

Wednesday, September 10

2F Conv. Hall 200	2F 201A	2F 201B	2F 202A	4F 405	4F 406	4F 403
A-3: CBRAM/DRAM (9:30-11:00) Chairs: K. Hamada (Micron Memory Japan) T. Sakamoto (LEAP)	B-3: Light Sources and Functional Devices (9:30-11:15) Chairs: H. Oohashi (NTT Electronics) K. Kojima (Tohoku Univ.)	C-3: Growth and Process of Nitrides (9:30-10:45) Chairs: T. Iwai (Fujitsu Lab.) T. Suemasu (Univ. of Tsukuba)	D-3: Biosensors (9:30-10:45) Chairs: H. -M. Chen (NCTU) R. Tero (Toyohashi Univ. of Tech.)	E-3: GaN Power Devices (9:30-11:15) Chairs: T. Tanaka (Panasonic) T. Uesugi (Toyota Central R&D Labs.)	F-3: Interface and Material Science (9:30-11:00) Chairs: K. Kakushima (Tokyo Tech) T. Yamaguchi (Renesas Electronics)	
9:30 A-3-1 (Invited) Current Status of Cation-Based Resistive Memory <i>M.N. Kozicki and H.J. Barnaby, Arizona State Univ. (USA)</i>	9:30 B-3-1 Demonstration of GaAs based Nanowire Plasmonic Laser <i>J.F. Ho¹, J. Tatebayashi¹, S. Sergent¹, C.F. Fong¹, S. Iwamoto^{1,2} and Y. Arakawa^{1,2}, ¹Inst. Nano Quantum Info. Electron., Univ. of Tokyo and ²Inst. Industrial Sci., Univ. of Tokyo (Japan)</i>	9:30 C-3-1 (Invited) Direct Growth of Uniform In-rich InGaN on Si: A New Basic Technology <i>P. Aseev¹, P.S. Rodriguez¹, V.J. Gómez¹, P. Kumar¹, N.H. Alvi¹, J.M. Manuel², F.M. Morales², J.J. Jiménez², R. García², E. Calleja¹ and R. Nötzel¹, ¹Univ. Politécnica de Madrid and ²Univ. de Cádiz (Spain)</i>	9:30 D-3-1 Sensitivity Enhancement for Reaction between Drosophila LUSH odorant-binding Protein and Ethanol using Dual-Gate EGFETs <i>I.K. Lee¹, T.E. Bae¹, H.C. Lau², J.O. Lim², J.Y. Kwon², T.J. Ha¹ and W.J. Cho¹, ¹Kwangju Univ., ²Kyungpook National Univ. and ³Sungkyunkwan Univ. (Korea)</i>	9:30 E-3-1 (Invited) Commercialization of 600V GaN HEMTs <i>P. Parikh¹, Y. Wu¹, U. Mishra¹, L. Shen¹, R. Birkhahn¹, B. Swenson¹, J. Gritters¹, R. Barr¹, L. McCarthy¹, J. Honea¹, S. Yea¹, K. Smith¹, P. Smith¹, D. Dunn¹, J. McKay¹, H. Clement¹, T. Kikkawa², T. Hosoda², Y. Asai², K. Imanashi² and K. Shono², ¹Transphorm Inc. and ²Transphorm Japan Inc. (USA)</i>	9:30 F-3-1 (Invited) Negative Capacitance in Ferroelectric Materials and Implications for Steep Transistors <i>S. Salahuddin, Univ of California, Berkeley (USA)</i>	
10:00 A-3-2 Mechanism of OFF-State Lifetime Improvement in Complementary Atom Switch <i>N. Banno, M. Tada, T. Sakamoto, M. Miyamura, K. Okamoto, N. Iguchi, T. Nohisa and H. Hada, LEAP (Japan)</i>	9:45 B-3-2 Optical Coherence Tomography Imaging by Using a Superluminescent Diode Based on InAs/GaAs Quantum Dots <i>H. Shibata¹, T. Yasuda¹, S. Ohkouchi², N. Ikeda³, H. Ohsato³, E. Watanabe³, Y. Sugimoto³, K. Furuki⁴, K. Miyaji¹, R.A. Hogg⁵ and N. Ozaki¹, ¹Wakayama Univ., ²NEC Corp., ³NIMS, ⁴Think-Lands Co. Ltd. and ⁵Univ. Sheffield (Japan)</i>	10:00 C-3-2 Selective Area Growth of N-face GaN (000-1) Films by Group-III-Source Flow-Rate Modulation Epitaxy <i>T. Akasaka, C.H. Lin and H. Yamamoto, NTT BRL (Japan)</i>	9:45 D-3-2 Elucidation of semiconductor / bio-interface structure by molecular dynamics simulation <i>Y. Maekawa, Y. Shibuta and T. Sakata, Univ. of Tokyo (Japan)</i>	10:00 E-3-2 A Novel High-Current Density GaN-based Normally-Off Transistor with Tensile Strained Quaternary InAlGaN Barrier <i>R. Kajitani, K. Tanaka, M. Ogawa, H. Ishida, M. Ishida and T. Ueda, Panasonic Corp. (Japan)</i>	10:00 F-3-2 Development of Ferroelectric Phase in TiN/Hf-Zr-O/TiN Capacitors Prepared by Sputter Deposition and Capped Anneal <i>S. Migita, H. Ota, Y. Morita and M. Masahara, AIST (Japan)</i>	
10:20 A-3-3 DRAM with Storage Capacitance of 3.9 fF using CAAC-OS Transistor with L of 60 nm and having More Than 1-h Retention Characteristics <i>T. Onuki, K. Kato, M. Nomura, Y. Yakubo, S. Nagatsuka, T. Matsuzaki, S. Hondo, Y. Hata, Y. Okazaki, M. Nagai, T. Atsumi, M. Sakakura, T. Okuda, Y. Yamamoto and S. Yamazaki, Semiconductor Energy Lab. Corp., Ltd. (Japan)</i>	10:00 B-3-3 Effect of Cavity-Layer Thicknesses on Two-Color Lasing in a Coupled Multilayer Cavity with InAs Quantum Dots <i>C. Harayama¹, S. Kato¹, Y. Nakagawa^{1,2}, X. Lu¹, N. Kumagai¹, T. Kitada¹ and T. Izu¹, ¹Univ. of Tokushima and ²NICHIA Corp. (Japan)</i>	10:15 C-3-3 Synthesis of Gallium Nitride Nanostructure by Ammoniating the Electrochemically Deposited Gallium Oxide on Silicon Substrate <i>N. M. Ghazali¹, M.R. Mahmood², K. Yasui³ and A.M. Hashim¹, ¹Univ. Teknologi Malaysia, ²Univ. Teknologi MARA and ³Nagaoka Univ. of Tech. (Malaysia)</i>	10:00 D-3-3 A Miniaturized Implantable Glucose Sensor Based on CMOS Line Sensor Using Glucose-Responsive Fluorescent Hydrogel <i>T. Kawamura¹, M. Takahashi², K. Masuda¹, T. Noda¹, K. Sasagawa¹, T. Tokuda¹, T. Okitsu³, S. Takeuchi³ and J. Ohta¹, ¹Nara Inst. of Sci. and Tech., ²BEANS Laboratory and ³Univ. of Tokyo (Japan)</i>	10:15 E-3-3 5V High Threshold Voltage Normally-off MIS-HEMTs with Combined Partially Recessed and Multiple Fluorinated-Dielectric Layers Gate Structures <i>H. Huang¹, Y.H. Wang¹, Y.C. Liang¹, G.S. Samudra¹, C.F. Huang² and W.H. Kuo³, ¹National Univ. of Singapore, ²National Tsing Hua Univ. and ³Indus. Tech. Res. Inst. (Singapore)</i>	10:20 F-3-3 SiO₂-interface Layer Reduction in HfO₂ Gate Stacks through Si-substrate Oxidation <i>X. Li, T. Yajima, T. Nishimura, K. Nagashio and A. Toriumi, Univ. of Tokyo (Japan)</i>	
10:40 A-3-4 2T1C Gain Cell Memory with Improved Retention Characteristic By Dual Coupling Method for SOC application Using 45nm-logic compatible CMOS Process <i>C.J. Lee, Y.K. Lee, M.K. Park, S.W. Kim and D.H. Lee, Samsung Electronics Corp. (Korea)</i>	10:15 B-3-4 Intersubband All-Optical Logic Gate in InGaAs/AlAsSb Quantum Wells <i>J. Feng, R. Akimoto and S. Gozu, AIST (Japan)</i>	10:30 C-3-4 Droplet Epitaxial Growth of 1.55-μm Wavelength InAs Quantum Dots on Metamorphic InAlAs/GaAs(111)A <i>N. Ha^{1,2}, T. Mano¹, X. Liu¹, T. Kuroda^{1,2}, K. Mitsuishi¹, A. Ohtake¹, A. Castellano^{1,3}, S. Sanguinetti³, T. Noda¹, Y. Sakuma⁴ and K. Sakoda¹, ¹NIMS, ²Kyushu Univ. and ³Univ. Milano Bicocca (Japan)</i>	10:15 D-3-4 Signal Amplification of Immune-Field-Effect Transistors Using Enzyme Catalyzed Ag Reduction to Overcome Debye Screening Length <i>H.J. Jang¹, J.H. Ahn², S.W. Moon¹, T.E. Bae¹, M.G. Kim¹, Y.B. Shin⁴ and W.J. Cho¹, ¹Department of Electronic Materials Eng, Kwangwoon Univ., ²Department of Nano Manufac Tech, Nano Convergence Mech Systems Res Division, Korea Inst of Machinery and Materials, ³Department of Chemistry, Gwangju Inst of Sci & Tech and ⁴Res Center of Integrative Cellulomics, Korea Res Institute of Bioscience and Biotech (Korea)</i>	10:30 E-3-4 Normally-off Operation GaN HEMT Devices with Nano-pattern Structure <i>Y.K. Fu, W.H. Kuo, S.F. Lin and Y.L. Chou, Indus. Tech. Res. Inst. (Taiwan)</i>	10:40 F-3-4 Defect Distribution and MIGS at Metal/Ge Interfaces; First-Principles Study <i>S. Sasaki, T. Hiramatsu, K. Kobinata and T. Nakayama, Chiba Univ. (Japan)</i>	

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<p>H-3: Topological Insulators and Imaging (9:30-11:15) Chairs: A. Kimura (Hiroshima Univ.) K. Terabe (NIMS)</p>	<p>J-3: CMOS Platform & SRAM (9:30-11:15) Chairs: H. Tokita (Renesas Electronics) N. Planes (STMicroelectronics)</p>	<p>K-3: Organic Photovoltaics II (9:30-11:00) Chairs: P. Ho (National Univ. of Singapore) S. Yata (Panasonic)</p>	<p>M-3: RF and Analog Techniques (9:30-11:15) Chairs: I. Akita (Toyohashi Univ. of Tech.) T. Matsuda (Toyama Pref. Univ.)</p>		<p>P-3: Nanowire Electronics (9:30-11:15) Chairs: K. Kawaguchi (Univ. of Tokyo) G. Zhang (NTT)</p>
<p>9:30 H-3-1 (Invited) Quantum anomalous Hall effect in magnetically doped topological insulator <i>K. He, Y. Wang and Q.-K. Xue, Tsinghua Univ. (China)</i></p>	<p>9:30 J-3-1 (Invited) A 16 nm FinFET CMOS Technology for Mobile SoC and Computing Applications <i>S.-Y. Wu, C.Y. Lin, M.C. Chiang, J.J. Liaw, J.Y. Cheng, S.H. Yang, C.H. Yao, T.L. Lee, W. Chang, C.C. Chen, M.H. Tsai, S.M. Jang, K.S. Chen and Y. Ku, Taiwan Semiconductor Manufacturing Company (Taiwan)</i></p>	<p>9:30 K-3-1 (Invited) FUTURE PROSPECTS OF ORGANIC AND HYBRID SOLAR CELLS FOR NEXT GENERATION PHOTOVOLTAICS <i>H. Segawa, Univ. of Tokyo (Japan)</i></p>	<p>9:30 M-3-1 (Invited) Time Difference Amplifier and Its Application for TDC <i>T. Nakura, Univ. of Tokyo (Japan)</i></p>		<p>9:30 P-3-1 (Invited) Signatures of Majorana Fermions in Topological Superconductor Nanowires <i>H. Xu, Lund Univ. and Peking Univ. (Sweden)</i></p>
<p>10:00 H-3-2 Band-Alignment Induced Current Modulation in Bi₂Se₃ Topological Insulator <i>G. Gupta, M.B.A. Jalil and G. Liang, NUS (Singapore)</i></p>	<p>10:00 J-3-2 Detailed Analysis of Minimum Operation Voltage (V_{min}) of Extraordinarily Unstable Cells in Fully Depleted Silicon-on-Thin-BOX (SOTB) 6T-SRAM <i>T. Mizutani¹, Y. Yamamoto², H. Makiyama², T. Yamashita², H. Oda², S. Kamohara², N. Sugii² and T. Hiramoto¹, ¹Univ. of Tokyo and ²LEAP (Japan)</i></p>	<p>10:00 K-3-2 Push Coating Technique Applied for a Bulk-heterojunction Solar Cell <i>S. Kobayashi¹, D. Kaneto¹, S. Fujii², H. Kataura² and Y. Nishioka¹, ¹Ninon Univ. and ²AIST (Japan)</i></p>	<p>10:00 M-3-2 A 0.8 ps-LSB, 10-bit, 0.018 mm² Time-to-Digital Converter <i>Z. Xu, M. Sugawara, M. Miyahara and A. Matsuzawa, Tokyo Tech (Japan)</i></p>		<p>10:00 P-3-2 Encapsulated Gate-All-Around InAs/InP Core-Shell Nanowire FETs <i>S. Sasaki, K. Tateno, G. Zhang, H. Pigot, Y. Harada, S. Saito, A. Fujiwara, T. Sogawa and K. Muraki, NTT Basic Research Labs. (Japan)</i></p>
<p>10:15 H-3-3 (Late News) Electric transport properties of the thallium-based topological insulators <i>G. Eguchi¹, K. Kuroda², K. Shirai², A. Kimura² and M. Shiratishi¹, ¹Dept. of Electronic Science and Engineering, Graduate School of Engineering, Kyoto Univ. and ²Graduate School of Science, Hiroshima Univ. (Japan)</i></p>	<p>10:20 J-3-3 Comparison and Statistical Analysis of Four Write Stability Metrics in Bulk CMOS SRAM Cells <i>H. Qiu, T. Mizutani, T. Saraya and T. Hiramoto, Univ. of Tokyo (Japan)</i></p>	<p>10:15 K-3-3 Control of Donor/Acceptor Interface in Bilayer Organic Solar Cells <i>K. Tajima^{1,2}, Y.F. Zhong^{1,3}, A. Tada³, Y.F. Geng^{3,4}, Q.S. Wei³, S. Izawa^{1,3} and K. Hashimoto³, ¹RIKEN CEMS, ²JST, ³Univ. of Tokyo and ⁴NCNST (Japan)</i></p>	<p>10:20 M-3-3 Evaluation of Uniqueness of Output from Current Mismatch ID Generation Circuit for Sensor Network Services <i>K. Matsunaga, S. Oshima, T. Minotani, T. Kondo and H. Morimura, NTT Microsystem Integration Laboratories (Japan)</i></p>		<p>10:15 P-3-3 Integration of Vertical InAs Nanowires on Ge(111) by Selective-Area MOVPE <i>K. Tomioka^{1,2}, F. Ishizaka¹, E. Nakai¹ and T. Fukui¹, ¹Hokkaido Univ. and ²JST-PRESTO (Japan)</i></p>
<p>10:30 H-3-4 Withdrawn</p>	<p>10:40 J-3-4 High Reliability SRAM Development for 40 nm Embedded Spilt Gate-MONOS <i>S. Okamoto¹, K. Maekawa², Y. Kawashima¹, K. Shiba², H. Sugiyama¹, M. Inoue¹ and A. Nishida¹, ¹Renesas Electronics Corp. and ²Renesas Semiconductor Manufacturing Co., Ltd. (Japan)</i></p>	<p>10:30 K-3-4 The Effect of Bathocuproine (BCP) buffer layer in boron subphthalocyanine chloride (SubPc)/fullerene (C₆₀) Organic Solar Cells with inverted structure <i>X. Hao, S. Wang, T. Sakurai and K. Akimoto, Univ. of Tsukuba (Japan)</i></p>	<p>10:40 M-3-4 A Nano-Watt Power Rail-to-Rail CMOS Amplifier with Adaptive Biasing for Ultra-Low Power Analog LSIs <i>T. Ozaki, T. Hirose, K. Tsubaki, N. Kuroki and M. Numa, Kobe Univ. (Japan)</i></p>		<p>10:30 P-3-4 Impact of High-κ Spacers on Parasitic Effects Considering DC/AC Performance Optimization in Si-Nanowire FETs for sub 10 nm Technology Node <i>J.H. Hong¹, S.H. Lee¹, Y.R. Kim¹, E.Y. Jeong¹, J.S. Yoon¹, J.S. Lee¹, R.H. Baek² and Y.H. Jeong¹, ¹Pohang Univ. of Tech. and Sci. and ²SEMATECH (Korea)</i></p>

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A-3: CBRAM/DRAM	<p>B-3: Light Sources and Functional Devices</p> <p>10:30 B-3-5 Room Temperature Lasing Characteristics in Metal-Coated GaN Spiral and Grating Structures <i>S.W. Liao¹, W.C. Liao¹, K.J. Chen¹, M.H. Shih^{1,2} and H.C. Kuo¹, ¹NCTU and ²Academia Sinica (Taiwan)</i></p> <p>10:45 B-3-6 Highly Efficient White Organic Light Emitting Devices with a Binary Random Phase Array <i>T. Hirasawa¹, Y. Inada¹, S. Nishiwaki¹, J. Matsuzaki², Y. Nakamura¹, A. Hashiya¹, S. Wakabayashi¹ and M. Suzuki¹, ¹Panasonic Corp. and ²Panasonic Corp. Eco Solutions Company (Japan)</i></p> <p>11:00 B-3-7 Synthetic Multi-Spectral Material Filter Based on Terahertz Metamaterial Combined with Thin-Film Etalon Structure <i>H. Kang, H. Jung and H. Lee, Soongsil Univ. (Korea)</i></p>	<p>C-3: Growth and Process of Nitrides</p>	<p>D-3: Biosensors</p> <p>10:30 D-3-5 (Late News) Anions Sensing and Interfering Behaviors of Electrolyte-Insulator-Semiconductor Sensors with Nitrogen Plasma Treated Samarium Oxide <i>Y.-T. Chan, Y.-R. Ye, J.-C. Wang and C.-S. Lai, Dept. of Electronic Engineering, Chang Gung Univ. (Taiwan)</i></p>	<p>E-3: GaN Power Devices</p> <p>10:45 E-3-5 Enhancement-mode AlGaIn/GaN HEMTs by selective area growth of AlGaIn layer with Al₂O₃ deposition <i>T. Narita, K. Inoue, A. Wakejima and T. Egawa, Nagoya Inst. of Tech. (Japan)</i></p> <p>11:00 E-3-6 Study of Constant Voltage Off-state Stress on Au-free AlGaIn/GaN Schottky Barrier Diodes <i>J. Hu^{1,2}, S. Stoffels¹, S. Lenci¹, T. Wu^{1,2}, N. Ronchi¹, S. You¹, B. Bakeroot^{1,3}, G. Groeseneken^{1,2} and S. Decoutere¹, ¹imec, ²KU Leuven and ³Ghent Univ. (Belgium)</i></p>	<p>F-3: Interface and Material Science</p>	

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<p>H-3: Topological Insulators and Imaging</p> <p>10:45 H-3-5 Real-space Mapping of Spin-resolved Quantum Hall Chiral Edge States by Near-field Scanning Optical Microscopy <i>S. Nomura¹, S. Mamyouda¹, H. Ito¹, Y. Shibata¹, T. Ohira¹, L. Yoshikawa¹, Y. Ootuka¹, S. Kashiwaya¹, M. Yamaguchi³, H. Tamura² and T. Akazaki³, ¹Univ. of Tsukuba, ²AIST and ³NTT BRL (Japan)</i></p> <p>11:00 H-3-6 KPFM Observation of Quantum Dots Induced by Clustered Donors in Selectively-Doped SOI-FETs <i>K. Tyszkla^{1,2}, D. Moraru¹, T. Mizuno¹, R. Jablonski² and M. Tabe¹, ¹Shizuoka Univ. and ²Warsaw Univ. of Tech. (Japan)</i></p>	<p>J-3: CMOS Platform & SRAM</p> <p>11:00 J-3-5 (Late News) The Guideline of Si/SiGe Hetero-Junction Design in Parallel Plate Style TFETs (PP-TFETs) for Si CMOS Platform Implementation <i>M. Goto¹, Y. Kondo¹, Y. Morita², S. Migita², A. Hokazono¹, H. Ota², M. Masahara² and S. Kawanaka¹, ¹Toshiba Corp. and ²GNC, AIST (Japan)</i></p>	<p>K-3: Organic Photovoltaics II</p> <p>10:45 K-3-5 Property Enhancement of Hole Transport Layer and Transparent Electrode by the Addition of Polar Solvents for Organic Solar Cells <i>D.H. Kim, K.Y. Lee, S.J. Park and Y.J. Kim, Yonsei Univ. (Korea)</i></p>	<p>M-3: RF and Analog Techniques</p> <p>11:00 M-3-5 (Late News) On-chip Microparticle Manipulation with Efficient Wireless Power Transfer <i>Y. Dei, Y. Kishiwada, R. Yamane, T. Inoue and T. Matsuoka, Osaka Univ. (Japan)</i></p>		<p>P-3: Nanowire Electronics</p> <p>10:45 P-3-5 Comparative Study of Silicon Nanowire Transistors with Triangular-Shaped Cross Sections <i>Y.B. Zhang, L. Sun, H. Xu, Y.Q. Xia, J.W. Han, Y. Wang and S.D. Zhang, Peking Univ. (China)</i></p> <p>11:00 P-3-6 Thermal Transport Properties of Si Nanowire Covered with SiO₂ Layer: A Molecular Dynamics Study <i>T. Zushi^{1,3}, K. Ohmori², K. Yamada² and T. Watanabe¹, ¹Waseda Univ., ²Univ. of Tsukuba and ³JSPS Research Fellow (Japan)</i></p>

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A-4: FeRAM/PCRAM (16:30-17:30) Chairs: H. Saito (Fujitsu Semicon.) Y. Sasago (Hitachi)	B-4: Magneto-Optic Devices (16:30-17:45) Chairs: H. MuneKata (Tokyo Tech) H. Oohashi (NTT Electronics)	C-4: Metal Induced Crystallization (16:30-17:30) Chairs: T. Suemasu (Univ. of Tsukuba) T. Iwai (Fujitsu Lab.)	D-4: Neural Interface (16:30-17:45) Chairs: Y. Mita (Univ. of Tokyo) J. Ohta (Nara Inst. of Sci. & Tech.)	E-4: Silicon Carbide Devices (16:30-17:45) Chairs: Y. Tanaka (AIST) R. Hattori (Mitsubishi Electric)	F-4: Metal Contacts and Junction Technologies (16:30-17:40) Chairs: T. Nakayama (Chiba Univ.) S. Migita (AIST)	G-4: III-V and Quantum Photovoltaics (16:30-17:45) Chairs: N. Kojima (Toyota Tech. Inst.) L. -S. Hong (National Taiwan Univ. of Science and Technology)
16:30 A-4-1 10⁸ Endurance Nonvolatile Memory Transistor with 100 nm Metal Gate L.V. Hai, M. Takahashi, W. Zhang and S. Sakai, AIST (Japan)	16:30 B-4-1 (Invited) On-Chip Nonreciprocal Photonic Devices Using Magneto-Optical Oxide Thin Films L. Bi ¹ , J. Hu ² , H.S. Kim ³ , G.F. Dionne ³ , C.A. Ross ³ , X. Liang ¹ , J. Xie ¹ and L. Deng ¹ , ¹ Univ. of Electron. Sci. and Tech. of China, ² Univ. of Delaware and ³ Mass. Inst. Tech. (China)	16:30 C-4-1 (Invited) Metal-Induced Crystallization - Fundamentals and Applications Z. Wang ¹ and E.J. Mittemeijer ^{1,2} , ¹ Max Planck Inst. for Intelligent Systems and ² Univ. of Stuttgart (Germany)	16:30 D-4-1 (Invited) MEMS Neural Probes by CMOS Technology and Micromachining O. Paul, Univ. of Freiburg (Germany)	16:30 E-4-1 (Invited) The Continuing Evolution of Silicon Carbide Power MOSFETs J.A. Cooper, Purdue Univ. (USA)	16:30 F-4-1 (Invited) Nickel Compound and Alloy Contacts to Nanoscale Si, Ge, and InGaAs Channels R. Chen ¹ , B.-M. Nguyen ^{1,2} , W. Tang ^{2,3} and S.A. Dayeh ¹ , ¹ Univ. of California San Diego, ² Los Alamos National Laboratory and ³ Univ. of California Los Angeles (USA)	16:30 G-4-1 (Invited) High Efficiency, Flexible, Thin Film III-V Solar Cell Technology G.S. Higashi, Alta Devices, Inc. (USA)
16:50 A-4-2 Effect of Oxygen Partial Pressure Under Heat Treatment on Ferroelectricity of (Hf_{0.5}Zr_{0.5})O₂ Thin Films H. Funakubo ^{1,2} , T. Shimizu ³ , T. Yokouchi ¹ , T. Oikawa ¹ , T. Shiraiishi ¹ , T. Kiguchi ³ , A. Akama ³ , T.J. Konno ³ , H. Uchida ⁴ , D. Kim ⁵ and A. Gruverman ⁵ , ¹ Department of Innovative and Engineered Material, Tokyo Tech, ² Materials Reserch Center for Element Strategy, Tokyo Tech, ³ Institute for Materials Research, Tohoku Univ., ⁴ Department of Materials and Life Sciences, Sophia Univ. and ⁵ Department of Physics and Astronomy, Univ. of Nebraska, Lincoln (Japan)	17:00 B-4-2 (Invited) Optical Isolators and Circulators on Si Waveguide Platforms T. Mizumoto and Y. Shoji, Tokyo Tech (Japan)	17:00 C-4-2 Orientation-Controlled Large-Grain SiGe on Flexible Substrate by Nucleation-Controlled Gold-Induced Crystallization J.H. Park ^{1,2} , M. Miyao ¹ and T. Sadoh ¹ , ¹ Kyushu Univ. and ² JSPS Research Fellow (Japan)	17:00 D-4-2 (Invited) Multi-channel Recording System with UWB Wireless Data Transmitter for Brain-Machine Interface T. Suzuki ¹ , H. Ando ¹ , T. Yoshida ² , M. Hirata ^{1,3} , K. Takizawa ¹ , ¹ NICT and Osaka Univ., ² Hiroshima Univ. and ³ Osaka Univ. Medical School (Japan)	17:00 E-4-2 3.3-kV Double Channel-Doped SiC Vertical JFET in Cascode Configuration H. Shimizu, S. Akiyama, N. Yokoyama, A. Shima and Y. Shimamoto, Hitachi, Ltd. (Japan)	17:00 F-4-2 NiPt Silicide Agglomeration Caused by Stress Relaxation along <010> Direction in NISi Grain M. Mizuo ¹ , T. Yamaguchi ² , X. Pages ³ , K. Vanormelingen ³ , M. Smits ³ , E. Granneman ³ , M. Fujisawa ² and N. Hattori ¹ , ¹ Renesas Semiconductor Manufacturing Co., Ltd., ² Renesas Electronics Corp. and ³ Levitech BV (Japan)	17:00 G-4-2 Hole Trap Associated with High Background Doping in P-type GaAsN Grown by Chemical Beam Epitaxy O. Elleuch, L. Wang, K. Demizu, K. Ikeda, N. Kojima, Y. Ohshita and M. Yamaguchi, Toyota Tech (Japan)
17:10 A-4-3 A 4F²-cross-point Phase Change Memory Using Nano-crystalline Doped GeSbTe Material T. Morikawa, K. Akita, M. Kinoshita, M. Tai, T. Ohyanagi and N. Takaura, LEAP (Japan)	17:30 B-4-3 Double-Dielectric-Loaded Plasmonic Optical Isolator for Integration into Photonic Integrated Circuits T. Kaihara ¹ , T. Ando ¹ , H. Shimizu ¹ , V. Zayets ² , H. Saito ² , K. Ando ² and S. Yuasa ² , ¹ Tokyo Univ. of Agri. Tech. and ² AIST (Japan)	17:15 C-4-3 Metal-Induced Crystallization of Amorphous Ge on Insulators: Comparative Study of Catalytic Effects between Al and Sn N. Oya, K. Toko and T. Suemasu, Univ. of Tsukuba (Japan)	17:30 D-4-3 A Flexible Antenna Using a Parylene Film for Wirelessly-Powered Neural Recording Devices K. Okabe ¹ , I. Akita ¹ , S. Asai ¹ and M. Ishida ^{1,2} , ¹ Toyohashi Univ. of Tech. and ² Electronics-Inspired Interdisciplinary Res. Inst. (EIIRIS) (Japan)	17:15 E-4-3 Temperature Dependence of Current Gain in 4H-SiC Bipolar Junction Transistors S. Asada, T. Okuda, T. Kimoto and J. Suda, Kyoto Univ. (Japan)	17:20 F-4-3 Reduction of Parasitic Resistance in Ge nMOSFETs with NiGe/n⁺Ge Junctions by Two-step Phosphorus Ion Implantation M. Koike, Y. Kamimuta and T. Tezuka, AIST (Japan)	17:15 G-4-3 Electrical Evaluation of Energy Distribution of State Density for Embedded Quantum Dot Single Layer T. Hoshii and Y. Okada, RCAST, Univ. of Tokyo (Japan)
				17:30 E-4-4 (Late News) 3.3 kV/1500 A Power Modules for the World's First All-SiC Traction Inverter K. Hamada ¹ , S. Hino ^{1,2} , N. Miura ¹ , H. Watanabe ^{1,2} , S. Nakata ^{1,2} , E. Suekawa ³ , Y. Ebiike ³ , M. Imaizumi ³ , I. Umezaki ³ and S. Yamakawa ^{1,2} , ¹ Advanced Technology R&D Center, Mitsubishi Electric Corp., ² R&D Partnership for Future Power Electronics Technology (FUPET) and ³ Power Device Works, Mitsubishi Electric Corp. (Japan)	17:30 G-4-4 Enhanced Light Absorption in Ge/Si Quantum Dot Solar Cells by Surface Photonic Nanostructures T. Tayagaki ¹ , Y. Kishimoto ¹ , Y. Hoshi ² and N. Usami ² , ¹ Kyoto Univ. and ² Nagoya Univ. (Japan)	

Wednesday, September 10

4F 404	1F 101	2F 202B	3F 304	4F 401	4F 402
<p>H-4: Novel Devices (16:30-17:30) Chairs: H. Inokawa (Shizuoka Univ.) T. Tanamoto (Toshiba)</p>	<p>J-4: Device Physics (16:30-17:30) Chairs: M. Hane (Renesas Electronics) O. Weber (CEA-LETI)</p>	<p>K-4: Organic Biosensors (16:30-17:45) Chairs: S. Tokito (Yamagata Univ.) K. Shinbo (Niigata Univ.)</p>			<p>P-4: Novel Interconnects (16:30-17:45) Chairs: M. Ueki (Renesas Electronics) D. Kondo (Fujitsu)</p>
<p>16:30 H-4-1 Purcell Effect of THz Emission using Multilayer Photonic Micro-Structures <i>N. Tsurumachi¹, H. Izawa¹, T. Kai¹, T. Kawanaka¹, F. Toyoshima³, H. Shirai², F. Shimokawa¹, H. Miyagawa¹, S. Koshiba¹ and S. Nakanishi¹, ¹Kagawa Univ. and ²Inst. of Molecular Science (Japan)</i></p>	<p>16:30 J-4-1 n⁺/p⁺-Single Doping Effects on Impurity Band Structure Modulation in Two Dimensional Si Layers <i>T. Mizuno¹, Y. Nakahara¹, Y. Nagamine¹, Y. Suzuki¹, Y. Nagata¹, T. Aoki¹ and T. Sameshima², ¹Kanagawa Univ. and ²Tokyo Univ. of Agric. and Tech. (Japan)</i></p>	<p>16:30 K-4-1 (Invited) Organic Bioelectronics - regulating cell signalling <i>in vivo</i> and <i>in vivo</i>, towards new therapy methods <i>M. Berggren, D. Simon, K. Tybrandt, E. Gabrielsson, A. Jonsson and D. Nilsson, Linköping Univ. (Sweden)</i></p>			<p>16:30 P-4-1 (Invited) A Possibility of Cross-Bar Wiring in Three-Dimensional Crystallographic Space <i>H.M. Yamamoto, CIMoS, IMS and RIKEN (Japan)</i></p>
<p>16:45 H-4-2 Control of Metal-to-Insulator Phase Transition in VO₂ Thin Films via Interface Engineering <i>T. Yajima, T. Nishimura and A. Toriumi, Univ. of Tokyo (Japan)</i></p>	<p>16:50 J-4-2 Mobility Model for Advanced SOI-MOSFETs Including Back-Gate Contribution <i>H. Zenitani, H. Miyamoto, H. Kikuchihara, U. Feldmann, H.J. Mattausch and M. Miura-Mattausch, Hiroshima Univ. (Japan)</i></p>	<p>17:00 K-4-2 An Extended-gate Organic Field-Effect Transistor toward Food Freshness Sensing <i>T. Minamiki^{1,2}, T. Minami^{1,2}, K. Fukuda^{1,2}, D. Kumaki^{1,2} and S. Tokito^{1,2}, ¹Yamagata Univ. and ²Research Center for Organic Electronics (Japan)</i></p>			<p>17:00 P-4-2 (Invited) METAL-CNT CONTACTS <i>P. Wilhite, A.A. Vyas and C.Y. Yang, Santa Clara Univ. (USA)</i></p>
<p>17:00 H-4-3 Impact of Dopant Induced States on Interband Tunneling in Nanoscale pn Junctions <i>H.N. Tan¹, S. Purwiyanti^{1,2}, D. Moraru¹, L.T. Anh³, M. Manoharan³, T. Mizuno¹, H. Mizuta^{3,4}, D. Hartanto² and M. Tabe¹, ¹Shizuoka Univ., ²Univ of Indonesia, ³JAIST and ⁴Univ of Southampton (Japan)</i></p>	<p>17:10 J-4-3 On the Importance of Electron-electron Scattering for Hot-carrier Degradation <i>S. Tyaginov^{1,2}, M. Bina¹, J. Franco³, B. Kaczer³ and T. Grasser³, ¹Inst. for Microelectronics, TU Wien, ²Joffe Physical-Technical Inst. and ³imec (Austria)</i></p>	<p>17:15 K-4-3 Detection of Cysteine in Water using an Extended-gate Organic Field Effect Transistor <i>T. Minami, T. Minamiki, K. Fukuda, D. Kumaki and S. Tokito, Yamagata Univ. (Japan)</i></p>			<p>17:30 P-4-3 Resistivity of Graphene Nanowires: Requirements of Quality and Doping for Inter-Connect Applications <i>H. Miyazaki¹, M. Katagiri¹, M. Takahashi¹, Y. Yamazaki¹, D. Nishide¹, T. Matsumoto¹, M. Wada¹, N. Sakuma¹, K. Ueno², R. Matsumoto², A. Kajita¹ and T. Sakai¹, ¹LEAP, ²Shibaura Inst. of Tech. and ³Tokyo Polytechnic Univ. (Japan)</i></p>
<p>17:15 H-4-4 Resistance Switching Behavior of ZnO Resistive RAM (RRAM) with a Reduced Graphene Oxide capping layer <i>C.L. Lin, W.Y. Chang, Y.L. Huang, T.W. Wang and K.Y. Hung, Feng Chia Univ. (Taiwan)</i></p>		<p>17:30 K-4-4 OTFT Circuit Design for Actuator Driving Control in an Organic Fluid Pump <i>L. Chen, T.K. Maiti, H. Miyamoto, M. Miura-Mattausch and H.J. Mattausch, Hiroshima Univ. (Japan)</i></p>			

POSTER SESSION

(14:00-16:00, Multi-Purpose Hall and 102)

Area 1: Advanced LSI Processing & Materials Science

(15 papers)

PS-1-1

High Mobility Ultrathin GeSn (111) pMOSFETs by Solid Phase Epitaxy

T. Maeda¹, W. Jevasuwan¹, H. Hattori¹, N. Uchida¹, S. Miura², M. Tanaka², J.P. Locquet³ and R. Lieten^{3,4,5}, ¹AIST, ²Yokohama National Univ., ³KU Leuven, ⁴IMEC and ⁵Entegris (Japan)

PS-1-2

Electrically Active Defects in GeSnSi/Ge Junctions Formed at Low Temperature

N. Taoka^{1,2}, T. Asano², T. Yamahata², T. Terashima², S. Asaba², O. Nakatsuka², P. Zaumseil¹, G. Capellini¹, T. Schroeder¹ and S. Zaima², ¹IHP and ²Nagoya Univ. (Germany)

PS-1-3

Effect of Kr/O₂ Mixed ECR Plasma Oxidation on Electrical Properties of Al₂O₃/Ge Gate Stacks Fabricated by ALD

Y. Nagatomi, Y. Nagaoka, K. Yamamoto, D. Wang and H. Nakashima, Kyushu Univ. (Japan)

PS-1-4

High-k/Ge Interface Passivation Using Cycling Ozone Oxidation

X. Yang^{1,2}, S.K. Wang¹, L. Han^{1,2}, X. Zhang², B. Sun¹, H.D. Chang¹, W. Zhao¹, Z.H. Zeng^{1,2}, H.G. Liu¹ and Y.P. Cui², ¹Inst. of Microelectronics of Chinese Academy of Science and ²Univ. of Southeast (China)

PS-1-5

Flexible Silicon-Germanium Devices With High-k/Metal Gate Stacks For Next Generation High Hole Mobility Channel Devices

J.M. Nassar, A.M. Hussain, J.P. Rojas and M.M. Hussain, King Abdullah Univ. of Science and Technology (KAUST) (Saudi Arabia)

PS-1-6

Transformation of Holes Emission Paths under Negative Bias Temperature Stress in Deeply Scaled pMOSFETs

Y. Liao¹, X. Ji¹, Q. Guo² and F. Yan¹, ¹Nanjing Univ. and ²Wuhan Xinxin Semiconductor Manufac. Company (China)

PS-1-7

Thickness Dependences of Stress, Poisson's Ratio and Longitudinal Optical Phonon Lifetime in Ultrathin Strained-Silicon-on-Insulator

V. Poborchii, M. Hara and T. Tada, AIST (Japan)

PS-1-8

Assessment of Self Heating Effect (SHE) on Negative Bias Temperature Instability in SOI FinFETs under Circuit Operation

H. Jiang, Z.Y. Lun, B. Chen, G. Du, X.Y. Liu and X. Zhang, Peking Univ. (China)

PS-1-9

The Impact of Positive Bias Temperature Instabilities on Stacked High-k/Metal Gate Transistor with TiN Barrier Layer

D.C. Huang¹, J. Gong², C.F. Huang¹ and S.S. Chung³, ¹National Tsing Hua Univ., ²Tunghai Univ. and ³NCTU (Taiwan)

PS-1-10

Recovery of Interface States Generated by Hot-Carrier Stress

Y. Yamamoto, Hitachi, Ltd. (Japan)

PS-1-11

Reliability of Polycrystalline HfO₂ Thin Films Directly Bonded to Si Substrates

R. Hasunuma, Y. Tomura and K. Yamabe, Univ. of Tsukuba (Japan)

PS-1-12 (Late News)

Fabrication of High Performance Single-Crystalline Silicon Thin Film Transistors on a Polyethylene Terephthalate Substrate

K. Sakaïke¹, M. Akazawa¹, A. Nakagawa¹ and S. Higashi^{1,2}, ¹Dept. of Semiconductor Electronics and Integration Science, Graduate School of Advanced Sciences of Matter, Hiroshima Univ. and ²Research Inst. for Nanodevice and Bio Systems, Hiroshima Univ. (Japan)

PS-1-13 (Late News)

Toward 1-nm-EOT Hf_{0.5}Zr_{0.5}O₂ Ferroelectric Films

T. Nishimura, T. Yajima, K. Nagashio and A. Toriumi, Univ. of Tokyo (Japan)

PS-1-14 (Late News)

Si-substrate-based High Mobility Ge-pMOSFETs Using Ozone Passivated Al₂O₃/GeO_x Gate Dielectric

S.K. Wang¹, X. Yang^{1,2}, Z. Gong¹, R. Liang², B. Sun¹, W. Zhao¹, H. Chang¹, J. Wang³ and H.G. Liu¹, ¹Inst. of Microelectronics of Chinese Academy of Sci., ²Southeast Univ. and ³Tsinghua Univ. (China)

PS-1-15 (Late News)

Properties of Ultrathin Body Condensation GOI Films Thinned by Additional Thermal Oxidation

W.K. Kim^{1,2}, M. Takenka^{1,2} and S. Takagi^{1,2}, ¹Univ. of Tokyo and ²JST-CREST (Japan)

Area 2: Advanced Interconnect and 3D Integration/ Materials and Characterization

(4 papers)

PS-2-1

Joule Heating Induced Bonding Interface Improvement and Ti Breakthrough by Electron Bombardment for 40- μ m Pitch of Cu TSV and Cu/Sn μ -Bump Pair

Y.J. Chang¹, Y.S. Hsieh¹, C.T. Ko^{1,2}, W.C. Lo², F.Y. Ouyang², C.S. Wu⁴, Y.M. Cheng⁴, W.J. Chen⁴ and K.N. Chen¹, ¹NCTU, ²Electronics and Optoelectronics Res. Lab., ITRI, ³Department of Engineering and System Science, National Hsing Hua Univ. and ⁴Metal Industries R&D Centre (Taiwan)

PS-2-2

Influence of Lateral Stress on Interdiffusion in Thin Cr/Au Film

J. He, X. Huang, L. Zhang, D. Zhao, W. Hu and D. Zhang, Peking Univ. (China)

PS-2-3

Measurement on Interfacial Adhesion Property of Low-k Thin Film by the Surface Acoustic Waves Using the Cohesion Zone Model

X. Xiao¹, Y. Tao¹ and T. Kikkawa², ¹Univ. of Tianjin and ²Hiroshima Univ. (China)

PS-2-4 (Late News)

Vacuum Ultraviolet (VUV) / Vapor-Assisted Bonding for Organic / Inorganic Hybrid Integration

A. Shigetou¹, M. Ajayan^{1,2}, J. Mizuno² and S. Shuichi², ¹National Inst. for Mater. Sci. and ²Waseda Univ. (Japan)

Area 3: CMOS Devices / Device Physics

(12 papers)

PS-3-1

Extraction of Source/Drain Series Resistance Components Optimized for Double-gate FinFETs.

J.-S. Yoon, E.-Y. Jeong, S.-H. Lee, Y.-R. Kim, J.-H. Hong, J.-S. Lee and Y.-H. Jeong, Pohang Univ. of Sci. and Tech. (Korea)

PS-3-2

Impact of Surface Oxide Layer on Band Structure Modulation in Si Quantum Well Structures

T. Mizuno¹, Y. Suzuki¹, M. Yamanaka¹, Y. Nagamine¹, Y. Nakahara¹, Y. Nagata¹, T. Aoki¹ and T. Maeda², ¹Kanagawa Univ. and ²AIST (Japan)

PS-3-3

Strain Effects on Monolayer MoS₂ Field Effect Transistors

L. Zeng¹, Z. Xin², P.Y. Chang² and X.Y. Liu¹, ¹Inst. of Microelectronics, Peking Univ. and ²School of Electronic and Computer Engineering, Peking Univ. (China)

PS-3-4

Impact of Trap Behavior in High-k/Metal Gate p-MOSFET with Incorporated Fluorine on Low-Frequency Noise Characteristics

T.-H. Kao¹, S.-L. Wu¹, C.-Y. Wu², Y.-K. Fang¹, P.-C. Huang¹, C.-M. Lai³, C.-W. Hsu³, Y.-W. Chen³, O. Cheng³ and S.-J. Chang¹, ¹National Cheng Kung Univ., ²Cheng Shiu Univ. and ³United Microelectronics Corp. (Taiwan)

PS-3-5

Initial and Long-Term Frequency Degradation on Ring Oscillators from Plasma Induced Damage in 65 nm Bulk and Silicon On Thin BOX Processes

R. Kishida, A. Oshima, M. Yabuuchi and K. Kobayashi, Kyoto Inst. of Tech. (Japan)

PS-3-6

Gate Voltage Dependent 1/f Noise Variance Model in n-Channel MOSFETs

Y. Arai, H. Aoki, F. Abe, S. Todoroki, R. Khatami, M. Kazumi, T. Totsuka, T. Wang and H. Kobayashi, Gunma Univ. (Japan)

PS-3-7

Electrical Characteristics of Novel Junctionless FinFET Utilizing Trench Structure for Extreme Scaling

M.-S. Yeh, Y.-C. Wu, M.-H. Wu, Y.-R. Jhan and M.-H. Chung, National Tsing Hua Univ. (Taiwan)

PS-3-8

Dopant Drive-in Path Analysis in Poly-Silicon Filled in Trench Type 3D-MOSFET using Atom Probe Tomography

K. Inoue¹, H. Takamizawa¹, Y. Shimizu¹, B. Han¹, Y. Nagai¹, F. Yano², Y. Kunimune³, M. Inoue⁴ and A. Nishida¹, ¹Tohoku Univ., ²Tokyo City Univ., ³Renesas Semiconductor Manufacturing Co., Ltd. and ⁴Renesas Electronics Corp. (Japan)

PS-3-9

High Performance Germanium n⁺/p Shallow Junction for the Scaled nMOSFET

C. Wang, C. Li, W. Huang, S.Y. Chen and H.K. Lai, Xiamen Univ. (China)

PS-3-10

Investigation of Low-Frequency Noise in High-k First/Metal Gate Last HfO₂ and ZrO₂ nMOSFETs

S.L. Wu¹, B.C. Wang², Y.Y. Lu¹, S.C. Tsai², J.F. Chen², S.J. Chang^{2,3}, S.P. Chang^{2,3}, C.H. Hsu⁴, C.W. Yang⁴, C.G. Chen¹, O. Cheng¹ and P.C. Huang^{2,3}, ¹Cheng Shiu Univ., ²Inst. of Microelectronics and Department of Electrical Engineering, National Cheng Kung Univ., ³Advanced Optoelectronic Tech. Center, National Cheng Kung Univ. and ⁴United Microelectronics Corp. (Taiwan)

PS-3-11

New Concept of Planar Germanium MOSFET with Stacked Germanide Layers at Source/Drain
H. Xu, L. Sun, Y.-B. Zhang, Y.-Q. Xia, J.-W. Han, Y. Wang and S.-D. Zhang, Peking Univ. (China)

PS-3-12

Physical DC and Thermal Noise Models of 18 nm DG Junctionless pMOSFETs
E.-Y. Jeong¹, M.J. Deen², C.-H. Chen³, R.-H. Beak³, J.-S. Lee¹ and Y.-H. Jeong¹, Pohang Univ. of Sci. and Tech., ²McMaster Univ. and ³SEMATECH (Korea)

PS-5-4

A Novel Electromechanical Model of a MEMS Energy Harvesting Device for a Multi-physics Simulation Platform on a Circuit Simulator
T. Konishi¹, T. Matsushima¹, D. Yamane², K. Masu², H. Toshiyoshi³ and K. Machida^{1,2}, ¹NTT Advanced Tech. Corp., ²Tokyo Tech and ³Univ. of Tokyo (Japan)

PS-5-5

SoC Realization of LVQ Neural Network with On-chip Learning and Recognition
F. An, T. Akazawa, S. Yamazaki, L. Chen and H.J. Mattausch, Hiroshima Univ. (Japan)

PS-5-6

Digital Word-Parallel Low-Power Recognition SoC for Mobile Equipment Based on Nearest Euclidean Distance Search and KNN Classification
S. Yamasaki, T. Akazawa, F. An and H.J. Mattausch, Univ. of Hiroshima (Japan)

PS-5-7

Design Guidelines of All Storage Class Memory (SCM) SSD and Hybrid SCM/NAND Flash SSD to Balance Performance, Power, Endurance and Cost
T. Onagi¹, C. Sun^{1,2} and K. Takeuchi¹, ¹Chuo Univ. and ²Univ. of Tokyo (Japan)

PS-5-8

A High-frequency Level-up Shifter Based on 0.18 μ m Vertical MOSFETs with More than 70% Reduction of Overshoot-voltage Above VDD
S. Tanoi^{1,2} and T. Endoh^{1,2}, ¹Tohoku Univ. and ²ACCEL, JST (Japan)

PS-5-9

Dynamically Reconfigurable Non-Volatile Multi-Context FPGA with CAAC-OS-based Programmable Routing Switches
N. Bjorklund^{1,2}, Y. Okamoto¹, T. Aoki¹, M. Kozuma¹, Y. Kurokawa¹, T. Ikeda¹, N. Yamade¹, Y. Okazaki¹, H. Miyairi¹, M. Fujita³ and S. Yamazaki¹, ¹Semiconductor Energy Lab. Co., Ltd., ²Linkoping Univ. and ³Univ. of Tokyo (Japan)

PS-5-10

A Dual-Mode Active Pixel Sensor for Low-Light-Level Detection Using a Hybrid Photodetector
S. Lee, S.H. Jo, M. Bae, B.S. Choi and J.K. Shin, Kyungpook National Univ. (Korea)

PS-5-11

Multichannel Capacitance to Voltage Converter for Pressure Sensor Front-end
R. Kuguminato¹, T. Matsuda¹, K. Izumi¹, H. Iwata¹, M. Mizushima² and T. Obata³, ¹Toyama Pref. Univ., ²Oga Inc. and ³Toyama Industrial Technology Center (Japan)

PS-5-12

Pulse-Output Readout Circuit with Temperature Compensation for a Temperature-Dependent Input Voltage
R.L. Wang¹, C. Yu¹, W.D. Wu¹, Y.F. Hao¹, J.L. Shi¹, H.H. Liao², H.H. Tsai² and Y.Z. Juang², ¹National Kaohsiung Normal Univ. and ²National Chip Implementation Center, National Applied Research Lab. (Taiwan)

PS-5-13 (Late News)

Studies on Response Speed and Sensitivity of Two-Dimensional Integrated Magnetic Sensor
T. Kimura, K. Uno and T. Masuzawa, Ibaraki Univ. (Japan)

Area 6: Compound Semiconductor Electron Devices & Related Technologies
(18 papers)

PS-6-1

Comparison of Power Gain Performance between Conventional and Independently Biased HBT Cascode Chips
D.M. Luong, K. Honjo, Y. Takayama and R. Ishikawa, Univ. of Electro-Communications (Japan)

PS-6-2

Fluorinated Al₂O₃ Gate Dielectric Engineering on GaSb MOS Devices
Z.H. Zeng^{1,2}, B. Sun¹, H.D. Chang¹, W. Zhao¹, X. Yang^{1,2}, S.K. Wang¹, X. Zhang², Y.P. Cui² and H.G. Liu¹, ¹Inst. of Microelectronics of Chinese Academy of Sciences and ²Southeast Univ. (China)

PS-6-3

InGaSb Buried-Channel pMOSFET Fabricated by Using Digital Etch Technique
B. Sun¹, Z.H. Zeng^{1,3}, H.D. Chang¹, S.K. Wang¹, W.X. Wang² and H.G. Liu¹, ¹Inst. of Microelectronics of Chinese Academy of Sciences, ²Inst. of Physics, Chinese Academy of Sciences and ³Southeast Univ. (China)

PS-6-4

Characterization of GaAs Surface State by Hard X-ray Photoemission Spectroscopy
Y. Saito, J. Iihara, T. Yonemura, K. Yamaguchi and D. Tsurumi, Sumitomo Electric Industries, Ltd. (Japan)

PS-6-5

High-frequency Performance In_{0.49}Ga_{0.51}P/In_{0.4}Ga_{0.6}As MOSFET
J.H. Zhou^{1,2}, H.D. Chang², G.M. Liu², H.O. Li¹ and H.G. Liu², ¹Guangxi Experiment Center of Info. Sci., Guilin Univ. of Electronic Tech. and ²Microwave Device and IC Department, Inst. of Microelectronics of Chinese Academy of Sciences (China)

PS-6-6

Reduction of Initial Threshold Voltage Shift in ALD-Al₂O₃/AlGaIn/GaN MIS-HEMTs on Si Substrates by Post-deposition Annealing
T. Kubo, J. Freedman, Y. Yoshida and T. Egawa, Nagoya Inst. of Tech. (Japan)

PS-6-7

Observation of Drain Current Instability on p-GaN Gate AlGaIn/GaN HEMTs
T.F. Chang¹, T.C. Hsiao¹, C.F. Huang¹, C.W. Chiu², T.Y. Yang², T.Y. Huang², Y.C. Liang³ and G. Samudra³, ¹Nat'l Tsing Hua Univ., ²Richtek Tech. Corp. and ³Nat'l Univ. of Singapore (Taiwan)

Area 4: Advanced Memory Technology
(13 papers)

PS-4-1

The Impact of Inserted Ta Ultra-thin Layer on the Resistive Switching Voltage in Ir/Ti/Ta/HfO₂/TiN/Ti/SiO₂/Si Devices
S. Asanuma, H. Shima, M. Yamazaki, N. Hata and H. Akinaga, AIST (Japan)

PS-4-2

A Possible Bipolar HfO₂ Resistive Memory Device with Self-Rectification - Observations from STM Study
Y. Zhou, K.S. Yew and D.S. Ang, Nanyang Tech. Univ. (Singapore)

PS-4-3

Rectifying Characteristics of Sol-gel derived TiO₂ thin films for 1D-IR Resistance Switching Memory Applications
J.H. Kim, K.H. Nam, T.J. Ha, W.J. Cho and H.B. Chung, Kwangju Univ. (Korea)

PS-4-4

Scanning Tunneling Microscopy Study of the Bipolar Resistance Switching Characteristics of Nanoscale Conductive Filament for HfO₂-based MIM stack
K.S. Yew, Y. Zhou and D.S. Ang, Nanyang Tech. Univ. (Singapore)

PS-4-5

La/Al-doped ZrO₂ Thin-Film Resistive Random Access Memory Devices by Sol-gel Method for Transparent Solid-State Circuit Systems
Y.R. Wang¹, B. Chen¹, B. Gao¹, L.F. Liu¹ and J.F. Kang¹, Peking Univ. (China)

PS-4-6

Improvement of Unipolar Resistive Switching by N₂ Annealing in Ni/ZrO₂/TaN Memory Device
T.L. Tsai, T.H. Ho and T.Y. Tseng, NCTU (Taiwan)

PS-4-7

Switching Properties in ZrO₂-Based Resistive Switching Device
U. Chand, C.-Y. Huang, J.S. Meena and T.-Y. Tseng, NCTU (Taiwan)

PS-4-8

A Measurement of Ratio-less 12-transistor SRAM cell Operation at Ultra-low Supply-voltage
T. Kondo, H. Yamamoto, H. Imi, H. Okamura and K. Nakamura, Kyushu Inst. of Tech. (Japan)

PS-4-9

Enhanced Erasing Performance of Ω -Gate P-Channel Junctionless Fin-FET SONOS Nonvolatile Memory
M.S. Yeh, Y.C. Wu, M.H. Chung, Y.R. Jhan and M.H. Wu, National Tsing Hua Univ. (Taiwan)

PS-4-10

Stochastic Model for SPICE simulation about Resistance Distribution of Magnetic Tunnel Junction
G.H. Ki¹, J.T. Choi¹, C.M. Choi¹, H. Sukegawa², S. Mitani² and Y.H. Song¹, ¹Hanyang Univ. and ²NIMS (Korea)

PS-4-11

Reliability Modeling of Magnetic Tunnel Junction using MgO Barrier
J.M. Lee¹, C.M. Choi¹, Y.T. Oh¹, H. Sukegawa², S. Mitani² and Y.H. Song¹, ¹Hanyang Univ. and ²NIMS (Korea)

PS-4-12 (Late News)

Find Filament in ReRAM using Thermal Analysis
M. Uenuma, I. Yamashita and Y. Uraoka, NAIST (Japan)

PS-4-13 (Late News)

Multilevel Storage and its Cycling in Ge₂Sb₂Te₃ Phase-Change Memory
Y. Yin¹, S. Iwashita² and S. Hosaka¹, ¹Divl. of Electronics and Informatics, Gunma Univ. and ²Dept. Production of Science and Technology, Gunma Univ. (Japan)

Area 5: Advanced Circuits and Systems
(13 papers)

PS-5-1

A Characterization Method of On-Chip Tee-Junction for Millimeter-Wave CMOS Circuit Design
K.K. Tokgoz, N. Fajri, Y. Seo, S. Kawai, K. Okada and A. Matsuzawa, Tokyo Tech (Japan)

PS-5-2

Diode Modeling with Lossy Nonlinear Capacitance Model
R. Nahara, K. Katayama, K. Takano, S. Amakawa, T. Yoshida and M. Fujishima, Univ. of Hiroshima (Japan)

PS-5-3

A Comprehensive Modeling of Skin and Proximity Effects for mm-wave Inductors Simulation and Design in Nanoscale CMOS Technology
J.C. Guo and R.J. Chan, NCTU (Taiwan)

PS-6-8

Study of HfO₂/AlGaIn/GaN MOS-HEMT for High Power Application
W.C. Lan¹, P.C. Chin¹, Y.C. Lin², J.S. Maa³ and E.Y. Chang^{2,4}, ¹Inst. of Photonic System, NCTU, ²Inst. of Materials Sci. and Eng., NCTU, ³Inst. of Lighting and Energy Photonics NCTU and ⁴Inst. of Electronics Engineering, NCTU (Taiwan)

PS-6-9

Electrical Characteristic Simulation of Novel AlGaIn/GaN Vertical HEMT with Multi-Aperture and SiO₂ Current Blocking Layer
N.M. Shrestha, Y.Y. Wang, Y. Li and E.Y. Chang, NCTU (Taiwan)

PS-6-10

Reduction in Mobility Difference between C-Axis-Aligned Crystalline IGZO-FET and Si-FET by Miniaturization
S. Matsuda, Y. Yamane, Y. Okazaki, T. Ishizu, Y. Kobayashi, H. Suzawa, A. Isobe and S. Yamazaki, Semiconductor Energy Laboratory Co., Ltd. (Japan)

PS-6-11

Fabrication and Characteristics of Fully-Transparent Al-Sn-Zn-O TFTs Fabricated on Glass at Low Temperature
Y.Y. Cong¹, D.D. Han¹, J. Wu^{1,2}, N.N. Zhao^{1,2}, Z.F. Chen^{1,2}, F.L. Zhao^{1,2}, J.C. Dong^{1,2}, S.D. Zhang², X. Zhang¹ and Y. Wang¹, ¹Inst. of Microelectronics, Peking Univ. and ²Shenzhen Graduate School, Peking Univ. (China)

PS-6-12

Characteristics of Submicron Indium-Tin-Oxide Thin-Film Transistors Fabricated by Film Profile Engineering
Y.A. Huang¹, H.C. Lin^{1,2} and T.Y. Huang¹, ¹NCTU and ²National Nano Device Labs. (Taiwan)

PS-6-13

Fabrication of High Performance Ultra-thin body SnO₂ Thin-Film-Transistors (TFTs) using Microwave Annealing
S.W. Moon, H.J. Jang and W.J. Cho, Department of Electronic Materials Eng, Kwangwoon Univ. (Korea)

PS-6-14

Fully Transparent Dual-active-layer ITO/TZO TFT Fabricated on Glass Substrate at low-temperature
Z.F. Chen^{1,2}, D.D. Han², N.N. Zhao^{1,2}, J. Wu^{1,2}, Y.Y. Cong², J.C. Dong^{1,2}, F.L. Zhao^{1,2}, S.D. Zhang^{1,2}, X. Zhang^{1,2}, Y. Wang² and L.F. Liu², ¹Shenzhen Graduate School, Peking Univ. and ²Inst. of Microelectronics, Peking Univ. (China)

PS-6-15

A Comparison of Photo-Induced Hysteresis between Hydrogenated Amorphous Silicon and Amorphous IGZO Thin-Film Transistors
T.J. Ha, J.H. Kim, W.J. Cho and H.B. Chung, Kwangwoon Univ. (Korea)

PS-6-16 (Late News)

Ideal transport characteristics of Schottky contacts on AlGaIn/GaN structure grown on free-standing Si-GaN substrate
T. Nanjo, K. Kurahashi, M. Tanaka, A. Kiyoi, A. Imai, M. Suita, Y. Suzuki, T. Tanaka and E. Yagyū, Mitsubishi Electric Corp. (Japan)

PS-6-17 (Late News)

Physical Mechanism of Source and Drain Resistance Reduction in Oxide TFT ~Towards High-Performance Short-Channel InGaZnO TFT~
K. Ota, K. Sakuma, T. Irisawa, C. Tanaka, D. Matsushita and M. Saitoh, Toshiba Corp. (Japan)

PS-6-18 (Late News)

The reading operation of quantum dot memory devices using photocurrent detection in strain relaxation InAs quantum dots
J.-F. Wang, C.-L. Lin, S.-S. Pan, C.-P. Huang, C.-S. Hsieh and J.-F. Chen, National Chiao Tung Univ. (Taiwan)

Area 7: Photonic Devices and Related Technologies

(14 papers)

PS-7-1

Structure Dependence of over 10 GHz Lateral Si-PIN Photodiode Fabricated by CMOS Compatible Process
G. Li, K. Maekita, T. Maruyama and K. Iiyama, Kanazawa Univ. (Japan)

PS-7-2

A Silicon Schottky Photodetector Made Directly on a Silicon Fiber
Y.P. Huang, S.H. Chen and L.A. Wang, National Taiwan Univ. (Taiwan)

PS-7-3

A Novel Method of Fabricating Silicon Microsphere Resonators for High Quality-Factor Whispering-Gallery-Mode Generation
C.A. Lin, J.H. Chen and L.A. Wang, National Taiwan Univ. (Taiwan)

PS-7-4

All-Optical-Gate-Type Mode-Locked Few-Picosecond Pulsed Laser with Externally Injected, Weakly Modulated Optical Seed
K. Nagahiro, T. Nakane, H. Itagaki, T. Shibuya, K. Hirai and Y. Ueno, Univ. of Electro-Communications (Japan)

PS-7-5

Modes Selection in a Semiconductor Circular Ring Laser Diode by Perturbation at the Active Soliton Cavity
M.C. Shih, C.L. Yen, J.Z. Luo and W.H. Lan, National Univ. of Kaohsiung (Taiwan)

PS-7-6

Ge/Si/Ge Potential Barrier Structure for Bolometer in Uncooled Infrared Image Sensor
J. Takarada, T. Oda and A. Furukawa, Tokyo Univ. of Sci. (Japan)

PS-7-7

GaAs/AlAs Triple-Coupled Cavity with InAs Quantum Dots for an Ultrafast Wavelength Conversion Device via the Four-Wave-Mixing
M. Ogarane¹, Y. Yasunaga¹, Y. Nakagawa^{1,2}, K. Morita^{1,3}, T. Kitada¹ and T. Isu¹, ¹Univ. of Tokushima, ²NICHIA Corp. and ³Chiba Univ. (Japan)

PS-7-8

The Improvement of Surface Current of 2.6 μm InGaAs Photodetectors by Using ICPCVD Technology
X. Ji¹, B. Liu¹, H. Tang², X. Li², M. Shi², Y. Zhou¹, Y. Xu¹, H. Gong² and F. Yan¹, ¹Nanjing Univ. and ²Chinese Academy of Sci. (China)

PS-7-9

GaN Metal-Insulator-Semiconductor Ultraviolet Photodetectors with a Magnesium Fluoride Insulator
C.H. Chen, W.C. Lin and J.F. He, Cheng Shiu Univ. (Taiwan)

PS-7-10

Optical Property of Triangle-Shaped GaN Microdisk Array with Triangular Lattice
S. Suzuki¹, T. Kouno¹, M. Sakai², K. Kishino³ and K. Hara¹, ¹Shizuoka Univ., ²Univ. of Yamanashi and ³Sophia Univ. (Japan)

PS-7-11

Hydrothermal Growth of Quasi-Crystalline ZnO Thin Films and Theirs Application in Ultraviolet Photodetectors
Y.C. Tu¹, S.J. Wang¹, R.W. Wu¹, T.C. Tsai¹, T.H. Lin¹, C.H. Hung¹, K.M. Uang² and T.M. Cheng², ¹National Cheng Kung Univ. and ²WuFeng Univ. (Taiwan)

PS-7-12

High Pockel's Coefficient for Poled Polymer in Multilayered Electro-Optical Device
Y. Jouane¹, Y.C. Chang¹, D. Zhang¹, A.K.Y. Jen² and Y. Enami¹, ¹Kochi Univ. of Tech. and ²Univ. of Washington (Japan)

PS-7-13

Electro-Optic Polymer/TiO₂ Slot Waveguide Modulators Driven with Low Half-Wave Voltage
Y. Enami¹, Y. Jouane¹, D. Zhang¹, Y.C. Chang¹, J. Luo² and A.K.Y. Jen², ¹Kochi Univ. of Tech. and ²Univ. of Washington (Japan)

PS-7-14

Scaling Study of Antenna-Coupled Microbolometer
A. Tiwari¹, H. Satoh¹, M. Aoki², M. Takeda², N. Hiromoto² and H. Inokawa¹, ¹Research Institute of Electronics, Shizuoka Univ. and ²Graduate School of Engineering, Shizuoka Univ. (Japan)

Area 8: Advanced Material Synthesis and Crystal Growth Technology

(18 papers)

PS-8-1

Morphological and Structural Observation of Ni and Fe Clusters on SrTiO₃ (001) and (110) surfaces
M. Tanaka, NIMS (Japan)

PS-8-2

Growth and Optical Properties of GaSb/GaAs type-II Quantum Dots with and without Wetting Layer
T. Kawazu¹, T. Noda¹, M. Mano¹, Y. Sakuma¹ and H. Sakaki^{1,2}, ¹NIMS and ²Toyota Tech. Inst. (Japan)

PS-8-3

Low-temperature Formation of nc-Si in SiO_x by Soft X-ray Irradiation
F. Kusakabe¹, S. Hirano¹, A. Heya¹, N. Matsuo¹, K. Kanda², T. Motizuki², K. Kohama³ and K. Ito³, ¹Univ. of Hyogo, ²LASTI, Univ. of Hyogo and ³Osaka Univ. (Japan)

PS-8-4

Soft X-ray Crystallization of Si_{1-x}Ge_x Multilayer Films
A. Heya¹, F. Kusakabe¹, N. Matsuo¹, K. Kanda², T. Motizuki², M. Takahashi³ and K. Ito³, ¹Univ. of Hyogo, ²LASTI, Univ. of Hyogo and ³Osaka Univ. (Japan)

PS-8-5 (Late News)

A self-aligned Ge/SiO₂/Si_{0.4}Ge_{0.6} gate-stacking heterostructure generated in a single fabrication step
W.-T. Lai¹, K.-C. Yang¹, T.-C. Hsu¹, P.-H. Liao¹, T. George² and P.-W. Li¹, ¹National Central Univ. and ²Private Consultant (Taiwan)

PS-8-6

Synthesis, Characterization and Carrier Transport Properties of Crystalline Ge Nanowires Growth with Ag-Based Catalysts
R. C. Gouveia^{1,2}, H. Kamimura¹, A. G. Rodrigues¹ and A. J. Chiquito¹, ¹Federal Univ. of São Carlos and ²Instituto Federal de Educação Ciência e Tecnologia de São Paulo (Brazil)

PS-8-7

Evolution of TiO₂ Nanostructures from Nucleation to Nanorods by Hydrothermal Growth Method
Y.C. Huang¹, R.M. Ko², S.J. Wang¹ and Y.R. Lin³, ¹Department of Electrical Engineering, National Cheng Kung Univ., ²Advanced Optoelectronic Tech. Center, National Cheng Kung Univ. and ³Ming Chi Univ. of Tech. (Taiwan)

PS-8-8

High Electron Mobility, Low Carrier Concentration of Hydrothermally Grown ZnO Thin Films on Seeded a-Plane Sapphire at Low Temperature
N.A. Jayah¹, H. Yahaya¹, M.R. Mahmood², T. Terasako³, K. Yasui⁴ and A.M. Hashim¹, ¹Univ. Teknologi Malaysia, ²Univ. Teknologi MARA, ³Ehime Univ. and ⁴Nagaoka Univ. of Tech. (Malaysia)

PS-8-9
Growth of V-doped ZnO Thin Films with Two-layer Structure on a-Al₂O₃ by RF Magnetron Sputtering
H. Chiba, T. Kawashima and K. Washio, Tohoku Univ. (Japan)

PS-8-10
Effects of Annealing on In-Ga-Zn-Oxide Films
K. Okazaki¹, H. Kanemura¹, Y. Hosaka¹, T. Obonai¹, M. Oota², M. Takahashi², S. Nishino³ and S. Yamazaki², ¹Advanced Film Device Inc. and ²Semiconductor Energy Lab. Co., Ltd. (Japan)

PS-8-11
Synthesis, Microstructure, Optical and Magnetic Properties of Ge-doped CuFeO₂ Delafossite Oxide
T. Kamwanna, L. Naka-in, P. Srepusharawoot, S. Pinitsoontorn and V. Amornkitbamrung, Khon Kaen Univ. (Thailand)

PS-8-12
(001) Orientation Single Crystalline PZT Pyroelectric Nanorod Array Synthesized by Hydrothermal Reaction
C.G. Wu, Q.X. Peng, J. Meng, X.Y. Sun, Y. Shuai, J.Q. Cao, W.B. Luo and W.L. Zhang, Univ. of Electronic Sci. and Tech. of China (China)

PS-8-13
Enhancement of Pyroelectric PZT Thick Film Sintered at Low Temperature on Pt-Si Substrate by Adding Pb₂Ge₃O₁₁
C.G. Wu, Q.X. Peng, J. Meng, X.Y. Sun, Y. Shuai, J.Q. Cao, W.B. Luo and W.L. Zhang, Univ. of Electronic Sci. and Tech. of China (China)

PS-8-14
Effects of Pr Doping on the Scintillation Properties of CeBr₃ Crystals Grown by the Modified Micro-Pulling-Down Method
T. Ito¹, Y. Yokota², S. Kurosawa^{1,2}, K. Kamada^{2,3}, J. Pejchal^{2,4}, Y. Ohashi¹ and A. Yoshikawa^{1,2,3}, ¹IMR, Tohoku Univ., ²NICHE, Tohoku Univ., ³C&A Corp. and ⁴Inst. of Phys. AS CR (Japan)

PS-8-15
LiF/CaF₂/LiBaF₃ Ternary Fluoride Eutectic Scintillator
K. Hishinuma¹, K. Kamada^{2,3}, S. Kurosawa^{1,2}, A. Yamaji¹, J. Pejchal^{2,4}, Y. Yokota², Y. Ohashi¹ and A. Yoshikawa^{1,2,3}, ¹IMR, Tohoku Univ., ²NICHE, Tohoku Univ., ³C&A Corp. and ⁴Inst. of Phys. AS CR, Cukrovarnicka (Japan)

PS-8-16
Improvement of Scintillation Properties on Ce doped Y₃Al₅O₁₂ scintillator by divalent cations co-doping
K. Kamada^{1,2}, A. Nagura³, M. Nikl⁴, S. Kurosawa³, J. Pejchal^{1,4}, Y. Ohashi³, Y. Yokota¹ and A. Yoshikawa^{1,2,3}, ¹NICHE, Tohoku Univ., ²C&A Corp., ³IMR, Tohoku Univ. and ⁴Inst. of Phys. AS CR (Japan)

PS-8-17
Electrical Transport Properties in Ternary NbMoS₂ Layer crystals
H.P. Hsu¹, R.S. Chen², Y.H. Huang², C.C. Pung² and Y.S. Huang², ¹Ming Chi Univ. of Tech. and ²National Taiwan Univ. of Sci. and Tech. (Taiwan)

PS-8-18
Behavior of Focused Ga⁺ Beam Spot Milling and its Superimposition Property
H.M. Chen¹, P.J. Wu², K.Y. Shen¹ and C.H. Kuan^{1,2}, ¹Graduate Inst. of Electronics Engineering, National Taiwan Univ. and ²Graduate Inst. of Biomedical Electronics and Bioinformatics, National Taiwan Univ. (Taiwan)

Area 9: Physics and Applications of Novel Functional Devices and Materials (12 papers)

PS-9-1
Analysis of Single- and Double-barrier Tunneling Diode Structures using Ultra-thin-CaF₂/CdF₂/Si Multilayered Heterostructures Grown on Si
K. Suda, Y. Kuwata and M. Watanabe, Tokyo Tech (Japan)

PS-9-2
Diode like Behavior of IZO Junction with Superconducting Electrode at Low Temperatures
K. Makise¹ and B. Shinozaki², ¹NICT and ²Univ. of Kyushu (Japan)

PS-9-3
Investigation and Mitigation of Work-Function Variation for III-V Heterojunction Tunnel FET
C.W. Hsu, M.L. Fan and P. Su, NCTU (Taiwan)

PS-9-4
High-performance Fully-transparent Ni-doped ZnO Thin-film Transistors Fabricated on Flexible Plastic Substrate at Low Temperature
L.L. Huang¹, D.D. Han¹, Z.F. Chen^{1,2}, Y.Y. Cong¹, J. Wu^{1,2}, N.N. Zhao^{1,2}, J.C. Dong^{1,2}, F.L. Zhao^{1,2}, L.F. Liu¹, S.D. Zhang², X. Zhang¹ and Y. Wang¹, ¹Inst. of Microelectronics, Peking Univ. and ²Shenzhen Graduate School, Peking Univ. (China)

PS-9-5
Position Control of PbS Quantum Dot by Nanohole on Silicon Substrate
A. Hirota¹, S. Nakashima^{1,2} and K. Mukai¹, ¹Yokohama National Univ. and ²RIKEN Advanced Research Institute (Japan)

PS-9-6
Performance Enhancement of Colloidal Synthesis-Coated Au-Nanoparticle Nonvolatile Memory with Low Damage NH₃ Plasma Treatment on SiO₂ Tunneling Layer
C. Liao¹, Y. Liu¹, J. Wang¹, L. Chang² and C. Lai¹, ¹Chang Gung Univ. and ²Ming Chi Univ. of Tech. (Taiwan)

PS-9-7
Single InGaN nanocolumn spectroscopy
K. Sekine, Y. Onoue, T. Yoshiike, K. Asami, S. Ishizawa, T. Nakaoka and K. Kishino, Sophia Univ. (Japan)

PS-9-8
Fabrication of 10-nm-Scale Nanoconstrictions in graphene using AFM-Based Local Anodic Oxidation Lithography
M. Arai¹, S. Masubuchi^{1,2}, K. Nose¹, Y. Mitsuda¹ and T. Machida^{1,2}, ¹IIS, Univ. of Tokyo and ²INOIE, Univ. of Tokyo (Japan)

PS-9-9
Theoretical study of current fluctuation in multi-contact molecular bridge systems
S. Tsukuda and T. Nakayama, Chiba Univ. (Japan)

PS-9-10
Parameter Extraction by Microwave Characteristics of two-section Distributed feedback lasers
Y.C. Hwang, S.C. Hsu, Y.H. Lo, C.Y. Chien, H.C. Kuo and C.C. Lin, NCTU (Taiwan)

PS-9-11
High Detectivity Infrared Detectors Using Porous PZT Pyroelectric Thick Films
C.G. Wu, Q.X. Peng, X.Y. Sun, J. Meng, Y. Shuai, J.Q. Cao, W.B. Luo and W.L. Zhang, Univ. of Electronic Sci. and Tech. of China (China)

PS-9-12
Electric states in laterally and vertically arrayed Type-II Quantum Dots
T. Kawazu, NIMS (Japan)

Area 10: Organic Materials Science, Device Physics, and Applications (15 papers)

PS-10-1
Measurement and Analysis of Annealing Effect on Parylene Dielectric Transistor
R. Shidachi¹, N. Take¹, L. Philida¹, T. Tokuhara¹, T. Yokota^{1,2}, T. Sekitani^{1,2,3} and T. Someya^{1,2}, ¹Univ. of Tokyo, ²JST and ³Osaka Univ. (Japan)

PS-10-2
Improvement in Electronic Stability under Bending Stress in Flexible Organic TFT using Polymer Semiconductor
T. Sekine, K. Fukuda, D. Kumaki and S. Tokito, Research Center for Organic Electronics, Yamagata Univ. (Japan)

PS-10-3
Impact of Gate Coupling and Misalignment on Performance of Double-gate Organic Thin Film Transistors
J.W. Han, L. Sun, Y.Q. Xia, H. Xu, Y.B. Zhang, S.D. Zhang and Y. Wang, Peking Univ. (China)

PS-10-4
Charge-Transfer Behavior of Conducting Polymers as Contact Electrode for Semiconductor Devices
J. Kawakita, Y. Fujikawa, T. Nagata and T. Chikyow, NIMS (Japan)

PS-10-5
Dramatic Improvement of Bulk Heterojunction PTB7: PC₆₁BM Organic Solar Cells by Adding Small Amounts of P3HT
Y. Ohori¹, T. Hoashi¹, S. Fujii², H. Kataura² and Y. Nishioka¹, ¹Nihon Univ. and ²AIST (Japan)

PS-10-6
Electrochemical Deposition of ZnO Nanorods for Hybrid Solar Cells
J. Damasco Ty and H. Yanagi, AIST (Japan)

PS-10-7
1,3,5-tri(phenyl-2-benzimidazole)-benzene Cathode Buffer Layer Effects on Solution-Processable Organic Solar Cell Based on 1,4,8,11,15,18,22,25-Octahexylphthalocyanine
G.D.R. Banoukepa¹, A. Fujii¹, Y. Shimizu¹ and M. Ozaki¹, ¹Osaka Univ. and ²AIST (Japan)

PS-10-8
Cathode Buffer Layer Composed of Hyper-Branched Polymer Having Imidazoline Moieties for Organic Devices
K. Fujita, Y. Kimoto and T. Okada, Kyushu Univ. (Japan)

PS-10-9
Fabrication of Large-area Nano Metal Meshes by Strip-off Method
X. Fang¹, C.H. Lin², Y.T. Sun¹, H.W. Zan³, H.F. Meng⁴ and L.A. Wang¹, ¹Graduate Inst. of Photonics and Optoelectronics, National Taiwan Univ., ²Inst. of Electronics Eng., National Tsing-Hua Univ., ³Department of Photonics and Institute of Electro-Optics, NCTU and ⁴Institute of Physics, NCTU (Taiwan)

PS-10-10
Variety of Emission Color Control for Coating and Self-Aligned Ink-jet Printed Small Molecules Organic Light-Emitting Diodes
T. Kanamori¹, S. Naka¹ and H. Okada^{1,2}, ¹Univ. of Toyama and ²Center for Res. and Development in Natural Sciences (Japan)

PS-10-11
Low-Frequency Noise Characteristics of Metal-Organic-Metal Ultraviolet Sensors
P.Y. Su¹, R.W. Chuang¹, C.H. Chen² and T.H. Kao¹, ¹National Cheng Kung Univ. and ²Cheng Shiu Univ. (Taiwan)

PS-10-12
Investigation of Localized SPR and Grating-coupled SPR Enhanced Photocurrent of TiO₂ Films
S. Nootchanat^{1,2}, H. Ninsonti^{1,3}, C. Thammacharoen², S. Ekgasir², K. Shinbo¹, K. Kato¹, F. Kaneko¹ and A. Baba¹, ¹Niigata Univ., ²Chulalongkorn Univ. and ³Chiang Mai Univ. (Japan)

PS-10-13

Investigation of Initial Deposition Stage of Small Molecule Alq₃ on \bar{n} -NPD Layer by Modified Electro-spray Deposition (ESD) Technique (nano-mist deposition: NMD)
Y. Takatsuka¹, T. Irie¹, D. Nishi¹ and A. Kikuchi^{1,2}, ¹Univ. of Sophia and ²Sophia Nanotechnology Research Center (Japan)

PS-10-14

Electric and Pyroelectric Properties of spin-coated Polyurea Films
M. Morimoto, Y. Koshiba, M. Misaki and K. Ishida, Kobe Univ. (Japan)

PS-10-15

Fabrication and Optical Anisotropy of Non-Peripheral Octahexylphthalocyanine Films with Large Mono-Domain
T. Higashi, M. Ohmori, M.F. Ramanarivo, H. Yoshida, A. Fujii and M. Ozaki, Osaka Univ. (Japan)

Area 11: Sensors and Materials for Biology, Chemistry and Medicine

(17 papers)

PS-11-1

Detection of PCR Products by Micro- and Nanoscale Field-Effect Transistors
M. Schwartz^{1,3}, T.C. Nguyen¹, X.T. Vu^{1,2}, P. Wagner³ and S. Ingebrandt¹, ¹Univ. of Applied Sciences Kaiserslautern, ²RWTH Aachen Univ. and ³Hasselt Univ. (Germany)

PS-11-2

Surface Modified Poly-crystalline Silicon Nanowires Field Effect Transistor for Ammonia Gas Sensor
W.T. Kuo¹, Y.R. Lo², Y.S. Yang³ and H.M.P. Chen^{1,3}, ¹Department of Photonics, NCTU, ²Department of Biological Science and Technology, NCTU and ³Institute of Biomedical Engineering, NCTU (Taiwan)

PS-11-3

CMOS Pulse-Width-Modulation Readout Circuit for ISFET-Based Sensors
R.L. Wang¹, W.D. Wu¹, C. Yu¹, P.H. Chiu¹, J.L. Shi¹, Y.F. Hao¹, H.H. Liao², H.H. Tsai³ and Y.Z. Juang², ¹National Kaohsiung Normal Univ. and ²National Chip Implementation Center, National Applied Research Lab. (Taiwan)

PS-11-4

PSPIICE Simulation Model for Biomolecule Detection with Silicon Nanowire Bio-sensors in both Potentiometric and Impedimetric Readout Mode
T.C. Nguyen¹, M. Schwartz¹, X.T. Vu^{1,2} and S. Ingebrandt¹, ¹Univ. of Applied Sciences Kaiserslautern and ²RWTH Aachen Univ. (Germany)

PS-11-5

Characterization of ion sensitive extended-gate field effect transistor coated by functional self-assembled monolayer
T. Kajisa and T. Sakata, Univ. of Tokyo (Japan)

PS-11-6

Schottky Barrier Carbon Nanotube FET (CNTFET) Gas Sensors
C.V.S. Reddy¹, S. Maheshwaram¹, S. Dasgupta¹, A.K. Saxena¹, N. Jain² and S.K. Manhas¹, ¹Indian Inst. of Tech. Roorkee and ²Solid State Physics Lab. (India)

PS-11-7

Conductive Diamond-like Carbon Film Deposition by Low Temperature Neutral Beam Enhanced Chemical Vapor Deposition for Bio-LSIs
X.J. Chang¹, Y. Kikuchi^{1,2}, T. Kubota¹, K.Y. Inoue³, T. Matsue^{3,4} and S. Samukawa^{1,4}, ¹Inst. of Fluid Sci., Tohoku Univ., ²Tokyo Electron Ltd., ³Grad. Sch. of Environ., Tohoku Univ. and ⁴WPI-Adv. Inst. Mat. Res., Tohoku Univ. (Japan)

PS-11-8

Induction of Neural Stem Cells on Indium Tin Oxide Surface
I.C. Lee, Y.C. Liu, Y.C. Wu and K.F. Lei, Chang Gung Univ. (Taiwan)

PS-11-9

Fluidity Evaluation of Cell Membrane Model Formed on Graphene Oxide with Single Particle Tracking Using Qdot
Y. Okamoto, T. Motegi, S. Iwasa, A. Sandhu and R. Tero, Toyohashi Univ. of Tech. (Japan)

PS-11-10

Formation and Fluidity Measurement of Artificial Lipid Membranes on Polyvinyl Chloride Substrate
T. Kobayashi¹, A. Kono¹, T. Hattori¹, K. Sawada¹ and R. Tero^{1,2}, ¹Toyohashi Univ. of Tech and ²Electronics-Inspired Interdisciplinary Research Institute (Japan)

PS-11-11

Fiber-optic Biosensor based on Multimode Interference using Small-core Single-mode Fiber
M. Doi¹, S. Taw¹, Y. Yanase² and H. Fukano¹, ¹Okayama Univ. and ²Hiroshima Univ. (Japan)

PS-11-12

Sensitivity Enhancement in Refractive Index Measurement based on Optical Fiber Multimode Interference with Gold Nanoparticles
S. Taw, H. Daitoh and H. Fukano, Okayama Univ. (Japan)

PS-11-13

SPR Imaging Sensor for Visualization of Individual Cell Activation and Clinical Diagnosis of Allergy
Y. Yanase, T. Kawaguchi, K. Ishii and M. Hide, Hiroshima Univ. (Japan)

PS-11-14

Electrochemical Impedance Spectroscopy of Colloidal Gold Nanoparticles in Chromatography Paper for Immunochemical Assay
F. Hori and S. Uno, Ritsumeikan Univ. (Japan)

PS-11-15

Catalytic Behaviour of Ultrafine Pt on the Gas Sensor of ZnO Nanoparticles
A. Ahmadi Daryakenari¹, A. Apostoluk² and J.J. Delaunay¹, ¹Univ. of Tokyo, Mechanical Eng. and ²Institut des Nanotechnologies de Lyon (Japan)

PS-11-16

Bioassay of Target Proteins Using A NiCr Strain Gauge-Cantilever Liposome Biosensor with Droplet-Sealed Structure
Z. Zhang¹, T. Akai¹, M. Sohigawa², K. Takada¹, K. Yamashita¹ and M. Noda¹, ¹Kyoto Inst. Tech. and ²Niigata Univ. (Japan)

PS-11-17

Capacitive Breathing Sensor and Evaluation of Body Movement Noise
M. Sasaki, S.K. Kundu, J. Jeong and S. Kumagai, Toyota Tech. Inst. (Japan)

Area 12: Spintronics Materials and Devices

(13 papers)

PS-12-1

Preparation of GaAs-based Spin-photonic Devices for Emission and Detection of Circularly Polarized Light
H. Munekata, N. Nishizawa, H. Ikeda and K. Nishibayashi, Tokyo Tech (Japan)

PS-12-2

Monolithic integration of Magneto-Optical Plasmonic Waveguides with GaAs/Al-GaAs Waveguides on GaAs Substrate and with Si Nanowire Waveguides on Si substrate for Integrated Non-reciprocal Optical Devices
V. Zayets, H. Saito, K. Ando and S. Yuasa, AIST (Japan)

PS-12-3

Fabrication of Ge-based light-emitting diodes with a ferromagnetic electrode
S. Iba¹, H. Saito¹, S. Yuasa¹, Y. Yasutake² and S. Fukatsu², ¹AIST and ²Univ. of Tokyo (Japan)

PS-12-4

Effects of Band Mixing on Hole-Spin Superposition in GaAs/AlGaAs Quantum Wells
T. Ito^{1,2}, H. Gotoh³, M. Ichida⁴ and H. Ando¹, ¹Res. Inst. of Electronics, Shizuoka Univ., ²Graduate School of Eng., Shizuoka Univ., ³NTT Basic Res. Labs., NTT Corp. and ⁴Department of Physics, Faculty of Sci. and Eng., Konan Univ. (Japan)

PS-12-5

Effects of interface electric field on the magnetoresistance for nonlocal setup
T. Tanamoto, M. Ishikawa, T. Inokuchi, H. Sugiyama and Y. Saito, Toshiba Corp. (Japan)

PS-12-6

In-plane Anisotropy of a CoFeB-MgO Magnetic Tunnel Junction with Perpendicular Magnetic Easy Axis
E. Hirayama¹, S. Kanai¹, K. Sato², M. Yamanouchi^{1,3}, H. Sato^{3,4}, S. Ikeda^{1,3,4}, F. Matsukura^{2,3} and H. Ohno^{1,2,3,4}, ¹Lab. for Nanoelectronics and Spintronics, Res. Inst. of Electrical Communication, Tohoku Univ., ²WPI-AIMR, Tohoku Univ., ³Center for Spintronics Integrated Systems, Tohoku Univ. and ⁴Center for Innovative Integrated Electronic Systems, Tohoku Univ. (Japan)

PS-12-7

Dependence of magnetic properties of MgO/CoFeB/Ta stacks on CoFeB and Ta thicknesses
K. Watanabe¹, S. Ishikawa¹, H. Sato^{2,3}, S. Ikeda^{1,2,3}, M. Yamanouchi^{1,2}, S. Fukami^{2,3}, F. Matsukura^{1,2} and H. Ohno^{1,2,3,4}, ¹Lab. for Nanoelectronics and Spintronics, Res. Inst. of Electrical Communication, Tohoku Univ., ²Center for Spintronics Integrated Systems, Tohoku Univ., ³Center for Innovative Electronic Systems, Tohoku Univ. and ⁴WPI-Advanced Inst. for Materials Res., Tohoku Univ. (Japan)

PS-12-8

The Fabrication of the Magnetic Tunnel Junctions Including Spinel Ferrite Layers
N. Takahashi¹, T. Kawai¹, T. Nagahama² and T. Shimada², ¹Graduate School of Chemical Sciences and Engineering, Hokkaido Univ. and ²Graduate School of Engineering, Hokkaido Univ. (Japan)

PS-12-9

Synthesis And Characterization of Electron Doped La_{0.85}Te_{0.15}MnO₃ Thin Film Grown on LaAlO₃ Substrate By Pulsed Laser Deposition Technique.
I. Bhat¹, Shahid. Husain¹ and S.I. Patil², ¹Department of Physics, Aligarh Muslim Univ. and ²Department of Physics, Univ. of Pune (India)

PS-12-10

Growth of Very Thin Films of Mn₂Ge with a Perpendicular Magnetic Anisotropy
A. Sugihara, S. Mizukami and T. Miyazaki, WPI-AIMR, Tohoku Univ. (Japan)

PS-12-11

LLG Micromagnetic Simulation on STT Efficiency of sub 30nm Perpendicular MTJs with etching damage
K. Ito, S. Ohuchida and T. Endoh, Tohoku Univ. (Japan)

PS-12-12

Fabrication of Magnetic Tunnel Junctions with Synthetic Coupled Free Layer for Highly Sensitive Magnetic Field Sensor Devices
D. Kato¹, M. Oogane¹, K. Fujiwara¹, T. Nishikawa², H. Naganuma¹ and Y. Ando¹, ¹Tohoku Univ. and ²KONICA MINOLTA (Japan)

PS-12-13

Development of Scanning dc-SQUID system for local magnetic imaging
Y. Shibata¹, Y. Osima¹, H. Kashiwaya², R. Ishiguro³, S. Kashiwaya², H. Takayanagi⁴ and S. Nomura¹, ¹Univ. of Tsukuba, ²AIST, ³RIKEN and ⁴NIMS (Japan)

Area 13: Applications of Nanotubes, Nanowires, and Graphene (14 papers)

PS-13-1

Electrical Properties of MoS₂/Graphene Heterostructure and pn Junction Diode
W.J. Su¹, H.C. Chang², H.Y. Chang², Y.S. Huang^{1,2} and K.Y. Lee^{1,2}, ¹Graduate Institute of Electro-Optical Engineering, National Taiwan Univ. of Sci. and Tech. and ²Department of Electronic Engineering, National Taiwan Univ. of Sci. and Tech. (Taiwan)

PS-13-2

Improved Dispersibility and Thermopower of Single-Walled Carbon Nanotubes in Ionic Polymers
M. Nakano, Y. Nonoguchi, T. Nakashima and T. Kawai, NAIST (Japan)

PS-13-3

Graphene as a Template Layer for the Growth of Ga-Based Compound Materials
F.R. Wong¹, N.S.A. Aziz², K. Yasui² and A.M. Hashim¹, ¹Malaysia-Japan International Inst. of Tech. and ²Nagaoka Univ. of Tech. (Malaysia)

PS-13-4

Defect Generation in Mono-layer Graphene in O₂-PDA and FGA
W.J. Liu, K. Nagashio, T. Nishimura and A. Toriumi, Univ. of Tokyo (Japan)

PS-13-5

Damping of Unexpected Motion of Carbon-Nanotube Nanorelay-Arm by Introducing Pinhole Defects
A. Nagataki^{1,2}, K. Takei¹, T. Arie¹ and S. Akita¹, ¹Osaka Pref. Univ. and ²KRI Inc. (Japan)

PS-13-6

Ab Initio Calculations for Li⁺ Solvation in Ethylene Carbonate near the Graphite Edges with Hydrogen/Oxygen Terminations
T. Kawai^{1,2} and S. Okada¹, ¹NEC Corp. and ²Univ. of Tsukuba (Japan)

PS-13-7

A First Principles Study on CVD Graphene Growth on Copper Surface: C-C Bonding Reactions at Graphene Edges
N. Tajima¹, T. Kaneko¹, J. Nara¹ and T. Ohno^{1,2}, ¹NIMS and ²Univ. of Tokyo (Japan)

PS-13-8

Detection of Molecular Charge Dynamics through Current Noise in A GaAs-based Nanowire FET
S. Inoue^{1,2}, R. Kuroda^{1,2}, M. Sato^{1,2} and S. Kasai^{1,2}, ¹Graduate School of Info.Sci.Tech., Hokkaido Univ. and ²RCIQE, Hokkaido Univ. (Japan)

PS-13-9

Highly-Sensitive BiFeO-Coated ZnO Nanowire Arrays for Flexible Piezoelectric Sensing Applications
C.P. Cheng, C.H. Hsu, C.P. Chou, Z.Y. Liou, Y.S. Li, Y.Y. Syu and C.H. Cheng, National Taiwan Normal Univ. (Taiwan)

PS-13-10

Characterization of Electron Transport Properties of <110> InAs Nanowires by Hall Effect Measurements
Z. Cui¹, R. Perumal¹, T. Ishikura¹, K. Konishi¹, K. Yoh¹ and J. Motohisa¹, ¹RCIQE, Hokkaido Univ. and ²IST, Hokkaido Univ. (Japan)

PS-13-11

Characterization of Selective Doping and Stress in Ge/Si Core-Shell Nanowires
M. Yu, J. Wipakorn and N. Fukata, NIMS (Japan)

PS-13-12

Design and Growth of Nanowire Nanocavity
T. Wada¹, S. Hara^{1,2} and J. Motohisa¹, ¹Graduate School of Information Science and Technology, Hokkaido Univ. and ²Research Center for Integrated Quantum Electronics, Hokkaido Univ. (Japan)

PS-13-13

Enhancement of Thermoelectric Properties via Radial Dopant Inhomogeneity in B-doped Si Nanowires
T. Yanagida¹, F. Zhuge¹, K. Nagashima¹, N. Fukata² and K. Uchida³, ¹Osaka Univ., ²NIMS and ³Keio Univ. (Japan)

PS-13-14 (Late News)

Electrical Characterization of Nanometer Structures with Graphene Directly Grown on SiO₂ by Alcohol Chemical Vapor Deposition
H. Sato¹, K. Yamada¹, A. Nakamura¹, H. Satoh¹, J. Temmyo¹ and H. Inokawa², ¹Grad. Sch. Of Engineering, Shizuoka Univ. and ²Res. Inst. Of Elec. Shizuoka Univ. (Japan)

Area 14: Power Devices and Materials (14 papers)

PS-14-1

Hot carrier effect and PBTI of a thin-film SOI power MOSFET at high temperature
W. Yoshida, T. Takasugi and S. Matsumoto, Kyushu Inst. of Tech. (Japan)

PS-14-2

Well proximity effect impact on fully isolated low R_{on}*Q₂ MOSFET performance
M. Shima¹, M. Katayama¹, H. Sato¹, M. Onoda¹, T. Yoshimura¹, T. Ishihara¹, Y. Suzuki¹, N. Suzuki¹, M. Hosoda², T. Imada² and T. Hirose², ¹Fujitsu Semiconductor Ltd. and ²Fujitsu Laboratories Ltd. (Japan)

PS-14-3

Impact of the silicon on diamond structure for high temperature switching applications
H. Kanoya, K. Nakagawa and S. Matsumoto, Kyushu Inst. of Tech. (Japan)

PS-14-4

Analysis of forward voltage and reverse recovery charge control of silicon PiN diodes
Y. Yamashita and S. Machida, Toyota Central R&D Labs., Inc. (Japan)

PS-14-5

Growth and investigation of stacking fault of 4H-SiC C-face homoepitaxial layers with 1° off-angle
K. Masumoto^{1,2}, H. Asamizu^{1,3}, K. Tamura^{1,3}, C. Kudou^{1,4}, J. Nishio^{1,5}, K. Kazutoshi^{1,2}, T. Ohno^{1,6} and H. Okumura^{1,2}, ¹FUPET, ²AIST, ³ROHM Co., Ltd., ⁴Panasonic Corp., ⁵Toshiba Corp. and ⁶Hitachi, Ltd. (Japan)

PS-14-6

Tilt-implanted trench termination for SiC power devices
G.Y. Song, D.H. Cho, G.H. Song and G.S. Kim, Sogang Univ. (Korea)

PS-14-7

Short-circuit capability of SiC power MOSFETs
T. Shoji^{1,2}, A. Soeno², H. Toguchi², S. Aoi¹, Y. Watanabe¹ and H. Tadanoo³, ¹Toyota Central R&D Labs., Inc., ²Toyota Motor Corp. and ³Univ. of Tsukuba (Japan)

PS-14-8

Switching characteristics of a 4H-SiC IGBT with interface defects up to the nonquasi-static regime
I. Pesic^{1,2}, D. Navarro², M. Fujinaga², Y. Furui² and M. Miura-Mattausch¹, ¹Hiroshima Univ. and ²Silvaco Japan (Japan)

PS-14-9

Energy-band offset of AlN/Diamond(111) heterojunction determined by X-ray photoelectron spectroscopy
M. Imura, A. Tanaka, H. Iwai, J. Liu, M. Liao and Y. Koide, NIMS (Japan)

PS-14-10

Schottky-barrier inhomogeneities in WC/p-diamond at high temperature
A. Fiori, T. Teraji and Y. Koide, NIMS (Japan)

PS-14-11

Static and transient performance comparisons between diamond p+/p- diode and m-i-p+ (Metal-Intrinsic-p+) diode
A. Nawawi¹, K.J. Tseng¹, R. Rusli¹, G.A.J. Amaratunga^{1,2}, H. Umezawa³ and S. Shikata³, ¹Nanyang Tech. Univ., ²Univ. of Cambridge and ³AIST (Singapore)

PS-14-12 (Late News)

Generation and suppression of oxidation byproducts at 4H-SiC C-face / SiO₂ interface characterized by infrared spectroscopy
H. Hirai¹ and K. Kita^{1,2}, ¹The Univ. of Tokyo and ²JST-PRESTO (Japan)

PS-14-13 (Late News)

Effect of gate oxide process at SiC-MOS interface on threshold voltage shift analyzed by DLTS
J. Hasegawa¹, M. Noguchi¹, M. Furuhashi¹, S. Nakata², T. Iwasaki¹, T. Koderu¹, T. Nishimura¹ and M. Hatano¹, ¹Tokyo Inst. Of Tech. and ²Mitsubishi Electric Corp. (Japan)

PS-14-14 (Late News)

Quantitative characterization of border traps with widely-spread time constants in SiC MOS capacitors by transient capacitance measurements
Y. Fujino¹, R.H. Kikuchi¹, H. Hirai¹ and K. Kita^{1,2}, ¹The Univ. of Tokyo and ²JST-PRESTO (Japan)

Area 15: Photovoltaic Materials and Devices

(9 papers)

PS-15-1

Simulation Analysis of The Potential Causes for The Low Jsc in GaAsN Solar Cells
L. Wang, O. Elleuch, N. Kojima, Y. Ohshita and M. Yamaguchi, Toyota Tech. Inst. (Japan)

PS-15-2

Characterization of Directly Bonded Ge/GaAs by Surface Activated Bonding for Multi-junction Solar Cells
G. Kono, M. Fujino, D. Yamashita, K. Watanabe, M. Sugiyama, Y. Nakano and T. Suga, Univ. of Tokyo (Japan)

PS-15-3

Optical Characterization of GaInP p-i-n Solar Cells
Y.G. Li¹, D.Y. Lin¹, T.S. Ko¹, J.S. Wu¹, C.H. Wu², Y.L. Tsai², M.C. Kao³ and H.Z. Chen³, ¹National Changhua Univ. of Edu., ²Inst. of Nuclear Energy Res. and ³Hsiuping Univ. Sci. and Tech. (Taiwan)

PS-15-4

Effects of Copper Concentration on the Characteristics of Cu₂ZnSnS₄ Thin Films Prepared by Rapid Thermal Annealing
B.T. Jheng¹ and P.T. Liu¹, ¹National Tsing Hua Univ. and ²NCTU (Taiwan)

PS-15-5

Ultra-low Reflective Micro-structures Fabricated by One-step Advanced Silicon Etching on Silicon Surface
L. Zhang, D.Q. Zhao, J. He, X. Huang, F. Yang and D.C. Zhang, Peking Univ. (China)

PS-15-6

Investigation of chemical-bonding state and fixed charge state of Sr₂SiO₄ film on Si(100) substrate
S. Tanigaki¹, Y. Hotta^{1,3}, H. Yoshida^{1,3}, K. Arafune^{1,3}, A. Ogura^{2,3} and S. Satoh^{1,3}, ¹Univ. of Hyogo, ²Meiji Univ. and ³JST-CREST (Japan)

PS-15-7

Withdrawn

PS-15-8

Enhanced Conversion Efficiency of Hybrid Solar Cells by using Alloyed Silicon-Tin Nanocrystals via Quantum Confinement Effect
M. Lozac¹, V. Svrcek¹, D. Mariotti¹ and K. Matsukuba¹, ¹AIST and ²Univ. of Ulster (Japan)

PS-15-9 (Late News)

Effect of Inter-dot Spacing on Radiative Lifetime in InAs/GaAsSb Type II Quantum Dot Superlattices
H. Yoshikawa, T. Kotani, Y. Kuzumoto, M. Izumi and Y. Tomomura, SHARP Corp. (Japan)