takashi Matsukawa (AIST), Kuniyuki Kakushima (Science Tokyo)	02: Advanced and Emerging Memories / New Applications B-1:3D NAND Flash Memory (13:30-15:00) Session Chair: Yoshihiro Sato (Tohoku Univ.), Toshinori Numata (Toyota Technological Inst.)	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials C-1:Power and Sensing Circuits (13:30-15:00) Session Chair: Kousuke Miyaji (Shinshu Univ.), Hao Qiu (Nanjing Univ.)	09: Novel Functional / Quantum / Spintronic Devices and Materials D-1:Spintronics/Quantum Materials/Reservoir Computing (13:30-15:15) Session Chair: Shinobu Ohya (The Univ. of Tokyo), Kenichi Aoshima (NHK STRL)	06: Energy Harvesting and Converting Devices and Materials E-1:Photovoltaics (13:30-15:00) Session Chair: Kentaro Watanabe (The Univ. of Tokyo), Naoyuki Shibayama (Toin Univ. of Yokohama)	07: Organic / Molecular / Bio-electronics F-1:Organic/Inorganic Hybrid Electronics (13:30-15:00) Session Chair: Toshinori Matsushima (Kyushu Univ.), Hiroaki Iino (Science Tokyo)
13:30 A-1-01 (Invited) Modeling of Gate-All-Around and CFET Transistor and Interconnects towards Next Generation Logic Nodes °Ashish Pal ¹ , ¹ AMAT (United States of America)	13:30 B-1-01 (Invited) Horizontal Channel Flash to Explore the Limits of 3D Flash Memory °Minoru Oda ¹ , Kosuke Sakamawari ¹ , Shunichi Seno ¹ , Yuki Nakata ¹ , Ryo Fukuoka ¹ , Haruka Kusai ¹ , Keiji Hosotani ¹ , Toru Nakanishi ¹ , Daisuke Hagishima ¹ , Toshiya Ishikawa ¹ , Tatsuo Ogura ¹ , Shinya Naito ¹ , Takashi Kurusu ¹ , Sumiko Mano ¹ , Tsuyoshi Ogikubo ¹ , Motohiko Fujimatsu ¹ , Kikuko Sugimae ¹ , Mina Hatakeyama ¹ , Yuki Inuzuka ¹ , Yusuke Niki ¹ , Rieko Tanaka ¹ , Noboru Shibata ¹ , Hiroshi Nakamura ¹ , Makoto Fujiwara ¹ , Koji Matsuo ¹ , Yoshiro Shimojo ¹ , Fumitaka Arai ¹ , Masaki Kondo ¹ , Tomohiro Oki ¹ , Masaru Kito ¹ , ¹ Kioxia Corp. (Japan)	13:30 C-1-01 (Invited) Development of Close-Loop Active Gate Driver ICs for Silicon Carbide (SiC) Power MOSFETs Han-Lin Wang ¹ , °Po-Hung Chen ¹ , ¹ National Yang Ming Chiao Tung Univ. (Taiwan)	13:30 D-1-01 (Invited) Towards Van der Waals Semiconductor Heterojunction Spintronic Devices °Kaiyou Wang ^{1,2} , ¹ Inst. of Semiconductors, Chinese Academy of Sci. (China), ² Univ. of Chinese Academy of Sci. (China)	13:30 E-1-01 (Invited) Low-cost strategies for III-V solar cells using hydride vapor phase epitaxy °Ryuji Oshima ¹ , Yasushi Shoji ¹ , Yudai Shimizu ¹ , Akinori Ubukata ² , Hiroki Tokunaga ² , Takeyoshi Sugaya ¹ , ¹ AIST (Japan), ² TNSC (Japan)	13:30 F-1-01 (Invited) Single-walled Carbon Nanotubes Transparent Electrodes with p- and n-Doping for Organic and Perovskite Solar Cells °Yutaka Matsuo ¹ , ¹ Nagoya Univ. (Japan)
14:00 A-1-02 Ultimate Scaling of the Bonding Dielectric for sequential CFET °ANNE VANDOOREN ¹ , Kevin Vandersmissen ¹ , Ferenc Fodor ¹ , Gerhard Bast ² , Jeffrey Mileham ² , Steven Demuyne ¹ , Katia Devriendt ¹ , Naoto Horiguchi ¹ , Serge Biesemans ¹ , ¹ imec (Belgium), ² KLA Corporation (United States of America)	14:00 B-1-02 Area Selective Deposited SiN for Confined Charge Trap Layer in 3D NAND Devices °Sana Rachidi ¹ , Laurent Breuil ¹ , Silvia Armini ¹ , Yoshitomo Hashimoto ² , Daigo Yamaguchi ² , Kimihiko Nakatani ² , Jie Li ¹ , Marta Coelho Silva ¹ , Geert Van den Bosch ¹ , Maarten Rosmeulen ^{1,3} , ¹ imec (Belgium), ² KOKUSAI ELECTRIC CORPORATION (Japan), ³ KU Leuven (Belgium)	14:00 C-1-02 A Fully Integrated 2V-input 2:1 Switched Capacitor Converter Using CMOS-Type Class-D Oscillator-Based Driver Achieving Low Driving Loss at 480MHz °Yuto Watanabe ¹ , Atsuya Kakuta ¹ , Kousuke Miyaji ¹ , ¹ Shinshu Univ. (Japan)	14:00 D-1-02 Spontaneous spin-splitting observed in (In,Fe)Sb via resonant tunneling spectroscopy in double-barrier heterostructures °Akhil Sanjaya Kumar Pillai ¹ , Le Duc Anh ^{1,2} , Masaaki Tanaka ^{1,2,3} , ¹ Dept. EEIS, The Univ. of Tokyo (Japan), ² CSRN, The Univ. of Tokyo (Japan), ³ Inst. for NanoQuine, The Univ. of Tokyo (Japan)	14:00 E-1-02 Evaluation of in-plane uniformity of 6-inch InGaP solar cells fabricated by hydride vapor phase epitaxy °Keigo Kondo ¹ , Ryuji Oshima ² , Yudai Shimizu ² , Akinori Ubukata ³ , Hiroki Tokunaga ³ , Takeyoshi Sugaya ² , Yoshinobu Okano ¹ , ¹ Tokyo City Univ. (Japan), ² AIST (Japan), ³ Taiyo Nippon Sanso Corp. (Japan)	14:00 F-1-02 (Invited) Organic host dispersion-based perovskite nanocrystals light-emitting diodes °Takayuki Chiba ¹ , ¹ Yamagata Univ. (Japan)

Lunch

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-1: Integrated Photonics (13:30-15:00) Session Chair: Frederic Boeuf (STMicroelectronics), Mizuki Shirao (Mitsubishi Electric)	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-1: Group IV Materials (13:30-15:00) Session Chair: Taizoh Sadoh (Kyushu Univ.), Katsunori Makiyama (Nagoya Univ.)	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-1: 3D Integration (13:30-15:00) Session Chair: Takashi Matsumoto (Tokyo Electron Technology Solutions Ltd.), Mayumi B. Takeyama (Kitami Inst. of Tech.)	08: Low Dimensional Devices and Materials K-1: Growth (13:30-15:00) Session Chair: Satoshi Hiura (Hokkaido Univ.), Takayuki Arie (Osaka Metropolitan Univ.)	04: Power / High-speed Devices and Materials M-1: SiC Materials and Processes (13:30-15:00) Session Chair: Tomoya Ono (Kobe Univ.), Kohei Adachi (Mitsubishi Electric)	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-1: Oxide Semiconductor Devices 1 (13:30-15:00) Session Chair: Mamoru Furuta (Kochi Univ. of Tech.), Jun Koyama (Semiconductor Energy Lab.)
13:30 G-1-01 4-Port Evanescently Coupled Waveguide Ge-on-Si Photodetector with High Saturation Current and High Bandwidth °CHAO ZHANG¹, Rui Tang¹, Makoto Okano², Kasidit Toprasertpong¹, Shinichi Takagi¹, Mitsuru Takenaka¹, ¹The Univ. of Tokyo (Japan), ²National Inst. of Advanced Indus. Sci. and Tech. (Japan)	13:30 H-1-01 (Invited) Advanced Group-IV Epitaxy and Integration Strategies for GAA Nanosheet Transistor Performance Enhancement °Shogo Mochizuki¹, Curtis Durfee¹, Nicolas Loubet¹, ¹IBM Res. (United States of America)	13:30 J-1-01 (Invited) COW Integration Technology for Capacitor Embedded 3D Functional Interposer °Tatsuya Funaki^{1,2}, Takayuki Ohba¹, ¹Inst. of Sci. Tokyo (Japan), ²Murata Manufac. Co., Ltd (Japan)	13:30 K-1-01 (Invited) Growth and Application of Quantum Dot Lasers for Silicon Photonic Integrated Circuits °Jinkwan Kwoen¹, Yasuhiko Arakawa¹, ¹The Univ. of Tokyo (Japan)	13:30 M-1-01 (Invited) Consideration on 4H-SiC surface nitridation reactions for designing more efficient SiO₂/SiC interface defect passivation processes °Koji Kita¹, ¹The Univ. of Tokyo (Japan)	13:30 N-1-01 (Invited) Nanosheet Oxide Semiconductor Transistors for 3D integrated devices °Masaharu Kobayashi¹, ¹The Univ. of Tokyo (Japan)
13:45 G-1-02 Ultra-compact and Power-efficient Acousto-optic Modulator on Polymer-loaded LNOI Platform °Zhi Jiang¹, Cizhe Fang¹, Xuetao Gan², Yan Liu¹, Genquan Han¹, ¹Xidian Univ. (China), ²Northwestern Polytechnical Univ. (China)					
14:00 G-1-03 Low Divergence Si/SiN Millimeter-long antennas for Silicon Photonics based Optical-Phased Arrays °Louise-Eugénie Bataille¹, Sylvain Guerber², Beatrice Dagens³, Frederic Boeuf¹, ¹STMicroelectronics (France), ²CEA Leti (France), ³Univ. Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies (France)	14:00 H-1-02 Atomic Layer Epitaxy of Si in Ge °Yuji Yamamoto^{1,2}, Wei-Chen Wen¹, Markus Andreas Schubert¹, Daniel Steckler¹, Junichi Murota³, Bernd Tillack^{1,4}, ¹IHP - Leibniz-Inst. für innovative Mikroelektronik (Germany), ²Nagoya Univ. (Japan), ³Micro System Integration Center, Tohoku Univ. (Japan), ⁴Tech. Univ. Berlin (Germany)	14:00 J-1-02 Evaluation of 19 nm-Half-Pitch Patterning by Nanoimprint Lithography Through Electrical Test of W-Damascene Interconnects Using Atomic-Scale Dry-Etching and Deposition Process °Kenta Suzuki¹, Tetsuya Ueda¹, Yuji Kasashima¹, Wataru Mizubayashi¹, Naoya Okada¹, Hiroyuki Ota¹, Masanaga Fukasawa¹, Yoshihiro Hayashi¹, Masaki Ishida², Tomomi Funayoshi², Hiromi Hiura², Masayuki Kagawa², Noriyasu Hasegawa², Kiyohito Yamamoto², ¹AIST (Japan), ²Canon Inc. (Japan)	14:00 K-1-02 Improvement of photoluminescence intensity and development of template for position control of silica-coated PbS quantum dots as photon sources °Hirotoshi Sirozumi¹, Kohei Iwata¹, Kohki Mukai¹, ¹Yokohama National University (Japan)	14:00 M-1-02 Expansion Rate Change of Single Shockley-Type Stacking Faults in 4H-SiC by High Temperature Annealing After Fluorine or Oxygen Ion Implantation °Johji Nishio¹, Chiharu Ota¹, Ryosuke Iijima¹, ¹Toshiba Corp. (Japan)	14:00 N-1-02 Superlattice ZnO₂-Al₂O₃ Gate Stack of BEOL-Compatible In₂O₃ FETs with High On/Off Ratio >10⁹ and Synaptic a = -0.63 for 2T0C °Zhao-Feng Lou¹, Sie Beng Ting², Yit-Tay Chang¹, Che-Chi Cheng¹, Shu-Tong Chang³, Ming-Han Liao⁴, Ling-Yen Yeh⁵, Shou-Zen Chang², I-Chun Cheng², Min-Hung Lee^{1,6,7}, ¹Program for Semiconductor Devices, Materials, and Hetero-integration, Graduate School of Advanced Technology, National Taiwan Univ. (Taiwan), ²Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan), ³Department of Electrical Engineering, National Chung Hsing Univ. (Taiwan), ⁴Department of Mechanical Engineering, National Taiwan Univ. (Taiwan), ⁵Powerchip Semiconductor Manufacturing Corp. (Taiwan), ⁶Graduate Institute of Electronics Engineering, National Taiwan Univ. (Taiwan), ⁷Institute of Applied Mechanics, National Taiwan Univ. (Taiwan)

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-1:CFET Technology	02: Advanced and Emerging Memories / New Applications B-1:3D NAND Flash Memory	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials C-1:Power and Sensing Circuits	09: Novel Functional / Quantum / Spintronic Devices and Materials D-1:Spintronics/Quantum Materials/Reservoir Computing	06: Energy Harvesting and Converting Devices and Materials E-1:Photovoltaics	07: Organic / Molecular / Bio-electronics F-1:Organic/Inorganic Hybrid Electronics
14:15 A-1-03 Recent insights in direct extraction of access resistance components in NSFET and CFET devices with the cascaded transistor method °PIERRE CHARLES EYBEN ¹ , Andrea Pondini ^{1,2} , Hiroaki Arimura ¹ , Thomas Chiarella ¹ , Hans Mertens ¹ , Clément Porret ¹ , Erik Rosseel ¹ , Ritam Sarkar ¹ , Maryam Hosseini ¹ , Daisy Zhou ¹ , Jérôme Mitard ¹ , Naoto Horiguchi ¹ , ¹ IMEC (Belgium), ² KU Leuven (Belgium)	14:15 B-1-03 Optimizing Cell Structure to Improve Cell Characteristics in IGZO Channel-Based 3D NAND Flash with p-Type Gate Daewoong Kang ¹ , °Sungho Park ^{1,2} , Joohyo Kim ^{1,2} , Nayoon Kang ^{1,3} , Jeongnam Youn ¹ , Youngho Jung ¹ , ¹ Seoul National University (Korea), ² Chung-Ang University (Korea), ³ Soongsil University (Korea), ⁴ Daegu University (Korea)	14:15 C-1-03 Statistical Capacitance Measurement of Si Trench Capacitors Using Array Test Circuit °Ryoya Nishimaki ¹ , Koga Saito ¹ , Takezo Mawaki ^{1,2} , Ken Miyauchi ² , Rihito Kuroda ^{1,2} , ¹ Graduate School of Engineering, Tohoku University (Japan), ² New Industry Creation Hatchery Center, Tohoku University (Japan)	14:15 D-1-03 Self-Generated Spin Wave in Biquadratic Coupled Spin Torque Oscillators °Tsz Chung Cheng ¹ , Chuhan Liu ¹ , Yuichiro Kurokawa ¹ , Hiromi Yuasa ¹ , ¹ Kyushu University (Japan)	14:15 E-1-03 Evaluation of Crystallinity of Single-Crystal Ge Membranes via Germanium-on-Nothing Structures for Substrate Reuse Techniques °Wenbo Fan ¹ , Shuhei Yagi ¹ , Hiroyuki Yaguchi ¹ , ¹ Saitama Univ. (Japan)	
14:30 A-1-04 Comparative Analysis of Conventional and Line-Type Tall Via Structures for CFET: Performance, Scalability, and Process Feasibility °Jinyoung Lee ^{1,2} , Seung Kyu Kim ^{1,2} , KwangYoung Lee ^{1,2} , Jongwook Jeon ¹ , ¹ Sungkyunkwan Univ. (Korea), ² Samsung Electronics (Korea)	14:30 B-1-04 A Novel Structure using p-Doped Polysilicon for Wide Memory Window in ferroelectric 3D NAND Flash Daewoong Kang ¹ , °Nayoon Kang ^{1,2} , Sungho Park ^{1,3} , Joohyo Kim ^{1,3} , Jeongnam Youn ¹ , Youngho Jung ¹ , ¹ Seoul National University (Korea), ² Soongsil University (Korea), ³ Chung-Ang University (Korea), ⁴ Daegu University (Korea)	14:30 C-1-04 Ultra-Low-Energy Architecture of Temperature Sensor Sheet Integrating Phase-Transition Materials and Digital Circuits °Kosuke Kayano ¹ , Sang-Gyu Koh ² , Satoshi Hamasuna ¹ , Shiyuan Sun ¹ , Takaaki Miyasako ² , Tadasu Hosokura ² , Takeaki Yajima ¹ , ¹ Kyushu University (Japan), ² Murata Manufacturing Co., Ltd. (Japan)	14:30 D-1-04 (Late News) Fabrication and Evaluation of Topological Semimetal YPtBi/Ta/CoFeB Junctions with High Spin Hall Angle for SOT-MRAM °Sho Kagami ¹ , Reo Yamamoto ¹ , Zhang Ruixian ¹ , Ken Ishida ¹ , Quang Le ² , Brian York ² , Cheryngye Hwang ² , Xiaoyong Liu ² , Son Le ² , Maki Maeda ³ , Tuo Fan ¹ , Yu Tao ¹ , Hisashi Takano ¹ , Pham Nam Hai ¹ , ¹ Sci. Tokyo (Japan), ² WD. Inc. GO (United States of America), ³ WD. Inc. FJ (Japan)	14:30 E-1-04 Photovoltage Mapping in Planar-Heterojunction Ternary Polymer Solar Cells by Kelvin Probe Force Microscopy °Chitlada Mani-Lata ¹ , Kaoru Toda ¹ , Ryota Fukuzawa ¹ , Masakazu Nakamura ¹ , Hiroaki Bente ¹ , ¹ Nara Institute of Science and Technology (Japan)	14:30 F-1-03 Design and Mechanism Investigation of Aggregation-Controlled Double-Layer SnO ₂ for Enhanced Performance in Perovskite Solar Cells Dai Semba ¹ , Telugu Bhim Raju ¹ , Zhanglin Guo ¹ , °Toshinori Matsushima ¹ , ¹ Kyushu University (Japan)
14:45 A-1-05 Evaluation of SiCo as a Protective Layer for Nanosheet Integrity and Random Parasitic Channel Mitigation in Monolithic Complementary FET Fabrication °Yu-Fan (Andy) Peng ¹ , Steven Demuyne ¹ , Camila Toledo de Carvalho Cavalcante ¹ , Jishnu Ganguly ¹ , Cassie Sheng ¹ , Karen Stiers ¹ , Anne Vandooen ¹ , Maryam Hosseini ¹ , Dmitry Batuk ¹ , Thomas Chiarella ¹ , Anthony Peter ¹ , Maria Chistiakova ¹ , Alfonso Marquez ¹ , Lucas PetersenBarbosa Lima ¹ , Naoto Horiguchi ¹ , Serge Biesemans ¹ , ¹ IMEC (Belgium)	14:45 B-1-05 Enhanced Charge Trapping Characteristics in Flash Memory Using TiN Nanocrystal embedded SiN _x Layers °Yunseo Im ¹ , San Park ¹ , Sehyeon Choi ¹ , Boncheol Ku ¹ , Seongho Lee ¹ , Hyungjun Kim ² , Jaehyun Yang ² , Bio Kim ² , Youngseon Son ² , Hanmei Choi ² , Changhwan Choi ¹ , ¹ Hanyang Univ. (Korea), ² Samsung Electronics Co.Ltd. (Korea)	14:45 C-1-05 A Cryogenic SAR ADC with an Attenuated Sampling Technique for In-Situ Signal Monitoring in Silicon Spin Qubit Systems °Ryozo Takahashi ¹ , Makoto Nagata ¹ , Takuji Miki ¹ , ¹ Kobe Univ. (Japan)	14:45 D-1-05 Chiral plasmonic metasurfaces facilitate the manipulation of valley degrees of freedom in two-dimensional materials °Yang Xu ¹ , Yunfei Xie ¹ , Yuxin Ye ¹ , Jianhua Huang ² , Zhi-Xiang Zhang ¹ , Zongwen Li ¹ , Qianqian Zhang ¹ , Ming Huang ² , Xuan Ye ¹ , Yuan Ma ¹ , Xiaochen Wang ¹ , Bin Yu ¹ , Ziwei Li ² , ¹ Zhejiang Univ. (China), ² Hunan Univ. (China)	14:45 E-1-05 Atomic Layer Deposition-Free Tin Oxide for Efficient Electron Transport in Wide-Bandgap Perovskite and Tandem Solar Cells °Chih Wei Chu ¹ , Wajidullah Wajidullah ¹ , Faisal Attique ¹ , Abhishek Kumar ¹ , ¹ Academia Sinica (Taiwan)	14:45 F-1-04 Influence of Alkyl Chain Length in 2D Perovskites on Thermal Transport of CNT/Perovskite Composite Yarns for Flexible Thermoelectric Generators °Aghnia Dinan Maulani Heriyanto ¹ , Masateru Hirai ¹ , Yongyoon Cho ¹ , Naofumi Okamoto ¹ , Hiroaki Bente ¹ , Masakazu Nakamura ¹ , ¹ NAIST (Japan)
15:00 A-1-06 Defect Characterization through Fin and Gate Modules for Complementary Field-Effect Transistor Fabrication °Xiuju Zhou ¹ , Nachiketa Zhou Janardan ¹ , Andrea Mingardi ¹ , Ataklti Weldeclassie ¹ , Anabela Veloso ¹ , Lucas Petersen Barbosa Lima ¹ , Serge Biesemans ¹ , Kaushik Sah ² , Roel Gronheid ² , Andrew Cross ² , ¹ IMEC (Belgium), ² KLA Corp. (United States of America)			15:00 D-1-06 Enhanced Information Processing Capacity of Redox-Type Ion-Gating Reservoirs via Physical Masking with Periodic Drain Voltage Streams °Daiki Nishioka ¹ , Kaoru Shibata ² , Wataru Namiki ² , Kazuya Terabe ² , Takashi Tsuchiya ² , ¹ International Center for Young Scientists, NIMS (Japan), ² Research Center for Materials Nanoarchitectonics, NIMS (Japan)		

Tuesday, September 16

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-1: Integrated Photonics	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-1: Group IV Materials	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-1: 3D Integration	08: Low Dimensional Devices and Materials K-1: Growth	04: Power / High-speed Devices and Materials M-1: SiC Materials and Processes	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-1: Oxide Semiconductor Devices 1
14:15 G-1-04 Low Propagation Loss in LPCVD Si₃N₄ Waveguides Without the Need for High-Temperature Annealing: Expanding Applications in Silicon Photonics ^o Norikatsu Takaura ^{1,2} , Shoma Miyata ¹ , Moataz Eissa ² , Takaaki Noda ¹ , Yuji Urano ¹ , Zhao Jiaang ^{1,2} , Hiroaki Takahashi ^{1,2} , Shuntaro Machida ¹ , Tsuyoshi Horikawa ² , Nobuhiko Nishiyama ² , ¹ KOKUSAI ELECTRIC CORPORATION (Japan), ² Institute of Science Tokyo (Japan)	14:15 H-1-03 Control of Three-Dimensionally Aligned SiGe Nanodot Superlattice Formation by Strain Engineering Using SiGe Virtual Substrate ^o Wei-Chen Wen ¹ , Katsunori Makihara ^{2,1} , Andreas Mai ^{1,3} , Bernd Tillack ^{1,4} , Yuji Yamamoto ^{1,2} , ¹ IHP - Leibniz-Institut für innovative Mikroelektronik (Germany), ² Nagoya Univ. (Japan), ³ Technical Univ. of Applied Science Wildau (Germany), ⁴ Technische Universität Berlin (Germany)	14:15 J-1-03 Die-level 3D integration with Via-last TSV from Multi-Project Wafers Towards Universal Access to 3D-ICs ^o Akihiro Tominaga ¹ , Jiayi Shen ² , Tetsu Tanaka ^{1,2} , Takafumi Fukushima ^{1,2} , ¹ Graduate School of Engineering, Tohoku Univ. (Japan), ² Graduate School of Biomedical Engineering, Tohoku Univ. (Japan)	14:15 K-1-03 Orientation-controlled close-packing of colloidal PbS quantum dots with butylamine ligands toward intermediate-band solar cells ^o Nozomu Yoshikuni ¹ , Satsuki Sasaki ¹ , Kohki Mukai ¹ , ¹ Yokohama National University (Japan)	14:15 M-1-03 Significant Lowering of Interface State Density at Deposited SiO₂/SiC Interface by Two-Step O₂/N₂ Annealing ^o Junhao Meng ¹ , Xianyong Wu ^{1,2} , Wei Shan ¹ , Changhong Zhong ¹ , Jingquan Liu ¹ , Xiuyan Li ¹ , ¹ Shanghai Jiao Tong Univ. (China), ² GTA Semiconductor Co., Ltd. (China)	14:15 N-1-03 Electrical Characteristics Improvement and V_{th} Modification in Ultrathin InO_x FETs with AlO_x-Interlayer/HfO_x Gate Stack ^o Chia-Tsong Chen ¹ , Kasidit Toprasertpong ² , Toshifumi Irisawa ¹ , Wen Hsin Chang ¹ , Shinji Migita ¹ , Yukinori Morita ¹ , Hiroyuki Ota ¹ , Tatsuro Maeda ¹ , ¹ AIST (Japan), ² The Univ. of Tokyo (Japan)
14:30 G-1-05 (Invited) High density CPO based on Si photonics technology ^o Masaki Kato ¹ , ¹ Marvell (Japan)	14:30 H-1-04 Epitaxial Growth of Ultra-High Sn Composition Ge_{0.5}Sn_{0.5} and Possible Formation of Ge-Sn Ordered Bonds ^o Kaito Shibata ¹ , Shigehisa Shibayama ¹ , Mitsuo Sakashita ¹ , Masashi Kurosawa ¹ , Osamu Nakatsuka ^{1,2} , ¹ Grad. Sch. of Eng., Nagoya Univ. (Japan), ² IMaSS, Nagoya Univ. (Japan)	14:30 J-1-04 Void-Free, Low-temperature Direct Bonding of Si-Si for μLHP Integration in 3D ICs ^o Dianping Jiang ¹ , Marie Sano ² , Fumihiro Inoue ² , Masaaki Hashimoto ¹ , Hosei Nagano ³ , Munehiro Tada ¹ , ¹ Keio Univ. (Japan), ² Yokohama National Univ. (Japan), ³ Nagoya Univ. (Japan)	14:30 K-1-04 Gas-source CVD growth of WS₂ on high-k dielectrics for area selective 2D layer formation ^o Toshifumi Irisawa ¹ , Wen Hsin Chang ¹ , Naoya Okada ¹ , ¹ AIST (Japan)	14:30 M-1-04 Study on 4H-SiC (0001) MOS Interface Characteristics with Direct NO Oxynitridation Considering SiC Surface Reaction Kinetics ^o Yutaro Uchida ¹ , Atsushi Tamura ¹ , Koji Kita ¹ , ¹ The Univ. of Tokyo (Japan)	14:30 N-1-04 Reduction Parasitic Resistance in Polycrystalline Ga-Doped In₂O₃ Channel Field-Effect Transistors by Using a Buffer Layer of In₂O₃-Based Conductive Oxides ^o Hikaru Hoshikawa ¹ , Takanori Takahashi ¹ , Yukiharu Uraoka ¹ , ¹ NAIST (Japan)
	14:45 H-1-05 Fabrication of ultra-high density periodic Si nanowire arrays using monolayer self-assembly of polystyrene nanospheres ^o Hiroki Iwata ¹ , Kentaro Watanabe ^{1,2} , ¹ Shinshu Univ. (Japan), ² IFES, Shinshu Univ. (Japan)	14:45 J-1-05 Etch development of Through-Dielectric-Via for Wafer Reconstruction with Gap-Fill Oxide ^o Qiyang LIN ¹ , Eoin Jackman ¹ , Prathamesh Dhakras ¹ , Jeongsoo Kim ¹ , Violeta Georgieva ¹ , Ye Lin ¹ , Katia Devriendt ¹ , Gerald Beyer ¹ , Eric Beyne ¹ , ¹ IMEC (Belgium)	14:45 K-1-05 "Zirconium Disulfide Film Annealed in Hydrogen Sulfide Gas with Less Residues" ^o Taiga Fuse ¹ , Naoki Matsunaga ¹ , Takuya Hoshii ¹ , Kuniyuki Kakushima ¹ , Hitoshi Wakabayashi ¹ , ¹ Institute of Science Tokyo (Japan)	14:45 M-1-05 Unveiling Trapped Photoinduced Charges at the 4H-SiC/SiO₂ Interface via Graphene Transport ^o Tetsuhiro Owa ¹ , Jin Miura ¹ , Fumiyuki Inamura ¹ , Takashi Ikuta ¹ , Kenzo Maehashi ¹ , Kenji Ikushima ¹ , ¹ Tokyo Univ. of A&T (Japan)	14:45 N-1-05 Insights into S/D Contact Impacts on Asymmetric Performance of Vertical Channel-All-Around IGZO FETs ^o Xianglie Sun ¹ , Tiantian Wei ¹ , Wei Yu ¹ , Fuvang Yang ¹ , Jiabiao Sun ¹ , Yong Yu ¹ , Shujuan Mao ¹ , Jing Zhang ¹ , Guilei Wang ¹ , Bok-Moon Kang ¹ , Chao Zhao ¹ , ¹ Beijing Superstring Academy of Memory Technology (China)

Tuesday, September 16

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-2:Threshold Voltage Control (15:30-17:00) Session Chair: Keisuke Yamamoto (Kumamoto Univ.), Genji Nakamura (Tokyo Electron Ltd.)	02: Advanced and Emerging Memories / New Applications B-2:In-Memory and Unconventional Computing 1 (15:30-17:00) Session Chair: Ken Takeuchi (The Univ. of Tokyo), Xu Bai (NanoBridge Semiconductor, Inc.)	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials C-2:Device Circuit Co-Design (15:30-16:45) Session Chair: Yasuhiro Ogasahara (AIST), Mahfuzul Islam (Science Tokyo)		06: Energy Harvesting and Converting Devices and Materials E-2:Thermoelectric Devices and Materials (15:30-16:45) Session Chair: Masahiro Nomura (The Univ. of Tokyo), Takuya Hoshii (Science Tokyo)	07: Organic / Molecular / Bio-electronics F-2:Organic Electronics (15:30-17:00) Session Chair: Masakazu Nakamura (NAIST), Seiya Yokokura (Hokkaido Univ.)
15:30 A-2-01 Vt Fine-Tuning for Multi-Vt using Wet Fine-Etching of LaO in Dipole-first °Hikaru Kawarazaki ¹ , Ju-Geng Lai ¹ , Hiroaki Arimura ¹ , Leo Lukose ⁴ , Dai Ueda ¹ , Stephan Brus ¹ , Yukifumi Yoshida ² , Takayoshi Tanaka ² , Yoichi Tanaka ² , Koji Nakata ³ , Yuuichi Ogawa ² , Nobuko Gan ³ , Hideaki Iino ³ , Min-Soo Kim ⁴ , Naoto Horiguchi ⁴ , Naveen Reddy ⁴ , Efrain Altamirano Sanchez ⁴ , ¹ SCREEN SPE Germany GmbH (Germany), ² SCREEN Semiconductor Solutions Co., Ltd. (Japan), ³ Kurita Water Industries Ltd. (Japan), ⁴ imec (Belgium)	15:30 B-2-01 (Invited) Emerging Trends in MTJ-Based Nonvolatile Logic LSI Technology °Masanori Natsui ¹ , Takahiro Hanyu ¹ , ¹ Tohoku Univ. (Japan)	15:30 C-2-01 Normally-Off CPU with Crystal Indium Oxide Enabling Power Gating Operation with Power Supply Voltage of 0.8 V °Masashi Fujita ¹ , Kouhei Toyotaka ¹ , Kazuaki Ohshima ¹ , Kazuma Furutani ¹ , Takehisa Sato ¹ , Haruki Katagiri ¹ , Yoshinori Ando ¹ , Motomu Kurata ¹ , Tsutomu Murakawa ¹ , Takanori Matsuzaki ¹ , Tatsuya Onuki ¹ , Yuto Yakubo ¹ , Shunpei Yamazaki ¹ , ¹ Semiconductor Energy Laboratory Co., Ltd. (Japan)		15:30 E-2-01 (Invited) Various Device Structures of Thermoelectric Systems for Specific Purposes °Woochul Kim ¹ , ¹ Yonsei Univ. (Korea)	15:30 F-2-01 (Invited) Molecular Neuromorphic Building Blocks for Artificial Intelligence °Sreetosh Goswami ¹ , ¹ Indian Inst. of Sci. (India)
15:45 A-2-02 Fluorine-Compatible Dipole-First Gate Stack with Yttrium Oxides for Multi-Vth and Enhanced Device Performance °Sangkuk Han ¹ , Kyungsoo Park ¹ , Wonjae Choi ¹ , Wonyoung Jang ¹ , Haesoo Jang ¹ , Kyungwook Park ¹ , Changhwan Choi ¹ , ¹ Hanyang University (Korea)		15:45 C-2-02 Measurement Circuit and Block Level Analysis of Continuous-Diffusion Structure induced Leakage Current in 5nm FinFET Process °Yuuki Uchida ¹ , Mitsuhiko Igarashi ¹ , Keiichiro Iwamoto ¹ , Yoshio Takazawa ¹ , Yasumasa Tsukamoto ¹ , ¹ Renesas Electronics Corp. (Japan)			
16:00 A-2-03 Threshold Voltage Design for GAAFETs through Work Function Metal Thickness Engineering under Tight Nanosheet Spacing °Hiroyuki Ota ¹ , Yukinori Morita ¹ , Kenzo Manabe ¹ , Misako Morota ¹ , Naoya Okada ¹ , Shinji Migita ¹ , Yoshihiro Hayashi ¹ , ¹ AIST (Japan)	16:00 B-2-02 Approximate Euclidean Distance Computing Accelerator using Asymmetric Encoding Scheme in 3D-NAND Flash for High Performance Large Vector Database Search °Po-Hao Tseng ¹ , Wei-Chen Lin ¹ , Yu-Hsuan Lin ¹ , Feng-Ming Lee ¹ , Yu-Yu Lin ¹ , Ming-Hsiu Lee ¹ , Kuang-Yeu Hsieh ¹ , Keh-Chung Wang ¹ , Chih-Yuan Lu ¹ , ¹ Macronix International Co., Ltd. (Taiwan)	16:00 C-2-03 Experimental Demonstration of 1FeFET-1RRAM Field Programmable Analog Modules °Zhengyang Lu ¹ , Xueyang Li ¹ , Zhetao Ding ¹ , Jiabao Ye ¹ , Chengji Jing ² , Xiao Yu ² , Peng Lin ¹ , Bing Chen ² , Yong Ding ¹ , Genquan Han ² , Ran Cheng ¹ , ¹ Zhejiang Univ. (China), ² Xidian Univ. (China)		16:00 E-2-02 Polycrystalline Mg-IV Alloy Thin Films for Eco-friendly FlexibleThermoelectric Devices °Takenori Nakajima ^{1,2} , Takamitsu Ishiyama ^{1,2} , Shintaro Maeda ^{1,2} , Takashi Suemasu ^{1,2} , Kaoru Toko ^{1,2} , ¹ The Univ. of Tsukuba (Japan), ² Inst. of Applied Physics (Japan)	16:00 F-2-02 Elucidation of the charge carrier injection enhancement mechanism in liquid crystal organic semiconductors utilizing electric-field-induced dopant sweeping °Hiroki Nakano ¹ , Hiroaki Iino ¹ , ¹ Inst. of Sci. Tokyo (Japan)
16:15 A-2-04 Density Functional Theory Analysis of V_d and CMOS Polarity Control in Si High K based FETs °John Robertson ¹ , Ruiyue Cao ^{1,2} , Jun-Wei Luo ² , Hailing Guo ¹ , Yizheng Guo ³ , ¹ Cambridge University (UK), ² CAS (China), ³ Wuhan University (China)	16:15 B-2-03 Physical Modeling of Oxide-Semiconductor-Channel FeFETs for Content Addressable Memory Circuit Simulation °Xuebin Wang ¹ , Fei Mo ^{1,2} , Zhuo Li ⁴ , Guanhua Yang ² , Masaharu Kobayashi ¹ , Yeliang Wang ¹ , ¹ Beijing Inst of Tech. (China), ² Beijing Inst of Tech. (Zhuhai) (China), ³ The Inst of Microelectronics of the Chinese Academy of Sci. (China), ⁴ The Univ. of Tokyo (Japan)	16:15 C-2-04 How Defect Dynamics in a pFET Can Be Interpreted as a Single-Node Reservoir Computer With Virtual Nodes °Yuanyang Guo ^{1,2} , Robin Degraeve ¹ , Pablo Saraza-Canflanca ¹ , Erik Bury ¹ , Ingrid Verbauwhede ² , ¹ imec (Belgium), ² KU Leuven Univ. (Belgium)		16:15 E-2-03 Si-NW Width Dependence of Power Generation Performance of Planar Integrated Micro Thermoelectric Generator Devices °Masayuki Mishima ¹ , Takuya Miura ¹ , Takeo Matsuki ¹ , Takanobu Watanabe ¹ , ¹ Waseda Univ. (Japan)	16:15 F-2-03 Influence of Gate Dielectric Interface on Contact Resistance in Organic FET °Manish Pandey ¹ , Riki Matsumoto ² , Hiroaki Bente ² , Masakazu Nakamura ² , ¹ Indian Inst. of Tech. Bhilai (India), ² Nara Inst. of Sci. and Tech. (Japan)

Tuesday, September 16

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-2:Light Sources (15:30-17:00) Session Chair: Xuejun Xu (NTT, Inc.), Mizuki Shirao (Mitsubishi Electric)	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-2:Wide Bandgap and Oxide Materials I (15:30-16:45) Session Chair: Takuya Hoshi (NTT Device Technology Lab.), Yoriko Tominaga (Hiroshima Univ.)	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-2:Advanced Devices (15:30-17:00) Session Chair: Kenji Shiojima (Univ. of Fukui), Takeshi Nogami (IBM Research)	08: Low Dimensional Devices and Materials K-2:Characterization I (15:30-17:00) Session Chair: Takuo Sasaki (QST), Shinjiro Hara (NIMS)	04: Power / High-speed Devices and Materials M-2:THz and High-speed Devices (15:30-17:00) Session Chair: Taketomo Sato (Hokkaido Univ.), Takuya Tsutsumi (Osaka Metropolitan Univ.)	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-2:Oxide Semiconductor Devices 2 (15:30-17:00) Session Chair: Wenchang Yeh (Shimane Univ.), Tsung-En Lee (National Yang Ming Chiao Tung Univ.)
15:30 G-2-01 Telecom Nanobeam Lasers Monolithically Integrated on SOI °Zhenhua Wu ¹ , Cong Zeng ¹ , Zili Lei ¹ , Zhaojie Ren ¹ , Ying Yu ¹ , Siyuan Yu ¹ , Yu Han ¹ , ¹ Sun Yat-sen University (China)	15:30 H-2-01 (Invited) Recent Advances in ScAlN/ GaN-based High Electron Mobility Transistors °Takuya Maeda ¹ , ¹ The Univ. of Tokyo (Japan)	15:30 J-2-01 (Invited) Pay more attention to development other than power devices: Its importance in commercializing new devices °Ken Nakahara ¹ , ¹ ROHM Corp. (Japan)	15:30 K-2-01 (Invited) Introduction of the new synchrotron radiation facility NanoTerasu and its applications to nanomaterials °Koji Horiba ¹ , ¹ QST (Japan)	15:30 M-2-01 (Invited) THz Plasmonic Detectors Based on Grating-Gate InGaAs-Channel High-Electron-Mobility Transistors °Akira Satou ¹ , Taiichi Otsuji ^{1,2,3} , ¹ Res. Inst. of Electrical Communication, Tohoku Univ. (Japan), ² International Res. Inst. of Disaster Sci., Tohoku Univ. (Japan), ³ Center of Excellence ENSEMBLE3 Ltd (Poland)	15:30 N-2-01 Top-Gate Oxide Semiconductor Transistor with High Mobility and Steep Subthreshold Slope Enabled by Oxygen-Rich Gate Insulator Process °Kai Jiang ¹ , Ziheng Wang ¹ , Zhiyu Lin ¹ , Mengwei Si ¹ , ¹ Shanghai Jiao Tong University (China)
15:45 G-2-02 High-rate and high-brightness photon-pair generation from silicon microring resonator °Shoichiro Yasui ^{1,2} , Tomohiro Inaba ¹ , Hidetaka Nishi ^{3,4} , Reina Kaji ² , Satoru Adachi ² , Xuejun Xu ¹ , Haruki Sanada ¹ , ¹ NTT Basic Res. Labs. (Japan), ² Graduate School of Eng., Hokkaido Univ. (Japan), ³ NTT Device Tech. Labs. (Japan), ⁴ NTT Nanophotonics Center (Japan)					15:45 N-2-02 Improved Positive Bias Stability in In₂O₃ Top-Gate Transistors via Optimized Oxidant Precursors for High-κ Dielectrics °Ching-Shuan Huang ^{1,3} , Che-Chi Shih ² , Tung-Cheng Shih ^{1,3} , Wu-Wei Tsai ² , Yu-Hsuan Yu ¹ , Meng-Chung Chen ¹ , Bin-Shiuan Ku ¹ , Wen-Chih Lo ¹ , Chien-Wei Chen ¹ , Wei-Yen Woon ¹ , Chao-Hsin Chien ¹ , ¹ Institute of Electronics, National Yang Ming Chiao Tung University (Taiwan), ² Pathfinding, R&D, Taiwan Semiconductor Manufacturing Company (TSMC) (Taiwan), ³ Taiwan Instrument Research Institute, National Applied Research Laboratories (Taiwan), ⁴ Thales System Co., Ltd (Taiwan)
16:00 G-2-03 Numerical Simulation of Output Characteristics of Narrow-LinewidthTunable External Cavity Laser using Thin-Film Lithium Niobate Platform °KELIN CHEN ^{1,2} , Atsushi Matsumoto ² , Kouichi Akahane ² , Naokatsu Yamamoto ² , Tomohiro Maeda ^{1,2} , Hideyuki Sotobayashi ¹ , ¹ The Univ. of Aoyama Gakuin (Japan), ² Inst. of Information and Communications Technology (Japan)	16:00 H-2-02 Machine Learning Prediction of Global Photonic Bandgaps in GaN Visible Topological PhCs with Triangular Holes °Hinaki Sugiura ¹ , Akihiko Kikuchi ^{1,2} , ¹ Sophia Univ. (Japan), ² Sophia Semiconductor Research Inst. (Japan)	16:00 J-2-02 Hybrid 2T eDARM enabled by Monolithic 3D Hetero-Integrated Circuits with 2D Electronics °I-Min Liu ¹ , I-Ling Li ² , Han-Hsiang Pai ² , Chao-Hui Yeh ^{1,2,3} , Chuan-You Lin ³ , Zih-Yi Wen ⁴ , ¹ Inst. of Electronics Eng., National Tsing Hua Univ. of Taiwan (Taiwan), ² College of Semiconductor Res. , National Tsing Hua Univ. of Taiwan (Taiwan), ³ Department of Electrical Eng. , National Tsing Hua Univ. of Taiwan (Taiwan), ⁴ Department of Physics, National Tsing Hua Uni. of Taiwan (Taiwan)	16:00 K-2-02 Elucidation of Hidden Grain-Boundary Effects in MOCVD MoS₂ Films via Single-Grain device and ultra-short channel TLM °Keisuke Atsumi ¹ , Shuhong Li ¹ , Tomonori Nishimura ¹ , Kaito Kanahashi ¹ , Yoshiki Sakuma ² , Kosuke Nagashio ¹ , ¹ University of Tokyo (Japan), ² National Institute of Materials Science (Japan)	16:00 M-2-02 Heterodyne Detection at 300-GHz Band by a UTC-PD-Integrated HEMTPhotonic Double-Mixer with a Grating-Gate Structure °Rauru Takahashi ¹ , Shota Horiuchi ¹ , Tsung-Tse Lin ¹ , Chao Tang ¹ , Taiichi Otsuji ^{2,1} , Akira Sato ¹ , ¹ Tohoku Univ. (Japan), ² Center of Excellence ENSEMBLE3 Ltd. (Poland)	16:00 N-2-03 Ideal Subthreshold Swing in ultra-thin IGZTO TFTs via Gate Stacking °Kai Chen ^{1,2} , Ran Cheng ¹ , Rui Zhang ¹ , Junkang Li ¹ , Yunlong Li ^{1,2} , ¹ Zhejiang Univ. (China), ² Zhejiang ICsprout Semiconductor Corp. (China)
16:15 G-2-04 Electroluminescence of 1.27µm Near-Infrared Quantum Cascade Lasers using Si/CaF₂ Heterostructures on SOI Substrate °Zhiyuan Fan ¹ , Hyuma Suzuki ¹ , Haibo Wang ¹ , Masahiro Watanabe ¹ , ¹ Inst. of Science Tokyo (Japan)	16:15 H-2-03 Multi-Scale Strain Landscape of Al_{1-x}Ga_xN/GaN/Si Heterostructures Probed by X-ray Diffraction Microscopy °Cedric Xavier Corley-Wiciak ¹ , Pierre Everaere ¹ , Laura Neumann ² , Agnieszka Anna Corley-Wiciak ¹ , Ennio Tito Capria ¹ , Carsten Detlevs ¹ , Michael Reisinger ³ , Thu Nhi Tran Caliste ¹ , Tobias Urs Schull ¹ , ¹ European Synchrotron Radiation Facility (France), ² Microelectronics and Nanoanalytic, Fraunhofer Institute for Ceramic Technologies and Systems (Germany), ³ Kompetenzzentrum Automobil- und Industrieelektronik GmbH (Austria)	16:15 J-2-03 Conjugated Radical Based Low Power Memristors for Artificial Synapses °Kai Peng ¹ , Chengjia Shi ¹ , Siying Liu ¹ , Yu Yan ¹ , Li Zhang ¹ , Xiaoguang Hu ¹ , Xuying Liu ¹ , ¹ Zhengzho University (China)	16:15 K-2-03 Variability-Tolerant Performance Prediction Model for array CNT-FETs: Alignment and Scalability Study Himanshu Sharma ¹ , Fabian Ducry ¹ , Marina Timmermans ¹ , Luca Mana ¹ , Han Han ¹ , Lijun Liu ¹ , Xiangyu Wu ¹ , Katherine Jinkins ² , Michael Arnold ² , Jean-François de Marneffe ¹ , Cesar Javier Lockhart de la Rosa ¹ , Gouri Sankar Kar ¹ , °Dennis Lin ¹ , ¹ imec Leuven (Belgium), ² Sixline Semiconductor (United States of America)	16:15 M-2-03 Digital Alloying of InGaAs for Resonant Tunneling Diodes °Michele Cito ¹ , Ryuto Machida ¹ , Issei Watanabe ¹ , ¹ NICT (Japan)	16:15 N-2-04 A Physics-Based Compact Model for Drain Current in Amorphous InGaZnO Thin-Film Transistors with Scalability of Channel Thickness °Haotong Zhu ^{1,3} , Yuanzhao Hu ^{2,3} , Haolin Li ^{1,3} , Zheng Zhou ^{1,3} , Xiaoyan Liu ^{1,3} , Jinfeng Kang ^{1,3} , ¹ School of Integrated Circuits, Peking Univ. (China), ² School of Software and Microelectronics, Peking Univ. (China), ³ Beijing Advanced Innovation Center for Integrated Circuits (China)

Tuesday, September 16

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-2:Threshold Voltage Control	02: Advanced and Emerging Memories / New Applications B-2:In-Memory and Unconventional Computing 1	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials C-2:Device Circuit Co-Design		06: Energy Harvesting and Converting Devices and Materials E-2:Thermoelectric Devices and Materials	07: Organic / Molecular / Bio-electronics F-2:Organic Electronics
16:30 A-2-05 Mechanism of Fluorine-induced Suppression of Effective Work Function Lowering in TiN/TiAlC Metal Gate Electrodes °Kenzo Manabe ¹ , Kazuya Uejima ¹ , Hiroyuki Ota ¹ , Yukinori Morita ¹ , Atsushi Yagishita ¹ , Toshifumi Irisawa ¹ , Yoshihiro Hayashi ¹ , ¹ AIST (Japan)	16:30 B-2-04 Column-wise Weight Value Inversion (Colwin)of ReRAM CiM to Reduce MAC Error during Data-retention °Yusuke Izume ¹ , Yusuke Hirata ¹ , Naoko Misawa ¹ , Masahiro Morimoto ² , Takeshi Ohara ² , Chihiro Matsui ¹ , Ken Takeuchi ¹ , ¹ The University of Tokyo (Japan), ² Nuvoton Technology Corporation Japan (Japan)			16:30 E-2-04 43 μW/cm²/K² Normalized Power Output Thermoelectric Device Boosted by Cavity in Substrate °Takuya Miura ¹ , Mahfuz Md Mehdee Hasan ¹ , Takeo Matsuki ¹ , Takanobu Watanabe ¹ , ¹ Waseda University (Japan)	16:30 F-2-04 Solution-Processed Top-Gate Small-Molecule Organic Thin-Film Transistor With High Gate Dielectric Capacitance °Weihong Yang ¹ , Zimo Zhang ¹ , Haobo Wang ¹ , Xiaojun Guo ¹ , ¹ Shanghai Jiao Tong Univ. (China)
16:45 A-2-06 Flat-Band Voltage Tuning through Al Layer Position Engineering °Wonjae Choi ¹ , Sangkuk Han ¹ , Wonyoung Jang ¹ , Haesoo Jang ¹ , Jaewon Chung ² , Kyungwook Park ¹ , Changhwan Choi ¹ , ¹ Hanyang University (Korea)	16:45 B-2-05 Fine-Grained Extraction Method of Discrete Shift and Spike RTN in 40nm TaOx-based Analog ReRAM for CiM Applications °Yushi Abarra ¹ , Naoko Misawa ¹ , Chihiro Matsui ¹ , Ken Takeuchi ^{1,2} , ¹ Department of Electrical Eng. and Info. Systems, The Univ. of Tokyo (Japan), ² Systems Design Lab., Graduate School of Eng., The Univ. of Tokyo (Japan)				16:45 F-2-05 Evaluation of Orientation and Ordering of Liquid Crystal Molecules in Microspace °Issei Suzuki ¹ , Hiroaki Iino ¹ , ¹ Inst. of Sci. Tokyo (Japan)

Tuesday, September 16

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-2:Light Sources	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-2:Wide Bandgap and Oxide Materials I	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-2:Advanced Devices	08: Low Dimensional Devices and Materials K-2:Characterization I	04: Power / High-speed Devices and Materials M-2:THz and High-speed Devices	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-2:Oxide Semiconductor Devices 2
16:30 G-2-05 Effect of Stacking Number of InGaAs Quantum Dot Active Layers on Circularly Polarized Electroluminescence Properties of Spin-Polarized Light-Emitting Diodes ^o <i>Itsu Tanaka¹, Daiki Mineyama¹, Ayano Morita¹, Hiroto Kise¹, Junichi Takayama¹, Akihiro Murayama¹, Satoshi Hiura¹, ¹Hokkaido Univ. (Japan)</i>	16:30 H-2-04 Structures and Adsorption Behavior on N-polar GaN(000-1) Surface with Steps and Kinks: A First-Principles Study ^o <i>Toru Akiyama^{1,2}, Taiki Tahara¹, Takahiro Kawamura^{1,2}, ¹Graduate School of Engineering, Mie Univ. (Japan), ²ICSDF, Mie Univ. (Japan)</i>	16:30 J-2-04 Device Fabrication and Equivalent Circuit Optimization of Low-Insertion-Loss Lithium Tantalate Acoustic Filter ^o <i>Taofang Yu¹, Chen Xia¹, Renrong Liang¹, Jun Xu¹, ¹Tsinghua University (China)</i>	16:30 K-2-04 Determination of Critical Carrier Density in Re-doped WSe₂ Crystal and Their Application to Esaki Diode ^o <i>Toshinari Sugiyama¹, Satoshi Morito², Tomonori Nishimura¹, Kaito Kanahashi¹, Keiji Ueno², Kenji Watanabe³, Takashi Taniguchi³, Kosuke Nagashio¹, ¹The University of Tokyo (Japan), ²Saitama University (Japan), ³National Institute for Materials Science (NIMS) (Japan)</i>	16:30 M-2-04 High-Speed and Low DC-Power Operations of Double δ-Doped GaInSb HEMTs ^o <i>Wataru Nakajima¹, Ryosuke Kouno¹, Tomoki Jinnai¹, Tatsuhisa Oba¹, Ryuto Machida², Issei Watanabe^{2,1}, Yoshimi Yamashita², Shinsuke Hara², Akifumi Kasamatsu², Akira Endoh¹, Hiroki I Fujishiro¹, ¹Tokyo Univ. of Science (Japan), ²National Inst. of Information and Communications Technology (Japan)</i>	16:30 N-2-05 (Late News) Effects of Ozone Concentration on ALD Copper Oxide TFTs Exhibiting High-Temperature Stability Compatible with NAND Process ^o <i>Ji-Hwan Choi¹, JaeKyeong Jeong¹, ¹Hanyang University (Korea)</i>
16:45 G-2-06 Significant Emission Enhancement of InGaN/GaN MQW Nanostripes ^o <i>Seiichi Kataoka^{1,2}, Akihiko Kikuchi^{1,2}, ¹Sophia univ. (Japan), ²Sophia Semiconductor Research Inst. (Japan)</i>		16:45 J-2-05 A Study of Electron Beam Focusing and Depth Profiling by DUV-Induced Surface Charging of Floating Metal Electrode Arrays ^o <i>HOTING CHAO¹, SHANGCHEN TSAI¹, WEI CHANG², BURNJENG LIN¹, JIAWREN SHIH¹, CHRONGJUNG LIN², YACHIN KING², ¹Coll. of Semiconductor Research, National Tsing Hua Univ. (Taiwan), ²Inst. of Electronics Engineering, National Tsing Hua Univ. (Taiwan)</i>	16:45 K-2-05 Probing Interface Trap Density and Mobility Scattering Mechanism in Monolayer MoS₂ Using Local-Back-Gate Transistors ^o <i>Yuan-Chun Eric Su¹, Yi-Shuan Cheng¹, Sheng-Zai Liu¹, Jian-Chen Tsai¹, Jing-Kai Jiang¹, Wen-Hao Chang^{1,2,3}, ¹National Yang Ming Chiao Tung University (Taiwan), ²Academia Sinica (Taiwan), ³Center for Emergent Functional Matter Science (Taiwan)</i>	16:45 M-2-05 Recent Developments in Type-II InP/Ga(In)AsSb DHBTs: Device Physics, Performance and New Perspectives ^o <i>Colombo R. Bolognesi¹, Filippo Ciabattini¹, Sara Hamzeloui², Akshay Arabhavi¹, Mojtaba Ebrahimi¹, Andrea Cercaci¹, Giorgio Bonomo¹, Olivier Ostinelli¹, ¹ETH-Zürich (Switzerland)</i>	16:45 N-2-06 (Late News) Core-Shell Soft Magnetic Composites with High Resistivity and Saturation Magnetization for Inductor Applications ^o <i>Cheng-Hsien Yeh¹, Guan-Wei Fan¹, Chuan-Feng Shih¹, ¹National Cheng Kung Univ. (Taiwan)</i>

Wednesday, September 17

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-3:Process Technology and Characterization (9:00-10:30) Session Chair: Genji Nakamura (Tokyo Electron Ltd.), Kasidit Toprasertpong (The Univ. of Tokyo)	02: Advanced and Emerging Memories / New Applications B-3:Ferroelectric Devices (9:00-10:15) Session Chair: Laurent Grenouillet (CEA-Leti), Ming-Hsiu Lee (Macronix International Co., Ltd.)				12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials F-3:Oscillators and Interface Circuits (9:00-10:15) Session Chair: Akira Tsuchiya (The Univ. of Shiga Prefecture), Takeshi Yoshida (Hiroshima Univ.)
9:00 A-3-01 Interface trap density evaluation of off-angle Si(110)/ SiO₂ interface:Toward understanding of interface properties in advanced MOSFET <i>[○]Ryotaro Shimura¹, Eishin Nako¹, Koji Matsumoto², Akihiro Suzuki², Hiroaki Yamamoto², Kazuhito Matsukawa², Mitsuru Takenaka¹, Shinichi Takagi¹, Kasidit Toprasertpong¹, ¹The Univ. of Tokyo (Japan), ²SUMCO Corp. (Japan)</i>	9:00 B-3-01 (Invited) HfO₂-based Ferroelectric Devices for Edge AI Application <i>[○]Jun Okuno¹, Yusuke Shuto¹, Kensuke Ota¹, Tsubasa Yonai¹, Ryo Ono¹, Masaki Sakakibara¹, Akihiko Kato¹, Maximilian Lederer², Peter Reinig², Konrad Seidel², Ruben Alcalá², Uwe Schroeder², Thomas Mikolajick², Taku Umebayashi¹, Kentaro Akiyama¹, ¹Sony Semiconductor Solutions Corp. (Japan), ²Fraunhofer IPMS - Center Nanoelectronics Technologies (Germany), ³NaMLab gGmbH (Germany)</i>				9:00 F-3-01 (Invited) Fractional-N Phase-Locked Loops Using Harmonic-Mixer-Based Feedback <i>[○]Tetsuya Iizuka¹, Masaru Osada¹, Haoming Zhang¹, Yiyang Zhu¹, ¹The Univ. of Tokyo (Japan)</i>
9:15 A-3-02 Unveiling Ferroelectric Properties of Co-Injected ALD Hf,Zr_{1-x}O₂: A Study of Thickness, Composition, and Cryogenic Behavior (73 to 300 K) <i>[○]Kyungsoo Park¹, Minhyuk Kim¹, Chulwon Chung¹, Sunbum Kim¹, Sangkuk Han¹, Changhwan Choi^{1,2}, ¹Division of Materials Science and Engineering, Univ. of Hanyang (Korea), ²Department of Semiconductor Engineering, Univ. of Hanyang (Korea)</i>					
9:30 A-3-03 Ti-Based Spacer Approach for Semi-Damascene Spacer-is-Dielectric SADP Process Integration at MP18 Demonstration <i>[○]Vincent Renaud¹, Gilles Delie¹, Debanjan Jana², Yiting Sun², Miguel De Abreu Neto³, Sungdae Woo⁴, David De Roest², Hyungjoo Shin¹, Andrey Sokolov¹, Daniele Piumi², Laurent Souriau¹, Chen Wu¹, Seongho Park¹, Zsolt Tokei¹, ¹Imec (Belgium), ²ASM Belgium (Belgium), ³ASM Japan (Japan), ⁴ASM Korea (Korea)</i>	9:30 B-3-02 Mechanism and Mitigation of Parasitic Resistance in Vertical TiO₂ Channel-Air-Around FeFET towards High-Speed Memory Application <i>[○]Kohei Kawaguchi¹, Takamasa Hamai¹, Shoichi Kabuyanagi¹, Shosuke Fujii¹, ¹KIOXIA (Japan)</i>				9:30 F-3-02 Opto-electronically Integrated Chiplet using a CMOS-Driver-embedded substrate with a III-V Electro-absorption Modulator <i>[○]Tadashi Minotani^{1,2}, Tatsurou Hiraki^{1,2}, Yohei Saito^{1,2}, Takuma Aihara^{1,2}, Yoshiho Maeda^{1,2}, Toru Miura^{1,2}, Takuro Fujii^{1,2}, Tomonari Sato^{1,2}, Norio Sato^{1,2}, Shinji Matsuo², ¹NTT Device Innovation Center (Japan), ²NTT Device Technology Labs (Japan)</i>
9:45 A-3-04 Effective Deep Learning Technology for Predicting High-Aspect Ratio Contact Hole Striation Problem in 3D V-NAND Flash Memory <i>[○]BYUNG YONG CHO¹, HOYUN JUNG¹, JONGIK HONG¹, YOUNGCHAN PARK¹, BONG-TAE PARK¹, SEUNGWAN HONG¹, SUNG HOI HUR¹, ¹Samsung Electronics Co., Ltd. (Korea)</i>	9:45 B-3-03 Impact of read operation on memory and synapse characterization of FDSOI FEFET <i>[○]Miaomiao Zhang¹, Haoji Qian^{1,2}, Xiaoxi Li^{1,2}, Yian Ding², Yan Liu^{1,2}, Chengji Jin^{1,2}, Jiajia Chen^{1,2}, Genquan Han^{1,2}, ¹Univ. Xidian (China), ²Tech. Hangzhou Institue, Univ. Xidian (China)</i>				9:45 F-3-03 A 78% Area-Reduction in Edge-Coupled Inductive Coupling Link for Flexible Chip Assembly Using Oblong Coil <i>[○]Yuki Mitarai¹, Masaya Kawano¹, Hung-Chih Huang¹, Tadahiro Kuroda¹, Mototsugu Hamada¹, Atsutake Kosuge¹, ¹The University of Tokyo (Japan)</i>

Wednesday, September 17

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-3:Advanced Photonic Designs (9:00-10:15) Session Chair: Kento Komatsu (Sumitomo Electric Industries, Ltd.), Frederic Boeuf (STMicroelectronics)	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-3:Wide Bandgap and Oxide Materials II (9:00-10:15) Session Chair: Akihiko Kikuchi (Sophia Univ.), Hirokazu Tatsuoka (Shizuoka Univ.)	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-3:3D Integration/Novel Materials (9:45-10:15) Session Chair: Takeo Minari (NIMS)	08: Low Dimensional Devices and Materials K-3:Device I (9:00-10:15) Session Chair: Mahito Yamamoto (Kansai Univ.), Toshifumi Irisawa (AIST)	04: Power / High-speed Devices and Materials M-3:Ga2O3 Power Devices (9:00-10:15) Session Chair: Kohei Sasaki (Novel Crystal Technology, Inc.), Shinya Takashima (Fuji Electric)	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-3:Oxide Semiconductor Devices 3 (9:00-10:15) Session Chair: Keisuke Ide (Science Tokyo), Mamoru Furuta (Kochi Univ. of Tech.)
9:00 G-3-01 High-Speed 226 Gb/s Operation Using Dual Array EML with Two-Photon Polymerization Resin Lens for High-Density Integration °Kei Masuyama ¹ , Mizuki Shirao ¹ , Shinya Okuda ¹ , Nobuo Ohata ¹ , ¹ Mitsubishi Electric Corp. (Japan)	9:00 H-3-01 Growth of High-Quality AlN Templates by Metalorganic Vapor Phase Epitaxy on Sputtered AlN °Yuto Matsubara ¹ , Koki Fujii ¹ , Yusuke Takayanagi ¹ , Yukiya Hayashi ¹ , Yuusuke Takashima ^{1,2} , Yoshiki Naoi ^{1,2} , Atsushi Maeoka ³ , Atsushi Osawa ² , Shigeru Takatsuji ³ , Takahiro Kimura ³ , Kentaro Nagamatsu ^{1,2} , ¹ Tokushima University (Japan), ² Institute of Post-LED Photonics, Tokushima University (Japan), ³ SCREEN Holdings Co. Ltd. (Japan)		9:00 K-3-01 (Invited) Interfaces in Semiconductor Devices Based on Low-dimensional Materials: The Case of Flexible Carbon Nanotube TFTs and Analog ICs °Yutaka Ohno ¹ , ¹ Nagoya Univ. (Japan)	9:00 M-3-01 (Invited) High performance gallium oxide devices: status and challenges °Uttam Singiseti ¹ , ¹ Univ. at Buffalo (United States of America)	9:00 N-3-01 (Invited) Developing high-performance p-type oxide TFTs and circuits °Ao Liu ¹ , Mingyang Wang, Zhikai Le, Huihui Zhu, ¹ Univ. of Electronic Sci. and Tech. of China (China)
9:15 G-3-02 Monolithic integration of III-V heterojunction phototransistor on Si substrate °Kyunghwan Kim ¹ , Dae-Hwan Ahn ¹ , Yuna Lee ¹ , Jae-Hoon Han ¹ , ¹ Korea Inst. of Sci. and Tech. (Korea)	9:15 H-3-02 Improvement of Crystalline Quality in Directly Grown AlN by Pretreatment of SiC Substrate °Yusuke Takayanagi ¹ , Yuto Matsubara ¹ , Koki Fujii ¹ , Yuusuke Takashima ^{1,2} , Yoshiki Naoi ^{1,2} , Kentaro Nagamatsu ^{1,2} , ¹ Tokushima Univ. (Japan), ² Institute of Post-LED Photonics, Tokushima Univ. (Japan)				
9:30 G-3-03 Experimental demonstration of valley photonic crystal heterostructure waveguides supporting wide-mode-width slow-light modes °Chengkun Zhang ¹ , Guangtai Lu ¹ , Natthajuks Pholsen ¹ , Yasutomo Ota ² , Satoshi Iwamoto ¹ , ¹ The Univ. of Tokyo (Japan), ² Keio Univ. (Japan)	9:30 H-3-03 Improvement of Crystalline Quality in the AlN by the Polarity Inversion and the High-temperature Growth °Yusuke Takayanagi ¹ , Yuto Matsubara ¹ , Koki Fujii ¹ , Yuusuke Takashima ^{1,2} , Yoshiki Naoi ^{1,2} , Kentaro Nagamatsu ^{1,2} , ¹ Tokushima Univ. (Japan), ² Institute of Post-LED Photonics, Tokushima Univ. (Japan)		9:30 K-3-02 Source/Drain Contact Formation Using H₂S Annealing for TMDC-channel CMOS: Ni₃Nb_{1-x}S₂ Contacts for MoS₂ nFET and NbS₂ contacts for WSe₂ pFET °Koki Hori ^{1,2} , Wen Hsin Chang ² , Toshifumi Irisawa ² , Naoya Okada ² , Atsushi Ogura ^{1,3} , ¹ Meiji Univ. (Japan), ² AIST (Japan), ³ MREL (Japan)	9:30 M-3-02 2.1-kV β-Ga₂O₃ Heterojunction Barrier Schottky Diodes with Cu anode °Xiaohui - Wang ^{1,2} , Mujun Li ¹ , Chun-Zhang Chen ² , Haozhe Yu ¹ , Qing Wang ¹ , Hongyu Yu ^{1,3} , ¹ Southern Univ. of Sci. and Tech. (China), ² Pengcheng Lab. (China), ³ Shenzhen Polytechnic Univ. (China)	9:30 N-3-02 High-Performance Nanoscale Self-Aligned Top-Gate Indium Oxide Thin-Film Transistors with Ti/Au Source/Drain Electrodes °Zhihao Lv ¹ , Shengjie Yang ¹ , Mengran Liu ¹ , Zhendong Jiang ¹ , Yuhan Zhang ¹ , Xinwei Wang ¹ , Shengdong Zhang ¹ , Lei Lu ¹ , ¹ Peking Univ. (China)
9:45 G-3-04 (Invited) Unified Coherent Receiver for Space-Wavelength-Division Multiplexing °Haoshuo Chen ¹ , ¹ Nokia Bell Labs (United States of America)	9:45 H-3-04 Epitaxial growth of (001)-oriented ultrathin continuous Pt films on MgO(001) and SrTiO₃(001) substrates °Soshi Akita ¹ , Tomohiro Yasuda ¹ , Yuki Sobukawa ¹ , Kaoru Toko ² , Takashi Suemasu ² , ¹ Graduate school of Science and Technology, Univ. of Tsukuba (Japan), ² Department of Applied Physics, Univ. of Tsukuba (Japan)	9:45 J-3-01 Neuromorphic Electronics Enabled by Photoresponsive Dielectric Materials and Transistor Architectures °Cancan Cui ¹ , Hongwei Ge ¹ , Yu Yan ¹ , Mengwei Wang ¹ , Meina Xiao ¹ , Xiaoyu Zhang ¹ , Qingqing Sun ¹ , Xuying Liu ¹ , ¹ The Univ. of Zhengzhou (China)	9:45 K-3-03 Nearly Ideal Subthreshold Swing in Monolayer WSe₂ Top-Gate pFETs with Scaled EOT of 0.8 nm °Yu-wei Hsu ^{1,2} , Chen-Hsun Hsu ² , Yu-Tung Lin ¹ , Nien-En Chiang ¹ , Ying-Zhan Chiu ¹ , Shao-Heng Chen ¹ , Sin-Yue Lee ² , Ting-Hua Wei ² , Zi-Quan Su ² , Hung-Li Chiang ² , I-Chih Ni ¹ , Chih-I Wu ¹ , Tsung-En Lee ² , ¹ National Taiwan Univ. (Taiwan), ² National Yang Ming Chiao Tung Univ. (Taiwan)	9:45 M-3-03 Improvement of β-Ga₂O₃ Schottky Barrier Diodes with AgO_x Anode: Achieving 1.5-kV Breakdown Voltage and Over 10¹³ On-/Off-state Ratio °Xiaole Jia ¹ , Zheyuan Hu ² , Yibo Wang ³ , Cizhe Fang ³ , Haodong Hu ¹ , Bochang Li ³ , Yan Liu ¹ , Yue Hao ¹ , Genquan Han ^{1,3} , ¹ Xidian University (China), ² Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences (China), ³ Hangzhou Institute of Technology, Xidian University (China)	9:45 N-3-03 Achieving high-mobility and stable InGaO thin-film transistors by stacking InGaO films Ruixin Chen ¹ , Chuan Liu ¹ , Li Zhang ¹ , °Mengye Wang ¹ , ¹ Sun Yat-sen Univ. (China)

Wednesday, September 17

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-3:Process Technology and Characterization	02: Advanced and Emerging Memories / New Applications B-3:Ferroelectric Devices				12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials F-3:Oscillators and Interface Circuits
10:00 A-3-05 Accurate Si₃N₄ Wet Etching Rate Prediction with Small Training Data by Gaussian Process Regression ^o Yusuke Hirata ¹ , Koki Shibata ¹ , Naoko Misawa ¹ , Takashi Ota ² , Yuki Yoshinaga ³ , Chihiro Matsui ¹ , Ken Takeuchi ^{1,2} , ¹ Department of Electrical Eng. and Info. Systems, The Univ. of Tokyo (Japan), ² Systems Design Lab., Graduate School of Eng., The Univ. of Tokyo (Japan), ³ Cleaning Equipment Development Operations, SCREEN Semiconductor Solutions Co., Ltd. (Japan)	10:00 B-3-04 A 2 kilo-bits 1-Transistor-and-n-Ferroelectric-tunnel-junctions (1TnFTJ) Array with Voltage-readout and Few-shots Wake-up ^o Yi Xiang Huang ¹ , Zhi Yuan Chen ¹ , Chong Wei Chen ¹ , Yu liang Hsueh ¹ , Cheng Yi Yang ¹ , E Ray Hsieh ² , ¹ National Central University (Taiwan), ² National Yang Ming Chiao Tung University (Taiwan)				10:00 F-3-04 A Low-Voltage 10-MHz Crystal-Less Clock Generator ^o Feng-Ming Wen ¹ , Wen-Dong Ke ¹ , Jen-Chieh Liou ¹ , Kun-Ju Tsai ² , Yu Lee ² , ¹ National United University (Taiwan), ² Industrial Technology Research Institute (Taiwan)
10:15 A-3-06 ”Characterization of Plasma-induced Damage on TiN/HfO₂/SiO₂ Stacked Structure during Multi-Vt Process Using Different Gas Chemistries” ^o Hidefumi Hirabayashi ¹ , Satoshi Sakai ¹ , Kiyohiko Sato ¹ , Naoyuki Kofuji ¹ , Makoto Miura ¹ , ¹ Hitachi High-tech Corporation (Japan)					

Wednesday, September 17

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-3:Advanced Photonic Designs	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-3:Wide Bandgap and Oxide Materials II 10:00 H-3-05 Strain-Driven Selective Stabilization of Metastable TiO₂ Phases <i>^oJihoon Jeon^{1,2}, Myungsu Jang^{1,2}, Gwang Min Park^{1,2}, Minseok Kim^{1,2}, Jongseo Kim^{1,2}, Seungwan Ye^{1,2}, Yongjoo Park³, Seung-Hyub Baek¹, Jun-Yun Kang⁴, Seong Keun Kim^{1,2}, ¹Korea Inst. of Sci. and Tech. (Korea), ²Korea Univ. (KU-KIST) (Korea), ³SK Trichem (Korea), ⁴Korea Inst. of Mater. Sci. (Korea)</i>	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-3:3D Integration/Novel Materials 10:00 J-3-02 (Late News) Evaluation of Lateral and Depth Distribution of Si Strain around Cu Through Silicon Via by Micro-Raman Spectroscopy <i>^oRyota Fujimori¹, Yuta Ito¹, Atsushi Ogura^{1,2}, Koichiro Saga³, ¹Meiji University (Japan), ²Meiji Renewable Energy Laboratory (Japan), ³Sony Semiconductor Solutions Corporation (Japan)</i>	08: Low Dimensional Devices and Materials K-3:Device I 10:00 K-3-04 Coplanar Structure Design of Floating-gate Antiferroelectric Transistor with Multiple Operation Modes for Reconfigurable Neuromorphic Computing System <i>^oYufei Shi¹, Jiali Huo¹, Yu-Chieh Chien¹, Kah-Wee Ang¹, ¹National Univ. of Singapore (Singapore)</i>	04: Power / High-speed Devices and Materials M-3:Ga2O3 Power Devices 10:00 M-3-04 The Improved Breakdown Characteristics of a 2-nm SiO₂ Interlayer Vertical β-Ga₂O₃ MIS Diode <i>^oXiangxin Zhang¹, Yibo Wang^{1,2}, Cizhe Fang², Haodong Hu², Zheng-Dong Luo², Yan Liu¹, Bochang Li², Yue Hao¹, Genquan Han^{1,2}, ¹Xidian University (China), ²Hangzhou Institute of Technology, Xidian University (China)</i>	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-3:Oxide Semiconductor Devices 3 10:00 N-3-04 High-Performance Thin-Film Transistors Based on IGO Homojunctions with Electrically Tunable Threshold Voltage <i>^oShuheng Fu¹, Xiao Li¹, Zhendong Jiang¹, Mengran Liu¹, Shengjie Yang¹, Lei Lu¹, ¹Peking Univ. (China)</i>

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-4:Cryo CMOS and SOI Technology (10:45-12:15) Session Chair: Anabela Veloso (imcc), Satofumi Souma (Kobe Univ.)	02: Advanced and Emerging Memories / New Applications B-4:Ferroelectric Memory Devices (10:45-12:15) Session Chair: Halid Mulaosmanovic (GlobalFoundries), Sanghun Jeon (KAIST)			02: Advanced and Emerging Memories / New Applications E-4:ReRAM (10:45-12:15) Session Chair: Wein-Town Sun (eMemory Tech. Inc.), Atsushi Himeno (Panasonic Holdings Corp.)	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials F-4:AI Computing Circuits (10:45-12:00) Session Chair: Nobuhiko Nakano (Keio Univ.), Yitao Ma (Zhejiang Univ.)
10:45 A-4-01 (Invited) Cryogenic characterization of advanced FDSOI devices for quantum computing applications <i>°Bruna Cardoso Paz¹, Giselle Elbaz¹, Johan Pelloux-Prayer¹, Pierre-Louis Juliard¹, Mathilde Ouvrier-Buffer², Mikael Cassé³, Flavio Bergamaschi³, Baptiste Jado¹, Mathieu Darnas³, Renan Lethiecq¹, Gregoire Roussely³, Heimanu Niebojewski³, Benoit Bertrand³, Brian Martinez³, Gerard Billiot³, Franck Badets³, Tristan Meunier¹, Maud Vinet¹, ¹Quobly (France), ²CNRS Institut Néel (France), ³CEA-Leti (France)</i>	10:45 B-4-01 (Invited) 22nm FDSOI Hf_{0.5}Zr_{0.5}O₂ FeRAM Demonstration for Embedded Applications: from Ferroelectric Capacitors to FeRAM Arrays <i>°Simon Martin¹, Carine Jahan¹, Liam Hosier¹, Fabien Grimaud¹, Mélanie Louro¹, Jean Coignus¹, Julien Borrel¹, Catherine Carabasse¹, Christelle Boixaderas¹, Messaoud Bedjaoui¹, Julien Mercier¹, Stéphane Minoret¹, Catherine Euvrard¹, Julian Sturm¹, Corinne Combouroure¹, Ludovic Couture¹, Olivier Glorieux¹, Denys Ly¹, Sébastien Martinie¹, Francois Andrieu¹, Olivier Billoint¹, Laurent Grenouillet¹, ¹CEA-Leti (France)</i>			10:45 E-4-01 Experimental Demonstration of Elliptical-shaped CMOS Process-compatible ReRAM in 3D Structure <i>°Park Minsik¹, Lee Aryeong¹, Park Solji¹, Sim Gapseop^{1,2}, Song Jonghyun^{1,2}, Park Namsoo¹, Cho Huijae², Kwon Soohyun², Kang Minho², Kim Youngjoo², Kim Heejong¹, Kwon Youna², Jeon Kanghyeok², Sul Woosuk², Kim Choulyoung¹, Ko Hyoungcho¹, Lee Wonchul^{1,2}, Lee Jongwon¹, ¹Chungnam National Univ. (Korea), ²National Nanofab Center (Korea)</i>	10:45 F-4-01 Crystal Indium Oxide Memory Macro for Analog in-Memory Computing System on Chip, Achieving 13.4-μW Power and 417.8-TOPS/W Efficiency <i>°Kiyotaka Kimura¹, Yusuke Komura¹, Kazuma Furutani¹, Kazuki Tsuda¹, Yoshinori Ando¹, Motomu Kurata¹, Tsutomu Murakawa¹, Takanori Matsuzaki¹, Tatsuya Onuki¹, Yuto Yakubo¹, Shunpei Yamazaki¹, ¹Semiconductor Energy Laboratory Co., Ltd. (Japan)</i>
				11:00 E-4-02 Characterization and Modeling of 16nm FinFET 3D Stackable Via RRAM <i>°Wei-Hwa Lin¹, Tsung-Pei Yang¹, Kai-Ching Chuang¹, Howard Tseng², Tassa Yang², Sung-Po Liao², Tim Chung², Ya-Chin King¹, Chrong Jung Lin¹, ¹Inst. of Electronics Engineering, National Tsing Hua Univ. (Taiwan), ²Memory and Product Diagnosis Engineering Division (MDED), Taiwan Semiconductor Manufac. Company (Taiwan)</i>	11:00 F-4-02 Hybrid-Domain SRAM Computation-in-Memory Architecture for Mixed-Precision FP/INT Operations <i>°Ruhui Liu¹, Yufan Zhang¹, Naoko Misawa¹, Chihiro Matsui¹, Ken Takeuchi^{1,2}, ¹Dept. of Electrical Eng. and Info. Systems, The Univ. of Tokyo (Japan), ²Systems Design Lab., Grad. School of Eng., The Univ. of Tokyo (Japan)</i>
11:15 A-4-02 Anomalous Variability of Subthreshold Characteristicsin Bulk and SOI MOSFETs at a Cryogenic Temperature <i>°Tomoko Mizutani¹, Kiyoshi Takeuchi¹, Takuya Saraya¹, Takumi Inaba², Hidehiro Asai², Hiroshi Oka², Takahiro Mori², Masaharu Kobayashi¹, Toshiro Hiramoto¹, ¹The University of Tokyo (Japan), ²AIST (Japan)</i>	11:15 B-4-02 Enhancing Cryogenic Performance of BEOL-Compatible FE NVMs via Extended 400 °C Annealing: 60 % Ec Boost, Robust 2Pr, Near-Fatigue-Free Endurance, and Selector-Free FeRAM Operation <i>°Cheng-Hung Wu¹, Jia-Tai Wu¹, Wei-Tung Chen¹, Chun-Jung Su^{2,3}, Vita Pi-Ho Hu¹, ¹National Taiwan Uni. (Taiwan), ²National Yang Ming Chiao Tung Uni. (Taiwan), ³Taiwan Semiconductor Research Inst. (Taiwan)</i>			11:15 E-4-03 Sub-1V/50ns Write/Erase of Ag/Ti/GeS/Pt Crossbar CBRAM via Pulse Optimization for High-Density Embedded Nonvolatile Memory <i>°Bolin Ji¹, Zhiyuan He¹, Asif Ali¹, Diing Shenp Ang¹, ¹Nanyang Technological University (Singapore)</i>	11:15 F-4-03 Truncated Carry Approximate Adder and Explicit Bit Pruning for SRAM-based Digital Computation-in-Memory <i>°Daqi LIN¹, Tao Wang¹, Ruhui Liu¹, Naoko Misawa¹, Chihiro Matsui¹, Ken Takeuchi², ¹Dept. of Electrical Eng. and Info. Systems, The Univ. of Tokyo (Japan), ²Systems Design Lab., Grad. School of Eng., The Univ. of Tokyo (Japan)</i>

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-4:UV Photonics	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-4:Characterization and Device Applications	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-4:3D Integration/Packaging/ Sensors/Novel Materials	08: Low Dimensional Devices and Materials K-4:Characterization II	04: Power / High-speed Devices and Materials M-4:GaN, Ga2O3 Processes	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-4:Oxide Semiconductor Devices 4
(10:45-11:45) Session Chair: Atsushi Ono (Shizuoka Univ.), Kouichi Akahane (NICT)	(10:45-12:00) Session Chair: Shingo Ogawa (Toray Res. Center, Inc.), Wen-Wei Wu (National Yang Ming Chiao Tung Univ.)	(10:45-12:00) Session Chair: Yoshiyuki Oba (Sony Semiconductor Manufacturing Corp.), Wei Feng (AIST)	(10:45-12:00) Session Chair: Masafumi Jo (RIKEN), Yusuke Hoshi (Tokyo City Univ.)	(10:45-12:00) Session Chair: Shinya Takashima (Fuji Electric), Kohei Sasaki (Novel Crystal Technology, Inc.)	(10:45-12:00) Session Chair: Chih-Yu Chang (TSMC), Chuan Liu (Sun Yat-sen Univ.)
10:45 G-4-01 Optics-free highly-collimated deep-ultraviolet micro-LEDs with Fresnel zone plate nano-structure enabling Gbps solar-blind optical communications °Lingjie Wei ¹ , Guo-Dong Hao ¹ , Manabu Taniguchi ¹ , Shin-ichiro Inoue ¹ , ¹ NICT (Japan)	10:45 H-4-01 (Invited) Operand Measurement of metal/insulator/semiconductor structures by Voltage-applied HAXPES °Hiroshi Nohira ¹ , Yoshiharu Kiriwara ¹ , Yuichiro Mitani ¹ , ¹ Tokyo City Univ. (Japan)	10:45 J-4-01 (Invited) Optically-Powered Microelectronic Systems with Heterogeneous Integration °Takashi Tokuda ¹ , Masato Saito ¹ , ¹ Science Tokyo (Japan)	10:45 K-4-01 Wafer-scale 2D Material Integrated Device Performance Assessment from Room-temperature Photoluminescence °Thomas Nuytten ¹ , Albert Minj ¹ , Stefanie Sergeant ¹ , Quentin Smets ¹ , Luca Panarella ¹ , Steven Brems ¹ , Pawan Kumar ¹ , Souvik Ghosh ¹ , Tom Schram ¹ , Sreetama Banerjee ¹ , Anastasiia Krav ¹ , Dennis van Dorp ¹ , Benjamin Groven ¹ , Pierre Morin ¹ , ¹ imec (Belgium)	10:45 M-4-01 Impact of Implanted Ion Species on Excess Donors Introduced in n-type GaN Epitaxial Layers °Hiroko Iguchi ¹ , Masahiro Horita ² , Keita Kataoka ¹ , Tetsuo Narita ¹ , Tetsu Kachi ² , Jun Suda ² , ¹ Toyota Central R&D Labs., Inc. (Japan), ² Nagoya Univ. (Japan)	10:45 N-4-01 Balancing Work Function and Contact Resistance in IGZO TFTs via Pt-Al Alloying °Krittin Auewattananapun ^{1,3} , Juan Paolo S. Bermundo ¹ , Senku Tanaka ² , Hidenori Kawanishi ¹ , Ratchatee Techapiesancharoenkij ³ , Yukiharu Uraoka ¹ , ¹ Nara Inst. of Science and Technology (NAIST) (Japan), ² Kindai Univ. (Japan), ³ Kasetsart Univ. (Thailand)
11:00 G-4-02 Ultrathin HfO₂ Enabled quasi-n-i-p-n Ultraviolet Photodetectors Based on SnO₂ Quantum Dots and p-GaN/2DEG Heterostructures for Self-Powered Operation with Low Dark Current °Sen Gao ¹ , Xian Wu ¹ , Xiao Lei ¹ , Jing Wang ¹ , ¹ Tsinghua University (China)			11:00 K-4-02 Effects of Top, Top+Edge, and C-type Source / Drain Contacts on Device Characteristics of P-Type WSe₂ Gate-All-Around Nanosheet FETs °Szu-Huan Hsu ¹ , Kuan-Lin Lee ¹ , Yueh-Ju Chan ¹ , Yiming Li ¹ , ¹ Nat'l Yang Ming Chiao Tung Univ. (Taiwan)	11:00 M-4-02 GaN and Ga₂O₃ Diodes Study by Applying Ni and O as p-type Dopants °Naohiro Shimizu ¹ , Arun Kumar Dhasiyan ¹ , Osamu Oda ¹ , Nobuyuki Ikarashi ¹ , Masaru Hori ¹ , ¹ Nagoya Univ. (Japan)	11:00 N-4-02 BEOL-Compatible Top-Gate Self-Aligned IGZO TFTs Realized by Etching-Time-Optimized ITO/IGZO Stacked Channel Architecture Shaocong Lv ¹ , Xiaoyu Lin ¹ , Xianglong Li ¹ , Zebin Zhang ¹ , Wenbo Cui ¹ , °Jiawei Zhang ¹ , ¹ School of Integrated Circuits, Shandong University (China)
11:15 G-4-03 (Invited) Simultaneous Deep-UV Raman and Photoluminescence Microscopy for Nanoscale Materials Characterization °Atsushi Taguchi ¹ , ¹ Hokkaido Univ. (Japan)	11:15 H-4-02 (Invited) Challenges in Visualizing Buried Interfaces of Multi-Layered Thin-Film Structures for Applications: A Depth-Resolved and Spatiotemporal Big Data Analysis Approach Based on Angle-Resolved XPS °Satoshi Toyoda ¹ , ¹ Scienta Omicron (Japan)	11:15 J-4-02 Vapor-phase Intercalation of Metal Chlorides into Multilayer Graphene Grown Directly on SiO₂/Si via Catalyst-free Microwave Plasma Chemical Vapor Deposition °Rika Matsumoto ¹ , Yoshito Watai ² , Takashi Matsumoto ² , ¹ Tokyo Polytechnic Univ. (Japan), ² Tokyo Electron Technology Solutions Ltd. (Japan)	11:15 K-4-03 Quantitative ToF-SIMS analysis of Transferred Nb Doped MoS₂: Direct Dopant Quantification and Micrometer Scale Impurity Distribution °Itsuki Tanaka ¹ , Tomonori Nishimura ¹ , Kaito Kanahashi ¹ , Satoru Morito ² , Keiji Ueno ² , Kosuke Nagashio ¹ , ¹ The Univ. of Tokyo (Japan), ² Saitama Univ. (Japan)	11:15 M-4-03 High-Temperature Annealing to Improve the Heterointerface in MOCVD-Grown β-Ga₂O₃ MOSFETs on Sapphire Substrates °Chunxiao Yu ¹ , Bochang Li ² , Yibo Wang ² , Chenyu Liu ¹ , Huaixin Wang ² , Haodong Hu ¹ , Xiaole Jia ¹ , Yiyang Wu ² , Jun Zheng ¹ , Yan Liu ¹ , Yue Hao ¹ , Genquan Han ² , ¹ Wide Bandgap Semiconductor Technology Disciplines State Key Lab., Xidian Univ. (China), ² The Inst. of Hangzhou Technology, Xidian Univ. (China), ³ The Inst. of Semiconductors, Chinese Academy of Sciences (China)	11:15 N-4-03 IGZO Schottky Barrier Thin Film Transistors with Positive V_{th} and Steep SS by Modulating Schottky Barrier Height °Tianhao Liao ^{1,2,3} , Nannan You ^{2,3} , Jiayi Wang ^{2,3} , Yang Xu ^{2,3} , Ling Li ² , Shengkai Wang ^{2,3} , ¹ School of Advanced Interdisciplinary Sci., Univ. of Chinese Academy of Sci. (China), ² State Key Lab. of Fabrication Tech. for Integrated Circuits, Chinese Academy of Sci. (China), ³ High-Frequency High-Voltage Device and Integrated Circuits R&D center, Inst. of Microelectronics, Chinese Academy of Sci. (China)

Wednesday, September 17

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-4:Cryo CMOS and SOI Technology 11:30 A-4-03 Planar FD-SOI NFETs with Ultra-Thin Si Body: Device Process Integration °Dmitry Batuk ¹ , Sylvain Baudot ¹ , Tom Schram ¹ , Erik Rosseel ¹ , Aryan Afzalian ¹ , Anish Dangol ¹ , An De Keersgieter ¹ , Anne Vandooren ¹ , Farid Sebaai ¹ , Mohamed Saib ¹ , Emma Vecchio ¹ , Subhobroto Choudhury ¹ , Bianca Chou ¹ , Naoto Horiguchi ¹ , Paul Heremans ¹ , ¹ imec (Belgium)	02: Advanced and Emerging Memories / New Applications B-4:Ferroelectric Memory Devices 11:30 B-4-03 Impact of Write Condition and Wake-up on Charge Distribution and Imprint Behaviors in Hf_{0.5}Zr_{0.5}O₂ Ferroelectric Capacitors °Zhenhong Liu ¹ , Zuochen Cai ¹ , Mitsuru Takenaka ¹ , Shinichi Takagi ¹ , Kasidit Toprasertpong ¹ , ¹ The Univ. of Tokyo (Japan)			02: Advanced and Emerging Memories / New Applications E-4:ReRAM 11:30 E-4-04 Forming- Free Ag/GeTe/GeS/GeTe/Ag Bidirectional Selector with Tunable High On-Current (~1mA), ~50ns On/Off Delay and >10¹⁰ Endurance Cycles at 1V Pulse °Asif Ali ¹ , Jiayi Li ¹ , Bolin Ji ¹ , Diing Shenp Ang ¹ , ¹ Nanyang Technological University (Singapore)	12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials F-4:AI Computing Circuits 11:30 F-4-04 High-Efficient Automatic White Balance Circuit Engine using Ultra-lightweight Half-SqueezeNet-DSC Architecture with Self-Attention Mechanism °Hanfeng Wang ¹ , Zhaolong He ² , Yue Cheng ¹ , Hongbo Zhu ⁴ , Dawei Gao ¹ , Wenzhang Fang ^{1,3} , Yitao Ma ^{1,3} , ¹ Zhejiang University (China), ² University of Science and Technology of China (China), ³ ZJU-Hangzhou Global Scientific and Technological Innovation Center (China), ⁴ Hangzhou Miaoxinqtu Technology, Ltd (China)
11:45 A-4-04 Strain and Mobility Enhancement in SiGe-OI pMOSFETs by Low O₂ Pressure Ge Condensation °Ke Zhou ¹ , Ruocheng Yang ¹ , Junkang Li ^{1,2} , Rui Zhang ^{1,2} , ¹ College of Integrated Circuits, Zhejiang University (China), ² Zhejiang ICsprout Semiconductor Company Ltd. (China)	11:45 B-4-04 Endurance Improvement in Defect-Engineered HfO₂-Based MFS Ferroelectric Capacitors with Non-Destructive Readout °Peiyuan Du ^{1,2} , Huan Liu ^{1,2} , Dongya Li ^{1,2} , Hongrui Zhang ^{1,2} , Bing Chen ^{1,2} , Ran Cheng ³ , Mengnan Ke ⁴ , Xiao Yu ^{1,2} , Yan Liu ¹ , Yue Hao ¹ , Genquan Han ^{1,2} , ¹ Xidian Univ. (China), ² Hangzhou Inst. of Tech., Xidian Univ. (China), ³ Zhejiang Univ. (China), ⁴ Yokohama National Univ. (Japan)			11:45 E-4-05 Multi-Level Self-Selective Memristor for Reliable Sparse Matrix Encryption °Guobin Zhang ^{1,2} , Zijian Wang ^{1,2} , Xuemeng Fan ^{1,2} , Yishu Zhang ^{1,2} , ¹ Zhejiang Univ. (China), ² ZJU-Hangzhou Global Sci. and Tech. Innovation Center (China)	
12:00 A-4-05 Evaluation of Transient Characteristics on Steep Subthreshold Slope “Gate-Controlled Carrier-Injection SOI-Transistor” °Haruki Yonezaki ^{1,2} , Takayuki Mori ¹ , Jiro Ida ¹ , ¹ Kanazawa Inst. of Tech. (Japan), ² KIOXIA Corp. (Japan)	12:00 B-4-05 Unraveling the Frequency-Dependent Accelerated Degradation Mechanism in HfO₂-Based 3D Trench Ferroelectric Capacitors °Fei Yu ^{1,2} , Xingcheng Jin ³ , Chongyong Guo ³ , Hongbo Li ³ , Huan Liu ^{1,2} , Haoji Qian ² , Bing Chen ^{1,2} , Yan Liu ^{1,2} , Xiao Yu ^{1,2} , Genquan Han ^{1,2} , ¹ The School of Microelectronics, Xidian Univ. (China), ² Hangzhou Inst. of Tech.,Xidian Univ. (China), ³ China Resources Microelectronics Ltd. (China)			12:00 E-4-06 Cryogenic RRAM Analog Synapse (CRAS) for Unconventional Computing Systems °Yunsur Kim ¹ , Jiyong Woo ¹ , ¹ Kyungpook National Univ. (Korea)	

Short Oral Presentation					
(13:30-14:00) 01: Advanced CMOS: Material Science / Process Engineering / Device Technology Session Chair: Kuniyuki Kakushima (Science Tokyo), Genji Nakamura (Tokyo Electron Ltd.)	(13:30-14:32) 02: Advanced and Emerging Memories / New Applications Session Chair: Xu Bai (NanoBridge Semiconductor, Inc.), Keiji Hosotani (XIOXIA Corp.)			(13:30-13:42) 06: Energy Harvesting and Converting Devices and Materials Session Chair: Hidetoshi Suzuki (Univ. of Miyazaki)	(13:30-13:56) 07: Organic / Molecular / Bio-electronics Session Chair: Kazuhiro Takahashi (Toyohashi Univ. of Technology), Hisashi Kino (Kyushu Univ.)
			(14:14-14:28) 09: Novel Functional / Quantum / Spintronic Devices and Materials Session Chair: Nozomi Nishizawa (Kitasato Univ.), Hidehiro Asai (AIST)	(14:15-14:35) 12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials Session Chair: Hongchin Lin (National Chung Hsing Univ.), Kousuke Miyaji (Shinshu Univ.)	

Wednesday, September 17

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-4:UV Photonics	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-4:Characterization and Device Applications	03: Heterogeneous and 3D Integration / Interconnect / MEMS J-4:3D Integration/Packaging/Sensors/Novel Materials	08: Low Dimensional Devices and Materials K-4:Characterization II	04: Power / High-speed Devices and Materials M-4:GaN, Ga2O3 Processes	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-4:Oxide Semiconductor Devices 4
	11:30 H-4-03 Investigation of Electromigration Mechanisms in NiAl °Shuhei Yonehara¹, Junichi Koike¹, ¹Tohoku Univ. (Japan) 11:45 H-4-03 Mapping of the Lattice Strain Tensor in Defect-Free Si_{1-x}Ge_x/SOI Multilayers Fabricated by Lateral-Selective Heteroepitaxy °Cedric Xavier Corley-Wiciak¹, Chen-Hsun Liu², Agnieszka Anna Corley-Wiciak^{1,3}, Edoardo Zatterin¹, Markus Andreas Schubert⁴, Carsten Richter², Wei-Chen Wen⁴, Marvin Hartwig Zoellner⁴, Yuji Yamamoto^{4,5}, ¹European Synchrotron Radiation Facility (France), ²Leibniz-Inst. for Crystal Growth (Germany), ³RWTH Aachen Univ. (Germany), ⁴Leibniz-Inst. for Innovations for High Performance Microelectronics (Germany), ⁵Nagoya Univ. (Japan)	11:30 J-4-03 Investigation of Electromigration Mechanisms in NiAl °Shuhei Yonehara¹, Junichi Koike¹, ¹Tohoku Univ. (Japan) 11:45 J-4-04 Toward Infinite Selectivity: Area-selective Atomic Layer Deposition of Ruthenium Enabled by CF_x Plasma Treatment °Dahui Jeon¹, Chee Won Chung¹, In-Hwan Baek¹, ¹Inha University (Korea)	11:30 K-4-04 Hot Carrier Dynamics in InAs Nanowire Photodetectors °Xiaofan Lin¹, Ralf Mouthaan², Faris Abualnaja¹, Peter J Christopher³, Greg Chu¹, Ibtisam Hammad Ab basi¹, Chennupati Jagadish^{4,5}, Hark Hoe Tan^{4,5}, Hannah J Joyce¹, Jack A Alexander-Webber¹, ¹Department of Eng., Univ. of Cambridge (UK), ²Univ of Adelaide, Centre of Light for Life (Austria), ³Department of Eng., Univ. of Nottingham (UK), ⁴Department of Electronic Materials Eng., Res. School of Physics, The Australian National Univ. (Austria), ⁵Australian Research Council Centre of Excellence for Transformative Meta-Optical Systems, Res. School of Physics, The Australian National Univ. (Australia) 11:45 K-4-05 Approaching the Intrinsic Homogeneous Broadening in Suspended Transition-Metal Dichalcogenide Monolayers °Giacomo Mariani¹, Keigo Matsuyama¹, Yoji Kunihashi¹, Taro Wakamura¹, Satoshi Sasaki¹, Makoto Kohda^{2,3,4}, Junsaku Nitta^{4,2}, Haruki Sanada¹, ¹NTT Basic Research Laboratories (Japan), ²Department of Materials Science, Graduate School of Engineering, Tohoku University (Japan), ³Center for Science and Innovation in Spintronics, Tohoku University (Japan), ⁴Quantum Materials and Applications Research Center (QUARC), National Institutes for Quantum Science and Technology (Japan)	11:30 M-4-04 Comparative Study of Sn δ-Doped α-Ga₂O₃ Metal-Semiconductor Field-Effect Transistors on R-Plane and M-Plane Sapphire °Jia-Zhe Wu¹, Han-Wei Chen¹, Nei-En Chiu¹, Yu-Jie Ge¹, William Cheng-Yu Ma¹, Han-Yin Liu¹, ¹National Sun Yat-sen Univ. (Taiwan) 11:45 M-4-05 (Late News) Photocapacitance Investigation of Deep-Level Trap States in Ga₂O₃ Thin Films Grown by Low-Pressure Hot-Wall Metalorganic Vapor Phase Epitaxy °Jun Jason Morihara¹, Tsukasa Kakio¹, Junya Yoshinaga^{2,3}, Takafumi Kamimura⁴, Yoshinao Kumagai², Masataka Higashiwaki^{1,4}, ¹Osaka Metropolitan Univ. (Japan), ²Tokyo Univ. of Agric. and Tech. (Japan), ³TAIYO NIPPON SANSO CORP. (Japan), ⁴NICT (Japan)	11:30 N-4-04 Employment of Flash Annealing to Enhance Electron Mobility of Atomic Layer Deposited InZnO_x Channel Thin-Film Transistors °Li Chi Peng¹, Yuma Ueno², Kenji Inoue², Katsuhiko Mitsuda², Shinichi Kato², Tsung-Te Chou³, Edward Yi Chang¹, Chun-Hsiung Lin¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan), ²SCREEN Semiconductor Solutions Co., Ltd. (Japan), ³Taiwan Instrument Research Inst. (Taiwan) 11:45 N-4-05 Room-temperature UV irradiation to improve stability of as-fabricated In-B-O thin-film transistors Shinri Yamadera¹, °Shinya Aikawa¹, ¹Kogakuin Univ. (Japan)

Short Oral Presentation					
(13:30-14:10) 05: Photonics: Devices / Integration / Related Technology Session Chair: Atsushi Ono (Shizuoka Univ.), Kouichi Akahane (NICT)	(14:00-14:28) 11: Advanced Materials: Synthesis / Crystal Growth / Characterization Session Chair: Shingo Ogawa (Toray Res. Center, Inc.)	(14:15-14:31) 03: Heterogeneous and 3D Integration / Interconnect / MEMS Session Chair: Mayumi B. Takeyama (Kitami Inst. of Tech.)	(13:30-14:12) 08: Low Dimensional Devices and Materials Session Chair: Masafumi Jo (RIKEN), Toshifumi Irisawa (AIST)	(13:30-14:20) 04: Power / High-speed Devices and Materials Session Chair: Taketomo Sato (Hokkaido Univ.), Joel T. Asubar (Univ. of Fukui)	(13:30-14:10) 10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process Session Chair: Toshiya Murakami (KIOXIA Corp.), Ryo Matsumura (NIMS)

Wednesday, September 17

Poster Session (15:00-17:00) Poster Hall (303+304, 3rd Floor)

01: Advanced CMOS: Material Science / Process Engineering / Device Technology

PS-01-01

Influence of Substrate Acceptor Concentration on the Density of States in MOS Structures

^oKaoru Kato¹, Hajime Tanaka¹, Nobuya Mori¹, ¹The Univ. of Osaka (Japan)

PS-01-02

Impact of a Single Interface-Trapped Charge on V_{th} Variation in GAA nanosheet FETs Analyzed by 3D TCAD Simulation

^oTakefumi Kamioka¹, Junichi Hattori¹, Naoya Okada¹, Koichi Fukuda¹, ¹AIST (Japan)

PS-01-03

Mean-Free-Path-Based Modeling of Interconnect Resistivity for Cryogenic CMOS

^oAkira Tsuchiya¹, ¹The Univ. of Shiga Prefecture (Japan)

PS-01-04

Threshold Voltage Design for High-Stability and High-Speed Cryogenic SRAM

^oGeng-Lun Li¹, Yu-Cheng Lu¹, Vita Pi-Ho Hu¹, ¹National Taiwan Univ. (Taiwan)

PS-01-05

A Machine Learning Approach to FEOL/MOL Parasitic Capacitance Extraction for the Complementary FET(CFET)

^oJaehong Park^{1,2}, Seung Kyu Kim^{1,2}, Johyeon Kim¹, Kee-Won Kwon¹, Jongwook Jeon¹, ¹The Univ. Sungkyunkwan (Korea), ²Samsung Electronics (Korea)

PS-01-06

AutoRW-Phys: A Physics-Guided Region-Weighted Model for Fast Parameter Extraction towards SPICE-Compatible RRAM Simulation

^oZhih-Yun Kuo¹, Hao-Stou Huang¹, Bo-Cheng Chen¹, I-Ling Li¹, Ning-Yuan Lue¹, Chao-Hui Yeh¹, ¹The Univ. of Taiwan (Taiwan)

PS-01-07

Work Function Engineering in Dual Metal BCAT DRAM for Simultaneous Mitigating GIDL, GJLJ, PGE and 1-RD

^oHwichan - Jeon¹, Min-Woo - Kwon¹, ¹Seoul National Univ. of Sci. and Tech. (Korea)

PS-01-08

Dual-Mode Charge Trap Flash Memory Using Nickel-Silicide Schottky-Junction Reconfigurable FETs via Channel Modulation Engineering

^oKi-Ju Park¹, Seong-Hwan Lim¹, Jin-Wook Shin², Jong-Heon Yang², Won-Ju Cho¹, ¹The Univ. of Kwangwoon (Korea), ²The Lab. of ETRI (Korea)

PS-01-09

Clarification of the Mechanism of Crystallization by the Topmost ZrO₂ Layer in ZrO₂/HfO₂ZrO₂ Stack

^oRina Takahisa¹, Takashi Onaya^{1,2}, Atsushi Tamura¹, Koji Kita¹, ¹Department of Advanced Materials Science, Graduate School of Frontier Sciences, The Univ. of Tokyo (Japan), ²Res. Center for Materials Nanoarchitectonics (MANA), National Inst. for Materials Sci. (Japan)

PS-01-10 (Late News)

Hf/Zr Ratio Adjusting in Hf,Zr_{1-x}O₂ and Conducting Structural Engineering for Capacitor with High Capacitance Density and Low Leakage Current

^oHong-Yan Zhu¹, Yu-Chun Li¹, Zi-Ying Huang¹, Hao-Lin Liao¹, Wei-Min Li², David Wei Zhang Zhang¹, Hong-Liang Lu¹, ¹Fudan University (China), ²Jiangsu Leadmicro Nano Technol Co Ltd (China)

PS-01-11

A design and comprehensive simulation of a channel-all-around FeFET for high density storage application

^oXiu Yang¹, Hongrui Zhang¹, Di Wang¹, Kai Xiong¹, Xiao Yu¹, Bing Chen¹, Yan Liu¹, Genquan Han¹, ¹HangZhou Inst. of Tech., Xidian Univ. (China)

PS-01-12

La Dipole's V_{th} Roll-Off mechanism and Improved leakage and interface charge performance in dipole Last process

^oHongmei Zhang¹, Yang liu¹, YuChun Li¹, HaiYang Liu¹, Hongliang Liu¹, Xiaona Zhu^{1,2}, Shaofeng Yu¹, Wei - Zhang^{1,2}, ¹Fudan university (China), ²Jiashan Fudan Institute (China)

PS-01-13

Evaluation of Heat-Dissipation Effects in Vertical-Transport Nanosheet FET (VTFET) Considering Various Metal-Contact Configurations

^oYi-Hsuan Yu¹, Pin Su¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan)

PS-01-14

Vertically Stacked Dual-Gate Dynamically Reconfigurable Field Effect Transistor for CMOS-Compatible Adaptive Logic Applications

^oSeung-Hyun Lee¹, Won-Ju Cho¹, ¹Kwangwoon Univ. (Korea)

PS-01-15

mm-Wave CMOS Device Optimization and Accurate Noise Deembedding Method Demonstrating Minimum Noise and Super-300GHz f_{max}

^oAdhi Cahyo Wijaya¹, Jyh Chyurn Guo¹, ¹National Yang Ming Chiao Tung University (Taiwan)

02: Advanced and Emerging Memories / New Applications

PS-02-01

NH₃ Plasma-Enhanced Ferroelectricity in P-FeFETs for Robust Multi-Level-Cell and Neuromorphic Memory Applications

^oJia-Tai Wu¹, Cheng-Hung Wu¹, Wei-Tung Chen¹, Chun-Jung Su², Vita Pi-Ho Hu¹, ¹National Taiwan Univ. (Taiwan), ²National Yang Ming Chiao Tung Univ. (Taiwan)

PS-02-02

A Novel Hybrid 1T U-MOSFET/TFET Memory Cell with 5-ns Programming, >100-ms Retention, and >10⁹ Endurance Cycles

^oHang Xu¹, Jianbin Guo¹, Peng Liao¹, Yanghao Wang¹, Yafen Yang¹, Qingqing Sun¹, David wei Zhang¹, ¹Fudan University (China)

PS-02-03

Cryogenic Characterization of HfO₂-Based RRAM: Exploring Multilevel Switching from 300 K to 1.5 K for Neuromorphic Quantum Computing

^oEmilio Perez-Bosch Quesada¹, Alberto Mistroni¹, Ruolan Jia², Keerthi Dorai Swamy Reddy¹, Markus Fritscher^{1,4}, Felix Reichmann¹, Helena Castan¹, Salvador Dueñas³, Christian Wenger^{1,4}, Eduardo Perez^{1,4}, ¹IHP - Leibniz Inst. for High Performance Microelectronics (Germany), ²Micro- and Nanosystems Tech., Technical Univ. of Munich (Germany), ³Department of Electronics, Univ. de Valladolid (Spain), ⁴BTU Cottbus-Senftenberg (Germany)

PS-02-04

Modeling Shallow and Deep Trapping Behavior Influenced by Tunneling Oxide in Charge Trap Flash Devices

^oJoonhyung Cho^{1,2}, Joon Hwang¹, Siyoung Park¹, Min-Kyu Park¹, Jong-Ho Lee¹, ¹Seoul National Univ. (Korea), ²SK Hynix Inc. (Korea), ³Gachon Univ. (Korea)

PS-02-05

Erasing by Hot Hole Injection in eSTM™ device: Comprehension & Optimization

^oCeline Belabbas¹, Vincenzo Della Marca¹, Pierre Canet¹, Marc Mantelli², Thibault Kempf¹, Arnaud Regnier², Stephan Niel¹, Francesco La Rosa², ¹Aix-Marseille Univ., Toulon Univ., CNRS, IM2NP, Marseille (France), ²STMicroelectronics, Rousset (France), ³STMicroelectronics, Crolles (France)

PS-02-06

Impacts of Grain-to-Grain Variability on Ferroelectric Polarization Switching in HZO

^oGui-Huai Chen¹, Pin Su¹, ¹National Yang Ming Chiao Tung University (Taiwan)

PS-02-07

Adjusting Interface States by Rapid Surface Annealing to Control Current Relaxation Property of Pt/Nb:SrTiO₃ Resistive Random Access Memory

^oTaiga Seto¹, Yumeng Zheng¹, Kentaro Kinoshita¹, ¹Tokyo Univ. of Sci. (Japan)

PS-02-08

Improvement on Ferroelectricity of HfO₂-ZrO₂ Superlattice on Si with an Ultra-thin Si₃N₄ Interfacial Layer

^oJiayuan Zhang^{1,2}, Zhuoyi Ma¹, Nazmus Sakib², Anjana Rajan^{1,2}, Andreas Grenmyr^{1,2}, Detlev Grützmacher¹, Joachim Knoch², Qing-Tai Zhao¹, ¹Res. Center Jülich (Germany), ²RWTH Aachen (Germany)

PS-02-09

High-stability Ultrathin InGaO Transistors for High-performance 2T0C DRAM

^oJiakang Li¹, Xuefei Li¹, Peiyan Hong¹, Chenchen Ye¹, ¹Huazhong University of Science and Technology (China)

PS-02-10

Duration of Disturbance Tolerance Governed Bias Selection in 1T-DRAM Array

^oAbhinav Kranti¹, Rohit Kumar Nirala¹, Manish Gupta², ¹Indian Institute of Technology Indore (India), ²Birla Institute of Technology and Science Pilani, K.K. Birla Goa Campus (India)

PS-02-11

Switching Dynamics of TiN and Pd Gated MFIS Hf_{0.5}Zr_{0.5}O₂ Capacitors: Impact of Gate Metal and Bias Polarity on Ferroelectric Operation

^oWei Tung Chen¹, Jia-Tai Wu¹, Cheng-Hung Wu¹, Chun-Jung Su^{2,3}, Vita Pi-Ho Hu¹, ¹National Taiwan Univ. (Taiwan), ²National Yang Ming Chiao Tung Univ. (Taiwan), ³Taiwan Semiconductor Research Inst. (Taiwan)

PS-02-12

In-Memory Computation Using Positive Feedback Field Effect Transistor Array Based on Charge Trap Layer for Boolean Logic Operations

^oHyunjun Yeom¹, Jaewon Lee¹, Min-Woo Kwon¹, ¹Seoul Nat'l Univ. of Sci. & Tech. (Korea)

PS-02-13

Approximate Neural Network Using Vertical NAND Flash Memory

^oSung-Ho Park¹, Ryun-Han Koo¹, Yeongheon Yang², Jiseong Im¹, Jonghyun Ko¹, Jong-Ho Lee¹, ¹Seoul National Univ. (Korea), ²SK hynix Inc. (Korea)

PS-02-14

Novel Se-based Phase-Change Materials for Next-Generation Embedded Phase-Change Memories

^oPierre Meilleux^{1,2}, Oussama Mouawad¹, Martina Tomelleri¹, Jean-Baptiste Dory¹, Nicolas Bernier¹, Yoann Brülé¹, Jules Lagrave¹, Jean-Yves Raty³, François Hippert¹, Daniel Benoit², Pierre Noël¹, ¹Inst. CEA-LETI (France), ²Indus. STMicroelectronics (France), ³FRS-FNRS, CESAM, Univ. of Liège (Belgium), ⁴Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP (France)

PS-02-15

Comparative Evaluation of Recovery Schemes for Hafnium-Based Ferroelectric Capacitors

^oMan Yutai¹, Du Peiyuan^{1,2}, Liu Huan^{1,2}, Yu Fei^{1,2}, Li Dongya^{1,2}, Zhang Hongrui¹, Chen Bing^{1,2}, Cheng Ran¹, Ke Mengnan¹, Liu Yan², Yu Xiao^{1,2}, Han Genquan^{1,2}, ¹Hang-zhou Institute of Technology, Xidian University (China), ²School of Microelectronics, Xidian University (China), ³College of Integrated Circuits, Zhejiang University (China), ⁴Institute for Multidisciplinary Sciences, Yokohama National University (Japan)

PS-02-16

3D NAND Memory Reliability Improvement by Tailoring Program/Erase Stress

^oJayavel Pachamuthu¹, Yanfang Shi², Peng Zhang¹, Deepanshu Dutta¹, ¹SanDisk Corporation (United States of America), ²SanDisk Information Technology (China)

PS-02-17
Low-Power Hierarchical Similarity Search Using Analog CAM Based on Dual-Gate FET
°In-Seok Lee^{1,2}, Kyu-Ho Lee^{1,2}, Sung Yun Woo³, Jong-Ho Lee^{1,2}, ¹Seoul National University (Korea),
²Inter-Univ. Semiconductor Res. Center (Korea), ³The Univ. of Kyungpook (Korea)

PS-02-18
Predictive Model of High Source-Drain Voltage induced Degradation of Select Transistors in Nonvolatile Memory Arrays
°Junru Qu¹, Dong Liu², Jiabao Ye¹, Bing Chen³, Ran Cheng¹, Xiao Yu¹, Yan Liu², Genquan Han³,
¹College of Integrated Circuit, Zhejiang University, Hangzhou, China (China), ²Polytechnic Institution, Zhejiang University, Hangzhou, China (China), ³Hangzhou Institute of Technology, Xidian University, Hangzhou, China (China)

PS-02-19
Silicon Carbide-Based Nonvolatile Interface-Type Resistive Switching Memory
°Yumeng Zheng¹, Tomohiro Baba¹, Kentaro Kinoshita¹, ¹Tokyo Univ. of Science (Japan)

PS-02-20
A 319.3-TOPS/W High-Efficient Neuromorphic Engine with 55nm High-Density Multi-Level NOR-flash-based Event-Driven Computing-in-Memory Array
°Yue Cheng¹, Yaolei Guo¹, Hanfeng Wang¹, Zhaolong He^{3,4}, Chenhao Tang¹, Xinjian Wang¹, Jingyao Chi¹, Dawei Gao^{1,2,3}, Dianyu Qi^{1,2,3}, Yitao Ma^{1,2,3}, ¹Zhejiang University (China), ²ZJU-Hangzhou Global Scientific and Technological Innovation Center (China), ³Zhejiang ICsprout Semiconductor Co., Ltd (China), ⁴University of Science and Technology of China (China)

PS-02-21
Area- and Shape-dependent Ferroelectric Properties of AlScN-based MFM Capacitors
°Yoojin Lim¹, Hyeongjun Joo¹, Sisung Yoon¹, Geonwook Yoo¹, ¹Soongsil Univ. (Korea)

PS-02-22
Cycling voltage dependence of the oxygen vacancy concentration profile in 6 nm Hf,Zr_{1-x}O₂ based ferroelectric capacitors
°Nick Barrett¹, Gunjan Yadav¹, Lucia Perez Ramirez¹, Ibrahima Gueye², Seo Okkyun¹, Jean Coignus³, Nicolas Vaxelaire², Laurent Grenouiller², ¹CEA Saclay (France), ²SPring-8 (Japan), ³CEA-Leti (France)

PS-02-23
Al₂O₃ Intercalation and Phase-Asymmetric Engineering for Thermal-Budget-Friendly Hf,Zr_{1-x}O₂ Planar and 3D DRAM Capacitors
°Congcong Xu¹, Hongwei Hao^{1,2}, Zhuo Chen^{1,3}, Jian Rong¹, Dan Lv¹, Lianqi Zhao¹, Yongchang Li¹, Lu Wang¹, Dongdong Li¹, ¹Zhangjiang Laboratory (China), ²Shanghai Jiao Tong University (China), ³Fudan University (China)

PS-02-24
Intrinsic ion migration-induced Nitride-enhanced Memristor with ultralow operating voltage
°Zijian Wang^{1,2}, Xuemeng Fan^{1,2}, Guobin Zhang^{1,2}, Pengtao Li^{1,2}, Shengpeng Xing^{1,2}, Zhejia Zhang^{1,2}, Qi Luo^{1,2}, Baichen Zhu^{1,2}, Yishu Zhang^{1,2}, ¹Zhejiang University (China), ²ZJU-Hangzhou Global Scientific and Technological Innovation Center (China)

PS-02-25
Investigation of Refresh Characteristics in 4F² Vertical DRAM Cells for Next-Generation Memory
°GYUBEOM KIM¹, DAGYO YOO¹, MYUNGHYUN BAEK¹, ¹Gangneung-Wonju National Univ. (Korea)

PS-02-26
Radiation-Resilient FeFET Ferroelectric Memory Enabled by Compositionally Graded Hf_xZr_{1-x}O₂ Films.
°Jung-Ting Chang¹, Yung-Hsien Hsu Wu¹, ¹National Tsing Hua University (Taiwan)

PS-02-27
Optimizing Joint Structure to Improve Cell Current in Misaligned Dual-Deck 3D NAND Flash
Daewoong Kang¹, °Joohyo Kim^{1,2}, Sungho Park^{1,2}, Nayoon Kang^{1,3}, Jeongnam Youn¹, Youngho Jung⁴,
¹Seoul National University (Korea), ²Chung-Ang University (Korea), ³Soongsil Univ. (Korea), ⁴Daegu University (Korea)

PS-02-28
Fringe-Field-Controlled Optimized Spatial Distribution of Trap Charge to Overcome Z-Pitch Scaling Limits in 3D NAND Flash
°Seungmin Lee¹, Yong Kyu Lee², Yong Sang Kim³, ¹Sungkyunkwan Univ. Samsung Electronics (Korea), ²Samsung electronics (Korea), ³Sungkyunkwan Univ. (Korea)

PS-02-29
Improvement of Polarization, Cycle Endurance and Switching Speed under Low- voltage Operation in 3.5nm HfO₂/ZrO₂ Ferroelectric Capacitors by Remote H₂/O₂ Plasma Treatment
°Wei-Kuo Tseng¹, Y.-T. Tang¹, ¹Dept. of Electrical Engineering, National Central Univ. (Taiwan)

PS-02-31 (Late News)
Hybrid SLC/MLC ReRAM for Quantized KV Cache in Transformer-based LLM
°Shota Suzuki¹, Naoko Misawa¹, Chihiro Matsui¹, Ken Takeuchi^{1,2}, ¹Department of Electrical Engineering and Information Systems, The University of Tokyo (Japan), ²Systems Design Lab., Graduate School of Engineering, The University of Tokyo (Japan)

03: Heterogeneous and 3D Integration / Interconnect / MEMS

PS-03-01
Microstructure of HiK laminates for MIM capacitors
°Yuichi Watanabe¹, Yasuhiro Oyama¹, Naoaki Tanaka¹, Zhouan Han², Vince McGahay³, Karen Barker³, Jeff Gambino³, ¹onsemi (Japan), ²University of Illinois Urbana-Champaign, (United States of America), ³onsemi US (United States of America)

PS-03-02
Vacuum Packaging for Sensitivity Enhancement in Coplanar Magnetic Sensors
°Zhan Zhen wei¹, ¹National Central University (Taiwan)

PS-03-03
Mitigating TSV-Induced Stress Using Novel Candle-type Hybrid TSV
°SEKI HONG^{1,2}, Jimyounng Lee^{1,2}, Seung Kyu Kim^{1,2}, Jongwook Jeon¹, Kee-Won Kwon¹, ¹The Univ. of Sungkyunkwan (Korea), ²Corp. Samsung electronics (Korea)

PS-03-04
Development of metallic amorphous chalcogenide electrodes for realizing All-Around transistors
°Toshiya Sasaki¹, Mihyeon Kim¹, Paul James Fons², Yuta Saito¹, ¹Tohoku Univ. (Japan), ²Keio Univ. (Japan)

PS-03-05
An Additive Approach to Realize and Integrated Millimeter-wave Module for 6G Applications
°Ying Ying Lim¹, Michitaka Ameya¹, Yuto Kato¹, Toshihide Ide¹, Motoshi Itagaki¹, Tatsuro Maeda¹, Ken-ichi Nomura¹, ¹AIST (Japan)

PS-03-06
Warpage Reduction Effect of Mesh Ground on Organic Interposers
°Wei Feng¹, Ying Ying Lim¹, Shunsuke Nemoto², Ken-ichi Nomura¹, Yusuke Takei¹, ¹AIST (Japan), ²KISTEC (Japan)

PS-03-07
Electron-Deficient Donor Engineering of Pyrazine-Flanked Diketopyrrolopyrrole for n-Type Organic Thermoelectrics
°Ling Huang¹, Xinwen Yan², Cong Zhang¹, Xuan Cao¹, Hanyu Jia¹, ¹Zhengzhou University (China), ²South-Central University for Nationalities (China)

PS-03-08
Mechanical Reliability of VCSEL Arrays Bonded with Gold Microbumps for CPO Applications
Thu Huong Bui¹, °Kung-An Lin², Lucas Yang², Chao-Hsin Wu^{1,2}, ¹Graduate School of Advantage Technology, National Taiwan Univ. (Taiwan), ²Graduate Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan)

04: Power / High-speed Devices and Materials

PS-04-01
Structures and Stability of Ga₂O₃ on α-Al₂O₃(0001) Substrate: A First-Principles Study
°Koki Ishida¹, Toru Akiyama¹, Takahiro Kawamura¹, ¹Mie University (Japan)

PS-04-02 (Late News)
Integration of Solution-Processed BaTiO₃ Dielectric for Enhancing the High-Voltage Performance of β-Ga₂O₃ Power Devices
°Zhiqiang Li¹, Wenpeng Zhou¹, Jiye Yang¹, Zuokai Wen¹, Shan Huang¹, Hanqin Zhou¹, Man Hoi Wong¹, ¹The Hong Kong University of Science and Technology (Hong Kong)

PS-04-03
1.2 kV Hybrid Power Switch Consisting of a PSJ GaN HEMT, a Si IGBT and a SiC Diode
°Alireza Sheikhan¹, Ekkanaath Madathil Sankara Narayanan¹, Hiroji Kawai², Shuichi Yagi², Hironobu Narui², ¹The University of Sheffield (UK), ²Powdec K.K. (Japan)

PS-04-04
Degradation Behaviors Comparison and Analysis of Two Typical Trench SiC MOSFETs Under High Gate Voltage Stress
°Peng Liao¹, Yanghao Wang¹, Jianbin Guo¹, QingQing Sun¹, David Wei Zhang¹, Hang Xu¹, ¹The Univ. of Fudan (China)

PS-04-05
TCAD and Experimental Study of Geometric Components in Charge Pumping Current for Accurate Characterization of Interface Trap Density in SiC pMOSFETs
°Kazuma Shimura¹, Dai Okamoto¹, Yuta Taguchi¹, Kenta Kimata¹, Mitsuru Sometani², Hirohisa Hirai², Mitsuo Okamoto², Tetsuo Hatakeyama¹, ¹Toyama Pref. Univ. (Japan), ²AIST (Japan)

PS-04-06
Influence of Dummy Gate Layout on Turn-On EMI Noise in Trench IGBTs
Wei Wei^{1,2}, °Xiaoli Tian¹, Ruixue Mai^{1,2}, Yun Bai¹, Yidan Tang¹, Jilong Hao¹, Xuan Li¹, Hong Chen³, Xinhua Wang¹, Xinyu Liu¹, ¹Inst.of Microelectronics of Chinese Academy of Sciences (China), ²Univ. of Chinese Academy of Sciences (China), ³JIEJIE Microelectronics Co. Ltd (China)

PS-04-07
Orientation Dependence of Structural Stability and Band Alignment for N-incorporated 4H-SiC/SiO₂ Interfaces: A DFT-Based Approach
°Naoto Ise¹, Toru Akiyama¹, Tetsuo Hatakeyama², Kenji Shiraishi³, Takashi Nakayama⁴, ¹Mie University (Japan), ²Toyama Prefectural University (Japan), ³Tohoku University (Japan), ⁴Chiba University (Japan)

PS-04-08
Resistivity Control via Dopant Evaporation in Sb-Doped CZ-Si Crystal Growth
°Takumi Yatai¹, Wataru Saito¹, Shin-ichi Nishizawa¹, ¹Kyushu Univ (Japan)

PS-04-09
A Surge-Robust Packaging Reinforcement Method for SiC MPS Diodes Using Ag Bonding Metal Foil
°Zheng Hu^{1,2}, Yidan Tang¹, Zhen Dong^{1,2}, Wenlong Liu^{1,2}, Lu Cao^{1,2}, Xinyu Liu¹, ¹Institute of Microelectronics, Chinese Academy of Sciences (China), ²School of Microelectronics, University of Chinese Academy of Sciences (China)

PS-04-10
Investigation of the Temperature-Dependent Degradation Behaviors in RF Performance of AlGaIn/GaN HEMTs Subjected to On-state DC Stress
°Chun-Yi Hsia¹, Yi-Fan Tsao¹, Ping-Hsun Chiu¹, Chia-Hui Liu¹, Chen-Hsuan Hung¹, Heng-Tung Hsu¹, ¹National Yang Ming Chiao Tung University (Taiwan)

PS-04-11
Suppression of Leakage and Hysteresis in p-GaN HEMTs by In-situ NH₃ Plasma
*Jiang Wei Siang¹, Phan Thi My Kien¹, Chu Chen Ling², Noriyuki Watanabe³, Toshifumi Konishi²,
Tsai Chia Lung², Ke Wen Cheng², Horng Ray Hua^{1,4}, ¹Industrial Technology Research Institute
(Taiwan), ²National Taiwan University of Science and Technology (Taiwan), ³NTT Advanced
Technology Corporation (Japan), ⁴National Yang Ming Chiao Tung University (Taiwan)*

PS-04-12
Al-rich AlGa_N HFET for Extreme Environment Applications
*Do-Hyeong Yeo¹, MyeongSu Chae¹, Hyun-Seop Kim², Hyungtak Kim¹, Ho-Young Cha¹, ¹Hongik
Univ. (Korea), ²Kunsan National Univ. (Korea)*

PS-04-13
Investigation of the Drain Bias-Dependent Degradation Behaviors in RF Perform-ance of AlGa_N/Ga_N HEMTs Subjected to High-Temperature DC Stress
*Chia-Hui Liu¹, Yi-Fan Tsao¹, Chun-Yi Hsia¹, Ping-Hsun Chiu¹, Chen-Hsuan Hung¹, Heng-Tung
Hsu¹, ¹National Yang Ming Chiao Tung University (Taiwan)*

PS-04-14
Ultra Low On-Resistance of Novel Quaternary QST Substrate with HfAlO Dielectric Layer HEMT
*Kuang Ting Hsieh², Yi Hsuan Chang¹, Yan Kuei Wu¹, Wei Chou Hsu^{1,2}, ¹Inst. of Microelectronics,
Department of Electrical Eng., National Cheng Kung Univ. (Taiwan), ²Academy of Innovative
Semiconductor and Sustainable Manufac., National Cheng Kung Univ. (Taiwan)*

PS-04-15
High-Performance Normally-Off InAlGa_N/Ga_N MOSHEMTs with p-NiO_x Gate and Dual Dielectric Structure
Yen-Ying Chu¹, Yun-Ru Lin¹, Yen-Kuei Wu¹, Wei-Chou Hsu¹, ¹National Cheng Kung Univ. (Taiwan)

PS-04-16
Realization of N-polar Ga_N/AlGa_N Heterostructures on Silicon Using an AlSi_N Polarity Inversion Layer by MOCVD
*Yin-Nan Wang¹, Chia-Yu Hsieh¹, Hsin-Ning Li¹, Hung-Yang Lin¹, Jen-Inn Chyi¹, Yue-ming Hsin¹,
¹National Central Univ. (Taiwan)*

PS-04-17
Bias and Temperature Dependence of Threshold Voltage Instability Induced by Low Drain Bias in E-mode AlGa_N/Ga_N HEMTs
Myeongsu Chae¹, Hyungtak Kim¹, ¹Hongik Univ. (Korea)

PS-04-18
Grating-Gate THz Plasmonic Detector Based on an InGaAs-channel HEMT with an InP Barrier Layer
*Masaki Nagatsu¹, Kenichi Narita¹, Yuma Takida², Hiroaki Minamide², Tsung tse Lin¹, Akira Satou¹,
¹Tohoku University (Japan), ²RIKEN Center for Advanced Photonics (Japan)*

PS-04-19
Optimizing RF Performance of InGaAs MOSFETs via Indium Composition Engineering
*Cheng-Jun Huang¹, Jin-Yu Chang¹, Yi-Ting Feng¹, Jing-Yuan Wu¹, Hua-Lun Ko¹, Si-Meng Chen^{1,2},
Hsuan-Yao Huang¹, Jui-Sheng Wu¹, Shuo Hwai¹, Edward Yi Chang¹, ¹Nat'l Yang Ming Chiao Tung
Univ. (Taiwan), ²Tokyo Inst. of Tech. (Japan), ³Univ. of California, Los Angeles (United States of
America)*

PS-04-20
Impact of Gate Recess Descum on the DC and RF Characteristics of AlInAs/GaInAs High-Electron Mobility Transistors
*Fran Kostelac¹, Giorgio Bonomo¹, Tamara Saranovac¹, Diego Marti¹, Ralf Flückiger¹, Olivier J.S.
Ostinelli¹, Colombo R. Bolognesi¹, ¹ETH Zürich (Switzerland)*

PS-04-21
Growth and Characterization of InGaAs Channel HEMTs on GaAs (100) with Pre-Grown InP Metamorphic Buffer Layers
*Hyunchul Jang¹, Jae-Phil Shim¹, Geunuk Han¹, Yunji Jeong¹, Inseon Song¹, Il-Hyeong Lee¹,
Deoksoo Park¹, Eun-kyung Chu¹, Seung Heon Shin², Keun-Man Song¹, ¹KANC (Korea),
²Soonchunhyang Univ. (Korea)*

PS-04-22
Isolation Characteristics of Ga_N Mesas on Diamond Substrates Fabricated Using the Surface-Activated Bonding
*Yosei Sunamoto¹, Hazuki Tomiyama¹, Tetsuya Suemitsu², Naoteru Shigekawa¹, Jianbo Liang¹,
¹Osaka Metropolitan University (Japan), ²Tohoku University (Japan)*

PS-04-23
Thermally Robust 3C-SiC/Diamond and Si (111)/Diamond Templates for Advanced III-Nitride Process
Hikaru Iwamoto¹, Naoteru Shigekawa¹, Jianbo Liang¹, ¹Osaka Metropolitan University (Japan)

PS-04-24
Enhancement-Mode InAlGa_N/Ga_N HEMTs Featuring USPD-Deposited Li-Doped p-NiO_x Gates with Low Interface Trap Density
*Yu-Hsuan Chen¹, Yan-Kuei Wu¹, Wei-Chou Hsu¹, ¹Inst. of Microelectronics, Department of
Electrical Engineering, National Cheng Kung Univ. (Taiwan)*

PS-04-25 (Late News)
Improved Device Characteristics of P-Ga_N/AlGa_N/Ga_N HFET with Boron Nitride Film
*Jun Hyeok Yim¹, Myeong Su Chae¹, Jin Hyeok Pyo¹, Sangyeon Pak¹, Hyungtak Kim¹, Ho-Young
Cha¹, ¹Hong-Ik Univ. (Korea)*

05: Photonics: Devices / Integration / Related Technology

PS-05-01
Radiation-safe CW-THz roll-to-roll Pt-loading monitor based on UTC-PD emitter and SBD detector
*Jin Chul CHO¹, Soo Cheol Kang¹, Dong Woo Park¹, Eui Su Lee¹, ¹Electronics and
Telecommunications Res. Inst. (Korea)*

PS-05-02
Ga₂O₃ Metal-Oxide-Semiconductor Field-Effect Phototransistors Grown by Plasma-Enhanced Atomic Layer Deposition
Hsin-Ying Lee¹, Pei-Yu Wu¹, Ching-Ting Lee¹, ¹National Cheng Kung Univ. (Taiwan)

PS-05-03
Impact of Short-Wave Infrared Transparent Conductive Oxide Electrodes on the Responsivity of n-type Ge Schottky Photodetectors
Rahmat Hadi Saputro¹, Tomo Tanaka², Hiroyuki Ishii¹, Tatsuro Maeda¹, ¹AIST (Japan), ²NEC Corp. (Japan)

PS-05-04
Enhanced Stability of Red/Green Micro-LEDs with TiO₂ and SiO₂ Passivated Quantum Dots
Hsin-Ying Lee¹, Yan-Zhang Chen¹, Mu-Ju Wu¹, Ching-Ting Lee¹, ¹National Cheng Kung Univ. (Taiwan)

PS-05-05
Multiple reflection behavior in OFDR transmission and reflection profiles for silicon waveguides
Tsuyoshi Horikawa¹, Nobuhiko Nishiyama^{1,2}, ¹Science Tokyo (Japan), ²PETRA (Japan)

PS-05-06
High Gain Characteristics of 25-layer Stacked QD-SOA in the Communication Wavelength Band
*Naoya Chiyo^{1,2}, Atsushi Matsumoto², Shinya Nakajima², Toshimasa Umezawa², Kouichi Akahane²,
Tomohiro Maeda^{1,2}, Hideyuki Sotobayashi¹, ¹Aogaku Univ. (Japan), ²NICT (Japan)*

PS-05-07
Plasmonic Metasurface Spectrometer Fabricated by Nano-Transfer Printing with Deep Learning-Based Spectral Reconstruction
*Yu-Heng Hung¹, Tsai-Yu Hsieh², Tzu-Yu Lin¹, Chun-Hung Lin^{1,2}, ¹Department of Photonics, National
Cheng Kung Univ. (Taiwan), ²Program on Key Materials, Academy of Innovative Semiconductor and
Sustainable Manufac., National Cheng Kung Univ. (Taiwan)*

PS-05-08
Fabrication and Optical Properties of Tensile-Strained Ge Microdisk Resonators via Laser-Induced Liquid-Phase Crystallization
*Tianping Li¹, Liji Zhan¹, Yuta Hayakawa², Takuma Kobayashi², Heiji Watanabe², Takayoshi
Shimura^{1,2}, ¹Waseda University (Japan), ²The University of Osaka (Japan)*

PS-05-09
Wavelength-Tunable Hetero-dimension Photodetectors with High Responsivities
*Yi-Tien Chiang^{1,2}, Yu-Han Huang¹, Shouu-Jinn Chang², Shih-Yen Lin¹, ¹Academia Sinica (Taiwan),
²National Cheng Kung Univ. (Taiwan)*

PS-05-10
High-Power Quantum Dot Lasers with Multiple Parallel-Ridge Waveguides
*Haruki Maruyama^{1,2}, Satoshi Yanase^{1,2}, Kouichi Akahane², Atsushi Matsumoto², Tomohiro Maeda^{1,2},
Hideyuki Sotobayashi¹, ¹Aogaku Univ. (Japan), ²NICT (Japan)*

PS-05-11
Drop-Cast Quasi-2D Perovskite Thin Films for Visible Light to X-rays Detection
Maojun Sun¹, Qiang Lou¹, Mengran Liu¹, Xinxin Xu¹, Hang Zhou¹, ¹Peking Univ. (China)

PS-05-12
Fabrication of High-Quality Germanium on Silicon Heterojunction PIN Photodiode with Substrate-Embedded Indigital Electrodes
Kuang-Yun Tu¹, Wei-Han Fang¹, Ching-Yu Hsu², Zingway Pei¹, ¹National Chung Hsing Univ. (Taiwan), ²National Yang Ming Chiao Tung Univ. (Taiwan)

PS-05-13
Measurement and Anaysis of 620nm AlGaInP-based Micro-LED Arrays with All Treatment Properties
*Yee Chee Keong -¹, Yi-Tzu Tseng¹, Ming-June Wu², Natchanon Prechatavanich -², Theeradech
Sutheebanjerd -², Zhi-An Lin¹, Chao-Hsin Wu^{1,2,3,4}, ¹Graduate Inst. of Photonics and Optoelectronics,
National Taiwan Univ. (Taiwan), ²Graduate School of Advanced Tech., National Taiwan Univ. (Taiwan), ³Graduate Inst. of Electronics Engineering, National Taiwan Univ. (Taiwan), ⁴Center for
Quantum Sci. and Engineering, National Taiwan Univ. (Taiwan)*

PS-05-14
Enhanced Efficiency Through Dual-Pulse Injection for 2D Semiconductor Light Emitting Device
*James Singh Konthoujam¹, Yen-Shou Lin^{1,2}, Zheng-Zhe Chen¹, Chiao-Yun Chang¹, Yu-Wei Zhang¹,
Shih-Yen Lin¹, Hao-Chung Kuo², Min-Hsiung Shih^{1,2}, ¹Research Center for Applied Sciences,
Academia Sinica (Taiwan), ²National Yang Ming Chiao Tung University (Taiwan), ³National Taiwan
Ocean University (Taiwan)*

PS-05-15
Solar-Blind Metal-Semiconductor-Metal Whole Ultraviolet Photodetectors using Metal-Oxide Materials
Ching-Ting Lee¹, Shao-Chi Weng¹, Hsin-Ying Lee¹, ¹National Cheng Kung Univ. (Taiwan)

PS-05-16
Photon-Enhanced Thermionic Emission Characteristics of Cs Deposited Mg-Doped InGa_N
Jotaro Tashiro¹, Kaisei Suzuki¹, Shigeya Kimura², Hisao Miyazaki², Akihisa Ogino¹, ¹Shizuoka Univ. (Japan), ²Toshiba Corp. (Japan)

PS-05-17
Study of Spontaneous Orientation Polarization for the Design of Host materials in Delayed Fluorescent Organic Light-Emitting Diodes
*Iswara Lestanto¹, Shunta Kakumachi¹, Youichi Tsuchiya¹, Hajime Nakanotani², Chin Yiu Chan²,
Chihaya Adachi¹, ¹Kyushu University (Japan), ²Hokkaido University (Japan), ³City University of
Hong Kong (China)*

PS-05-18
Demonstration of ZnO/Ga₂O₃ Heterojunction Artificial Optoelectronic Synapse
°Han-Wei Chen¹, Zong-Da Lin¹, Jia-Zhe Wu¹, Cheng-Yu Ma¹, Han-Yin Liu¹, ¹National Sun Yat-Sen Univ. (Taiwan)

PS-05-19
Simulation of a Novel Soft X-ray 3D Electrode Low Gain Avalanche Detector (3D-LGAD)
°Huimin Ji^{1,2}, Gaobo Xu¹, Xinyi Cai, Manwen Liu¹, Zhihua Li¹, ¹Inst. of Microelectronics of the Chinese Academy of Sciences (China), ²Univ. of Chinese Academy of Sciences (China)

PS-05-20
Band structure engineering and metal-semiconductor interface treatment effects for UTC-PDs
°Soo Cheol Kang¹, Jin Chul Cho¹, Dong Woo Park¹, Eui Su Lee¹, ¹Electronics and Telecommunications Res. Inst. (Korea)

06: Energy Harvesting and Converting Devices and Materials

PS-06-01
Environmentally Benign Supercapacitors Using a Biomass-Derived Electrolyte and Carbon Electrodes
°Shunsuke Yamada¹, Takashi Honda¹, ¹Kyushu Inst. of Tech. (Japan)

PS-06-02
Efficiency Improvement of GaAs Thin Film Solar Cells by Employing Nanostruc tured Backside Reflector
°Jieun Park¹, Cheol Jeong², Sang-Hun Lee³, Hyun-beom Shin², Hokwan Kang², Jae-Hyung Jang¹, ¹Korea Inst. of Energy Tech. (Korea), ²Korea Advanced Nano Fab Center (Korea), ³Gwangju Inst. of Sci. and Tech. (Korea)

PS-06-03
Self-Powered Ultraviolet Photodetection via Zeolitic Imidazolate Frame-work-8/ Polyetherimide Multisite Bonding Networks
°Thi Muoi Vo¹, Hoang Huy Vo Pham¹, Jae Ho Park¹, Min Jun Kim¹, Sam Yoon¹, Hyung Wook Kim¹, Chung Wung Bark¹, ¹The Univ. of Gachon (Korea)

PS-06-04
Thermoelectric properties of Mg-based Zintl phase epitaxial thin films on sapphire substrates
°Shunya Sakane¹, Akito Ayukawa¹, Takeru Kuriyama¹, Koki Nejo¹, Wakaba Yamamoto², Akira Yasuhara², Yuichiro Yamashita³, Haruhiko Udono¹, ¹Ibaraki Univ. (Japan), ²JEOL Ltd (Japan), ³AIST (Japan)

PS-06-05
Leg Shape dependence of Power Generation Performance of Si Integrated Thermoelectric Device
°Tatsuya Hayashi¹, Keita Kuga¹, Takanobu Watanabe¹, Takeo Matsuki¹, ¹Waseda University (Japan)

PS-06-06
Ionic Conduction by Site Percolation in NaCl-type Random Substitutional Ionic Crystal
°Rikuya Ishikawa¹, Kyohei Takae¹, Rei Kurita¹, ¹Tokyo Metropolitan Univ. (Japan), ²Tottori Univ. (Japan)

07: Organic / Molecular / Bio-electronics

PS-07-01
Multi-Gas Sensing Ability of Surface-Modified Chips
°Hsuan-Han Chen¹, Huang-Ming Philip Chen¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan)

PS-07-02
Ortho-Fluorine Substituted Triphenylamine-Based Hole Transport Materials for Perovskite Solar Cells: Influence of Planar Versus Non-Planar Linkers
°Bhim Raju Telugu¹, Toshinori Matsushima¹, ¹Kyushu Univ. (Japan)

PS-07-03
FET Fabrication Based on Electrophotographic Printing Technology
°Hinata Oshida¹, ¹Chiba Univ. (Japan)

PS-07-04
Highly Sensitive Cortisol Detection in Complex Environments Using a Dual-Gate FET Sensor with SnO₂ Extended Gate
°Seung-Jin Lee¹, Seong-Hwan Lim¹, Won-Ju Cho¹, ¹The Univ. of Kwangwoon (Korea)

PS-07-05
CMOS-Compatible Ambipolar RFET Biosensors with MSQ Dielectric and SnO₂ Extended Gate for Point-of-Care Diagnostics
°Seung-Hwa Choi¹, Seung-Jin Lee¹, Seung-Hyun Lee¹, Won-Ju Cho¹, ¹Kwangwoon University (Korea)

PS-07-06
UCNP Emission Intensity Enhancement with Microlens Array for Photodynamic Therapy
°Shutaro Oba¹, Naoki Iwanuma¹, Kazushi Tsuji², Keigo Kitta², Takafumi Fukushima^{1,2}, Tetsu Tanaka^{1,2}, ¹Department of Mechanical Eng., Graduate School of Eng., Tohoku Univ. (Japan), ²Department of Biomedical Eng., Graduate School of Biomedical Eng., Tohoku Univ. (Japan)

PS-07-07
Theragnostic Antibacterial Hydrogel Based on Biopolymers Cross-linked and Doped with Phytic Acid from Rice Bran for Wound Healing
°Yue Bai¹, ¹Zhengzhou University (China)

PS-07-08
Design and Fabrication of Grating Coupler with UV Nanoimprint Lithography for NIR Light-Propagating UCNPs Neural Probe for Deep Brain Stimulation
°Keigo Kitta¹, Kazushi Tsuji¹, Naoki Iwanuma², Shutaro Oba², Takafumi Fukushima^{1,2}, Tetsu Tanaka^{1,2}, ¹Department of Biomedical Eng., Graduated School of Biomedical Eng., Tohoku Univ. (Japan), ²Department of Mechanical Systems Eng., Graduated School of Eng., Tohoku Univ. (Japan)

PS-07-09
Fabrication of n-type CNT/perovskite composite yarns with n-DMBI doping for flexible thermoelectric applications
°Hiroki Tanaka¹, Aghnia Dinan Maulani Heriyanto¹, Ryota Fukuzawa¹, Hiroaki Bente¹, Masakazu Nakamura¹, ¹Nara Institute of Science and Technology (Japan)

PS-07-10
Crystal Engineering for Creating Organic Single Crystal Laser Media with Improved Processability and Photoluminescence Performance
°Takumi Matsu^{1,2}, Shotaro Hayashi^{1,2}, ¹Kochi Univ. of Tech. (Japan), ²FOREST Center, Res. Inst., Kochi Univ. of Tech. (Japan)

PS-07-11
Design, Synthesis and Characterization of Metal Organic Frameworks Based on a Novel Ligand, H₂TBACPA
°Miho Kamata¹, Seiya Yokokura^{1,2}, Hiroki Waizumi^{1,2}, Toshihiro Shimada^{1,2}, ¹Grad. Sch. of Chem. Sci. and Eng. Hokkaido Univ. (Japan), ²Div. of App. Chem. Fac. of Eng. Hokkaido Univ. (Japan)

PS-07-12
Giant Seebeck Effect in Polymer Semiconductors for Flexible Thermoelectric Device Applications
°Yuki Nishiu¹, Tomoki Kimura¹, Ryota Fukuzawa¹, Hiroaki Bente¹, Masakazu Nakamura¹, ¹Div. of Mater. Sci., Grad. Sch. of Sci. and Tech., Nara Inst. of Sci. and Tech. (NAIST) (Japan)

PS-07-13
Improving OFET Parameters for OPT Applications: A Ribbon-FTM Approach with PBTTF C-14
Vipul Singh Singh¹, °Sidhi G Ramer¹, I A Palani¹, Shyam Sudhir Pandey², ¹IIT Indore (India), ²Kyushu Institute of Technology (Japan)

08: Low Dimensional Devices and Materials

PS-08-01
Van der Waals Growth of h-BN on 2D WS₂ by Molecular Beam Epitaxy
°Ing-Song YU¹, Hao LIU¹, Yen-Ten HO², ¹National Dong Hwa Univ. (Taiwan), ²Advanced 2D Materials Co. Ltd. (Taiwan)

PS-08-02
Quantum Transport and Miniband Engineering in One-Dimensional Gated Bilayer Graphene Superlattices
°Szu-Chao Chen¹, Chi-Hsuan Lee², ¹National Formosa University (Taiwan), ²Academia Sinica (Taiwan)

PS-08-03
Interfacial Trap Dynamics and Optoelectronic Modulation in Monolayer MoS₂ Phototransistors
°Tzu-En Huang¹, Chen Yu Wang¹, Yu Ren Li¹, Neng An Huang¹, Kuang Yao Lo¹, ¹National Cheng Kung Univ. (Taiwan)

PS-08-04
The study of Inactive Sites on MoS₂: Reversible and Linear Response Gas Sensing in Monolayer MoS₂ with Pre-Gas Concentration Modulation
°Chen-Yu Wang¹, Tzu-En Huang¹, Yu-Ren Li¹, Neng-An Huang¹, Kuang-Yao Lo¹, ¹National Cheng Kung Univ. (Taiwan)

PS-08-05
Voltage-Tunable Triggered NO₂ Sensor Based on HfO₂ Memristor and CNT for Low-Power System
°Ikgeun Kwon¹, Yuseong Jang¹, Hee-Dong Kim¹, ¹Sejong Univ. (Korea)

PS-08-06
High-performance Molybdenum Disulfide Transistors with Polycrystalline Gold Electrodes and In-plane Gates
°Che-Jia Chang^{1,2}, Shih-Jie Chen³, Tzu-Hsuan Chang¹, Po-Tsung Lee³, Shih-Yen Lin^{1,2}, ¹National Taiwan University (Taiwan), ²Academia Sinica (Taiwan), ³National Yang Ming Chiao Tung University (Taiwan)

PS-08-07
Operation Mechanisms of Graphene/MoS₂ Hetero-structure Photodetectors and Induced Current Variation of Graphene/Al₂O₃/MoS₂ Stacked Structures
°Yu-Han Huang^{1,2}, Cheng-Yu Chen^{1,2}, Chao-Hsin Wu², Shih-Yen Lin¹, ¹Academia Sinica (Taiwan), ²National Taiwan Univ. (Taiwan)

PS-08-08
MgO interlayer thickness dependence on magnetic domain formation in CoFe/MgO nanolayer patterns on GaAs (001) substrates
°Hayato Yonemoto¹, Rui Ochiai¹, Soh Komatsu², Masashi Akabori², Sinjiro Hara^{1,3}, ¹Hokkaido Univ. (Japan), ²Japan Adv. Inst. of Sci. and Tech. (Japan), ³Nat'l Inst. for Materials Sci. (Japan)

PS-08-09
Crystallinity Improvement for PVD-MoS₂ Films by Plasma Damage Reduction with Higher Deposition Pressure
°Naoki Matsunaga¹, Jaehyo Jang¹, Soma Ito¹, Kuniyuki Kakushima¹, Hitoshi Wakabayashi¹, ¹Institute of Science Tokyo (Japan)

PS-08-10
All-2D Pseudo-CFET Inverter with Ultralow Subthreshold Swing N-type Bi₂O₃Se Top-gate Field-Effect Transistor
°Ching-Min Hsu¹, Hsing-Chien Chien¹, Chi-Chun Cheng², Chun-Yen Hsiao¹, Po-Wen Chiu^{1,2}, ¹National Tsing Hua Univ. College of Semiconductor Res. (Taiwan), ²National Tsing Hua Univ. Department of Electrical Engineering (Taiwan)

PS-08-11
Electron-Beam Surface Engineering For Enhanced Charge Transport All-2D WSe₂ CMOS
°Chun-Yen Hsiao¹, Chi-Chun Cheng², Wen-Yuan Fei¹, Ching-Min Hsu¹, Po-Wen Chiu², ¹College of Semiconductor Research, National Tsing Hua Univ. (Taiwan), ²Department of Electrical Engineering, National Tsing Hua Univ. (Taiwan)

PS-08-12
N-type Charge Transfer Doping in PVD-MoS₂ Film with ALD-HfO₂ Film
°Shunsuke Nozawa¹, Jaehyo Jang¹, Naoki Matsunaga¹, Taiga Fuse¹, Takuya Hoshii¹, Kuniyuki Kakushima¹, Hitoshi Wakabayashi¹, ¹Inst. of Sci. Tokyo (Japan)

PS-08-13
Epitaxial Growth of Single-Crystal Metal on Transition Metal Dichalcogenides Surface
°Po-Sen Mao^{1,2}, Yi-Jung Hsu¹, Wen-Hao Chang^{1,2,3}, ¹National Yang Ming Chiao Tung Univ. (Taiwan), ²Res. Center for Critical Issues, Academia Sinica (Taiwan), ³Res. Center for Applied Sciences, Academia Sinica (Taiwan)

PS-08-14
Simulation of In-Plane Strong Electronic Coupling in Self-Assembled InAs Quantum Dots
°Ryoga Kai¹, Naoya Miyashita^{1,2}, Toshiyuki Katzu^{1,1}, Koichi Yamaguchi^{1,2}, ¹Dep. of Eng. Sci Univ. of Electro-Comm. (Japan), ²QFCD2 center Univ. of Electro-Comm. (Japan)

PS-08-15
Atomic layer deposition on WSe₂ via F6-TCNQ monolayer and evaluation of dual gate FET
°Kensho Matsuda¹, Yuto Noguchi¹, Mengnang Ke², Shohei Kumagai³, Toshihiro Okamoto³, Nobuyuki Aoki¹, ¹Chiba University (Japan), ²Yokohama National University (Japan), ³Institute of Science Tokyo (Japan)

PS-08-16
Fabrication of Room Temperature based Acetone Sensor using Controlled CVD grown MoS₂ for Non-invasive Real Time Detection of Diabetes
°Sohel Siraj¹, Parikshit Sahatiya¹, ¹Birla Institute of Technology and Science Pilani, Hyderabad Campus (India)

PS-08-17
Direct Measurement of the Specific Contact Resistivity in Monolayer MoS₂ using Cross-Bridge Kelvin Probe Structures
°Aparna ^{-1,3}, Surajit Sutar¹, Kaustuv Banerjee¹, Cesar Javier Lockhart de la Rosa¹, Gouri Sankar Kar¹, Clement Merckling^{1,2}, Bart Soree^{1,3}, ¹IMEC (Belgium), ²Department of Materials Engineering (MTM), KU Leuven (Belgium), ³Department of Electrical Engineering (ESAT)-KU Leuven (Belgium)

PS-08-18
Elastic Effect-Driven MoS₂-Based Surface Acoustic Wave Skin gas sensor
°Sankar Ganesh Ramaraj¹, Ryo Fujioka¹, Chen Li¹, Daisuke Kiriya ¹, Hiroyasu Yamahara¹, Hitoshi Tabata¹, ¹The University of Tokyo (Japan)

PS-08-19
Development of a Graphene-CNT Hybrid Gas Sensor and Improvement of Its Sensitivity and Selectivity
°Yunsong Tang¹, Xiangyu Qiao¹, Kazuma Sugawara¹, Meng Yin¹, Suzuki Ken¹, ¹Tohoku Univ. (Japan)

PS-08-20
Influence of Spin-Orbit Coupling in Photoconductivity of Monolayer Transition Metal Dichalcogenides
°Akira Nakanishi¹, Satofumi Souma¹, ¹Kobe Univ. (Japan)

PS-08-21
Seeding ALD of High-k Dielectrics on TMD n/p- Dual-Gate FETs with Symmetrical V_{TH} for CMOS Application
°Zi-Jun Su¹, Jyun-Hong Chen², Min-Gji Liu¹, Yu-Lun Chueh¹, Chao-Hui Yeh¹, Chang-Hong Shen¹, ¹The Univ. of Tsinghua (Taiwan), ²The Inst. of Taiwan Semiconductor Research (Taiwan)

09: Novel Functional / Quantum / Spintronic Devices and Materials

PS-09-01
Suppression of the Skyrmion Hall Angle by Introducing Ultrathin Layers into Ta/CoFeB/MgO
°Kohei Yamashita¹, Yujian Tang¹, Tsz Chung Cheng¹, Yuichiro Kurokawa¹, Hiromi Yuasa¹, ¹Graduate School of Information Science and Electrical Engineering, Kyushu University (Japan)

PS-09-02
Large spin-splitting with complex persistent spin textures induced by interfacial effects in 2D Bi₂O₃/Se/SrTiO₃ heterostructures
°Moh. Adhib Ulil Absor¹, Arif Lukmantoro¹, Muhammad Darwis Umar¹, Edi Suprayoga², Harsojo Harsojo¹, ¹Gadjah Mada University (Indonesia), ²National Research and Innovation Agency (Indonesia)

PS-09-03
Nonlocal Detection of Current-Induced Magnetization Dynamics in Microfabricated Pt/CoFe/n-GaAs Heterostructure
°Varun Kumar Kushwaha¹, Mineto Ogawa², Tetsuya Uemura², Takeshi Seki¹, ¹Tohoku Univ. (Japan), ²Hokkaido Univ. (Japan)

PS-09-04
A Proposal to Utilize V_{FG}-V_{BG} Mapping toward Optimizing Gate Voltages in Silicon Fin-Type Quantum Dot Devices
°Yusuke Chiashi¹, Kimihiko Kato¹, Yoshihisa Iba¹, Hiroshi Oka¹, Shota Izuka¹, Hidehiro Asai¹, Minoru Ogura¹, Takumi Inaba¹, Takahiro Mori¹, ¹AIST (Japan)

PS-09-05
Machine Learning-Based Detection of Single-Electron Regime and Virtual Gate Definition in Quantum Dots
°Yui Muto^{1,2}, Michael R Zielewski^{3,4}, Motoya Shinozaki^{3,8}, Kosuke Noro^{1,2,8}, Tomohiro Otsuka^{3,1,2,6,7,8}, ¹Res. Inst. of Electrical Communication, Tohoku Univ. (Japan), ²Department of Electronic Eng., Graduate School of Eng., Tohoku Univ. (Japan), ³Graduate School of Info. Sci., Tohoku Univ. (Japan), ⁴Unprecedented-scale Data Analytics Center, Tohoku Univ. (Japan), ⁵WPI Advanced Inst. for Materials Res., Tohoku Univ. (Japan), ⁶Center for Sci. and Innovation in Spintronics, Tohoku Univ. (Japan), ⁷Center for Emergent Matter Sci., RIKEN (Japan), ⁸Res. Center for Materials Nanoarchitectonics, National Inst. for Material Sci. (Japan)

PS-09-06
Temperature Compensation of Analog Reservoir Computing by Integrating Monitoring Reservoir
°Yoshihiro Furue¹, Nada Besisa¹, Satoshi Hamasuna¹, Kazuya Tsuruda¹, Takeaki Yajima¹, ¹Kyushu University (Japan)

PS-09-07 (Late News)
First Demonstration of 3D Stacked Silicon Quantum Dots with Shared Barrier Gates
°Junoh Kim¹, Daiki Futagi¹, Tomoko Mizutani¹, Takuya Saraya¹, Hiroshi Oka², Takahiro Mori², Masaharu Kobayashi¹, Toshiro Hiramoto¹, ¹The Univ. of Tokyo (Japan), ²AIST (Japan)

10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process

PS-10-01
Impact of Microwave Annealing and Ar/O₂ Plasma Treatment on the Electrical Performance and Stability of Solution-Processed IWO Thin-Film Transistors
°Seong-Hwan Lim¹, Seung-Jin Lee¹, Jin-Wook Shin¹, Jong-Heon Yang², Won-Ju Cho¹, ¹The Univ. of Kwangjuwon (Korea), ²The Lab. of ETRI (Korea)

PS-10-02
High-Performance Submicron Independent Double-Gated Amorphous IGZO Thin-Film Transistors
°Ching-Hsiang Chang¹, Tsu-Yu Liao¹, Chien-Wei Chen², Cui-Chung Kei², Guo-Wei Huang³, Pei-Wen Li¹, Horng-Chih Lin¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan), ²Taiwan Instrument Research Inst. (Taiwan), ³Taiwan Semiconductor Res. Inst. (Taiwan)

PS-10-03
Yttrium-Doped Vanadium Pentoxide Films for Electrochemical Biomedical Sensing in Electrolyte-Insulator-Semiconductor Structure
°Chun-Yen Yang¹, Wei-Cheng Chen¹, Yu-hong Yang¹, Yen Su², Ming-Ling Lee², Hsiang Chen¹, ¹National Chi Nan University (Taiwan), ²Minghsin University of Science and Technology (Taiwan), ³Chang Gung University (Taiwan)

PS-10-04
MOS Structure Based Characterization of NiO Thin Films Deposited by Oxygen-Controlled Magnetron Sputtering
°Qiaoyu Hu¹, Robert Sokolovskij², Wenmao Li¹, Wenchuan Tao¹, Qing Wang¹, Hongyu Yu^{1,2}, ¹Southern Univ. of Sci. and Tech. (China), ²Shenzhen Polytechnic Univ. (China)

PS-10-05
High-Performance In₂O₃/ZnO Heterojunction Thin-Film Transistors Fabricated by Low-Temperature Process
°Xupeng Tian¹, Ce Ning¹, Jintong Miao¹, Ruibin Duan¹, Junchen Dong¹, Dedong Han¹, Xing Zhang¹, ¹Peking Univ. (China)

PS-10-06
Preparation of In₂O₃ based transparent conductive material for deep UV device
°Masaki Yasuda¹, Takeya Daichi¹, Murata Kotaro¹, Jumpei Kamikawa¹, Nobuhisa Fujima¹, Hiroko Kominami¹, Kazuhiko Hara¹, Akihiro Yamaji², Shunsuke Kurosawa¹, ¹Shizuoka Univ. (Japan), ²Tohoku Univ. (Japan)

PS-10-07
Hybrid-CMOS Inverter Comprising Poly-Ge and Oxide TFTs on Plastic Substrates
°Akito Kurihara¹, Toshiyuki Tsuchiya², Tetsuo Okuyama², Akito Hara¹, ¹Tohoku Gakuin University (Japan), ²TOYOBO CO., LTD. (Japan)

PS-10-08
High-Sensitivity Respiratory Monitoring and Diagnostic System Using Porous Ag₂S Thin Films
°Yu Hsuan Wu¹, ¹NCUE (Taiwan)

PS-10-09
Defect-Suppressed α-MgGaO Thin Films for High-Performance UV-C Photodetectors with Gain-Enhanced Mechanism
°Chun-Chia Lin¹, Chien-Sheng Cheng¹, Hao-Chun Hung¹, Shun-Cheng Shih¹, Wen-Chao Liu¹, Wei-Chou Hsu¹, ¹National Cheng Kung University (Taiwan)

PS-10-10
High-Performance Stable In₂O₃ Field-Effect Transistors by Atomic Layer Deposition Process
°Ruibin Duan¹, Ce Ning¹, Jiakang Zhang², Dunshan Yu¹, Junchen Dong², Dedong Han¹, Xing Zhang^{1,3}, ¹School of Integrated Circuits, School of Software and Microelectronics, Beijing Advanced Innovation Center for Integrated Circuits, Peking Univ. (China), ²School of Info. & Communication Eng., Beijing Info. Sci. and Tech. Univ. (China), ³Peking Univ. Shenzhen Graduate School (China)

PS-10-11
Process Variation-Tolerant Oxide Transistors with High Performance and Enhancement-Mode Operation via Indium Oxide/Yttrium Oxide Hetero-structure
°Jinhong Park¹, Jin-Hyuk Bae¹, Do-Kyung Kim², ¹Kyungpook National Univ. (Korea), ²Kangwon National Univ (Korea)

PS-10-12
Characterization of NbTiN/HZO/NbTiN MIM Capacitors for high frequency AC Clock & Power Distribution Network for Superconducting Digital Circuits
°Seifallah Ibrahim¹, Blake Hodges¹, Steven Brebels², Julian Gil Pinzon¹, Trent Josephsen¹, Ankit Pokhrel¹, Daniel Perez Lozano², Yann Canvel¹, Bart Kenens², Amey Walke², Gianpiero Maccarrone Lapi¹, Sara Iraci², Mihaela Popovici², Benjamin Huer², Quentin Herr^{1,2}, Zsolt Tokei², Anna Herr^{1,2}, ¹IMEC USA Nanoelectronics Design Center, Inc (United States of America), ²IMEC (Belgium)

PS-10-13
Low-Cost Fabrication of CuI/AgI Heterojunction Diodes Using a Solution-Based Ion Exchange Method
°YI CHIA CHEN¹, DER YUH LIN¹, CHICHAO WANG¹, CHIAHSUAN WU¹, SHIHTIEN CHEN¹, YUTAI SHIH¹, HUNGPIN HSU², SHENGBENG HWANG³, ¹The National Changhua Univ. of Edu. (Taiwan), ²The Ming Chi Univ. of Tech. (Taiwan), ³The Chienkuo Tech. Univ. (Taiwan)

PS-10-14
Compensation Technique for Modulating Threshold Voltage of High-Mobility InZnO/ZnO Heterojunction Transistors
◦Qinyuan Wang¹, Ce Ning¹, Junchen Dong², Jingye Xie¹, Dedong Han¹, Jinlong Han Lin¹, Xing Lin Zhang¹, ¹Peking University (China), ²Beijing Information Science and Technology University (China)

PS-10-15
Double-Layer Oxide Phototransistor for Neuromorphic Optical Synapses: Defect and Spectral Analysis
◦Minsu Seo¹, Minjung Kim², Nam Suji³, Yongcheol Jo⁴, Kwangsik Jeong², Kwun-Bum Chung¹, ¹Dongguk Univ. (Korea), ²Yonsei Univ. (Korea), ³Univ. of Science and Tech. (Korea), ⁴Pusan National Univ. (Korea)

PS-10-16
Influence of Zr(NMe2)4 Admixute in CpZr(NMe2)3 on ZrO2 Thin Film Properties
◦Sangmin Lee¹, Hyunki Kim², Kwanhyun Park², Hye-Lee Kim¹, Won-Jun Lee¹, Kyungsik Lee², Jungwoo Park², Jongwan Jung⁴, Seongmoo Oh¹, ¹The Univ. of Sejong (Korea), ²Hansol Chemical (Korea)

PS-10-17
Tunable Scavenging Effects of Al₂O₃ Passivation via Oxidant Selection for High-Performance Tellurium TFTs
◦Jaeyoon Shim¹, Jaemin Jung¹, Dahui Jeon¹, Inhong Hwang¹, Yoohyeon Jung¹, In-Hwan Baek¹, ¹Inha University (Korea)

PS-10-18
Electrical Performance Enhancement of p-Type SnO TFTs via Back-Channel Engineering with Fluorocarbon Plasma Treatment
◦Jaemin Jung¹, Jaeyoon Shim¹, Dahui Jeon¹, Taek-Mo Chung², Chee Won Chung¹, In-Hwan Baek¹, ¹Inha Univ. (Korea), ²Korea Res. Inst. of Chemical Tech. (Korea)

PS-10-19
BEOL-Compatible Self-Aligned Dual-Gate ALD InZnO TFT
◦Mengran Liu¹, JiYe Li¹, Yuhuan Zhang¹, Zhendong Jiang¹, Shengjie Yang¹, Xinwei Wang¹, Shengdong Zhang¹, Lei Lu¹, ¹Peking Univ. (China)

PS-10-20
Oxygen vacancy mobility and charge de-trapping in 6 nm HZO-based ferroelectric capacitors as a function of annealing temperature
◦Lucia Pérez Ramírez¹, Gunjan Yadav¹, Nicholas Barrett¹, Jean Coignus², Nicolas Vaxelaire², Laurent Grenouillet², Andrea Locatelli², Teyfik Omur Montes¹, ¹SPEC, CEA, CNRS, Université Paris-Saclay (France), ²CEA-Leti, Université Grenoble-Alpes (France), ³Elettra-Sincrotrone Trieste SCpA, Basovizza (Italy)

11: Advanced Materials: Synthesis / Crystal Growth / Characterization

PS-11-01
Solid-Phase Crystallization of Large-Grain Ultra-Thin Si Films on Insulator by Sn-Doping and Growth-Temperature Lowering
◦Shuma Akiyoshi¹, Yuki Hanafusa¹, Takashi Kajiwara¹, Taizoh Sadoh¹, ¹Kyushu Univ (Japan)

PS-11-02
Passivation of Defects in Sn-Doped Poly-Ge by Post-Annealing
◦Takuto Watanabe¹, Ryu Hashimoto¹, Takashi Kajiwara¹, Kenta Moto¹, Keisuke Yamamoto¹, Taizoh Sadoh¹, ¹Kyushu Univ. (Japan)

PS-11-03
Red Emission (620nm) InGaN-Based Nanocolumn LEDs - Approach for the Improved Current Injection Efficiency –
◦Mahiro Oguchi¹, Rie Togashi¹, Katsumi Kishino¹, ¹Sophia Univ. (Japan)

PS-11-04
Screen-Printed Cuprous Bromide (CuBr) Thick Films for Ammonia Detection
◦Shoichiro Nakao¹, Tsuyoshi Ueda¹, Hiroshi Miyazaki¹, Takafumi Taniguchi¹, Hiromasa Takashima¹, Hirofumi Inoue², Tomohiro Kawaguchi², ¹New Cosmos Electric Co., Ltd. (Japan), ²Figaro Engineering Inc. (Japan)

PS-11-05
Raman spectroscopy evaluation for solid phase crystallization of amorphous Ge / Mg / SiO2 stacked structure
◦Shota Kikumoto¹, Atsuki Morimoto¹, Taiga Nagashima¹, Kenichiro Takakura¹, Isao Tsunoda¹, ¹National Inst. of Tech., Kumamoto College (Japan)

PS-11-06
Evaluation of oxygen defect levels of afterglow phosphor Sr₂MgSi₂O₇:E,Dy using first-principles calculations
◦Jumpei Kamikawa¹, Hiroko Kominami¹, Nobuhisa Fujima¹, Kazuhiko Hara¹, ¹Shizuoka Univ. (Japan)

PS-11-07
Solid Phase Crystallization of On-Insulator Molecular Beam Deposited Germanium Sulfur Thin Films
◦Ahmed Mahmoud^{1,2}, Ryo Matsumura², Naoki Fukata^{1,2}, ¹Univ. of Tsukuba (Japan), ²NIMS-MANA (Japan)

PS-11-08
van der Waals Epitaxy of Ferroelectric α-GeTe(111) Thin Films for Spin-Based Frugal Electronics and Neuromorphic Devices
◦Jules Lagrave¹, Nicolas Bernier¹, Jean-Baptiste Dory¹, Yoann Brûlé¹, Pierre Meilleux¹, Oussama J. Mouawad¹, Damien Térébenec¹, Théo Frotier², Maxime Culo², Panagiotis Pappas², Laurent Vila², Jean-Phillipe Attané², Françoise Hippert¹, Pierre Noël¹, ¹Inst. CEA-LETI (France), ²Univ. Grenoble Alpes, CEA, IRIg, SPINTEC (France), ³Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP (France)

PS-11-09
Phase Evolution and Substrate-Dependent Passivation Behavior of ALD-Ru Films under Oxidizing Conditions
◦Youngseo Na¹, Hyunjin Lim¹, Seungchae Lee¹, Yehbeen Im¹, Donguk Kim¹, Kangbaek Seo¹, Changhwan Choi¹, ¹Hanyang Univ. (Korea)

PS-11-10
C-V characteristics of Mg₂Si graded pn junction fabricated by Ag thermal diffusion on n-type Mg₂Si substrate.
◦Hibiki Katsumata¹, Ryosuke Furuta¹, Kosuke Shimano¹, Shunya Sakane¹, Haruhiko Udono¹, ¹The Univ. of Ibaraki (Japan)

PS-11-11
Segmentation of Structured Defect Patterns in Wafer Maps Using U-Net Trained on Programmatically Generated Rule-Based Synthetic Data
◦Hironori Banba^{1,2}, Ichiro Omura², ¹GlobalWafers Japan Co., Ltd. (Japan), ²Kyushu Institute of Technology (Japan)

PS-11-12
Liquid–metal-based Synthesis of SnO Nanosheets and Application to Transparent Ultraviolet Photodetectors
◦Shunjiro Fujii¹, Hariya Hibi¹, Naoki Fukumuro¹, ¹Univ. of Hyogo (Japan)

PS-11-13
Optimization of Si-Doped β-Ga₂O₃ Ceramic Target for High-Performance Thin Film Deposition
◦MinJoon Kim¹, Jae Ho Park¹, Hyung Wook Kim¹, Same Yoon¹, Chung Wung Bark¹, ¹Gachon Univ. (Korea)

PS-11-14
High-mobility and high-stability In₂O₃/Ga₂O₃ heterojunction thin-film transistor
◦Jintong Miao¹, Ce Ning¹, Xupeng Tian¹, Ruibin Duan¹, Xing Zhang¹, Dedong Han¹, Juncheng Dong², ¹Peking University (China), ²Beijing Information Science and Technology University (China)

12: Advanced and Innovative Circuits / Systems Interacting with Devices and Materials

PS-12-01
A 2ps Resolution Timing Generator for Test Platform
◦Tsung-Ting Chen¹, Pei-Chun Hsieh¹, jen-chieh liu¹, Ching-Hua Chr², ¹National United University (Taiwan), ²Chroma ATE Inc. (Taiwan)

PS-12-02
Comparative Study of Extremely Low-Voltage Recursive Stacking Feedforward/Feedback Body Bias Inverters
◦Yuma Yasuda¹, Shintaro Sumi¹, Daisuke Kanemoto¹, Tetsuya Hirose¹, ¹The Univ. of Osaka (Japan)

PS-12-03
Design Trade-Off Analysis for an Electrical Interface with a Magnetic Tunnel Junction Based Photonic Spin Register for High-Speed Communications
◦Behraz Vatankehaghdam¹, Zolboo Byambadorj¹, Hiroshi Idzuchi¹, Satoru Nakatsuji¹, Tetsuya Iizuka¹, ¹The Univ. of Tokyo (Japan)

PS-12-04
Design of a High-Performance Readout Architecture for 4T CMOS Image Sensors Using Column-Parallel SAR ADCs and Rolling Shutter Control
Yang Xu¹, ◦Yuxin Ye¹, Yongyu Wu¹, ZhiXiang Zhang¹, Mingyi Zhou¹, Yunfei Xie¹, Jinfu Zhang¹, Yuan Ma¹, Yuxin Zheng¹, Bin Yu¹, Dianyu Qi¹, ¹Zhejiang Univ. (China)

PS-12-05
CMOS Readout Circuit with Delay and Offset Voltage Compensation for Membrane-Type Surface-Stress Sensors
◦Takuma Matsumori¹, Hikaru Sebe¹, Daisuke Kanemoto¹, Tetsuya Hirose¹, ¹The Univ. of Osaka (Japan)

PS-12-06
A Low-Temperature Variation Reference Current Source with Digital Counting Auto-Calibration Scheme
◦Hsin Liang Chen¹, Jo-Chieh Lin², ¹Tamkang University (Taiwan), ²National Normal University (Taiwan)

PS-12-07
High-Efficiency DC-DC Buck Converter for 55nm BCD Process with 98.37% Peak Efficiency for Wide-Load-Range IoT Systems
◦Chenhao Tang¹, Yaolei Guo¹, Yue Cheng¹, Zhaolong He⁴, Kai Xu^{1,2,3}, Dawei Gao^{1,2,3}, Ping Ouyang³, Yongpeng Cheng^{1,2,3}, Yitao Ma^{1,2,3}, ¹Zhejiang University (China), ²ZJU-Hangzhou Global Scientific and Technological Innovation Center (China), ³Zhejiang ICsprout Semiconductor Co. (China), ⁴University of Science and Technology of China (China)

PS-12-08
Investigation of Design Technology Co-optimization (DTCO) for Low-Temperature High Performance Computing CMOS Technology Based on The Calibrated Low Temperature TCAD-SPICE Method
◦Yuanxi Liao¹, Yongyu Wu^{1,2}, Qinglan Jiang³, Dong Liu¹, Yuxuan Luo¹, Yaxiong Liu¹, Kai Xu², Chen Shen³, Genquan Han¹, Dawei Gao^{1,2}, Ran Cheng¹, ¹Zhejiang Univ. (China), ²Zhejiang ICsprout Semiconductor Corp. Ltd. (China), ³Peifeng Tunan Semiconductor Corp. Ltd. (China), ⁴Xidian Univ. (China)

PS-12-09 (Late News)
24 GHz GaN/SiC SPDT Resonant Gain FET Switch MMIC
◦Koki Osada¹, Hiroshi Mizutani¹, Ryo Ishikawa², ¹National Inst. of Tech., Tokyo College (Japan), ²The Univ. of Electro-Communications (Japan)

PS-12-10
A CMOS Temperature Sensor with Threshold Voltage Compensation and VCO-based A/D Conversion Correction Method
◦Yoshihiro Komatsu¹, Takuto Togashi¹, Natsuki Tanaka¹, Masayuki Ikebe¹, ¹Hokkaido University (Japan)

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-5:CFET Technology and Self-heating (9:00-10:30) Session Chair: Kuniyuki Kakushima (Science Tokyo), Satofumi Souma (Kobe Univ.)	02: Advanced and Emerging Memories / New Applications B-5:Ferroelectric FET (9:00-10:15) Session Chair: Toshinori Numata (Toyota Technological Inst.), Halid Mulaosmanovic (GlobalFoundries)			09: Novel Functional / Quantum / Spintronic Devices and Materials E-5:Qubit Technology (9:00-10:30) Session Chair: Jun Yoneda (The Univ. of Tokyo), Hidehiro Asai (AIST)	07: Organic / Molecular / Bio-electronics F-5:Highly Sensitive Devices for Chem/Bio Detection 1 (9:00-10:15) Session Chair: Woo-Tae Park (Seoul National Univ. of Science and Technology), Hisashi Kino (Kyushu Univ.)
9:00 A-5-01 (Invited) Challenges and Opportunities in CFET-Based SRAM Design <i>Yu-Cheng Lu¹, Meng-Lin Wu¹, Amit Ranjan Trivedi², °Vita Pi-Ho Hu¹, ¹National Taiwan Univ. (Taiwan), ²Univ. of Illinois at Chicago (United States of America)</i>	9:00 B-5-01 (Invited) Recent Advances and Outlook on Ferroelectric NAND Technology <i>°Sijung Yoo¹, Duk-Hyun Choe¹, Jinseong Heo¹, ¹Samsung Electronics (Korea)</i>			9:00 E-5-01 (Invited) 300mm All Silicon Gate-Stack for Si/SiGe Spin Qubit <i>°Clément Godfrin¹, Arne Loenders^{1,2}, Yosuke Shimura¹, Roger Loo^{1,3}, Bart Raes¹, Gulzat Juliet¹, Sugandha Sharma¹, Stefan Kubicek¹, Sofie Beyne¹, Massimo Mongillo¹, Danny Wan¹, Kristiaan De Greve^{1,4}, ¹IMEC (Belgium), ²Department of Electrical Engineering, KULeuven (Belgium), ³Ghent Univ., Dep. of Solid-State Sci. (Belgium), ⁴Proximus chair in quan. scie. and tech., dep. of electrical engineering, KULeuven (Belgium)</i>	9:00 F-5-01 (Invited) Magnetic Biosensors Based on Giant Magnetoresistance <i>°Jung-Rok Lee¹, ¹Ewha Womans Univ. (Korea)</i>
9:30 A-5-02 A Simulation Study of Single Event Upset in Nanosheet-based CFET SRAM <i>°Vanness Filbert Cierra¹, Sida Wang¹, Yoshinari Kamakura¹, ¹Osaka Institute of Technology (Japan)</i>	9:30 B-5-02 Enhancing Erase Efficiency in Oxide Semiconductor FeFET through Post-Deposition Annealing Engineering <i>°Minglei Ma¹, Haoji Qian¹, Miaomiao Zhang¹, Yan Ding¹, Xiaoxi Li¹, Bochang Li¹, Yan Liu¹, Jiajia Chen¹, Chengji Jin¹, Genquan Han¹, ¹Xidian Univ. (China)</i>			9:30 E-5-02 Charge Stability and Sensing Design of Germanium/Si-SiN Barrier Charge Qubits <i>°Ting Tsai¹, Chi-Chen Lai¹, David M.T. Kuo², Horng-Chih Lin¹, Pei-Wen Li¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan), ²National Central Univ. (Taiwan)</i>	9:30 F-5-02 Reconfigurable Dual-Control Gate ISFETs with Complementary Sensing Behavior for Reliable pH Detection <i>°Seung-Jin Lee¹, Seung-Hyun Lee¹, Won-Ju Cho¹, ¹Kwangwoon University (Korea)</i>

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-5:Photonic Computing (9:00-10:00) Session Chair: Kouichi Akahane (NICT), Keijiro Suzuki (AIST)	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-5:Low Dimensional Materials I (9:00-10:15) Session Chair: Yuji Yamamoto (IHP GmbH), Yu-Lun Chueh (National Tsing-Hua Univ.)	02: Advanced and Emerging Memories / New Applications J-5:In-Memory and Unconventional Computing 2 (9:00-10:15) Session Chair: Kazuyuki Kouno (Nuvoton Technology Corp. Japan), Yumeng Zheng (Tokyo Univ. of Science)	08: Low Dimensional Devices and Materials K-5:Device II (9:00-10:15) Session Chair: Shu Nakaharai (Tokyo Univ. of Tech.), Takamasa Kawanago (AIST)	04: Power / High-speed Devices and Materials M-5:Emerging Materials and Devices (9:00-10:15) Session Chair: Joel T. Asubar (Univ. of Fukui), Taketomo Sato (Hokkaido Univ.)	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-5:Ferroelectric Memories and Gate Stack (9:00-10:00) Session Chair: Toshiya Murakami (KIOXIA Corp.), Hiroyuki Nishinaka (Kyoto Inst. of Technology)
9:00 G-5-01 On-chip alumina photonic waveguide platform for diamond-spin-based quantum computing ° <i>Ryota Kitagawa¹, Takuto Yamaguchi¹, Naoki Fushimi¹, Masaharu Hida¹, Tetsuya Miyatake¹, Toshiyuki Miyazawa¹, Kenichi Kawaguchi¹, Ryoichi Ishihara², Shintaro Sato¹, ¹Fujitsu Ltd. (Japan), ²Delft Univ. of Tech. (Netherlands)</i>	9:00 H-5-01 (Invited) Chemical Vapor Deposition of Single Crystal Graphene, Graphene Nanoribbons, and hBN on Ge and Ge-on-Si and Related Device Applications ° <i>Micheal Arnold¹, ¹Univ. of Wisconsin-Madison (United States of America)</i>	9:00 J-5-01 Fluorine Surface Engineering for V_i Control and Memory Window Boost in HZO FeFET toward High-Performance Analog In-Memory Computing. ° <i>Kyungsoo Park¹, Sangkuk Han¹, Chulwon Chung¹, MinHyuk Kim¹, Changhwan Choi^{1,2}, ¹Division of Materials Science and Engineering, Univ. of Hanyang (Korea), ²Department of Semiconductor Engineering, Univ. of Hanyang (Korea)</i>	9:00 K-5-01 (Invited) Scalable 2D Memristors Heterointegration for Energy-Efficient Compute-in-Memory Hardware ° <i>Kah-Wee ANG¹, ¹National Univ. of Singapore (Singapore)</i>	9:00 M-5-01 (Invited) Recent development of GeO₂, SBD device development ° <i>Kentaro Kaneko¹, ¹Ritsumeikan Univ. / PATENTIX (Japan)</i>	9:00 N-5-01 A Strategy to Improve the Low Voltage High Polarization Using Re-wakeup method on Thin WN, ICL Based Hf_{0.33}Zr_{0.66}O₂ Ferroelectric Memory <i>Soumyadip Patra¹, Asim Senapati¹, Yii-Tay Chang², Abhijit Aich¹, Le Nguyen Minh Long¹, Yi-Pin Chen^{3,4}, Shih-Yin Huang^{3,5}, Min-Hung Lee², °Siddheswar Maikap^{1,4}, ¹Department of Electronic Engineering, Chang Gung Univ. (Taiwan), ²Graduate School of Advance Technology, National Taiwan Univ. (Taiwan), ³School of Traditional Chinese Medicine, College of Medicine, Chang Gung Univ. (Taiwan), ⁴Department of Obstetrics and Gynecology, Keelung Chang Gung Memorial Hospital (Taiwan), ⁵Chang Gung Univ. , College of Medicine (Taiwan)</i>
9:15 G-5-02 Tri-layer IGZO Thin-Film Transistor with Self-aligned Structure for Optical Synaptic Plasticity ° <i>Jo Lin Chen¹, Tsung Che Chiang¹, Yu Chuan Chiu¹, Po Tsun Liu¹, ¹National Yang Ming Chiao Tung Univ. (Taiwan)</i>		9:15 J-5-02 Comparative Scaling Analysis of Charge-Trap TFET (CT-TFETs) and Charge-Trap MOSFETs (CT-MOSFETs) for Reliable Neuromorphic Synapse Arrays ° <i>Jae Seung Woo^{1,2}, Woo Young Choi^{1,2}, ¹Seoul National University (Korea), ²The Inter-university Semiconductor University Research Center (ISRC) (Korea)</i>			9:15 N-5-02 Solid Phase Epitaxy-Driven Enhancement of Ferroelectric Phase Fraction in Hf_{1-x}Zr_xO₂ Thin Films ° <i>Kuan-Ming Chen¹, Ming-Lun Tsai², Chia-Wei Hsu¹, Chia-Yin Hsiung³, Wei-Lin Yeh⁴, Yuan-Chieh Tseng¹, ¹Department of Materials Science and Engineering, National Yang Ming Chiao Tung University (Taiwan), ²Institute of Pioneer Semiconductor Innovation, National Yang Ming Chiao Tung University (Taiwan), ³Graduate Program of Nanotechnology, Department of Materials Science and Engineering, National Yang Ming Chiao Tung University (Taiwan), ⁴Degree Program of Semiconductor Material and Process Equipment, National Yang Ming Chiao Tung University (Taiwan)</i>
9:30 G-5-03 (Invited) Silicon Photonic MEMS-based Tunable Optical Elements and their Applications to Coherent Ising Machines ° <i>Kyoungsik Yu¹, Yoonhyuk Rah¹, Sangyoon Han², ¹KAIST (Korea), ²DGIST (Korea)</i>	9:30 H-5-02 Van der Waals Growth of Silicon on 2D h-BN by Molecular Beam Epitaxy ° <i>Yu-Hsien Chuang¹, Kuo-Chih Lee², Hung-Hsiang Cheng², Ing-Song YU¹, ¹National Dong Hwa University (Taiwan), ²National Taiwan University (Taiwan)</i>	9:30 J-5-03 Tiny & Error-robust Edge ViT CiM with 1/10 Training Parameters by Iteratively Error Injected LoRA (Ei-LoRA) ° <i>Naoko Misawa¹, Ruiqi Zhang¹, Tao Wang¹, Chihiro Matsui¹, Ken Takeuchi¹, ¹The University of Tokyo (Japan)</i>	9:30 K-5-02 Threshold Voltage Tuning of Dual-gate MoS₂ Transistors Via Engineering of Dielectric Interfacial Layers ° <i>Xiangyu Wu¹, Zaoyang Lin^{1,2}, Pawan Kumar¹, Daire Cott¹, Marco Introna^{1,2}, Fengben Xi¹, Tien Dat Ngo¹, Sreetama Banerjee¹, Kaustav Banerjee¹, Dennis Lin¹, Pierre Morin¹, Cesar Javier Lockhart de la Rosa¹, Gouri Sankar Kar¹, ¹IMEC (Belgium), ²KU Leuven (Belgium)</i>	9:30 M-5-02 First Demonstration of Multi-finger 2DHG Diamond MOSFETs with Source Via Structure ° <i>Kosuke Ota¹, Yukihiro Chou¹, Kento Narita¹, Yutaro Hashimoto¹, Yuki Takano¹, Atsushi Hiraiwa¹, Momoko Deura¹, Kenji Ueda¹, Hiroshi Kawarada¹, ¹Waseda University (Japan)</i>	9:30 N-5-03 LaB₆/LaB₆N_x Gate Stack Formation Utilizing LaB₆ Target for Floating-Gate Type Nonvolatile Memory ° <i>Fanyei Kong¹, Shun-ichiro Ohmi¹, ¹Inst. of Science Tokyo (Japan)</i>

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-5:CFET Technology and Self-heating	02: Advanced and Emerging Memories / New Applications B-5:Ferroelectric FET			09: Novel Functional / Quantum / Spintronic Devices and Materials E-5:Qubit Technology	07: Organic / Molecular / Bio-electronics F-5:Highly Sensitive Devices for Chem/Bio Detection 1
9:45 A-5-03 Stacked Transistors with Nanosheet-based Flip FET for A10 Node: A DTCO Viewpoint °Haoran Lu ¹ , Jingru Jiang ¹ , Jiacheng Sun ¹ , Ming Li ¹ , Runsheng Wang ¹ , Heng Wu ¹ , ¹ Peking Univ. (China)	9:45 B-5-03 Evaluation of Polarization-Induced Interface Degradations in FeFETs Using Quasi-Static Split C-V Techniques: Comparison of Oxide-Semiconductor and Si Channels °Xuanhedong Gao ¹ , Zuocheng Cai ¹ , Zhenghong Liu ¹ , Zhao Jin ¹ , Xueyang Han ¹ , Yan-kui Liang ¹ , Yutong Chen ¹ , Eishin Nako ¹ , Shin-Yi Min ¹ , Mitsuru Takenaka ¹ , Shinichi Takagi ¹ , Kasidit Toprasertpong ¹ , ¹ The Univ. of Tokyo (Japan)			9:45 E-5-03 Dielectric Dry Etch Patterning Used In Single Gate EUV Spin Qubit Device °Yuchao Jiang ¹ , Sofie Beyne ¹ , Chia-Yang Chou ¹ , Stefan Kubicek ¹ , Yannick Hermans ¹ , Johan De Backer ¹ , Clement Godfrin ¹ , Jeongsoo Kim ¹ , Danny Wan ¹ , Kristiaan De Greve ¹ , Katia Devriendt ¹ , ¹ IMEC (Belgium)	9:45 F-5-03 Microwave- and Plasma-Engineered Sol-Gel PZTO Thin Films for Enhanced pH Sensing in EG-ISFET Biosensors °Seung-Jin Lee ¹ , Dong-Gyun Mah ¹ , Won-Ju Cho ¹ , ¹ Kwangwoon University (Korea)
10:00 A-5-04 Alleviating Self-Heating-Effect in DFF by Introducing Equivalent Circuit in Double-Cell-Height CFET Design °Liang-Chi Huang ¹ , Huei-Lin Shih ¹ , Xiang-Ting Huang ¹ , Pen-Yi Chu ¹ , Bo-Hsun Juan ¹ , Ko-Cheng Lu ¹ , Tzu-Hsuan Chang ¹ , ¹ National Taiwan Univ. (Taiwan)	10:00 B-5-04 Understanding and Improving the Retention Loss in the Gate-Injection Ferroelectric NAND Cells by Optimizing the Retention Bias Voltage °Runhao Han ¹ , Tao Hu ¹ , Jia Yang ¹ , Junshuai Chai ¹ , Hao Xu ¹ , Xiaolei Wang ¹ , Wenwu Wang ¹ , ¹ Inst. of Microelectronics Chinese Academy of Sciences (China)			10:00 E-5-04 CNN-assisted automatic cross-capacitance matrix update for virtual-gate control of quantum dot arrays °Tatsuo Tsuzuki ¹ , Hideaki Yuta ¹ , Yui Muto ² , Arne Ludwig ³ , Andreas Dirk Wieck ³ , Akira Oiwa ¹ , Takafumi Fujita ¹ , ¹ Osaka University (Japan), ² Tohoku University (Japan), ³ Ruhr-Universität Bochum (Germany)	10:00 F-5-04 High Sensitivity pH Sensor Overcoming the Nernst Limit using the Silicon-on-Insulator Tunneling Field-Effect-Transistor Structure °Xingcong Chen ¹ , Junkang Li ^{1,2} , Rui Zhang ^{1,2} , ¹ College of Integrated Circuits, Zhejiang University (China), ² Zhejiang ICsprout Semiconductor Company Ltd. (China)
10:15 A-5-05 Effect of an Additional Top Silicon Substrate on Mitigating Self-Heating Effect in Complementary FET (CFET) °Seung Kyu Kim ^{1,2} , Johyeon Kim ¹ , Kee-Won Kwon ¹ , Jongvook Jeon ¹ , ¹ Sungkyunkwan Univ. (Korea), ² Samsung Electronics Corp. (Korea)				10:15 E-5-05 Controlled Growth of planar Ge Nanowires for Semiconductor Quantum Computing °Jian-Huan Wang ¹ , Jian-Jun Zhang ² , Hongqi Xu ^{1,3} , ¹ Beijing academy of quantum information sciences (China), ² Institute of Physics Chinese Academy of Sciences (China), ³ Peking University (China)	

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-5:Photonic Computing	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-5:Low Dimensional Materials I	02: Advanced and Emerging Memories / New Applications J-5:In-Memory and Unconventional Computing 2	08: Low Dimensional Devices and Materials K-5:Device II	04: Power / High-speed Devices and Materials M-5:Emerging Materials and Devices	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-5:Ferroelectric Memories and Gate Stack
	9:45 H-5-03 The Preparation of Wafer-scale Bi-layer MoS₂ through Sequential Mono-layer MoS₂ Growth for Device Applications °Yü-Han Huang ^{1,2} , Hao-Yü Wang ^{1,3} , Po-Tsung Lee ³ , Shih-Yen Lin ¹ , ¹ Academia Sinica (Taiwan), ² National Taiwan Univ. (Taiwan), ³ National Yang Ming Chiao Tung Univ. (Taiwan)	9:45 J-5-04 Quantized Neuron-Implementable Ternary-State Vertical NAND Flash Memory for the Highly Reliable Neuromorphic Computing °Jin Ho Chang ¹ , Jae Seung Woo ¹ , Jae Hyun Nam ¹ , Da Eun Yang ¹ , Kyungmoon Kim ¹ , Woo Young Choi ¹ , ¹ Seoul National University (Korea)	9:45 K-5-03 Enhanced Intermediate Polarization: A Platform for Neuromorphic and Logic-in-Memory Computing °Heng XIANG ¹ , Yi Tong ¹ , Kah-Wee Ang ² , ¹ Suzhou Laboratory (China), ² National University of Singapore (Singapore)	9:45 M-5-03 Defect-Enhanced Sub-Bandgap Excitation and Sinking-Electrode Optimization in Polycrystalline Diamond Photoconductive Semiconductor Switches °Yuxin Mao ¹ , Min Xie ¹ , Hanpeng Zhang ¹ , Zheng Fan ¹ , Xiaoli Lu ¹ , Xiaohua Ma ¹ , ¹ Xidian Univ. (China)	9:45 N-5-04 Investigation of the Capacitance-Voltage characteristics of Strongly Correlated Electron Films in Semiconductor Heterojunction °Kaito Fujitani ¹ , Koji Iwasaki ¹ , Shuhei Hashimoto ¹ , Ryosuke Takagi ¹ , Yasushi Hotta ¹ , ¹ University of Hyogo (Japan)
	10:00 H-5-04 MoS₂precursor-catalyst solution coating on Si substrate for selective CVD growth °Ryunosuke Nishimura ¹ , Kentaro Watanabe ^{1,2} , ¹ Shinshu Univ. (Japan), ² IFES, Shinshu Univ. (Japan)	10:00 J-5-05 A Heterogeneous-Integrated Computing-in-Memory Neuromorphic Architecture Based on Multi-Level IGZTO with 34.8 TOPS/W High-Power-Efficiency °He Zhao ^{1,2,4} , Chen Kai ^{2,4} , Wang Hanfeng ^{2,4} , Guo Yaolei ^{2,4} , Cheng Yue ^{2,4} , Tang Chenhao ^{2,4} , Li Yunlong ^{2,4} , Zhang Rui ² , Li Junkang ^{2,3,4} , Ma Yitao ^{2,3,4} , ¹ University of Science and Technology of China (China), ² Zhejiang University (China), ³ ZJU-Hangzhou Global Scientific and Technological Innovation Center (China), ⁴ Zhejiang ICsprout Semiconductor Co., Ltd. (China)	10:00 K-5-04 Reconfigurable 2D Ferroelectric PN Junctions for Integrated Synaptic-Neuronal Functions °Tianjiao Zhang ¹ , MaoXin Tian ¹ , Yang Xu ¹ , Bin Yu ¹ , Yuda Zhao ¹ , ¹ Zhejiang University (China)	10:00 M-5-04 α-Ga₂O₃-Based Schottky Barrier Diode for Microwave Rectenna Applications °Takeru Wakamatsu ¹ , Shizuo Fujita ¹ , Hikaru Ikeda ¹ , Kentaro Kaneko ^{1,2} , Yasuo Ohno ³ , Tomomi Hiraoka ³ , Katsuhisa Tanaka ¹ , ¹ Kyoto Univ. (Japan), ² Ritsumeikan Univ. (Japan), ³ Laser System Inc. (Japan)	

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-6:Integration Technology on Si Wafer (10:45-12:00) Session Chair: Shoichi Kabuyanagi (KIOXIA Corp.), Shibun Tsuda (Renesas Electronics Corp.)	02: Advanced and Emerging Memories / New Applications B-6:Emerging Memory Devices, and MRAM (10:45-12:15) Session Chair: Keiji Hosotani (KIOXIA Corp.), Yoshihiro Sato (Tohoku Univ.)			09: Novel Functional / Quantum / Spintronic Devices and Materials E-6:Qubit Systems (10:45-12:00) Session Chair: Toshiyuki Miyazawa (Fujitsu Ltd.), Motoya Shinozaki (Tohoku Univ.)	07: Organic / Molecular / Bio-electronics F-6:Highly Sensitive Devices for Chem/Bio Detection 2 (10:45-12:00) Session Chair: Cheng-Hsien Liu (National Tsing Hua Univ.), Takashi Tokuda (Science Tokyo)
10:45 A-6-01 (Invited) Oxide semiconductors for future DRAM and monolithic 3D integration <i>Kexin Wang¹, °Jianshi Tang¹, ¹Tsinghua Univ. (China)</i>	10:45 B-6-01 (Invited) Recent progress in materials design for voltage-controlled magnetic random access memory <i>°Takayuki Nozaki¹, Tomohiro Ichinose¹, Tatsuya Yamamoto¹, Jun Uzuhashi², Tomohiro Nozaki¹, Hiroyasu Nakayama¹, Atsushi Sugihara¹, Makoto Konoto¹, Kay Yakushiji¹, Tadakatsu Ohkubo², Shinji Yuasa¹, ¹AIST (Japan), ²NIMS (Japan)</i>			10:45 E-6-01 (Invited) Modular quantum computing chips <i>°Ryoichi Ishihara¹, ¹TU Delft (Netherlands)</i>	10:45 F-6-01 (Invited) Iridium Oxide Based Electrodes for Bio-Interface Applications <i>°Po-Chun Chen¹, ¹National Taipei Univ. of Tech. (Taiwan)</i>
11:15 A-6-02 Laser annealing technology for storage node contact in graphic DRAMs <i>°Dongkyu Jang¹, Jieun Lee¹, Taehoon Park¹, Chanho Park¹, Hyodong Ban¹, ¹Samsung Electronics (Korea)</i>	11:15 B-6-02 A Cache-Compatible 4T2MTJ MRAM Enabling Compute-in-Memory Adders <i>°Zhengde Xu¹, Xiaoyan Zhang², Dongyang Chen¹, Xue Zhang¹, Xuanyao Fong², Zhifeng Zhu¹, ¹ShanghaiTech University (China), ²National University of Singapore (Singapore)</i>			11:15 E-6-02 Cryogenic CMOS Selector Circuits on an Active Silicon Interposer for Scalable Signal Routing in Silicon Quantum Processors <i>°Kazuma Higashimomo¹, Raisei Mizokuchi², Misato Taguchi¹, Takuji Miki¹, Makoto Nagata¹, Tetsuo Kodera², ¹Kobe Univ. (Japan), ²Inst. of Sci. Tokyo (Japan)</i>	11:15 F-6-02 Machine-learning Enabled Quantitative Decomposition of Volatile Organic Compound Mixtures using Artificial Odor Sensor <i>°Toshihiro Sakamoto¹, Philip Hann Yung Lee², Zong Sheng Tang², Hiromu Kitajima¹, Yoshitsugu Uriu¹, ¹Panasonic Industry Co., Ltd. (Japan), ²Singapore Technology Center, Panasonic Industrial Devices Singapore Pte. Ltd. (Singapore)</i>
11:30 A-6-03 Room temperature operation of Ge_{1-x}Sn_x/Ge_{1-x-y}Si_xSn_y resonant tunneling diode <i>°Shota Torimoto¹, Shuto Ishimoto¹, Yoshiki Kato¹, Mitsuo Sakashita¹, Masashi Kurosawa¹, Osamu Nakatsuka^{1,2}, Shigehisa Shibayama¹, ¹Grad. Sch. of Eng., Nagoya Univ. (Japan), ²IMaSS, Nagoya Univ. (Japan)</i>	11:30 B-6-03 A Novel 2-kbits 28-nm Logic-Compatible AVAXOTP Macro for Embedded Data Storage Applications <i>°Yuan Heng Tseng³, Chi-Da Lu², Pei-Jyun Hou¹, E Ray Hsieh¹, ¹National Yang Ming Chiao Tung University (Taiwan), ²National Central University (Taiwan), ³eRaytroniks Inc. (Taiwan)</i>			11:30 E-6-03 Multi-Bit State Classification via Machine Learning in IQ-Encoded Spin Qubit Readout <i>°Naoya Negami¹, Raisei Mizokuchi¹, Shunsuke Ota¹, Riku Wada¹, Duanlian Zhang¹, Tetsuo Kodera¹, ¹Science Tokyo (Japan)</i>	11:30 F-6-03 A High-Sensitivity Flexible EGFET Biosensor for Epinephrine Detection Based on InZnSnO Sensing Films <i>°Charnq Shiuan Kuo¹, ¹CGU (Taiwan)</i>

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-6:Materials for Photodetector (10:45-11:45) Session Chair: Hideki Ono (OKI), Xuejun Xu (NTT, Inc.)	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-6:Low Dimensional Materials II (10:45-11:45) Session Chair: Shunjiro Fujii (Univ. of Hyogo), Takuya Hoshi (NTT Device Technology Lab.)	02: Advanced and Emerging Memories / New Applications J-6:Emerging Memory Devices, and DRAM (10:45-12:15) Session Chair: Atsushi Himeno (Panasonic Holdings Corp.), Akiyoshi Seko (Micron Memory Japan, K.K.)	08: Low Dimensional Devices and Materials K-6:Characterization III (10:45-11:45) Session Chair: Shinjiro Hara (NIMS), Takeshi Yanagida (The Univ. of Tokyo)	04: Power / High-speed Devices and Materials M-6:III-V High-frequency and Power Devices (10:45-12:00) Session Chair: Takuya Tsutsumi (Osaka Metropolitan Univ.), Yue-ming Hsin (National Central Univ.)	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-6:Group-IV, III-V based Thin-film Growth, and Device Application (10:15-12:15) Session Chair: Kaoru Toko (Univ. of Tsukuba), Ryo Matsumura (NIMS)
					10:15 N-6-01 (Invited) Carrier mobility enhancement of extremely-thin body Ge-On-Insulator (GOI) MOSFETs °Shinichi Takagi ^{1,2} , Xueyang Han ¹ , Chia-Tsong Chen ¹ , Kei Sumita ¹ , Mitsuru Takenaka ¹ , Kasidit Toprasertpong ¹ , ¹ The Univ. of Tokyo (Japan), ² Teikyo Univ. (Japan)
10:45 G-6-01 Cutoff Wavelength Control of GeSn HOT Infrared Detectors by Sn Concentration °Tomo Tanaka ¹ , Hiroyuki Ishii ² , Rahmat Hadi Saputro ² , Shigehisa Shibayama ² , Masashi Kurosawa ² , Osamu Nakatsuka ³ , Tatsuro Maeda ² , ¹ NEC Corp. (Japan), ² AIST (Japan), ³ Nagoya Univ. (Japan)	10:45 H-6-01 Tailored Doping Technology towards Enhanced p-Type WSe₂ FET Application °I-Ling Li ¹ , Cheng-Chieh Hsieh ¹ , Cheng-Yang Hsu ¹ , Han-Hsiang Pai ¹ , Tsung-Che Hsieh ¹ , Hung-Hui Yang ¹ , Chan-Yuen Chang ² , Chien-Wei Chen ² , Chih-Chao Yang ³ , Ying-Hao Chu ¹ , Chao-Hui Yeh ¹ , ¹ National Tsing Hua Univ. (Taiwan), ² Taiwan Instrument Research Inst. (Taiwan), ³ Taiwan Semiconductor Research Inst. (Taiwan)	10:45 J-6-01 Folded bit-line technology for bank-edge in 10nm 5th-generation DRAMs °Taecheon Park ¹ , Chanho Park ¹ , Hyodong Ban ¹ , Dongkyu Jang ¹ , ¹ Samsung Electronics (Korea)	10:45 K-6-01 Interlayer Stacking Order Enhanced Photoresponse in Multilayer Graphene Silicon Schottky Diodes °Yang Xu ¹ , Muhammad Abid Anwar ¹ , Srikrishna Chanakya Bodepudi ¹ , Wenzhang Fang ¹ , Muhammad Malik ¹ , Yance Chen ¹ , Qianqian Zhang ¹ , Zongwen Li ¹ , Zhi-Xiang Zhang ¹ , Jian Chai ¹ , Xie Yunfei ¹ , Hu Huan ^{1,2} , Bin Yu ¹ , ¹ College of Integrated Circuits, ZJU-HIC, Zhejiang University, Hangzhou, China (China), ² ZJU-UIUC, Zhejiang University, Haining, China (China)	10:45 M-6-01 (Invited) Application/Reliability-Driven Device Design of GaN Power Switches °Zhikai Tang ¹ , ¹ Texas Instruments Inc. (United States of America)	10:45 N-6-02 Low-Operation Voltage Nano-Filter Layer Ni-Induced Crystallization Poly-Si Complementary Thin-Film Transistors with Low-Thermal Budget °Po-Yi Kuo ¹ , Chou-Wei Wang ¹ , ¹ National Chin Yi Univ. of Technology (Taiwan)
11:00 G-6-02 Light-Absorbing Layer Thickness Dependence of Polarization-Sensitive Photodiodes Based on Dilute Nitride GaNAs °Daiki Mineyama ¹ , Itsu Tanaka ¹ , Kaito Nakama ² , Hidetoshi Hashimoto ² , Keisuke Minehisa ² , Junichi Takayama ¹ , Fumitaro Ishikawa ² , Akihiro Murayama ¹ , Satoshi Hiura ¹ , ¹ IST, Hokkaido Univ. Japan (Japan), ² RCIQE, Hokkaido Univ. Japan (Japan)	11:00 H-6-02 Wafer-Scale Epitaxial Growth of Monolayer WS₂ on Sapphire Using BTBMW Precursor °Zih-Siang Jian ^{1,2,3} , Wei-Lin Wang ² , Wei-Chun Chen ² , Wen-Hao Chang ^{1,2,3,4} , ¹ National Yang Ming Chiao Tung Univ. (Taiwan), ² National Center for Instrumentation Res., National Applied Res. Labs. (Taiwan), ³ Res. Center for Critical Issues, Academia Sinica (Taiwan), ⁴ Res. Center for Applied Sciences, Academia Sinica (Taiwan)	11:00 J-6-02 A novel solution to alleviate bit-line break and roughness in 10nm-class high-k metal gate DRAM °Jieun Lee ¹ , Taecheon Kim ¹ , Donghee Choi ¹ , Suji Kim ¹ , Dongseok Kim ¹ , Dongkyu Jang ¹ , Taecheon Park ¹ , Hyodong Ban ¹ , ¹ Samsung Electronics (Korea)	11:00 K-6-02 Tunable Contact Interfaces in MoS₂ Memristors for Synaptic Emulation in Neuromorphic Systems °Durgadevi Elamaram ¹ , Masahiro Sakai ¹ , Daisuke Kiriyu ¹ , ¹ The Univ. of Tokyo (Japan)		11:00 N-6-03 Origin for Anomalous Reverse Short-Channel Effect in Poly-Si TFTs °Geng-Yuan Xie ¹ , Cheng-Kuei Lee ¹ , Guo-Wei Huang ² , Pei-Wen Li ¹ , Ruey-Dar Chang ³ , Horng-Chih Lin ¹ , ¹ National Yang Ming Chiao Tung Univ. (Taiwan), ² Taiwan Semiconductor Research Inst. (Taiwan), ³ Chang-Gung Univ. (Taiwan)
11:15 G-6-03 CMOS-Compatible Ge-on-Si SPAD Array for Room-Temperature SWIR Detection with High PDE and Low DCR °Chi-En Chen ¹ , Jau-Yang Wu ² , Chao-Hsin Wu ¹ , ¹ National Taiwan University (Taiwan), ² National Taiwan University of Science and Technology (Taiwan)	11:15 H-6-03 XPS Study for the Heterostructure of 3D GaN and 2D WS₂ Grown by PA-MBE °Aminudin Zuhri ¹ , Po-Yen Chen ¹ , Ray-Yu Hong ¹ , Ing-Song YU ¹ , ¹ National Dong Hwa University (Taiwan)	11:15 J-6-03 A Capacitorless DRAM based on Complementary Field-Effect Transistor (CFET) °Sandeep Semwal ¹ , Pin Su ¹ , ¹ National Yang Ming Chiao Tung University (Taiwan)	11:15 K-6-03 DFT and Experimental Insights into Strain-Controlled Enhancement of Sensing Performance in Graphene Gas Sensors °Meng Yin ¹ , Xiangyu Qiao ¹ , Yunsong Tang ¹ , Ying Chen ¹ , Hideo Miura ² , Ken Suzuki ³ , ¹ Graduate School of Engineering, Tohoku Univ. (Japan), ² Co-Creation Inst. for Advanced Materials, Shimane Univ. (Japan), ³ Green X-tech Center, Green Goals Initiative, Tohoku Univ. (Japan)	11:15 M-6-02 Quasi-modulation doping technique to obtain high electron mobilityfor AlGaIn/ GaN FET °Kazuki Kodama ¹ , Chee-How Lu ¹ , You-Chen Weng ¹ , Yuan Lin ¹ , Yu-Hao Lin ¹ , Daisuke Ueda ¹ , Yi Edward Chang ¹ , ¹ NYCU (Taiwan)	11:15 N-6-04 Optimized high-speed CW Laser Annealing for High and Dopant Activation and Mobility in Sb-Doped Ge Films on Quartz °Yuta Goto ^{1,2} , Ryo Matsumura ² , Naoki Fukata ^{1,2} , ¹ Univ. of Tsukuba (Japan), ² NIMS (Japan)
11:30 G-6-04 (Late News) Exploring the Cryogenic Liquid Level Sensing Capability of NiTi-Coated Optical Fiber °Navneet Chouhan ¹ , Nandini Patra ¹ , I.A. Palani ¹ , Vipul Singh ¹ , ¹ Indian Institute of Technology, Indore (India)	11:30 H-6-04 (Late News) Machine Learning Assisted Process Optimization for High Polarization of Ferroelectric Hf_{0.1}Zr_{0.9}O₂ Thin Films °Xinrui Ma ¹ , Danyang Chen ¹ , Zhiyu Lin ¹ , Mengwei Si ¹ , Dongdong Li ² , Xiuyan Li ¹ , ¹ Shanghai Jiao Tong Univ. (China), ² Zhangjiang Lab. (China)	11:30 J-6-04 Analysis of Defect-Induced Performance Degradation in Gate-All-Around Nanosheet-Based 3D DRAM °Bushra Fatima ¹ , Sanjeev Kumar Manhas ¹ , Imtiyaz Ahmad Khan ¹ , Harsh Raju ¹ , Arvind Kumar ² , Mahendra Pakala ³ , ¹ Indian Institute of Technology Roorkee (India), ² Epitaxy Business Unit, Applied Materials Inc. (United States of America), ³ Advanced Product and Technology Development (APTD), Applied Materials Inc. (United States of America)	11:30 K-6-04 Controlling Dopant Ionization Energy in Substitutionally Doped TMDC Monolayers: A Universal Semi-Empirical Model and Experimental Verification °Kaito Kanahashi ¹ , Mian Wei ¹ , Ryo Kawaguchi ¹ , Tomonori Nishimura ¹ , Kosuke Nagashio ¹ , ¹ The Univ. of Tokyo (Japan)	11:30 M-6-03 GaN-based n-p-n HBTs with Mg-doped GaInN MQWs as p-type base region °Ryosei Inoue ¹ , Akira Mase ¹ , Tomoki Kojima ¹ , Takashi Egawa ¹ , Makoto Miyoshi ¹ , ¹ Nagoya Inst. of Tech. (Japan)	11:30 N-6-05 Effect of the Al-Catalyst-Layer on the Growth of Spherulite-Like GeS Thin Films and their Birefringent Properties °Qinqiang Zhang ¹ , Ryo Matsumura ¹ , Naoki Fukata ^{1,2} , ¹ NIMS (Japan), ² Univ. of Tsukuba (Japan)

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-6:Integration Technology on Si Wafer	02: Advanced and Emerging Memories / New Applications B-6:Emerging Memory Devices, and MRAM			09: Novel Functional / Quantum / Spintronic Devices and Materials E-6:Qubit Systems	07: Organic / Molecular / Bio-electronics F-6:Highly Sensitive Devices for Chem/Bio Detection 2
11:45 A-6-04 Agile Prototyping of AI Hardware LSIs Using Multi-Layer Aluminum Interconnects in a Minimal Fab Environment <i>°Hirofumi Sumi¹, Hideharu Amano¹, Naonobu Shimamoto¹, Atsutake Kosuge¹, Yukinori Ochiai¹, Tohru Mogami¹, Yoshio Mita¹, Makoto Ikeda¹, ¹The University of Tokyo (Japan)</i>	11:45 B-6-04 Bi-directional Read Scheme for High Density FinFET Based Multilevel OTP Memory <i>°FANGYU YE², BINGRONG TANG¹, CHRONGJUNG LIN¹, YACHIN KING¹, ¹Inst. of Electronics Eng., National Tsing Hua Univ. (Taiwan), ²College of Semiconductor Research, National Tsing Hua Univ. (Taiwan)</i> 12:00 B-6-05 Threshold Changeable Memory Based on Amorphous GeSbSeN <i>°Mohamad Kanaan^{1,2,3}, Renzo Antonelli^{2,3}, Massimo Borghi⁴, Jean Rottner², Mathieu Bernard², Zineb Saghi², Theo Monniet², Guillaume Bourgeois², Sylvain Gout², Antoine Salvi², Francois Andrieu², Abdelkader Souifi², Simon Jeannot¹, Gabriele Navarro², ¹STMicroelectronics Crolles Indus. (France), ²CEA-LETI Lab. (France), ³LTM Lab. (France), ⁴STMicroelectronics Agrate Indus. (Italy)</i>			11:45 E-6-04 Improved Readout Accuracy of a Silicon Spin Qubit via Maximum Likelihood Estimation <i>°Raisei Mizokuchi¹, Riku Wada¹, Ryutaro Matsuoka¹, Shunsuke Ota¹, Itaru Yanagi², Toshiyuki Mine², Ryuta Tsuchiya², Digh Hisamoto², Hiroyuki Mizuno², Tetsuo Kodera¹, ¹Science Tokyo (Japan), ²Hitachi, Ltd (Japan)</i>	11:45 F-6-04 Enhanced pH sensitivity of TbTaO ₄ sensing film for advanced solid-state pH sensors <i>Tung-Ming Pan^{1,2}, °Shu-Jung Hu¹, Yu-Shu Huang¹, Jim-Long Her¹, ¹Chang Gung University (Taiwan), ²Chang Gung Memorial Hospital (Taiwan)</i>

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
05: Photonics: Devices / Integration / Related Technology G-6:Materials for Photodetector	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-6:Low Dimensional Materials II	02: Advanced and Emerging Memories / New Applications J-6:Emerging Memory Devices, and DRAM	08: Low Dimensional Devices and Materials K-6:Characterization III	04: Power / High-speed Devices and Materials M-6:III-V High-frequency and Power Devices	10: Thin Film Electronics: Oxide / Non-single Crystalline / Novel Process N-6:Group-IV, III-V based Thin-film Growth, and Device Application
		11:45 J-6-05 (Late News) Temperature Dependence of Non-polar Switching Characteristics of carbon-doped HfO_x thin films formed by mist CVD for CeRAM °Masamichi Azuma ^{1,2} , Mamoru Ikeda ¹ , Tsubasa Miyamoto ¹ , Hiroyuki Nishinaka ¹ , ¹ Kyoto Institute of Technology (Japan), ² Symetrix Corp. (United States of America) 12:00 J-6-06 (Late News) Sc-Doped Amorphous GaO_x Memristors for High Temperature Neuromorphic Application °Yuki Komizo ¹ , Zhuo Diao ¹ , Tetsuya Tohei ¹ , Akira Sakai ¹ , ¹ Graduate School of Eng. Sci., The Univ. of Osaka (Japan)		11:45 M-6-04 Proposal for introduction of composition-graded extrinsic base layers into fine emitter InP HBTs °Yasuyuki Miyamoto ^{1,2} , Yuta Shiratori ² , ¹ Science Tokyo (Japan), ² NTT (Japan)	11:45 N-6-06 Impact of the precursor conditions on the solid-phase crystallizationof amorphous InGaAs thin films on glass substrates °Yutaka Kiyono ^{1,2} , Koki Nozawa ^{1,2} , Seo Jiso ¹ , Takashi Suemasu ^{1,2} , Kaoru Toko ^{1,2} , ¹ The Univ. of Tsukuba (Japan), ² Inst. of Applied Physics (Japan) 12:00 N-6-07 Demonstrating the Superiority of Atomic Layer Etching in 150-nm Gate AlGaIn/GaN MOSHEMTs for Ka-Band RF Applications °Hsuan-Yao Huang ¹ , Cheng-Xian Liu ¹ , Yu Chen ¹ , Kuan-Pang Chang ¹ , Tsung-Ying Yang ¹ , You-Chen Weng ² , Jui-Sheng Wu ² , Cheng-Jun Huang ¹ , Fitriyadi Fitriyadi ¹ , You-Ting Lin ¹ , Chung-Han Chiu ¹ , Edward Yi Chang ^{1,2} , ¹ International College of Semiconductor Technology, National Yang Ming Chiao Tung University (Taiwan), ² Industry Academia Innovation School, National Yang Ming Chiao Tung University (Taiwan)

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-7:2D Material Integration (13:30-14:45) Session Chair: Keisuke Yamamoto (Kumamoto Univ.), Anabela Veloso (imec)	02: Advanced and Emerging Memories / New Applications B-7:Ferroelectric Materials (13:30-14:45) Session Chair: Sanghun Jeon (KAIST), Kouichi Nagai (RAMXEED)			06: Energy Harvesting and Converting Devices and Materials E-7:Energy Related Materials (13:30-14:45) Session Chair: Yoshitaro Nose (Kyoto Univ.), Shogo Ishizuka (AIST)	07: Organic / Molecular / Bio-electronics F-7:Bio/Medical Electronics (13:30-14:45) Session Chair: Huang-Ming Philip Chen (National Yang Ming Chiao Tung Univ.), Ryugo Tero (Toyohashi Univ. of Technology)
13:30 A-7-01 (Invited) Demonstration of single-channel WSe₂ CMOS devices and circuits °Takamasa Kawanago ¹ , ¹ AIST (Japan)	13:30 B-7-01 (Invited) Emerging Ferroelectric Materials for Next-Generation Memory and In-Memory Computing °Genquan Han ¹ , Chengji Jin ¹ , Jiajia Chen ¹ , Xiao Yu ¹ , Xiaoxi Li ¹ , Jiuren Zhou ¹ , Yan Liu ¹ , ¹ Xidian Univ. (China)			13:30 E-7-01 (Invited) Calcium Titanate Doped with Several Elements for Efficient Photocatalytic Hydrogen Evolution °Shigeru Ikeda ¹ , ¹ Konan Univ. (Japan)	13:30 F-7-01 Hydrogel Electronic Device with Self-Healing, Motion Monitoring, and Bacteria Theranostics for Wound Healing °Xianghong Wang ¹ , Mengyao Shan ¹ , Zonghui Ye ¹ , Peng Zhang ¹ , Xin Chen ¹ , Xuying Lu ¹ , ¹ Zheng-zhou University (China)
					13:45 F-7-02 Design and verification of CMOS core chip for opto-electronic distributed Brain Machine Interface °Atsunori Sakata ¹ , Masato Saito ¹ , Yasufumi Yokoshiki ² , Takashi Tokuda ¹ , ¹ Inst. of Science Tokyo (Japan), ² Aoyama Gakuin Univ. (Japan)
14:00 A-7-02 Monolithic 3D CMOS Logic Integration of p-FinFET and 2D n-WSe₂ FET with Planar Local Back-Gate °Chi-Chun Cheng ¹ , Wen-Yuan Fei ¹ , Ching-Min Hsu ¹ , Po-Wen Chiu ¹ , ¹ The Univ. of Hsinchu (Taiwan)	14:00 B-7-02 Tetragonal-to-Orthorhombic Phase Transition and Dielectric Performance in HZO-Based High-κ Capacitors: The Role of Oxygen Vacancies °Dan Lv ¹ , Yongchang Li ¹ , Zhenyu Chen ² , Jian Rong ¹ , Congcong Xu ¹ , Lianqi Zhao ¹ , Lu Wang ¹ , Mengwei Si ² , Dongdong Li ² , ¹ Zhangjiang Laboratory (China), ² Shanghai Jiao Tong University (China)			14:00 E-7-02 The Al³⁺ ion energy storage behavior of 2D MoO₃ layer structure in hydrated eutectic electrolytes °Jin-Ming Chen ¹ , Kueih-Tzu Lu ² , ¹ National Yang Ming Chiao Tung Univ. (Taiwan), ² National Synchrotron Radiation Research Center (Taiwan)	14:00 F-7-03 Ultra-Low-Invasive Tentacle-Type Bone Marrow Neural Probe with Higher Electrode Density °Naoki Iwanuma ¹ , Kazushi Tsuji ² , Shutarō Oba ¹ , Keigo Kitta ² , Takafumi Fukushima ^{1,2} , Tetsu Tanaka ^{1,2} , ¹ Grad. Sch. Eng., Tohoku Univ. (Japan), ² Grad. Sch.Biomedical Eng., Tohoku Univ (Japan)
14:15 A-7-03 CMOS-Friendly Doping Strategies for p-Type WSe₂ Field-Effect Transistors °Cheng-Chieh Hsieh ¹ , I-Ling Li ¹ , Cheng-Yang Hsu ¹ , Han-Hsiang Pai ¹ , Tsung-Che Hsieh ¹ , Hung-Hui Yang ¹ , Chien-Wei Chen ² , Chih-Chao Yang ² , Ying-Hao Chu ¹ , Chao-Hui Yeh ¹ , ¹ National Tsing Hua Univ. (Taiwan), ² Taiwan Semiconductor Research Inst. (Taiwan), ³ Taiwan Instrument Research Inst. (Taiwan)	14:15 B-7-03 Dimension-Constrained Ferroelectric Phase Engineering of HfO₂ in 3D Structures for High-Density Nonvolatile Memory °Xiangyu Cui ¹ , Zongwei Shang ¹ , Xijun Zhou ¹ , Yifan Chen ¹ , Changqing Ye ² , Xing Wu ³ , Ming Li ^{1,2} , ¹ Peking Univ. (China), ² Beijing Advanced Innovation Center for Integrated Circuits (China), ³ East China Normal Univ. (China)			14:15 E-7-03 Self-powered Bias-Flip Rectifier with On-Chip Flip Switch Timing Controller for Piezoelectric Energy harvesting °So Iwanari ¹ , Kira Tanigami ¹ , Hikaru Sebe ¹ , Daisuke Kanemoto ¹ , Tetsuya Hirose ¹ , ¹ The University of Osaka (Japan)	14:15 F-7-04 Sub-1cm³ Beacon Driven by Intermittently-Operating Light-Energy-Harvesting Circuit °Juntaro Ito ¹ , Kaisei Yoshimoto ¹ , Masato Saito ¹ , Yasufumi Yokoshiki ² , Takashi Tokuda ¹ , ¹ Inst. of Science Tokyo (Japan), ² Aoyama Gakuin Univ. (Japan)
14:30 A-7-04 Fabrication of Electro-Absorption Dual Graphene Modulators on 200 mm Wafer Scale °Rasuole Lukose ¹ , Ashraful Islam Raju ¹ , Pawan Kumar Dubey ¹ , Philipp Kulse ¹ , Steffen Marschmayer ¹ , Daniele Capista ¹ , Anna Peczek ¹ , Aleksandra Kroh ¹ , Marco Lisker ^{1,2} , Andreas Mai ^{1,2} , Mindaugas Lukostius ¹ , ¹ IHP-Leibniz Institut für innovative Mikroelektronik (Germany), ² Technical University of Applied Science Wildau (Germany)	14:30 B-7-04 FeFETs with Enhanced Memory Window and Reliability by Hybrid Ferroelectrics Based on Solid Solution/Superlattice Structures and Interface Engineering °Yu-Cheng Lin ¹ , Tsen-Hsiang Pan ¹ , Yung-Hsien Hsu Wu ¹ , ¹ National Tsing Hua University (Taiwan)			14:30 E-7-04 Boosting Deep-ultraviolet Photodetector Performance Based on Novel Composite Material (HfO₂, Ga₂O₃, ZnO) Semiconductor Thin Film °Vo Pham Hoang Huy ¹ , Muoi Thi Vo ¹ , Jae Ho Park ¹ , Min Jun Kim ¹ , Sam Yoon ¹ , Hyung Wook Kim ¹ , Chung Wung Bark ¹ , ¹ Gachon University (Korea)	14:30 F-7-05 Design of CMOS Switch with Integrated Charge Pump to Extend Stimulation Voltage Range in Retinal Prosthesis Chip Using Standard CMOS Process °Wisaroot Sriitsaranusorn ¹ , Yuki Nakanishi ¹ , Ryoma Okada ¹ , Kenzo Shodo ² , Yasuo Terasawa ² , Hironari Takehara ¹ , Makito Haruta ^{1,3} , Hiroyuki Tashiro ^{1,4} , Jun Ohta ¹ , Kiyotaka Sasagawa ¹ , ¹ Nara Inst. of Sci. and Tech. (Japan), ² Nidek Co., Ltd. (Japan), ³ Chitose Inst. of Sci. and Tech. (Japan), ⁴ Kyushu Univ. (Japan)

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
	11: Advanced Materials: Synthesis / Crystal Growth / Characterization H-7:Advanced Materials and Thin Films (13:30-14:45) Session Chair: Kentaro Watanabe (Shinshu Univ.), Tomohiro Yamaguchi (Kogakuin Univ.)		08: Low Dimensional Devices and Materials K-7:Device III (13:30-14:30) Session Chair: Takamasa Kawanago (AIST), Yusuke Hoshi (Tokyo City Univ.)	04: Power / High-speed Devices and Materials M-7:Technologies for GaN HEMTs (13:30-14:45) Session Chair: Joel T. Asubar (Univ. of Fukui), Taketomo Sato (Hokkaido Univ.)	
	13:30 H-7-01 Impact of post-growth treatments on electrical insulation of chemical bath-grown ZnO nanowires and their underlying mechanisms °Kazuki Yamanaka¹, Kentaro Watanabe^{1,2}, ¹Shinshu Univ. (Japan), ²IFES, Shinshu Univ. (Japan) 13:45 H-7-02 Structural and Photoluminescence Properties of Cs₂PtCl₆-Based Structures Synthesized using Cs-Containing Aqueous Solution Katsuki Tanaka¹, Ryo Tamaki², Kanji Hara¹, Kotaro Yamakawa¹, Tatsuya Watanabe¹, Yoshitaka Okada³, Shinji Tsuyumu⁴, °Hirokazu Tatsuoka¹, ¹Shizuoka Univ. (Japan), ²Keio Univ. (Japan), ³The Univ. of Tokyo (Japan), ⁴Eu-BS Co.,Ltd. (Japan) 14:00 H-7-03 Thickness dependence below 10 nm on the ferroelectric HfN_{1.15} thin film formation by ECR-plasma sputtering °KANGBAI LI¹, Shun-ichiro Ohmi¹, ¹Science Tokyo (Japan)		13:30 K-7-01 Characteristics of p-Type WSe₂ FETs with Ru S/D Contacts °Kuan-Lin Lee¹, Szu-Huan Hsu¹, Yueh-Ju Chan¹, Yiming Li¹, ¹Nat'l Yang Ming Chiao Tung Univ. (Taiwan) 13:45 K-7-02 A metal-semiconductor field effect transistor based on a graphene/thin Si Schottky junction for ultraviolet light detection °Yang Xu¹, Qianqian Zhang¹, Zongwen Li¹, Yunfei Xie¹, Zhi-Xiang Zhang¹, Chuan Qin¹, Muhammad Malik¹, Jian Chai¹, Muhammad Abid Anwar¹, Bin Yu¹, ¹Zhejiang Univ. (China) 14:00 K-7-03 Reconfigurable Logic Obfuscation Enabled by 2D Ferroelectric Transistor for Secure Circuits °Xinwei Zhang¹, Xi Wang¹, Guanyu Liu¹, Bin Yu¹, ¹Zhejiang University (China)	13:30 M-7-01 (Invited) Overcoming Dynamic Instabilities in GaN Power Devices ° Jin Wei¹, Junjie Yang¹, Yanlin Wu¹, Jiawei Cui¹, Muqin Nuo¹, Yunhong Lao¹, ¹Peking Univ. (China) 14:00 M-7-02 Modeling and analysis of fully-recessed Ohmic contacts to AlGaIn/GaN heterostructures °Kazuya Uryu^{1,2}, Junewoo Choi², Yuchen Deng², Toshi-kazu Suzuki², ¹Advantest Corp. (Japan), ²Japan Advanced Inst. of Sci. and Tech. (Japan)	
	14:15 H-7-04 Synthesis and Magnetism of Two-Dimensional CrS₂ Film °Yuwei Wang^{1,2}, Jiwei Liu^{1,2}, Shuo Xiong^{1,2}, Mingsheng Xu^{1,2}, ¹The Univ. of Zhejiang (China), ²The Sate Key Lab. of Silicon and Advanced Semiconductor Materials (China)		14:15 K-7-04 Engineering of P Type Layer for High Performance Vertical WSe₂ p-i-n Photovoltaic Detector °Maoxin Tian¹, Tianjiao Zhang¹, Cheng Zhang¹, Jialei Miao¹, Bin Yu¹, Yang Xu¹, Yuda Zhao¹, ¹The Univ. of Zhejiang (China)	14:15 M-7-03 Revealing Characteristics under Gate Scaling to Achieve High RF Performance with Small-Signal Analysis in InAlGaIn/GaN HEMTs °Yi-Lun Huang¹, Kun-Yang Jhang², Min-Chun Chung², Ren-Hong Zhang², Chao-Hsin Wu^{1,2,3}, ¹ Graduate School of Advanced Tech., National Taiwan Univ. (Taiwan), ²Graduate Inst. of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan), ³Graduate Inst. of Electronics Engineering, National Taiwan Univ. (Taiwan)	
	14:30 H-7-05 Fabrication and characterization of ferromagnetic metal pattern embedded structure in Si-doped GaAs °Yuichiro Masubuchi¹, Shintaro Ohta¹, Tomoaki Takemura¹, Hayato Miyagawa¹, ¹Kagawa University (Japan)			14:30 M-7-04 Study of Interface Trap in Tri-Gate AlGaIn/GaN MISHEMT Using ALD ZrO₂ as Gate Dielectric °Rahul Rai^{1,2}, Khanh Quoc Nguyen¹, Hung Duy Tran¹, Viet Quoc Ho¹, Baquer Mazhar¹, Edward Yi Chang¹, ¹National Yang-Ming Chiao Tung University, (Taiwan), ²Indian Institute of Technology, Kanpur, (India)	

Thursday, September 18

Room A (301, 3rd Floor)	Room B (302, 3rd Floor)	Room C (303, 3rd Floor)	Room D (304, 3rd Floor)	Room E (311, 3rd Floor)	Room F (312, 3rd Floor)
01: Advanced CMOS: Material Science / Process Engineering / Device Technology A-8:Vertical FET and New Devices (15:15-16:15) Session Chair: Hiroyuki Ogawa (Rapidus Corp.), Takashi Matsukawa (AIST)	02: Advanced and Emerging Memories / New Applications B-8:Ferroelectric Memory Materials (15:15-16:30) Session Chair: Ming-Hsiu Lee (Macronix International Co., Ltd.), Laurent Grenouillet (CEA-Leti)				
15:15 A-8-01 Performance Enhancement Strategies in Vertical FETs for Next-Generation Logics <i>Zhihao Wang¹, [○]Ziqiao Xu¹, Yu Liu¹, Yanbang Chu¹, Chuan Lan¹, Yimeng Wang¹, Runsheng Wang¹, Ming Li¹, Heng Wu¹, ¹Peking University (China)</i>	15:15 B-8-01 Uniform La-Doping in HZO Ferroelectric Film Enables Ultra-Low Coercive Field of 0.72 MV/cm at 10 kHz <i>[○]Ze-Kun Zhao¹, Yu-Long Jiang¹, Dongdong Li², Shan-Ting Zhang², ¹Fudan Univ. (China), ²Zhangjiang Lab. (China)</i>				
15:30 A-8-02 Exploration and Insights into Vertical Nanowire/sheet FETs for Ultimate Scaled Circuits/ Systems <i>[○]Anabela Veloso¹, Bjorn Vermeersch¹, Abderrahim Tahia², Philippe Matagne¹, Adrian Chasin¹, Barry OSullivan¹, Ruben Asanovski¹, Bogdan Cretu², Eddy Simoen³, Roger Loo^{1,3}, Jeroen Scheerder¹, Claudia Fleischmann^{1,4}, ¹Imec (Belgium), ²Normandy Univ., ENSICAEN, UNICAEN, CNRS, GREYC (France), ³Ghent Univ. (Belgium), ⁴KU Leuven (Belgium)</i>	15:30 B-8-02 Enhanced Permittivity in Ga-Doped Hf_{0.5}Zr_{0.5}O₂ Ferroelectric Capacitors via Morphotropic Phase Boundary Engineering <i>[○]Zi-Ying Huang¹, Yu-Chun Li¹, Lei Shen¹, David Wei Zhang^{1,2}, Hong-Liang Lu^{1,2}, ¹Fudan Univ. (China), ²National Integrated Circuit Innovation Center (China)</i>				
15:45 A-8-03 Trimmable Via Pin Array Capacitor in Fully Compatible CMOS Logic Process in 16nm FinFET Platform <i>[○]Wei-Hwa Lin¹, Jian-Yu Wang¹, Yue-Der Chih², Yih Wang², Jonathan Chang², Ya-Chin King¹, Chrong Jung Lin¹, ¹Inst. of Electronics Engineering, National Tsing Hua Univ. (Taiwan), ²Design Technology Platform, Taiwan Semiconductor Manufac. Company (Taiwan)</i>	15:45 B-8-03 Enhanced Polarization and Switching Dynamics in Yttrium-Doped Hf_{0.5}Zr_{0.5}O₂ Metal-Ferroelectric-Metal Capacitors at 4 K <i>[○]Ankit Agarwal¹, Cyun-Siang Lin¹, Zhe-Wei Zheng¹, Chun-Jung Su², William Cheng-Yu Ma², Kuo-Hsing Kao¹, ¹Department of Electrical Engineering, National Cheng Kung Univ. (Taiwan), ²Department of Electrophysics and Inst. of Electronics, National Yang-Ming Chiao Tung Univ. (Taiwan), ³Department of Electrical Engineering, National Sun Yat-sen Univ. (Taiwan)</i>				
16:00 A-8-04 Demonstration of Field Curvature Aberration Correction Using Concave Curved Color CMOS Image Sensors <i>[○]Masahide Goto¹, Shigeyuki Imura¹, Hiroto Sato¹, ¹NHK Sci. & Tech. Res. Labs. (Japan)</i>	16:00 B-8-04 Ultra-High-κ Hf_{0.5}Zr_{0.5}O₂ Capacitors Assisted by Interfacial Layer Engineering <i>[○]Qiang Gao¹, Danyang Chen¹, Lu Wang², Zhiyu Lin¹, Mengwei Si¹, Dongdong Li², Xituan Li¹, ¹Shanghai Jiao Tong Univ. (China), ²Zhangjiang Lab. (China)</i>				
	16:15 B-8-05 Wake-Up-Free and High-Endurance Ferroelectric Capacitors Enabled by Co-Optimization of Zr/N Interface Engineering and Microwave Annealing <i>[○]Sheng-Ying Lu¹, Ching-Hsien Wang¹, Yung-Hsien Hsu Wu¹, ¹National Tsing Hua University (Taiwan)</i>				

Thursday, September 18

Room G (313, 3rd Floor)	Room H (314, 3rd Floor)	Room J (411+412, 4th Floor)	Room K (413, 4th Floor)	Room M (414+415, 4th Floor)	Room N (416+417, 4th Floor)
			08: Low Dimensional Devices and Materials K-8:Device IV (15:15-16:00) Session Chair: Masafumi Jo (RIKEN), Shinjiro Hara (NIMS)	04: Power / High-speed Devices and Materials M-8:Si Materials and Devices (15:15-16:30) Session Chair: Tsuyoshi Kachi (Toshiba Device & storage), Yue-ming Hsin (National Central Univ.)	
			15:15 K-8-01 Terahertz Hot-Carrier Bolometric Detectors Based on Graphene Topological Structures Using Plasmonic Resonances °VICTOR RYZHI¹, Chao Tang¹, Maxim Ryzhi², Michael S Shur², ¹Tohoku University (Japan), ²University of Aizu (Japan), ³Rensselaer Polytechnic Institute (United States of America) 15:30 K-8-02 Realization of WSe₂ nFETs via Surface Plasma Treatment Beneath Source/Drain Electrodes and Neural Network-Based Device Modeling for Circuit Applications °Takamasa Kawanago¹, Takumi Inaba¹, Naoya Okada¹, ¹AIST (Japan) 15:45 K-8-03 2D material channel-based phototransistor array for broadband image sensing Fengyuan Zhang¹, Shiyu Wei¹, Ali Imran¹, °Mingsheng Xu¹, ¹Zhejiang University (China)	15:15 M-8-01 Quantitative analysis of Sb donors in Si by PL spectroscopy °Yoshiji Miyamura¹, Ryosuke Sakemi¹, Daigo Hayashi¹, Shin-ichi Nishizawa¹, Michio Tajima², ¹Kyushu Univ. (Japan), ²NPERC-J (Japan) 15:30 M-8-02 Study on Dislocation Propagation in Trench Structures during Silicon IGBTs Process-Oxidation °Bozhou Cai¹, Jiuyang Yuan¹, Yoshiji Miyamura¹, Wataru Saito¹, Shin-ichi Nishizawa¹, ¹Kyushu University (Japan) 15:45 M-8-03 Influence of Pitch Shrinkage on Qrr in Trench Field Plate Power MOSFETs °Takuma Hara¹, Hiroaki Kato¹, Takuya Yasutake¹, Kazuyuki Sato¹, Hirofumi Kawai¹, Shigeru Nakajima¹, Tatsuya Ohguro¹, Yusuke Kawaguchi¹, ¹Toshiba Electronic Devices & Storage Corp (Japan) 16:00 M-8-04 Operating Principle of Field Limiting Ring Edge Termination °Kiyoshi Takeuchi¹, Munetoshi Fukui¹, Takuya Saraya¹, Kazuo Ito¹, Toshihiko Takakura¹, Shinichi Suzuki¹, Hiroyuki Takase¹, Toshiro Hiramoto¹, ¹The Univ. of Tokyo (Japan) 16:15 M-8-05 3D TCAD study on the behavior of current filaments at the boundary between cell and edge termination in IGBTs °Takeshi Suwa¹, ¹Toshiba Electronic Devices & Storage Corporation (Japan)	