

Wednesday, September 4

ES Meeting Room	ES021	ES022	ES024	ES025	ES033
<p>Area 7:Organic & Bio A-3:Biochemical Sensors</p> <p>(9:00-10:30) Session Chair: H. Tanaka (Panasonic Corp.), R. Tero (Toyohashi Tech)</p>	<p>Area 5:Photonics B-3:LiDAR</p> <p>(9:30-10:30) Session Chair: M. Shirao (Mitsubishi Electric Corp.), H. Isshiki (UEC)</p>	<p>Area 6:Energy C-3:Battery/Fuel Cell/ Capacitor</p> <p>(9:00-10:30) Session Chair: S. Shiraki (Nippon Inst. of Tech.), M. Motoyama (Nagoya Univ.)</p>	<p>Area 8:Low D D-3:Physics & Application of Graphene Devices</p> <p>(9:00-10:30) Session Chair: T. Arie (Osaka Prefecture Univ.), T. Irisawa (AIST)</p>		
<p>9:00 A-3-01 (Invited) DNA detection by Electrochemical Impedance Spectroscopy H. Han¹, N.B. Sabani¹, F. Takei^{1,2}, K. Nobusawa¹, I. Yamashita¹, ¹Osaka Univ. (Japan), ²National Defense Medical College (Japan)</p>		<p>9:00 C-3-01 (Invited) Atomic Layer Deposited Thin Film for Low-Temperature Solid Oxide Fuel Cell Electrolyte ^oJ. An¹, ¹Seoul National Univ. of Sci. and Tech. (Korea)</p>	<p>9:00 D-3-01 (Invited) Dynamical Studies of Hot Carriers in 2D Semiconductors: Intrinsic vs. Extrinsic Processes J. Nathawat¹, H. Ramamoorthy², R. Somphonsane², K. Sakanashi³, N. Aoki², ^oJ.P. Bird¹, ¹Univ. at Buffalo (USA), ²King Mongkut's Institute of Technology Ladkrabang (Thailand), ³Chiba Univ. (Japan)</p>		
<p>9:30 A-3-02 Organic Material-based Artificial Synaptic Device for Neuromorphic Applications ^oS. Ham¹, M. Kang², S. Jang¹, J. Jang¹, T.-W. Kim², G. Wang¹, ¹Univ. of Korea (Korea), ²Korea Inst. of Sci. and Tech. (Korea)</p>	<p>9:30 B-3-01 (Invited) On-chip coherent LiDAR for imaging: progress and current limitations ^oA. Martin¹, P. Feneyrou¹, J. Bourderionnet¹, ¹Thales Research and Technology (France)</p>	<p>9:30 C-3-02 Highly-durable carbon nanowalls electrodes for fuel cell synthesized employing a C₂F₄/H₂ mixture gas plasma ^oH. Kondo¹, S. Imai², T. Tsutsumi¹, K. Ishikawa¹, M. Sekine¹, M. Hiramatsu², M. Hori¹, ¹Nagoya Univ. (Japan), ²Meijo Univ. (Japan)</p>	<p>9:30 D-3-02 State-Space Modeling for Graphene FET Biosensor Dynamic Response ^oS. Ushiba¹, T. Okino¹, T. Ono², N. Miyakawa¹, A. Shinagawa¹, K. Yamamoto², Y. Kanai², K. Inoue², K. Takahashi¹, M. Kimura¹, K. Matsumoto², ¹Murata Manufac. Co., Ltd. (Japan), ²Osaka Univ. (Japan)</p>		
<p>9:45 A-3-03 High sensitive biosensor with extended-gate ISFETs based on in-plane-gate structure a-IGZO TFETs with engineered gate oxide ^oJ.H. Jeon¹, W.J. Cho¹, ¹Univ. of Kwangwoon (Korea)</p>		<p>9:45 C-3-03 Synthesis of CNTs/RGO/ Co(OH)₂ Hybrid Nanostructure for High Performance Supercapacitor Electrode ^oM.L. Chang¹, W.S. Li¹, H.C. Cheng¹, ¹National Chiao Tung Univ. (Taiwan)</p>	<p>9:45 D-3-03 Heavy-Metal-Ion Sensor Using Graphene Field-Effect Transistor Decorated with Thiacalix[4]arene ^oY. Takagiri¹, T. Ikuta¹, K. Maehashi¹, ¹Tokyo Univ. of Agri. and Tech. (Japan)</p>		
<p>10:00 A-3-04 Electric Signal Transmission in Seawater using Diamond Solution Gate FET as Receiver ^oK. Tadenuma¹, Y. Iyama¹, Y.H. Chang¹, Y. Shintani¹, H. Kawarada^{1,2}, ¹Waseda Univ. (Japan), ²The Kagami Memorial Lab. for Materials Sci. and Tech. (Japan)</p>	<p>10:00 B-3-02 Image acquired by FMCW- LiDAR using Slow-light Photonic Crystal Modulator based on Si-Photonics Technology ^oN.J. Jitcharoenchai¹, N. Nishiyama¹, H. Abe², Y. Hinakura², T. Baba², ¹Tokyo Inst. of Tech. (Japan), ²Yokohama National Univ. (Japan)</p>	<p>10:00 C-3-04 Fabrication of MnS@Ni(OH)₂ Composite for improved supercapacitor applications ^oP.K. Guruviah¹, ¹Alagappa Univ. (India)</p>	<p>10:00 D-3-04 Quantum Hall Effect and Band Dispersion in Artificially Stacked CVD Graphene ^oH. Murano¹, K. Ikushima¹, T. Ikuta¹, K. Maehashi¹, ¹Tokyo Univ. of A & T (Japan)</p>		
<p>10:15 A-3-05 The Investigation of IGZO Sensing Membrane Applied in Electrolyte-Insulator- Semiconductor (EIS) Biosensors C.S. Liu¹, C.H. Kao^{1,2,3}, C.Y. Lin², Y.W. Liu¹, C.F. Lin¹, C.H. Wang¹, M. Das¹, ^oY.H. Lin¹, K.L. Chen¹, ¹Chang Gung Univ. (Taiwan), ²Chang Gung Memorial Hospital (Taiwan), ³Ming Chi Univ. of Tech. (Taiwan)</p>	<p>10:15 B-3-03 Silicon Photonics Co-integrated with Silicon Nitride for Optical Phased Arrays ^oA. Marinins¹, S.P. Dwivedi¹, J. Ø. Kjellman¹, S. Kerman, T. David¹, B. Figeys¹, R. Jansen¹, D.S. Tezcan¹, X. Rottenberg¹, P. Soussan¹, ¹imec (Belgium)</p>	<p>10:15 C-3-05 Achieving Fast Charging and Long-life Li-S Battery via Li passivated MoO₃ NR decorated Celgard Separator ^oN. Kaisar^{1,2}, S. Joui², C.W. Chu¹, ¹Academia Sinica (Taiwan), ²National Taiwan Univ. of Science and Technology (Taiwan)</p>	<p>10:15 D-3-05 FABRICATION OF TENSILE STRAIN APPLYING STRUCTURE TO SUSPENDED GRAPHENE FOR NANOMECHANICAL RESONATOR WITH HIGH FQ PRODUCT ^oJ. Uesaka¹, K. Go¹, S. Kidane¹, K. Sawada¹, K. Takahashi¹, ¹Toyohashi Univ. of Tech. (Japan)</p>		
Short Oral Presentation					
<p>(10:45-11:25) Area7 (PS-7): Organic / Molecular / Bio-electronics Session Chair: H. Okada (Univ. of Toyama), T. Tanaka (Tohoku Univ.)</p>	<p>(10:45-11:07) Area5 (PS-5): Photonics: Devices, Integration and Related Technology Session Chair: N. Nishiyama (Tokyo Tech), T. Tawara (NTT Basic Res. Labs.)</p>	<p>(10:45-11:35) Area6 (PS-6): Photovoltaic / Energy Harvesting / Battery- related Technology Session Chair: M. Ikegami (Toin Univ. of Yokohama)</p>	<p>(10:45-11:31) Area8 (PS-8): Low Dimensional Devices and Materials Session Chair: K. Nagashio (Univ. of Tokyo), S. Hara (Hokkaido Univ.)</p>	<p>(10:45-11:21) Area9 (PS-9): Novel Functional / Quantum / Spintronic Devices and Materials Session Chair: A. Oiwa (Osaka Univ.), K. Terabe (NIMS)</p>	<p>(10:45-11:23) Area11 (PS-11): Advanced Materials Synthesis, Crystal Growth and Characterization Session Chair: A. Kikuchi (Sophia Univ.), K. Watanabe (Tohoku Univ.)</p>

Wednesday, September 4

ES034	IB011	IB013	IB014	IB015	IB Lecture Hall
	<p>Area 2:Memory H-3:Ferroelectric FET for Non-Volatile Device Applications (9:00-10:30) Session Chair: S. Jeon (KAIST), Y. Hikosaka (Fujitsu Semiconductor Ltd.)</p>		<p>Area 4:Power & High-speed K-3:Si Power Technologies (9:00-10:30) Session Chair: T. Terashima (Mitsubishi Electric Corp.), T. Matsudai (Toshiba Electronic Devices & Storage Corp.)</p>	<p>Joint Session(Area1&3+SP) M-3:Advanced Integration Technologies (9:00-10:30) Session Chair: H. Majima (Toshiba Electronic Devices & Storage Corp.), M. Ueki (Sony Semiconductor Manufacturing Corp.)</p>	<p>Area 1:Advanced CMOS N-3:Steep Slope Transistor (9:00-10:30) Session Chair: M. Kobayashi (Univ. of Tokyo), N. Mise (Hitachi High-Technologies Corp.)</p>
	<p>9:00 H-3-01 (Invited) Ferroelectric HfO₂ for Memory Applications and Unconventional Computing °H. Mulaosmanovic¹, E.T. Breyer¹, U. Schröder¹, T. Mikolajick^{2,3}, S. Slesazek¹, ¹NaMLab gGmbH (Germany), ²Chair of Nanoelectronic Materials (Germany)</p>		<p>9:00 K-3-01 (Invited) State-of-the Art IGBT and Development towards Higher Operation Temperature and Power Ratings °J. Vobecky¹, C. Corvasce¹, E. Buitrago¹, M. Andenna¹, B. Boksteen¹, G. Paques¹, ¹ABB Semiconductors (Switzerland)</p>	<p>9:00 M-3-01 (Invited) Integrated Hybrid MEMS Hydrogen Sensor with high sensitivity and wide dynamic range °H. Yamazaki¹, Y. Hayashi¹, K. Masunishi¹, T. Saito¹, D. Ono¹, N. Nakamura¹, A. Kojima¹, ¹Toshiba Corp. (Japan)</p>	<p>9:00 N-3-01 (Invited) Studies of Ferroelectric HfO₂ Materials before Memory and Logic Applications °S. Migita¹, ¹AIST (Japan)</p>
	<p>9:30 H-3-02 A Simulation Study on HI-based Ferroelectric FET Memory Performance °K. Takeuchi¹, M. Kobayashi¹, T. Hiramoto¹, ¹Univ. of Tokyo (Japan)</p>		<p>9:30 K-3-02 Impact of Structural Parameter Scaling on On-state Voltage in 1200V Scaled IGBTs °T. Saraya¹, K. Ito¹, T. Takakura¹, M. Fukui¹, S. Suzuki¹, K. Takeuchi¹, K. Kakushima², T. Hoshii², K. Tsutsui², H. Iwai², S. Nishizawa², I. Omura², T. Hiramoto¹, ¹Univ. of Tokyo (Japan), ²Tokyo Tech (Japan), ³Kyushu Univ. (Japan), ⁴Kyushu Inst. of Tech. (Japan)</p>	<p>9:30 M-3-02 3D SoC Design with TSV-less Power Supply Employing Highly Doped Silicon Via °K. Shiba¹, M. Hamada¹, T. Kuroda¹, ¹Keio Univ. (Japan)</p>	<p>9:30 N-3-02 Impact of Non-Linear Subthreshold I-V on the Scalability of Ultra-Thin-Body Negative-Capacitance FETs and Its Mitigation °S.E. Huang¹, P. Su¹, ¹National Chiao Tung Univ. (Taiwan)</p>
	<p>9:45 H-3-03 Variability Analysis for FeFET NVMs Considering Ferroelectric-Dielectric Phase Distribution °Y.S. Liu¹, P. Su¹, ¹National Chiao Tung Univ. (Taiwan)</p>		<p>9:45 K-3-03 Impact of 3-D Simulation on the Analysis of Unclamped Inductive Switching °M. Tanaka¹, N. Abe¹, A. Nakagawa², ¹Nihon Synopsys G.K. (Japan), ²Nakagawa Consulting Office, LLC. (Japan)</p>	<p>9:45 M-3-03 2.5D Integration Using Inductive-Coupling TSV-less Miniature Interposer Achieving 317Gb/s/mm², 1.2pJ/b Data Transfer °C. Cheng¹, K. Shiba¹, M. Hamada¹, T. Kuroda¹, ¹Keio Univ. (Japan)</p>	<p>9:45 N-3-03 Performance improvement in ZnSnO/Si bilayer TFET by W/Al₂O₃ gate stack °K. Kato^{1,2}, H. Matsui², H. Tabata², T. Mori¹, Y. Morita¹, T. Matsukawa¹, M. Takenaka², S. Takagi², ¹AIST (Japan), ²Univ. of Tokyo (Japan)</p>
	<p>10:00 H-3-04 ZrO₂ Anti-Ferroelectric Field Effect Transistor for Non-volatile Memory and Analog Synapse Applications °H. Liu¹, S. Zheng¹, G. Han¹, Y. Xu¹, Y. Liu¹, C. Wang², X. Wang², N. Yang³, N. Zhong², Y. Hao¹, ¹Xidian Univ. (China), ²Huazhong Univ. of Science and Technology (China), ³East China Normal Univ. (China)</p>		<p>10:00 K-3-04 Analysis of Oscillatory Phenomena in Cathode Designs for 1200 V Diodes Using an LCR Circuit Model in Reverse Recovery °K. Fuse¹, K. Kawamura¹, T. Matsudai¹, W. Saito¹, ¹Toshiba Electronic Devices & Storage Corp. (Japan)</p>	<p>10:00 M-3-04 (Late News) An Energy Efficient Normally-Off CPU with 2.4 pW Negative Voltage Generator Featuring 60-nm Crystalline Indium-Gallium-Zinc Oxide FETs in BEOL F. Akasawa¹, K. Furutani¹, T. Ishizu¹, °K. Sasaki¹, Y. Yakubo¹, A. Isobe¹, T. Ando¹, T. Murakawa¹, T. Ikeda¹, K. Kato¹, S. Yamazaki¹, ¹Semiconductor Energy Laboratory Co., Ltd. (Japan)</p>	<p>10:00 N-3-04 Demonstration of n- and p-TFET operations in a single ZnSnO/SiGe bilayer structure °K. Kato^{1,2}, K. Jo², H. Matsui², H. Tabata², T. Mori¹, Y. Morita¹, T. Matsukawa¹, M. Takenaka², S. Takagi², ¹AIST (Japan), ²Univ. of Tokyo (Japan)</p>
	<p>10:15 H-3-05 Design Space Exploration of 1T Non-Volatile Ferroelectric FET Memory for Logic-In-Memory Applications °T.-Y. Ho¹, V.P.-H. Hu¹, ¹National Central Univ. (Taiwan)</p>		<p>10:15 K-3-05 A Novel 120V Level Shifter with Enhanced Isolation Structure by Using 0.35um LV CMOS Process for Motor Driver Applications °V. Ningaraju¹, H.C. Lin¹, P.A. Chen², K.L. Lin², ¹National Chiao Tung Univ. (Taiwan), ²Nuvoton Technology Corporation (Taiwan)</p>	<p>10:15 M-3-05 Differential Signal Balancer Embedded in Metal Wiring Layers of Silicon LSI °M. Kameya¹, C. Yang-Min¹, K. Nakamura¹, ¹Kyushu Inst. of Tech. (Japan)</p>	<p>10:15 N-3-05 New types of resonant tunneling currents at Si-p/n junctions; Theoretical design °S. Cho¹, T. Nakayama¹, ¹Chiba Univ. (Japan)</p>
Short Oral Presentation					
<p>(10:45-11:19) Area10 (PS-10): Thin Film Electronics: Oxide, Non-single Crystalline and Novel Process Session Chair: H.Kakiuchi (Osaka Univ.), H. Odaka (Asahi Glass Co., Ltd.)</p>	<p>(10:45-11:25) Area2 (PS-2): Advanced / Emerging Memories and New Applications Session Chair: K. Yamamoto (Toshiba Memory Corp.), W. T. Sun (eMemory Technology Inc.)</p>	<p>(10:45-10:55) Area3 (PS-3): Interconnect / 3D Integrations / MEMS Session Chair: H. Kitada (Fujitsu Labs. Ltd.), A. Isobayashi (Toshiba Corp.)</p>	<p>(10:45-11:45) Area4 (PS-4): Power Devices / High-speed Devices, and Materials Session Chair: D. Hisamoto (Hitachi, Ltd.), N. Iwamura (Univ. of Tsukuba)</p>	<p>(10:45-10:59) Special Area (PS-SP): Advanced Circuits/Systems Interacting with Innovative Devices & Materials Session Chair: Y. Ogasahara (AIST), D. Kanemoto (Osaka Univ.)</p>	<p>(10:45-11:33) Area1 (PS-1): Advanced CMOS: Material Fundamentals, Process Science and Device Physics Session Chair: G. Nakamura (Tokyo Electron Ltd.), H. Morioka (Socionext Inc.)</p>

Wednesday, September 4

ES Meeting Room	ES021	ES022	ES024	ES025	ES033
<p>Area 7: Organic & Bio A-4: Biophotonic Devices</p> <p>(15:30-16:30) Session Chair: H.M. Chen (NCTU), T. Tokuda (Tokyo Tech)</p> <p>15:30 A-4-01 (Invited) Intelligent biophotonic imaging for clinical applications °C.-W. Sun¹, ¹National Chiao Tung Univ. (Taiwan)</p> <p>16:00 A-4-02 Development of Wireless Opto-Neural Probe with Upconversion Nanoparticles (UCNP) for Optogenetics °S. Urayama¹, H. Kino¹, T. Fukushima¹, T. Tanaka¹, ¹Tohoku Univ. (Japan)</p> <p>16:15 A-4-03 (Late News) A Printed Metal-oxide-free Cathode for Mechanically-durable and Ultra-flexible Organic Photovoltaics °Z. Jiang^{1,2}, K. Fukuda^{1,3}, T. Someya^{1,2,3}, ¹The Thin-film Device Lab, RIKEN (Japan), ²Univ. of Tokyo (Japan), ³CEMS, RIKEN (Japan)</p>		<p>Area 6: Energy C-4: Energy Harvesting</p> <p>(15:30-16:00) Session Chair: M. Ikegami (Toin Univ. of Yokohama) H. Shinohara (CEREBEA)</p> <p>15:30 C-4-01 (Invited) Percutaneous Electrical Stimulation for Virtual Reality °K. Aoyama¹, ¹Univ. of Tokyo (Japan)</p> <p>16:00 C-4-02 Withdrawn</p> <p>16:15 C-4-03 Withdrawn</p>	<p>Area 8: Low D D-4: 2D Materials & Devices I</p> <p>(15:30-16:30) Session Chair: T. Kawanago (Tokyo Tech), K. Nagashio (Univ. of Tokyo)</p> <p>15:30 D-4-01 (Invited) Artificial Synapses based on 2D Materials for Neuromorphic Computing Lin Wang^{1,2}, Yong-Wei Zhang³, Dongzhi Chi¹, °Kah-Wee Ang^{1,2}, ¹National Univ. of Singapore (Singapore), ²Centre for Advanced 2D Materials, National Univ. of Singapore (Singapore), ³Institute of High Performance Computing, A*STAR (Singapore), ⁴Institute of Materials Research and Engineering, A*STAR (Singapore)</p> <p>16:00 D-4-02 Band Alignment in Charge-Transfer-Type p⁻-WSe₂/MoS₂ Tunnel FET °K. Nakamura¹, N. Nagamura², K. Ueno³, T. Taniguchi², K. Watanabe², K. Nagashio¹, ¹Univ. of Tokyo (Japan), ²NIMS (Japan), ³Saitama Univ. (Japan)</p> <p>16:15 D-4-03 High Performance Three-Terminal Synaptic Transistor based on Ferroelectric Hf_{0.5}Zr_{0.5}O₂/Tungsten Disulfide for Neuromorphic Computing °L. Chen^{1,2}, L. Wang^{1,2}, Y. Peng³, X. Feng^{1,2}, S. Sarkar¹, S. Li^{1,2}, B. Li^{1,2}, L. Liu², J. Chen², Y. Liu², G. Han³, K.-W. Ang^{1,2}, ¹Department of Electrical and Computer Engineering, National Univ. of Singapore (Singapore), ²Centre for Advanced 2D Materials, National Univ. of Singapore (Singapore), ³State Key Discipline Laboratory of Wide Band Gap Semiconductor Technology, Xidian Univ. (China), ⁴NUSNNI-NanoCore, National Univ. of Singapore (Singapore), ⁵Department of Materials Science and Engineering, National Univ. of Singapore (Singapore)</p>	<p>Area 9: Novel Function & Spintronics E-4: Novel Functional Devices</p> <p>(15:30-16:30) Session Chair: Y. Nishi (Toshiba Corp.), K. Ota (Toshiba Memory Corp.)</p> <p>15:30 E-4-01 (Invited) Neuromorphic computing based on Highly reliable Analog ReRAM by filament control °T. Mikawa¹, R. Yasuhara¹, K. Katayama¹, K. Kouno¹, T. Ono¹, R. Mochida¹, M. Nakayama¹, H. Suwa¹, Y. Gohou¹, T. Kakiage¹, ¹Panasonic Semiconductor Solutions Co., Ltd. (Japan)</p> <p>16:00 E-4-02 Impact of Scaling the VO₂-Channel Mott Transistor below Material Correlation Length °T. Yajima^{1,2}, Y. Samata¹, T. Nishimura¹, A. Toriumi¹, ¹Univ. of Tokyo (Japan), ²JST PRESTO (Japan)</p> <p>16:15 E-4-03 Fabrication and Irradiation Effects of Field-Induced Two-Dimensional Electron Gas in Dopant-Etched Modulation-Doped GaAs/AlGaAs Heterostructures °G. Fukuda¹, T. Fujita¹, Y. Kanai¹, K. Matsumoto¹, J. Ritzmann², A. Ludwig², A.D. Wieck², A. Otiwa¹, ¹Osaka Univ. (Japan), ²Ruhr-Univ. (Germany)</p>	<p>Area 11: Growth & Characterization F-4: 2D Materials</p> <p>(15:30-16:30) Session Chair: A. Heya (Univ. of Hyogo), J. Yamaguchi (Fujitsu Labs. Ltd.)</p> <p>15:30 F-4-01 (Invited) 2D Oxide and Hydroxide Nanosheets: Synthesis, Layer-by-Layer Assembly and Function Design °T. Sasaki¹, Y. Ebina¹, N. Sakai¹, R. Ma¹, M. Osada¹, ¹NIMS (Japan)</p> <p>16:00 F-4-02 Synthesis of Ge-based Nanosheet Bundles Using Calcium Germanides as Templates in IP6 Aqueous Solution °Y. Saxena¹, Y. Shimura², H. Tatusoka¹, ¹GSIST, Shizuoka Univ. (Japan), ²Res. Inst. of Electronics, Shizuoka Univ. (Japan)</p> <p>16:15 F-4-03 Growth of Ultrathin Segregated-Ge Crystal on Al/Ge(111) Surface °M. Kobayashi¹, A. Ohta¹, M. Kurosawa¹, M. Araidai¹, M. Ikeda¹, N. Taoka¹, T. Shimizu², K. Makihara¹, S. Miyazaki¹, ¹Nagoya Univ. (Japan), ²Kansai Univ. (Japan)</p>

Rump Sessions (17:00~18:30)

[Rump Session A] (Toyoda Auditorium Meeting Room)
Will Memory change in the age of AI, IoT, VR/AR and 5G?
Moderator: N. Takaura, Hitachi, Ltd.

[Rump Session B] (Noyori Conference Hall)
Wide Band Gap and Silicon Power: Vision to Reality
Coordinator: D. Hisamoto, Hitachi, Ltd.
Moderator: I. Omura, Kyushu Institute of Technology

Wednesday, September 4

ES034	IB011	IB013	IB014	IB015	IB Lecture Hall
<p>Area 10:Thin Film G-4:Advanced Fabrication Technologies (15:30-16:30) Session Chair: H. Ikenoue (Kyushu Univ.), W. Yeh (Shimane Univ.)</p>			<p>Area 4:Power & High-speed K-4:GaN High Frequency Devices (15:30-16:45) Session Chair: T. Suzuki (JAIST), K. Tsuda (Toshiba Infrastructure Systems & Solutions Corp.)</p>	<p>Joint Session(Area2&SP) M-4:Advanced Memory Systems (15:30-16:45) Session Chair: K. Johguchi (Shinshu Univ.), T. Sakamoto (NEC Corp.)</p>	<p>Area 1:Advanced CMOS N-4:3D and Stacking Technology (15:30-16:30) Session Chair: H. Oishi (Sony Semiconductor Solutions Corp.) F.L. Yang (Academia Sinica)</p>
<p>15:30 G-4-01 Development of High Yield Layer Transfer Process of Single Crystalline Silicon Thin Film on Plastic Substrate and Its Application to Floating Gate Memory Fabrication °T. Hirano¹, R. Mizukami¹, T. Yamashita¹, F. Kondo¹, H. Hanafusa¹, Y. Mizukawa¹, S. Higashi¹, ¹Hiroshima Univ. (Japan)</p>			<p>15:30 K-4-01 (Invited) Surface Activated Bonding of SiC/Diamond for Thermal Management of High-Output Power GaN HEMTs °Y. Minoura^{1,2}, T. Ohki^{1,2}, N. Okamoto^{1,2}, A. Yamada^{1,2}, K. Makiyama^{1,2}, J. Kotani^{1,2}, S. Ozaki^{1,2}, M. Sato^{1,2}, N. Nakamura^{1,2}, ¹Fujitsu Ltd. (Japan), ²Fujitsu Labs. Ltd. (Japan)</p>	<p>15:30 M-4-01 An Ultra-Low-Power STT-MRAM-Based Multi-Core Associative Coprocessor with Inter-Core Pipeline Scheme for Large-Scale Full-Adaptive Nearest Pattern Search °Y. Ma¹, S. Miura¹, H. Honjo¹, S. Ikeda¹, T. Endoh¹, ¹Tohoku Univ. (Japan)</p>	<p>15:30 N-4-01 (Invited) Recent progress in sequential 3D device stacking: Low temperature reliable top tier junction-less devices on 300mm wafers. °A. Vandooren¹, J. Franco¹, Z. Wu¹, B. Parvais¹, G. Besnard², W. Schwarzenbach², I. Radu², B.-Y. Nguyen², N. Collaert¹, ¹imec (Belgium), ²SOITEC (France)</p>
<p>15:45 G-4-02 High-performance Transfer Printing method using Acetone Soluble Tape without adhesion promoter for Heterogeneous Integration °J. Zhang¹, Y.C. Wu¹, Z. Li¹, Y. Peng¹, Y.C. Zhang¹, C.F. Zhang¹, Y. Hao¹, ¹Xidian Univ. (China)</p>				<p>15:45 M-4-02 Design of an Energy-Efficient Controller for Realizing a Data-Shift-Minimized Nonvolatile FPGA °D. Suzuki¹, T. Hanyu¹, ¹Tohoku Univ. (Japan)</p>	
<p>16:00 G-4-03 Low Temperature Poly-Si Junctionless TFTs with Low Temperature Cyclic Trimming Process for 3D-ICs and Low Power Applications °C.C.-C. Chung¹, C.M. Ko¹, T.S. Chao¹, ¹National Chiao Tung Univ. (Taiwan)</p>			<p>16:00 K-4-02 Low Turn-on Voltage and High Breakdown GaN Schottky Barrier Diodes for RF Energy Harvesting Applications C.-H. Li¹, °H. Wang¹, Y. Liu¹, S.D. Joseph², Y. Huang², S.S.H. Hsu¹, ¹National Tsing Hua Univ. (Taiwan), ²Univ. of Liverpool (UK)</p>	<p>16:00 M-4-03 Alternate Pulse Scheme in a Hardware Neural Network for Reducing the Influence of Asymmetry on Weight Updating °C. Li¹, J. An¹, Y.-H. Song¹, ¹Hanyang Univ. (Korea)</p>	<p>16:00 N-4-02 Bottom Tier High Voltage Device Thermal Stability in 3D Sequential Integration for More than Moore Applications °C. Cavalcante^{1,2,3}, G. Ghibaud², X. Garros¹, M. Cassé¹, T. Karatsori², J. Lacord¹, C. Fenouillet¹, N. Rambal¹, O. Rozeau¹, J.P. Colinge¹, M. Vinet¹, D. Lattard¹, F. Andrieu¹, P. Batude¹, ¹Lab. CEA-LETI, MINATEC (France), ²Inst. IMEP-LAHC, Grenoble INP (France), ³Univ. Grenoble Alpes (France)</p>
<p>16:15 G-4-04 Asymmetrical Voltage Driving for Memory Window Improvement of Flexible 1TFT-1RRAM Cells for Future Internet-of-Things Applications °A. Lebanov^{1,2}, A. Fantini¹, J. Genoe^{1,2}, P. Heremans^{1,2}, K. Myny¹, ¹imec (Belgium), ²KU Leuven (Belgium)</p>			<p>16:15 K-4-03 Gallium-nitride-based Heterojunction Bipolar Transistors with Two-dimensional Hole Gas Fabricated by Epitaxial Lift-off Process °T. Kumabe¹, M. Ogura¹, A. Tanaka^{2,3}, Y. Ando¹, H. Watanabe², S. Usami¹, M. Deki², S. Nitta², Y. Honda², H. Amano^{2,3,4,5}, ¹Dept. of Electronics, Nagoya Univ. (Japan), ²IMaSS, Nagoya Univ. (Japan), ³NIMS (Japan), ⁴VBL, Nagoya Univ. (Japan), ⁵ARC, Nagoya Univ. (Japan)</p>	<p>16:15 M-4-04 Investigation of Gate-Length Dependence of Memory Window for 2D Ferroelectric-FET NVMs Considering the Impact of Spacers °W.-X. You¹, P. Su¹, ¹National Chiao Tung Univ. (Taiwan)</p>	<p>16:15 N-4-03 Effects of hydrogen ion implantation dose on electrical and physical properties of (100) and (111) Ge-on-insulator substrates fabricated by Smart-cut process °C.-M. Lim¹, Z. Zhao¹, K. Sumita¹, K. Toprasertpong¹, M. Takenaka¹, S. Takagi¹, ¹Univ. of Tokyo (Japan)</p>
			<p>16:30 K-4-04 (Late News) High-Power GaN-on-Diamond HEMTs Fabricated by Surface-Activated Room-Temperature Bonding °S. Hiza¹, M. Fujikawa¹, Y. Takiguchi¹, K. Nishimura¹, E. Yagyu¹, T. Matsumae², Y. Kurashima², H. Takagi², M. Yamamuka¹, ¹Mitsubishi Electric Corp. (Japan), ²AIST (Japan)</p>	<p>16:30 M-4-05 (Late News) An Accuracy Improved Resistance Measurement Platform For Evaluation of Emerging Memory Materials °T. Maeda¹, Y. Omura¹, R. Kuroda¹, A. Teramoto¹, T. Suwa¹, S. Sugawa¹, ¹Tohoku Univ. (Japan)</p>	

Rump Sessions (17:00~18:30)