

Friday, September 26

Room 101 (A)	Room 102 (B)	Room 201A (C)	Room 201B (D)	Room 202A (E)
Area 1: Advanced Gate Stack/Si Processing Science	Area 3: CMOS Devices/Device Physics	Area 2: Characterization and Materials Engineering for Interconnect Integration	Area 11: Micro/Nano Electromechanical and Bio-Systems (Devices)	Area 7: Photonic Devices and Device Physics
A-7: Metal Gate Engineering (9:00-10:20) Chairs: J. Yugami (Renesas Tech. Corp.) K. Shiraishi (Univ. of Tsukuba)	B-7: Variability Studies (9:00-10:20) Chairs: T. Hiramoto (Univ. of Tokyo) H. Wakabayashi (Sony Corp.)	C-7: Multi-functional Interconnect I (9:00-10:30) Chairs: J. Kodate (NTT Corp.) J. Gambino (IBM)	D-7: Nano Fabrication & MEMS Sensor I (9:30-10:30) Chairs: T. Nishimoto (Shimadzu Corp.) O. Nakagawara (Murata Manufacturing Co., Ltd.)	E-7: Si Photonics (9:00-10:30) Chairs: H. Yamada (Tohoku Univ.) J. Fujikata (NEC Corp.)
9:00 A-7-1 Pushing Bulk Transistor with Conventional SiON Gate Oxide for Low Power Applications G. Bidal ^{1,3} , F. Boeuf ¹ , F. Payet ¹ , S. Denorme ¹ , N. Loubet ¹ , P. Perreau ² , C. Mezzomo ^{1,3} , M. Marin ¹ , D. Fleury ^{1,3} , C. Leyris ¹ , F. Leverd ¹ , P. Gouraud ¹ , C. Laviro ² , R. Beneyton ¹ , A. Torres ² , B. Imbert ¹ , D. Delille ⁴ , L. Clement ¹ , G. Ghibaud ³ and T. Skotnicki ¹ , ¹ STMicroelectronics, ² CEA-LETI, ³ IMEP and ⁴ FEI (France)	9:00 B-7-1 Analysis of V_{th} Fluctuation at High Temperature using Takeuchi Plot T. Tsunomura ¹ , A. Nishida ¹ , K. Takeuchi ¹ , S. Inaba ¹ , A. T. Putra ³ , S. Kamohara ¹ , K. Terada ² , T. Hiramoto ^{1,3} and T. Mogami ¹ , ¹ MIRAI-Selete, ² Hiroshima City Univ. and ³ Univ. of Tokyo (Japan)	9:00 C-7-1 Low-Loss Magnetic Films of Ni-Zn Ferrite by Low-Temperature PVD Method for RF-CMOS Application K. Kaneko, N. Inoue, N. Furutake, K. Hijioka and Y. Hayashi, <i>NEC Electronics Corp. (Japan)</i>	9:30 D-7-1 (Invited) Compound Nanoimprint Processes and Their Applications for Functional Nanodevices J. Mizuno, H. Shinohara and S. Shoji, <i>Waseda Univ. (Japan)</i>	9:00 E-7-1 (Invited) Silicon Integrated Nanophotonics: A Platform for On-Chip Optical Interconnects W. M. J. Green, S. Assefa, J. V. Campenhout, Y. H. Kim, F. Xia and Y. A. Vlasov, <i>IBM (USA)</i>

Friday, September 26

Room 202B (F)	Room 303 (G)	Room 304 (H)	Room 405 (I)	Room 406 (J)
Area 5: Advanced Circuits and Systems	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices		Area 4: Advanced Memory Technology
F-7: Low Supply Voltage Functional Blocks (9:00-10:15) Chairs: T. Hamasaki (Texas Instruments Japan Ltd.) S. Kawahito (Shizuoka Univ.)	G-7: Diamond and SiC Devices (9:00-10:30) Chairs: T. Tanaka (Matsushita Electric Industrial Co., Ltd.) M. Kuzuhara (Univ. of Fukui)	H-7: Quantum Transport I (9:00-10:30) Chairs: K. Ono (RIKEN) P. W. Li (National Central Univ.)		J-7: Flash Memory IV/PRAM (9:00-10:20) Chairs: Y. Shimamoto (Hitachi, Ltd.) Y. C. Chen (Macronix International Co., Ltd.)
9:00 F-7-1 Current Reference Circuit for Subthreshold CMOS LSIs K. Ueno, T. Asai and Y. Amemiya, <i>Hokkaido Univ. (Japan)</i>	9:00 G-7-1 4H-SiC Trench MOSFETs with Low On Resistance Y. Nakano, T. Mukai, R. Nakamura, T. Nakamura and A. Kamisawa, <i>ROHM Co., Ltd. (Japan)</i>	9:00 H-7-1 (Invited) Spin Transport in a Single InAs Quantum Dot Attached to Ferromagnetic Electrodes T. Machida ^{1,2} and K. Hamaya ^{1,3} , ¹ Univ. of Tokyo, ² CREST-JST and ³ Kyusyu Univ. (Japan)		9:00 J-7-1 Enhanced Memory Performances of Advanced Impurity Trap Memory with Atomic-scale Ti Impurity Embedded in Ultrathin LaAlO ₃ as a Charge Trap Layer S. Jung, H. Choi, Y. Ju, M. Chang, M. Pyun and H. Hwang, <i>Gwangju Inst. of Sci. and Tech. (Korea)</i>

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9:20 A-7-2 Additive Process Induced Strain (APIS) Technology for $L_g = 30\text{nm}$ Band-Edge High-k/Metal Gate nMOSFET M. M. Hussain ¹ , K. Rader ² , C. Smith ³ , C. Young ¹ , S. Suthram ⁴ , C. Park ¹ , M. Cruz ¹ , P. D. Kirsch ¹ and R. Jammey ⁵ , ¹ SEMATECH, ² Texas State Univ., ³ Univ. of North Texas, ⁴ Univ. of Florida and ⁵ IBM Assignee (USA)	9:20 B-7-2 Process Architecture for Spatial and Temporal Variability Improvement of SRAM Circuits at the 45nm Node N. Planes ¹ , V. Huard ¹ , C. Laviron ² , O. Callen ¹ , J. Bonnouvier ¹ , O. Menu ¹ , S. Haendler ¹ , M. Haond ¹ and F. Boeuf ¹ , ¹ STMicroelectronics and ² CEA-LETI (France)	9:20 C-7-2 An Efficient Modeling Technique with Q-curve Analytic for Design Automation C. Y. Lee ¹ , S. C. Chang ¹ , J. D. S. Deng ² and C. H. Kao ¹ , ¹ National Defense Univ. and ² Cyntec Co., Ltd. (Taiwan)	10:00 D-7-2 Miniaturization of Electrical Conductivity Sensors for Multimodal Smart Microchip M. Futagawa ¹ , T. Iwasaki ¹ , K. Sawada ^{1,2} and M. Ishida ^{1,2} , ¹ Toyohashi Univ. of Tech. and ² CREST-JST (Japan)	9:30 E-7-2 Detailed Experimental Study of Silicon Integrated Waveguide Modulator Achievable Through a Hybrid Structure of JFET and p-i-n Diode R. W. Chuang ^{1,2} , M. T. Hsu ¹ , Z. L. Liao ¹ and C. C. Cheng ¹ , ¹ National Cheng Kung Univ. and ² National Nano Device Labs. (Taiwan)
9:40 A-7-3 Vertical Scaling of Metal/High-k Gate Stacked MOSFETs for Hp45 and Beyond T. Matsuki, T. Watanabe, T. Morooka, M. Sato, M. Kadoshima, T. Onizawa, T. Eimori, M. Nakamura, Y. Nara and Y. Ohji, Selete (Japan)	9:40 B-7-3 Modeling of MOSFET Characteristics using In-line Inspection Data and Statistical Explanation of Global Variation M. Kurihara ¹ , M. Izawa ¹ , J. Tanaka ¹ , K. Kawai ² , R. Yoshifuku ² , T. Maruyama ² , T. Imbe ² , Y. Koide ² and N. Fujiwara ² , ¹ Hitachi, Ltd. and ² Renesas Tech. Corp. (Japan)	9:40 C-7-3 (Invited) High-frequency Magnetic Shielding Technology for Electronic Devices M. Yamaguchi, Y. Endo and Y. Shimada, Tohoku Univ. (Japan)	10:15 D-7-3 Piezoresistive Rotation Angle Sensor Integrated in Micromirror Device T. Aonuma ¹ , S. Kumagai ¹ , M. Sasaki ¹ , M. Tabata ² and K. Hane ² , ¹ Toyota Technological Inst. and ² Tohoku Univ. (Japan)	9:45 E-7-3 Specific Blue Light Emission from Nanocrystalline Porous Si Treated by High-Pressure Water Vapor Annealing B. Gelloz, R. Mentek and N. Koshida, Tokyo Univ. of Agr. and Tech. (Japan)

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Area 5: Advanced Circuits and Systems	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices		Area 4: Advanced Memory Technology
9:20 F-7-2 A PMOS Charge Pump for Low Supply Voltages C. P. Hsu and H. Lin, National Chung Hsing Univ. (Taiwan)	9:15 G-7-2 4H-SiC Power MOSFETs and SBDs of 1.7kV Rating N. Miura, S. Yoshida, Y. Nakao, Y. Matsuno, K. Kuroda, M. Imaizumi, H. Sumitani, H. Yamamoto and T. Oomori, Mitsubishi Electric Corp. (Japan)	9:30 H-7-2 Hyperfine-coupling-programming of Current Through Coupled Quantum Dots with Multiple-sweep Bias Voltage Waveforms G. Austing ^{1,2} , C. Payette ^{1,2} , G. Yu ¹ and J. Gupta ¹ , ¹ National Res. Council of Canada and ² McGill Univ. (Canada)		9:20 J-7-2 Study of Fluorine Incorporation in the Blocking Oxide of Metal-Alumina-Nitride-Oxide-Silicon-type Flash Memory Devices M. Chang, J. Lee, Y. Ju, S. Jung, H. Choi and H. Hwang, Gwangju Inst. of Sci. and Tech. (Korea)
9:40 F-7-3 Circuitry Operating Simulation of High-Speed 90-nm Embedded ReRAM Array Y. Sato, K. Tsunoda, M. Aoki and Y. Sugiyama, Fujitsu Labs. Ltd. (Japan)	9:30 G-7-3 Improvements In Thermal Stability of Hydrogen-terminated Diamond FETs M. Kubovic, Y. Yamauchi and M. Kasu, NTT Corp. (Japan)	9:45 H-7-3 High-frequency Capacitance Measurements in GaAs/AlGaAs Quantum Dots T. Ota, T. Hayashi and T. Fujisawa, NTT Corp. (Japan)		9:40 J-7-3 Effect of High Pressure Oxygen Annealing (HPOA) on the Electrical Characteristics of Metal-Alumina-Nitride-Oxide-Silicon (MANOS)-type Flash Memory Devices Y. Ju, M. Chang, S. Jung, M. Jo, J. Lee, J. Yoon and H. Hwang, Gwangju Inst. of Sci. and Tech. (Korea)

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10:00 A-7-4 V _{th} Lowering Effect of TaC/Rare Earth Metal/TaC Laminated Gate Electrode Applicable to N-MISFET with HfSiON and its Physical Origins before and after High-Temperature Annealing R. Ichihara and M. Koyama, <i>Toshiba Corp. (Japan)</i>	10:00 B-7-4 Mitigation of CMOS Variability with Metal Gate J. W. Yang ¹ , C. S. Park ¹ , H. R. Harris ² , C. E. Smith ¹ , H. Adhikari ² , J. Huang ¹ , D. Heh ¹ , P. Majhi ³ and R. Jammy ⁴ , ¹ SEMATECH, ² AMD assignee, ³ Intel assignee and ⁴ IBM assignee (USA)	10:10 C-7-4 Enhanced Power Supply Structure with New Mesh Wiring and Electroless Plated Shunt Line and Assembly-Stress-Relaxation Structure Y. Ota, K. Ishikawa, F. Itoh, Y. Itoh, C. Karatani, K. Koike, T. Nishio, M. Takahashi and H. Hirano, <i>Matsushita Electric Industrial Co., Ltd. (Japan)</i>		10:00 E-7-4 Tapered Through-Si Via Formation for Optical Interposer with 3D ICs and Buried Vertical-Cavity Surface-Emitting Laser / Photo Diode Chips M. Fujiwara ^{1,2} , A. Noriki ² , T. Fukushima ² , T. Tanaka ² and M. Koyanagi ² , ¹ Sumitomo Bakelite Co., Ltd. and ² Tohoku Univ. (Japan)
				10:15 E-7-5 Impacts of Surface Orientation on Band Gap and Band Structure of Ultra-Thin Silicon Films G. Zhang ¹ , D. Yao ¹ , G. Q. Lo ¹ and B. Li ² , ¹ Inst. of Microelectronics and ² National Univ. of Singapore (Singapore)
Break				

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Area 5: Advanced Circuits and Systems	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices		Area 4: Advanced Memory Technology
	9:45 G-7-4 Diamond High Power Devices H. Umezawa ¹ , R. Kumaresan ¹ , K. Ikeda ¹ , N. Tatsumi ² and S. Shikata ¹ , ¹ AIST and ² Sumitomo Electric Industries (Japan)	10:00 H-7-4 Tunneling Spectroscopy of Germanium Quantum-dot in Single-hole Transistors with Self-aligned Electrodes W. T. Lai, C. C. Chen, D. M. T. Kuo and P. W. Li, <i>National Central Univ. (Taiwan)</i>		10:00 J-7-4 Multi-Level-Storage in Lateral SbTeN-based Phase-Change Memory with an Additional Top TiN Layer Y. Yin, K. Ota, T. Noguchi, H. Sone and S. Hosaka, <i>Gunma Univ. (Japan)</i>
		10:15 H-7-5 Implementation of Petri Net using Single-Electron Devices W. C. Zhang and N. J. Wu, <i>Chinese Academy of Sci. (China)</i>		
Break				

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A-8: Metal/High-k CMOS (10:45-12:15) Chairs: Y. Tsunashima (Toshiba Corp.) H. Fukutome (Fujitsu Labs. Ltd.)	B-8: Advanced Profile Design (10:45-12:15) Chairs: M. Hane (NEC Electronics Corp.) H. C. Lin (National Chiao Tung Univ.)	C-8: Multi-functional Interconnect II (10:45-12:15) Chairs: Y. Hayashi (NEC Electronics Corp.) J. Kodate (NTT Corp.)	D-8: Nano Fabrication & MEMS sensor II (10:45-12:00) Chairs: M. Niwano (Tohoku Univ.) O. Nakagawara (Murata Manufacturing Co., Ltd.)	E-8: Photonic Crystals and Si Photonics (10:45-12:15) Chairs: J. Fujikata (NEC Corp.) H. Yamada (Tohoku Univ.)

10:45 A-8-1 (Invited)
Low V_t Metal-Gate/High-k CMOS from Understanding the Mechanism to Innovative Solution
A. Chin^{1,2}, C. H. Cheng², N. C. Su³, S. J. Wang³, C. C. Liao^{1,2}, C. P. Chou² and H. L. Hwang^{1,4},
¹Nano-Electronics Consortium of Taiwan, ²National Chiao Tung Univ., ³National Cheng Kung Univ. and ⁴National Tsing Hua Univ. (Taiwan)

10:45 B-8-1 (Invited)
Simulation of Material and Strain Engineering of Tunneling Field-Effect Transistor with Subthreshold Swing below 60mV/decade
G. Samudra, Y. C. Yeo, C. H. Heng, E. H. Toh and L. Yang, *National Univ. of Singapore (Singapore)*

10:45 C-8-1
Effect of NH₃-Free Silicon Nitride for Protection Layer of Magnetic Tunnel Junction on Magnetic Properties of Magnetoresistive Random Access Memory
T. Murata, Y. Miyagawa, R. Matsuda, M. Tsujiuchi, S. Ueno, Y. Takeuchi, M. Matsuura and K. Asai, *Renesas Tech. Corp. (Japan)*

10:45 D-8-1
Si Ring Optical Resonators for Integrated On-Chip Biosensing
S. Yamatogi, Y. Amemiya and S. Yokoyama, *Hiroshima Univ. (Japan)*

10:45 E-8-1
Sharp-cut Wavelength Filtering Functions Utilizing Multilayer Photonic Crystals
Y. Ohtera¹ and T. Kawashima²,
¹Tohoku Univ. and ²Photonic Lattice, Inc. (Japan)

11:15 A-8-2
Improvement of Metal/High-k Device Performance by 40-Milli-Second Flash Lamp Annealing by using Flexibly-Shaped-Pulse Technology
T. Onizawa, S. Kato, T. Aoyama, Y. Nara and Y. Ohji, *Selete (Japan)*

11:15 B-8-2
Understanding the Effect of Laser Anneal on LSTP 45nm Node MOS Transistor Electrical Parameters
A. Cros, S. Renard, M. Bidaud, R. Ranica, G. Ribes, E. Josse, B. Dumont, R. Beneyton, K. Barla, M. Haond and H. Brut, *STMicroelectronics (France)*

11:05 C-8-2
Resistive Switching Memory using High-k Ta₂O₅ Films
Y. R. Tsai¹, S. Maikap¹, D. Panda¹, S. Z. Rahaman¹, C. S. Lai¹, P. J. Tzeng², C. H. Lin², T. C. Tien², T. Y. Wu², C. C. Wang², M. J. Kao² and M. J. Tsai²,
¹Chang Gung Univ. and ²Industrial Tech. Res. Inst. (Taiwan)

11:00 D-8-2
Controlled Reduction of BioNanoDots for Better Charge Storage Characteristics of BND Flash Memory
Y. Tojo¹, A. Miura^{1,2}, Y. Uraoka¹, T. Fuyuki¹ and I. Yamashita^{1,3},
¹NAIST, ²National Chiao Tung Univ. and ³Panasonic (Japan)

11:00 E-8-2
Strong Light Output from Thin SRO/SiO₂ Multilayers with Photonic Crystal Patterns
F. F. Ren, M. B. Yu, J. D. Ye, Q. Chen, S. T. Tan, G. Q. Lo and D. L. Kwong, *Inst. of Microelectronics (Singapore)*

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Area 13: Applications of Nanotubes and Nanowires	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
F-8: Carbon Nano Materials and Devices (10:45-12:15) Chairs: Y. Homma (Tokyo Univ. of Sci.) Y. Ochiai (JST)	G-8: Oxide Semiconductor Devices (10:45-11:45) Chairs: K. Maezawa (Univ. of Toyama) S. Sasa (Osaka Inst. of Tech.)	H-8: Quantum Transport II (10:45-12:15) Chairs: D. G. Austing (National Res. Council of Canada) M. Tabe (Shizuoka Univ.)	I-8: Organic Transistor I (10:45-12:15) Chairs: T. Someya (Univ. of Tokyo) K. Nomoto (Sony Corp.)	J-8: FeRAM/MRAM (10:40-12:20) Chairs: T. Eshita (Fujitsu Micro-electronics Ltd.) H. Hada (NEC Corp.)

10:45 F-8-1
Conversion Between Particle Nature and Wave Nature of Hole in Single-walled Carbon Nanotube Transistor by Gate Voltage
T. Kamimura^{1,2}, Y. Ohno³ and K. Matsumoto^{1,3},
¹AIIST, ²JSPS and ³Osaka Univ. (Japan)

10:45 G-8-1
Threshold Voltage Shift in Ga₂O₃-In₂O₃-ZnO (GIZO) Thin Film Transistors under Constant Voltage Stress
M. Fujii¹, H. Yano¹, T. Hatayama¹, Y. Uraoka¹, T. Fuyuki¹, J. S. Jung², J. Y. Kwon², T. Nakanishi³ and M. Kimura³,
¹NAIST, ²Samsung Advanced Inst. of Tech. and ³Ryukoku Univ. (Japan)

10:45 H-8-1 (Invited)
Spin Blockade and Lifetime Enhanced Transport in a Silicon/Silicon-Germanium Double-Quantum Dot
M. A. Eriksson, C. B. Simmons, N. Shaji, M. Thalakulam, E. K. Sackmann, B. J. Van Bael, D. E. Savage, M. G. Lagally, R. Joynt, M. Friesen, R. H. Blick, A. J. Rimberg and S. N. Coppersmith, *Univ. of Wisconsin-Madison (USA)*

10:45 I-8-1 (Invited)
Material Design of Phenylenevinylene Oligomers for Organic Field-effect Transistors
T. Tsutsui and T. Yasuda, *Kyushu Univ. (Japan)*

10:40 J-8-1 (Invited)
Overview and Future Challenges of Advanced Materials for FeRAM
H. Funakubo, T. Watanabe, N. Menou and T. Yamada, *Tokyo Tech. (Japan)*

11:00 F-8-2
Room Temperature Operation of Carbon Nanotube Single-Hole Transistors Fabricated by Shadow Evaporation Methods
Y. Ohno, Y. Asai, K. Maehashi, K. Inoue and K. Matsumoto, *Osaka Univ. (Japan)*

11:00 G-8-2
Transparent Oxide Semiconductor-Based Self-Alignment Thin-Film Transistor
Y. Hirouchi, A. Yamagishi, S. Naka and H. Okada, *Univ. of Toyama (Japan)*

11:15 H-8-2
Single-Electron Transfer by Controlling the Dopant-Induced Quantum Dot Landscape
D. Moraru, K. Yokoi, M. Ligowski and M. Tabe, *Shizuoka Univ. (Japan)*

11:15 I-8-2
Organic Transistor with Mesophase Semiconductors Possessing Two Thienyl Groups
Y. Shimizu¹, K. Oikawa², H. Monobe¹, K. Nakayama³, B. Heinrich⁴ and D. Guillon⁴,
¹AIIST-Kansai, ²Kanto Chemical Co., Inc., ³Yamagata Univ. and ⁴Institut de Physique et Chimie des Matériaux de Strasbourg (Japan)

11:10 J-8-2
Hydrogen-and-Stress-Induced delamination in an IrO₂ layer of FRAMs
J. H. Kim, D. J. Jung, H. H. Kim, Y. K. Hong, E. S. Lee, S. Y. Kim, J. Y. Jung, H. K. Koh, D. Y. Choi, S. K. Kang, H. Kim, W. W. Jung, J. Y. Kang, Y. M. Kang, S. Y. Lee and H. S. Jeong, *Samsung Electronics Co., Ltd. (Korea)*

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11:35 A-8-3 Dual Metal Gate Technology with Metal Inserted FUSI Stack (MIFS) using Single Phase FUSI for Scaled High-k CMOSFETs M. Kadoshima, T. Matsuki, T. Aminaka, E. Kurosawa, M. Kitajima, T. Aoyama, Y. Nara and Y. Ohji, <i>Selete (Japan)</i>	11:35 B-8-3 N-Channel MOSFETs with Embedded Silicon-Carbon Source/Drain Stressors Formed Using Novel Cluster-Carbon Implant and Excimer Laser-Induced Solid Phase Epitaxy S. M. Koh ¹ , K. Sekar ² , W. Krull ² , X. Wang ³ , G. Samudra ¹ and Y. C. Yeo ¹ , ¹ <i>National Univ. of Singapore</i> , ² <i>SemEquip Inc. and</i> ³ <i>Singapore Inst. of Manufacturing Tech. (Singapore)</i>	11:25 C-8-3 Development of Multi-Scale Electromigration Simulator using Ultra Accelerated Quantum Chemical Molecular Dynamics and a Kinetic Monte Carlo Method and its Application to Cu Interconnect H. Tsuboi ¹ , A. Chutia ¹ , C. Lv ¹ , Z. Zhu ¹ , R. Miura ¹ , A. Suzuki ¹ , R. Sahnoun ¹ , M. Koyama ¹ , N. Hatakeyama ¹ , A. Endou ¹ , H. Takaba ¹ , C. A. Del Carpio ¹ , R. C. Deka ² , M. Kubo ¹ and A. Miyamoto ¹ , ¹ <i>Tohoku Univ. and</i> ² <i>Tezpur Univ. (Japan)</i>	11:15 D-8-3 Diameter-controlled 2-dimensional Array of Si Nanodisk using Bio-nano-process and Neutral Beam Etching for Realistic Quantum Effect Devices C. H. Huang ¹ , M. Igarashi ¹ , T. Kubota ¹ , M. Takeguchi ² , K. Nishioka ³ , Y. Uraoka ⁴ , T. Fuyuki ⁴ , I. Yamashita ^{4,5} and S. Samukawa ¹ , ¹ <i>Tohoku Univ.</i> , ² <i>NIMS</i> , ³ <i>Univ. of Miyazaki</i> , ⁴ <i>NAIST and</i> ⁵ <i>Matsushita Electric Industrial Co., Ltd. (Japan)</i>	11:15 E-8-3 Evanescent-Coupled SEG-Ge Lateral and Vertical PIN Photodetectors Integrated on Si-Waveguide J. Wang ² , W. Y. Loh ¹ , K. T. Chua ¹ , H. Zang ² , Y. Z. Xiong ¹ , T. H. Loh ¹ , M. B. Yu ¹ , S. J. Lee ² , G. Q. Lo ¹ and D. L. Kwong ¹ , ¹ <i>Inst. of Microelectronics and</i> ² <i>National Univ. of Singapore (Singapore)</i>

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Area 13: Applications of Nanotubes and Nanowires	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
11:15 F-8-3 Response of Carbon Nanotube Field Effect Transistors to Vibrating Gate K. Hata ^{1,2} , Y. Nakayama ^{3,4} and S. Akita ^{1,4} , ¹ <i>Osaka Prefecture Univ.</i> , ² <i>Kyoto Univ.</i> , ³ <i>Osaka Univ. and</i> ⁴ <i>CREST-JST (Japan)</i>	11:15 G-8-3 Ring Oscillator Circuit based on ZnO Thin Film Transistors W. C. Shin, K. Remashan, M. S. Oh, S. J. Park and J. H. Jang, <i>Gwangju Inst. of Sci. and Tech. (Korea)</i>	11:30 H-8-3 Silicon Radio Frequency Single-electron Transistors Operating at above 4.2 K M. Manoharan ¹ , Y. Tsuchiya ^{1,2,3} , S. Oda ^{1,3} and H. Mizuta ^{1,2,3} , ¹ <i>Tokyo Tech.</i> , ² <i>Univ. of Southampton and</i> ³ <i>SORST-JST (Japan)</i>	11:30 I-8-3 Tetrathiafulvalene-Derivatives-Based Single-Crystal Organic Transistors with Organic Metal Electrodes Y. Takahashi ¹ , T. Hasegawa ¹ , Y. Tokura ² and G. Saito ³ , ¹ <i>AIST</i> , ² <i>Univ. of Tokyo and</i> ³ <i>Kyoto Univ. (Japan)</i>	11:30 J-8-3 (Invited) Current Development Status and Future Challenges of Spin Torque Transfer MRAM Technology K. Ito ¹ , J. Hayakawa ¹ , K. Miura ^{1,2} , M. Yamanouchi ¹ , R. Takemura ¹ , T. Kawahara ¹ , S. Ikeda ² , H. Hasegawa ² , T. Meguro ² , R. Sasaki ² , H. Takahashi ¹ , H. Matsuoka ¹ and H. Ohno ² , ¹ <i>Hitachi, Ltd. and</i> ² <i>Tohoku Univ. (Japan)</i>

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Area 1: Advanced Gate Stack/Si Processing Science	Area 3: CMOS Devices/Device Physics	Area 2: Characterization and Materials Engineering for Interconnect Integration	Area 11: Micro/Nano Electromechanical and Bio-Systems (Devices)	Area 7: Photonic Devices and Device Physics
11:55 A-8-4 Hybrid Gate Structures of NMOS : Poly-Si / PMOS : 2 Layers Ni-FUSI by using Flash Lamp Anneal (FLA) and CMP H. Ohta ¹ , S. Akiyama ² , H. Fukutome ¹ , K. Ookubo ² , K. Kawamura ² , N. Idani ² and S. Satoh ¹ , ¹ Fujitsu Labs. Ltd. and ² Fujitsu Microelectronics Ltd. (Japan)	11:55 B-8-4 Steeper Indium Halo Formation of nMOSFET by Reducing Interstitial Supersaturation with Flash Lamp pre-Annealing and Its Modeling with Atomistic Kinetic Monte Carlo T. Sawada ² , N. Zographos ⁴ , H. Yoshimura ¹ , T. Sanuki ¹ , T. Ito ¹ , T. Itani ¹ , H. Aikawa ¹ , O. Fujii ¹ , N. Kariya ³ , M. Oulmane ⁴ , R. Gull ⁴ , Y. Akiyama ³ , M. Ikeda ³ , M. Iwai ¹ and F. Matsuoka ¹ , ¹ Toshiba Corp., ² Toshiba Information Systems Tech. Inc., ³ NEC Electronics Corp. and ⁴ Synopsys Switzerland LLC (Japan)	11:45 C-8-4 (Invited) Interconnect and Packaging Technology for CMOS Image Sensors J. Gambino, B. Leidy, R. J. Rassel, J. Adkisson, J. Ellis-Monaghan, C. Musante, K. Ackerson, B. Guthrie, W. Abadeer, D. Meatyard, S. Mongeon and M. Jaffe, <i>IBM (USA)</i>	11:30 D-8-4 Development of Neural Probe with Microfluidic Channel Fabricated by using Wafer Direct Bonding Technique S. Kanno, R. Kobayashi, T. Fukushima, K. Sakamoto, N. Katayama, H. Mushiake, T. Tanaka and M. Koyanagi, <i>Tohoku Univ. (Japan)</i>	11:30 E-8-4 Strain and Absorption Coefficient of Finite Ge Structures on Si S. Park ¹ , Y. Ishikawa ¹ , Y. Tsusaka ² , J. Matsui ³ and K. Wada ¹ , ¹ Univ. of Tokyo, ² Univ. of Hyogo and ³ Center for Advanced Sci. and Tech. (Japan)
			11:45 D-8-5 Development of Si Double-sided Microelectrode for Platform of Brain Signal Processing System R. Kobayashi, S. Kanno, T. Fukushima, K. Sakamoto, N. Katayama, H. Mushiake, T. Tanaka and M. Koyanagi, <i>Tohoku Univ. (Japan)</i>	11:45 E-8-5 Enhancement of Two-Photon Excited Fluorescence using Two-Dimensional Photonic Crystals S. Inoue and S. Yokoyama, <i>Kyushu Univ. (Japan)</i>

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Room 202B (F)	Room 303 (G)	Room 304 (H)	Room 405 (I)	Room 406 (J)
Area 13: Applications of Nanotubes and Nanowires	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
11:30 F-8-4 In Situ Transmission Electron Microscopy of Bending Process of Crystalline C ₆₀ Nanowhiskers K. Saito ¹ , R. Kato ² , K. Miyazawa ² and T. Kizuka ¹ , ¹ Univ. of Tsukuba and ² NIMS (Japan)	11:30 G-8-4 Mo-doped ZnO Electrode for IGZO Transparent Thin-film Transistor - Its Hard-saturation Behavior W. S. Cheong, J. H. Shin, C. W. Byun, M. Ryu and C. S. Hwang, <i>ETRI (Korea)</i>	11:45 H-8-4 Silicon based Technology for Single Dopant Orbital Transistor R. Wacquez ^{1,2} , M. Sanquer ¹ , M. Vinet ² , X. Jehl ¹ , M. Pierre ¹ , S. Pauliac-Vaujour ¹ , G. Molas ² , T. Poiroux ² , G. Guegan ² , S. Deleonibus ² and D. Kern ³ , ¹ CEA-INAC, ² CEA-LETI /MINATEC and ³ Tübingen Univ. (France)	11:45 I-8-4 Design of Insulator Surface for Stable Operation of Organic Field Effect Transistors K. Suemori, M. Taniguchi and T. Kamata, <i>AIST (Japan)</i>	12:00 J-8-4 Improvement of Switching Disturbance in Spin-Transfer Torque MRAM D. K. Kim, S. C. Oh, W. Kim, K. T. Nam, Y. Kim, J. Jeong, S. Y. Lee, J. E. Lee, I. S. Yeo, U. I. Chung and J. T. Moon, <i>Samsung Electronics Co., Ltd. (Korea)</i>
11:45 F-8-5 Fabrication of Carbon Nanotube Films for Electric Packaging K. Takanishi, T. Isono, T. Oya and T. Ogino, <i>Yokohama National Univ. (Japan)</i>		12:00 H-8-5 Dopant Freeze-out and Potential Fluctuations Observed by Low Temperature Kelvin Probe Force Microscope M. Ligowski ^{1,2} , M. Anwar ¹ , D. Moraru ¹ , R. Jablonski ² and M. Tabe ¹ , ¹ Shizuoka Univ. and ² Warsaw Univ. of Tech. (Japan)	12:00 I-8-5 Structure and Performance of Thin-film Transistors of Pentacene Formed by Dispersion of Crystals T. Minakata and Y. Natsume, <i>Asahi-Kasei Corp. (Japan)</i>	

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				12:00 E-8-6 Soliton Emission in a Semiconductor Circular Ring Laser with Y-Junction Coupling M. C. Shih, S. C. Wang and C. I. Ho, <i>National Univ. of Kaohsiung (Taiwan)</i>

Lunch

Area 1: Advanced Gate Stack/Si Processing Science	Area 3: CMOS Devices/Device Physics	Area 2: Characterization and Materials Engineering for Interconnect Integration	Area 11: Micro/Nano Electromechanical and Bio-Systems (Devices)	Area 7: Photonic Devices and Device Physics
A-9: Process Technology and Material Science (13:15-14:55) Chairs: T. Tatsumi (Canon ANELVA Corp.) B. Mizuno (UJT Lab. Inc.)	B-9: SOI Devices (13:15-14:55) Chairs: A. Azuma (Toshiba Corp.) F. Boeuf (STMicro-electronics)	C-9: Advanced Metallization (13:15-15:05) Chairs: K. Ito (Kyoto Univ.) S. Ogawa (Selete)	D-9: Bio MEMS/ NEMS (13:15-14:30) Chairs: I. Yamashita (NAIST) H. Tabata (Univ. of Tokyo)	E-9: Lasers and LEDs (13:15-15:00) Chairs: M. Gotoda (Mitsubishi Electric Corp.) M. Ezaki (Toshiba Corp.)
13:15 A-9-1 Influence of the Light Irradiation on Galvanic Corrosion of Metal Gate D. Watanabe ^{1,2} , H. Aoki ¹ , J. Jong-Hyeon ¹ , C. Kimura ¹ and T. Sugino ¹ , ¹ <i>Osaka Univ. and</i> ² <i>Daikin Industries, Ltd. (Japan)</i>	13:15 B-9-1 A Study on Very High Performance Novel Balanced FD-SOI CMOSFETs on Si(110) Using Accumulation Mode Device Structure for RF Analog Circuits W. Cheng, A. Teramoto, C. Tye, R. Kuroda, S. Sugawa and T. Ohmi, <i>Tohoku Univ. (Japan)</i>	13:15 C-9-1 Influence of Ti Liner on Resistivity of Copper Interconnects H. Kitada ¹ , T. Suzuki ¹ , S. Akiyama ² and T. Nakamura ¹ , ¹ <i>Fujitsu Labs. Ltd. and</i> ² <i>Fujitsu Microelectronics Ltd. (Japan)</i>	13:15 D-9-1 (Invited) Bio-manipulation based on Microfabricated Structures M. Washizu, <i>Univ. of Tokyo (Japan)</i>	13:15 E-9-1 (Invited) Distributed Feedback and Mode Locked Silicon Evanescent Lasers A. W. Fang, B. R. Koch, E. Lively, D. J. Blumenthal and J. E. Bowers, <i>Univ. of California, Santa Barbara (USA)</i>

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Room 202B (F)	Room 303 (G)	Room 304 (H)	Room 405 (I)	Room 406 (J)
Area 13: Applications of Nanotubes and Nanowires	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology

Lunch

Area 12: Spintronic Materials and Devices	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
F-9: Spintronics (II) -Special Session on Spin-Related Phenomena and Future Devices- (13:15-14:45) Chairs: M. Tanaka (Univ. of Tokyo) K. Ando (AIST)	G-9: GaAs and InP Devices (13:15-15:00) Chairs: R. Hattori (Mitsubishi Electric Corp.) T. Hashizume (Hokkaido Univ.)	H-9: Novel Nano Devices (13:15-15:00) Chairs: M. Watanabe (Tokyo Tech.) Y. Suda (Tokyo Univ. of Agri. and Tech.)	I-9: Organic Transistor II (13:15-15:00) Chairs: K. Nomoto (Sony Corp.) K. Kudo (Chiba Univ.)	J-9: ReRAM (13:15-15:25) Chairs: K. Ishihara (Sharp Corp.) M. J. Tsai (ITRI)
13:15 F-9-1 (Invited) Recent Progress in "Beyond CMOS" Information Processing Technologies G. Bourianoff and P. Gargini, <i>Intel Corp. (USA)</i>	13:15 G-9-1 (Invited) Light Weight High Efficiency III-V Solar Cells using Epitaxial Lift Off (ELO) N. Pan, R. Tatavarti, G. Hillier, C. Youtsey, G. Martin, A. Wibowo, R. Navaratnarajah, F. Tuminello and M. Disabb, <i>MicroLink Devices (USA)</i>	13:15 H-9-1 Correlation Measurement of Time-dependent Potentials in a Semiconductor Point Contact H. Kamata ^{1,2} , T. Ota ¹ and T. Fujisawa ^{1,2} , ¹ <i>NTT Corp. and</i> ² <i>Tokyo Tech. (Japan)</i>	13:15 I-9-1 (Invited) Organic and Printed Devices for Large Area Electronics S. Y. Lee, D. H. Kim, B. L. Lee, H. Moon, E. J. Jeong, J. I. Park, B. W. Yoo, B. W. Koo and J. Y. Kim, <i>Samsung Advanced Inst. of Tech. (Korea)</i>	13:15 J-9-1 (Invited) Interpretation of Resistive Switching in NiO Thin Films I. K. Yoo, <i>Samsung Electronics Co., Ltd. (Korea)</i>

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13:35 A-9-2 Millisecond Rapid Thermal Annealing of Si Wafer Induced by High Density Thermal Plasma Jet Irradiation H. Furukawa, S. Higashi, T. Okada, H. Murakami and S. Miyazaki, <i>Hiroshima Univ. (Japan)</i>	13:35 B-9-2 Comparison of Plasma Doping with Implant for High Performance SOI CMOS Fabrication K. L. Lee ¹ , I. Lauer ¹ , J. Li ¹ , P. Porshnev ² , P. Ronsheim ¹ , J. Gardner ¹ , P. Kozlowski ¹ , K. Santhanam ² , M. Foad ² and D. G. Park ¹ , ¹ IBM and ² Applied Materials Inc. (USA)	13:35 C-9-2 Effects of Pre- and Post-treatment of TaN Barrier Metal Deposited by Plasma Enhanced Atomic Layer Deposition (PEALD) Method on Electromigration Resistance in Cu Interconnect H. C. Lee ¹ , M. H. Lee ¹ , B. H. Lee ¹ , S. C. Kim ¹ , J. Y. Yang ¹ , I. Hwangbo ¹ , J. W. Han ¹ , K. J. Choi ² , K. H. Lee ² and J. H. Jeong ² , ¹ Dongbu HiTek Semiconductor Business and ² QUROS Co., Ltd. (Korea)	13:45 D-9-2 Peptide-Nucleic Acid Immobilized Reaction on the Zn-polar and Oxygen-polar Surfaces of Zinc Oxide M. Noguchi, T. Uno, M. Seki and H. Tabata, <i>Univ. of Tokyo (Japan)</i>	13:45 E-9-2 High-order Reflecting Quantum Cascade Lasers K. Kennedy ¹ , D. G. Revin ¹ , A. B. Krysa ¹ , M. P. Semtsiv ² , J. P. Commin ¹ , M. D. Chashnikova ² , W. T. Masselink ² , J. C. Cockburn ¹ and R. A. Hogg ¹ , ¹ Univ. of Sheffield and ² Humboldt Univ. of Berlin (UK)
13:55 A-9-3 Carbon-Free Tantalum-Nitride Film from Ammonia and Extremely Diluted Pentakis-dimethylamino-Tantalum; Effect of Silicon Incorporation to nMIS-FET Metal-Gate Y. Sugita, T. Aoyama and Y. Nara, <i>Selete (Japan)</i>	13:55 B-9-3 Evaluation of Threshold-Voltage Variation in Silicon on Thin BOX (SOTB) CMOS and its Impact on Decreasing Standby Leakage Current N. Sugii ¹ , R. Tsuchiya ¹ , T. Ishigaki ¹ , Y. Morita ¹ , H. Yoshimoto ¹ , T. Iwamatsu ² , H. Oda ² , Y. Inoue ² , T. Hiramoto ³ and S. Kimura ¹ , ¹ Hitachi, Ltd., ² Renesas Tech. Corp. and ³ Univ. of Tokyo (Japan)	13:55 C-9-3 (Invited) Metal Resistivity in Narrow Interconnect Lines S. Maitrejean and V. Carreau, <i>CEA-LETI/MINATEC (France)</i>	14:00 D-9-3 Selective Adsorption of Protein Molecules on Atomic-Structure-Controlled Sapphire Surfaces T. Ikeda, T. Isono, R. Aoki and T. Ogino, <i>Yokohama National Univ. (Japan)</i>	14:00 E-9-3 Temperature Dependence of Threshold Current Density of THz GaAs Quantum Cascade Lasers T. T. Lin, K. Ohtani and H. Ohno, <i>Tohoku Univ. (Japan)</i>

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Area 12: Spintronic Materials and Devices	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
13:45 F-9-2 (Invited) Generation, Modulation and Electrical Detection of Spin Currents in Silicon B. T. Jonker ¹ , O. M. J. van 'tErve ² , G. Kioseoglou ² , A. T. Hanbicki ¹ , C. H. Li ¹ , M. Holub ³ , C. Awo-Affouda ³ and P. E. Thompson ¹ , ¹ Naval Res. Lab., ² George Washington Univ. Res. Associate and ³ National Res. Council Postdoctoral Associate (USA)	13:45 G-9-2 Synchrotron Radiation Photoemission Spectroscopic Study of Band Offsets and Interfacial Self-cleaning Mechanism in Atomic Layer Deposited HfO ₂ on InGaAs and InAlAs M. Kobayashi ¹ , P. T. Chen ¹ , S. Sun ² , N. Goel ³ , M. Garner ³ , W. Tsai ³ , P. Pianetta ² and Y. Nishi ¹ , ¹ Stanford Univ., ² Stanford Synchrotron Radiation Lab. and ³ Intel Corp. (USA)	13:30 H-9-2 High Field Electron Transport in the Ballistic T-Branch Junction H. Irie and R. Sobolewski, <i>Univ. of Rochester (USA)</i>	13:45 I-9-2 Contact-correlated Bias Stress Instability in Pentacene Thin Film Transistors S. D. Wang ^{1,3} , T. Minari ^{2,3} , T. Miyadera ^{1,3} and K. Tsukagoshi ^{1,3} , ¹ AIST, ² RIKEN and ³ CREST-JST (Japan)	13:45 J-9-2 Resistive Switching Ion-Plug Memory for 32-nm Technology Node and Beyond K. Ono, K. Kurotsuchi, Y. Fujisaki, R. Takemura, M. Terao and N. Takaura, <i>Hitachi, Ltd. (Japan)</i>
14:15 F-9-3 (Invited) Spin Dynamics in Magnetic Tunnel Junctions and Related Devices H. Kubota ¹ , A. Fukushima ¹ , S. Yakata ¹ , K. Yakushiji ¹ , S. Yuasa ¹ , K. Ando ¹ , H. Maehara ² , Y. Nagamine ² , K. Tsunekawa ² , D. D. Djayaprawira ² , N. Watanabe ² and Y. Suzuki ^{1,3} , ¹ AIST, ² Canon ANELVA Corp. and ³ Osaka Univ. (Japan)	14:00 G-9-3 Realizing High Quality Metal-Gate/High-Permittivity Dielectric Stack on Indium Gallium Arsenide by Vacuum Annealing and Silane Treatment H. C. Chin ¹ , B. Wang ² , P. C. Lim ² , L. J. Tang ³ , C. H. Tung ³ and Y. C. Yeo ¹ , ¹ National Univ. of Singapore, ² Inst. of Materials Res. and Eng. and ³ Inst. of Microelectronics (Singapore)	13:45 H-9-3 Fabrication and Characterization of CdF ₂ /CaF ₂ Resonant Tunneling Floating Gate Metal-oxide-semiconductor Field Effect Transistor Structures M. Watanabe and T. Wada, <i>Tokyo Tech. (Japan)</i>	14:00 I-9-3 Charge Trapping Barrier and the Effect of Surface Treatment in Pentacene Thin Film Transistors T. Miyadera ^{1,2} , S. D. Wang ^{1,2} , T. Minari ^{2,3} and K. Tsukagoshi ^{1,2} , ¹ AIST, ² CREST-JST and ³ RIKEN (Japan)	14:05 J-9-3 RRAM Technology for Fast and Low-Power Forming/Switching Y. Tamai ¹ , H. Shima ² , H. Muramatsu ² , H. Akinaga ² , Y. Hosoi ¹ , S. Ohnishi ¹ and N. Awaya ¹ , ¹ Sharp Corp. and ² AIST (Japan)

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14:15 A-9-4 Metalorganic Chemical Vapor Deposition of High-Dielectric-Constant Praseodymium Oxide Films using a Liquid Cyclopentadienyl Precursor H. Kondo ¹ , S. Sakurai ¹ , A. Sakai ² , M. Ogawa ¹ and S. Zaima ¹ , ¹ Nagoya Univ. and ² Osaka Univ. (Japan)	14:15 B-9-4 Effect of Poly/SiON Gate Stack Combined with Thin BOX and Ground Plane for Low V _{th} and Analog Applications of FDSOI Devices C. Fenouillet-Beranger ^{1,2} , P. Perreau ^{1,2} , S. Kohler ¹ , F. Arnaud ¹ , M. Cassé ² , X. Garros ² , C. Laviro ^{1,2} , P. Garnier ¹ , P. Rivallin ² , D. Chanemougame ¹ , R. Beneyton ¹ , A. Torres ^{1,2} , D. Barge ¹ , N. Cherault ¹ , P. Gouraud ¹ , F. Leverd ¹ , E. Deloffre ¹ , M. Gros-Jean ¹ , N. Loubet ¹ , F. Abbate ¹ , M. Fournier ¹ , M. Gattefait ¹ , J. D. Chapon ¹ , B. Le-Gratiet ¹ , M. Gregoire ¹ , J. Bienacel ¹ , P. Gros ¹ , N. Kubler ¹ , G. Guierleo ¹ , C. Mezzomo ¹ , M. Marin ¹ , C. Leyris ¹ , R. Pantel ¹ , O. Faynot ² , C. Buj ² , F. Andrieu ² , S. Barnola ² , T. Salvetat ² , S. Denorme ¹ , S. Deleonibus ² and T. Skotnicki ¹ , ¹ STMicroelectronics and ² CEA-LETI MINATEC (France)	14:25 C-9-4 Materials Engineering for Future Interconnects: "Catalyst-free" Electroless Cu Deposition on Self-assembly Monolayer Alternative Barriers S. Armini and C. M. Whelan, <i>IMEC (Belgium)</i>	14:15 D-9-4 Fabrication of Micro Fluidic Channels for Detection of DNA Molecules using Infrared Absorption Spectroscopy Y. Kimura, T. Miyoshi, R. Yamaguchi, K. Ishibashi, K. Miyamoto and M. Niwano, <i>Tohoku Univ. (Japan)</i>	14:15 E-9-4 GaAs-Based Self-Aligned Laser Incorporating an InGaP Opto-Electronic Confinement Layer B. J. Stevens ¹ , K. M. Groom ¹ , D. T. D. Childs ¹ , R. R. Alexander ¹ , J. S. Roberts ¹ , A. S. Helmy ² and R. A. Hogg ¹ , ¹ Univ. of Sheffield and ² Univ. of Toronto (UK)

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	14:15 G-9-4 Fabrication of III-V MOS Structure by using Selective Oxidation of InAlAs S. Nakagawa ¹ , M. Yokoyama ¹ , O. Ichikawa ² , M. Hata ² , M. Tanaka ¹ , M. Takenaka ¹ and S. Takagi ¹ , ¹ Univ. of Tokyo and ² Sumitomo Chemical Co., Ltd. (Japan)	14:00 H-9-4 An Analysis of THz Oscillator using Negative Differential Resistance Dual Channel Transistor (NDR-DCT) and Integrated Antenna K. Furuya ¹ , S. Hori ² , T. Sugaya ¹ , K. Komori ¹ , M. Mori ¹ and M. Asada ³ , ¹ AIST, ² Shibaura Inst. of Tech. and ³ Tokyo Tech. (Japan)	14:15 I-9-4 Direct Observation of Field-Induced Carrier Dynamics in Pentacene Thin-film Transistors by ESR Spectroscopy H. Matsui ^{1,2} and T. Hasegawa ¹ , ¹ AIST and ² Univ. of Tokyo (Japan)	14:25 J-9-4 Low-Voltage and Fast-Speed Forming Process of Tungsten Oxide Resistive Memory K. P. Chang ¹ , W. C. Chien ^{1,2} , Y. C. Chen ¹ , E. K. Lai ^{1,3} , S. C. Tsai ¹ , S. H. Hsieh ¹ , Y. D. Yao ² , J. Gong ³ , K. Y. Hsieh ¹ , R. Liu ¹ and C. Y. Lu ¹ , ¹ Macronix International Co., Ltd., ² National Chiao Tung Univ. and ³ National Tsing Hua Univ. (Taiwan)

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14:35 A-9-5 Extended EOT Scalability of HfON/SiON Gate Stack Down to 0.57 nm with High Carrier Mobility by Post-Deposition Annealing D. Ishikawa, S. Kamiyama, E. Kurosawa, T. Aoyama and Y. Nara, ¹ Selete (Japan)	14:35 B-9-5 Characteristics of Thin-Body <100> Channel SOI MOSFETs by using Two Step Elevated Silicon Epitaxial Process K. Ishikawa, T. Iwamatsu, T. Terada, H. Oda and Y. Inoue, <i>Renesas Tech. Corp. (Japan)</i>	14:45 C-9-5 Kinetics of Self-Formation of Ti-based Barrier Layers in Cu(Ti)/Dielectric-Layer Samples K. Kohama ¹ , K. Ito ¹ , K. Mori ² , K. Maekawa ² , Y. Shirai ¹ and M. Murakami ³ , ¹ Kyoto Univ., ² Renesas Tech. Corp. and ³ Ritsumeikan Trust (Japan)		14:30 E-9-5 Novel, Simple Model for High Temperature Stability of InAs/GaAs Self-assembled Quantum Dot Lasers with Optimum p-type Modulation Doping C. Y. Jin ^{1,2} , H. Y. Liu ^{1,3} , T. J. Badcock ¹ , K. M. Groom ¹ , D. J. Mowbray ¹ , M. Hopkinson ¹ and O. Wada ² , ¹ Univ. of Sheffield, ² Kobe Univ. and ³ Univ. of College London (UK)
				14:45 E-9-6 Tuning Superluminescent Diode Characteristics for Optical Coherence Tomography Systems by Utilising a Multi-Contact Device Incorporating Chirped Quantum Dots P. D. L. Judson, K. M. Groom, D. T. D. Childs, M. Hopkinson, N. Krstajic and R. A. Hogg, <i>Univ. of Sheffield (UK)</i>

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Area 12: Spintronic Materials and Devices	Area 6: Compound Semiconductor Circuits, Electron Devices and Device Physics	Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	Area 4: Advanced Memory Technology
	14:30 G-9-5 Improved Electrical Characteristics of Atomic-layer-deposited Al ₂ O ₃ /GaAs MOS Capacitors with (NH ₄) ₂ S-C ₄ H ₉ OH Sulfide Treatment H. C. Chiang ¹ , C. H. Chien ^{1,2} , C. C. Cheng ¹ , C. L. Lin ¹ , C. S. Chen ¹ , G. L. Luo ² , Y. L. Shen ² , C. C. Kei ³ and C. N. Hsiao ³ , ¹ National Chiao Tung Univ., ² National Nano Device Lab. and ³ National Applied Res. Lab. (Taiwan)	14:15 H-9-5 Theoretical Analysis of Electrorefractive Effect in GaInNAs/GaAs Five Layer Asymmetric Coupled Quantum Well (FACQW) for 1.3 micron Phase Modulator M. Fukuoka ¹ , T. Toya ¹ , Y. Sawai ¹ , T. Arakawa ¹ and K. Tada ² , ¹ Yokohama National Univ. and ² Kanazawa Inst. of Tech. (Japan)	14:30 I-9-5 Observation of Electron Injection from Au Electrode into Organic Field-Effect Transistor with Electroluminescence Y. Ohshima, H. Kohn, E. Lim, T. Manaka and M. Iwamoto, <i>Tokyo Tech. (Japan)</i>	14:45 J-9-5 Multi-Level Switching Characteristics for WO _x Resistive RAM (RRAM) W. C. Chien ^{1,2} , K. P. Chang ¹ , Y. C. Chen ¹ , E. K. Lai ^{1,3} , H. Mähne ¹ , Y. D. Yao ^{2,4} , P. Lin ² , J. Gong ³ , S. H. Hsieh ¹ , K. Y. Hsieh ¹ , R. Liu ¹ and C. Y. Lu ¹ , ¹ Macronix International Co., Ltd., ² National Chiao Tung Univ., ³ National Tsing Hua Univ. and ⁴ Tatung Univ. (Taiwan)
	14:45 G-9-6 GaAs MOS Diodes with the Gate Oxide Formed by PEC Method H. Y. Lee ¹ , Y. F. Lin ² and L. R. Lou ¹ , ¹ National Cheng Kung Univ. and ² National Formosa Univ. (Taiwan)	14:30 H-9-6 Electrical Properties and Photo-responses of SiNWs with Selective Anchored Gold Nanoparticles by using Scanning Probe Bond Breaking Nanolithography C. H. Wu ¹ , J. T. Sheu ² and T. S. Chao ² , ¹ MingDao Univ. and ² National Chiao Tung Univ. (Taiwan)	14:45 I-9-6 Fabrication of Air-Stable High-On/Off-Ratio Organic Static-Induction Transistor with Nano-Triode Array Y. Takenouchi, S. Masuda, M. Sakai, K. Kudo and M. Nakamura, <i>Chiba Univ. (Japan)</i>	15:05 J-9-6 The Effect of Current Compliance on the Resistive Switching Behaviors in TiN/ZrO ₂ /Pt Memory Device B. Sun, L. F. Liu, N. Xu, B. Gao, Y. Wang, D. D. Han, X. Y. Liu, R. Q. Han and J. F. Kang, <i>Peking Univ. (China)</i>
		14:45 H-9-7 Structure and Conductance of Platinum Wires of Single-Atom Width Studied by In Situ Transmission Electron Microscopy K. Monna, T. Matsuda and T. Kizuka, <i>Univ. of Tsukuba (Japan)</i>		

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Area 3: CMOS Devices/Device Physics

B-10: Characterization and Modeling & Nanoscale MOSFETs (15:15-16:55)
Chairs: T. Tanaka (Fujitsu Micro-electronics Ltd.)
J. C. S. Woo (UCLA)

15:15 B-10-1
Accuracy Assessment of Charge-based Capacitance Measurement for Nanoscale MOSFET Devices
H. Zhao^{1,2}, S. C. Rustagi¹, F. Ma^{1,2}, G. S. Samudra², N. Singh¹, G. Q. Lo¹ and D. L. Kwong¹, ¹*Inst. of Microelectronics and* ²*National Univ. of Singapore (Singapore)*

Area 2: Characterization and Materials Engineering for Interconnect Integration

C-10: CMP & Process Control (15:15-16:25)
Chairs: M. Kodera (Toshiba Corp.)
T. Tatsumi (Sony Corp.)

15:15 C-10-1
Galvanic Corrosion Control during Cu Chemical Mechanical Polishing of Cu Interconnects that Contain Ruthenium Barrier Metal Film
K. Maruyama, M. Shiohara, K. Yamada, S. Kondo and S. Saito, *Selete (Japan)*

Area 7: Photonic Devices and Device Physics

E-10: Lasers and LEDs (15:15-17:00)
Chairs: O. Wada (Kobe Univ.)
H. Yamada (Tohoku Univ.)

15:15 E-10-1
Light Output Enhancement of GaN-based Photonic Crystal LED with AlN/GaN DBR
S. W. Chen, C. H. Chiu, T. T. Kao, L. F. Lin, T. C. Lu, H. C. Kuo and S. C. Wang, *National Chiao Tung Univ. (Taiwan)*

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Area 12: Spintronic Materials and Devices

F-10: Spintronics (III) -Special Session on Spin-Related Phenomena and Future Devices- (15:15-16:30)
Chairs: K. Ando (AIST)
M. Tanaka (Univ. of Tokyo)

15:15 F-10-1 (Invited)
Magnetic Domain Wall Dynamics in (Ga,Mn)As
F. Matsukura, *Tohoku Univ. (Japan)*

Area 9: Physics and Applications of Novel Functional Materials and Devices

H-10: Novel Nano Materials (15:15-16:45)
Chairs: T. Fujisawa (NTT Corp.)
K. Ono (RIKEN)

15:15 H-10-1
Thickness-dependent Resistance Change of Dual-gated Thin Graphite Films
H. Miyazaki^{1,5}, S. Odaka^{1,2}, S. Tanaka³, H. Goto^{3,5}, K. Tsukagoshi^{1,4,5}, A. Kanda^{3,5}, Y. Ootuka³ and Y. Aoyagi^{2,4,5}, ¹*AIST, Tokyo Tech.*, ²*Univ. of Tsukuba*, ³*RIKEN* and ⁴*CREST-JST (Japan)*

Area 10: Organic Materials Science, Device Physics, and Applications

I-10: Organic Transistor III (15:15-16:45)
Chairs: K. Kudo (Chiba Univ.)
C. K. Song (Dong-A Univ.)

15:15 I-10-1
Self-Organized Organic Field-Effect Transistors on a Plastic Substrate
T. Minari¹, M. Kano², T. Miyadera³, S. D. Wang³, Y. Aoyagi¹ and K. Tsukagoshi^{3,4}, ¹*RIKEN*, ²*Dai Nippon Printing Co., Ltd.*, ³*AIST* and ⁴*CREST-JST (Japan)*

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Area 3: CMOS Devices/Device Physics	Area 2: Characterization and Materials Engineering for Interconnect Integration			Area 7: Photonic Devices and Device Physics
15:35 B-10-2 Anomalous RTS Extractions from a Very Large Number of n-MOSFETs using TEG with 0.47 Hz - 3.0 MHz Sampling Frequency K. Abe, T. Fujisawa, A. Teramoto, S. Watabe, S. Sugawa and T. Ohmi, <i>Tohoku Univ. (Japan)</i>	15:35 C-10-2 (Invited) FDC and APC System Approach to Stabilize Cu CMP Process in Mass Production Line H. Tsuchiyama ¹ and K. Tamaki ² , ¹ <i>Renesas Tech. Corp.</i> and ² <i>Hitachi, Ltd. (Japan)</i>			15:30 E-10-2 Extraction Enhancement and Collimation from a Thin-Film InGaN/GaN Photonic Crystal Light-Emitting Diodes C. F. Lai ^{1,3} , J. Y. Chi ^{2,3} , H. H. Yeh ^{1,3} , C. E. Lee ¹ , H. C. Kuo ¹ , C. H. Chao ³ , H. T. Hsueh ³ , C. Y. Huang ³ , J. F. Wang ³ , W. Y. Yeh ³ , T. C. Lu ¹ and S. C. Wang ¹ , ¹ <i>National Chiao Tung Univ.</i> , ² <i>National Dong Hua Univ.</i> and ³ <i>Industrial Tech. Res. Inst. (Taiwan)</i>
15:55 B-10-3 Accurate Channel Thermal Noise Modeling in BSIM4 J. Jeon ¹ , J. Lee ¹ , C. H. Park ² , J. S. Yoon ³ , H. Lee ³ , H. Oh ³ , B. G. Park ¹ and H. Shin ¹ , ¹ <i>Seoul National Univ.</i> , ² <i>Kwangwoon Univ.</i> and ³ <i>Samsung Electronics Co., Ltd. (Korea)</i>	16:05 C-10-3 Defect-less Monolithic Low-k/Cu Interconnects by Chemistry-controlled CMP M. Ueki ¹ , T. Onodera ¹ , A. Ishikawa ² , S. Hoshino ² and Y. Hayashi ¹ , ¹ <i>NEC Electronics Corp.</i> and ² <i>Nikon Corp. (Japan)</i>			15:45 E-10-3 White Light Generation from DBPPV Polymer-CdSe/ZnS Quantum Dot-InGaN/GaN Quantum Well Dual Hybrid Light-Emitting Diodes Y. C. Chen, C. Y. Huang, Y. K. Su and W. L. Li, <i>National Cheng Kung Univ. (Taiwan)</i>

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Room 202B (F)	Room 303 (G)	Room 304 (H)	Room 405 (I)	Room 406 (J)
Area 12: Spintronic Materials and Devices		Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	
15:45 F-10-2 (Invited) Spin-dependent Resonant Tunneling in III-V-based Ferromagnetic-Semiconductor Quantum Heterostructures S. Ohya ^{1,2} , ¹ <i>Univ. of Tokyo</i> and ² <i>PRESTO-JST (Japan)</i>		15:30 H-10-2 Graphene Nanoribbon Transistors and Resonant Tunneling Diodes G. Liang ¹ , H. Teong ¹ , K. Lam ¹ , N. Neophytou ² and D. E. Nikonov ³ , ¹ <i>National Univ. of Singapore</i> , ² <i>Purdue Univ.</i> and ³ <i>Intel Corp. (Singapore)</i>	15:30 I-10-2 Enhancement of Carrier Mobility by Controlling the Initial Pentacene Growth Modes on SiO ₂ Dielectric Layer C. Jiang, Q. Qi and A. Yu, <i>National Center for Nanoscience and Tech. (China)</i>	
16:15 F-10-3 Coherent Spin Conduction in Multilayer Graphene H. Goto ^{1,2} , A. Kanda ^{1,2} , T. Sato ¹ , S. Tanaka ¹ , Y. Ootuka ¹ , S. Odaka ^{3,4} , H. Miyazaki ^{2,3} , K. Tsukagoshi ^{2,3} and Y. Aoyagi ^{2,4} , ¹ <i>Univ. of Tsukuba</i> , ² <i>CREST-JST</i> , ³ <i>AIST</i> and ⁴ <i>Tokyo Tech. (Japan)</i>		15:45 H-10-3 Sound Emission from Nanocrystalline Silicon Device under Operation of Electroluminescence B. Gelloz, T. Shibata and N. Koshida, <i>Tokyo Univ. of Agr. and Tech. (Japan)</i>	15:45 I-10-3 Low Voltage and Small Subthreshold Swing HfLaO/Pentacene Organic TFTs M. F. Chang ¹ , P. T. Lee ¹ and A. Chin ^{1,2} , ¹ <i>National Chiao Tung Univ.</i> and ² <i>Nano-Electronics Consortium of Taiwan (Taiwan)</i>	

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	Area 3: CMOS Devices/Device Physics	Area 2: Characterization and Materials Engineering for Interconnect Integration		Area 7: Photonic Devices and Device Physics
	16:15 B-10-4 Impacts of Random Dopant Fluctuation on Transient Characteristics in CMOS Inverters: A Device Simulation Study S. Toriyama ¹ , K. Matsuzawa ¹ and N. Sano ² , ¹ Toshiba Corp. and ² Univ. of Tsukuba (Japan)			16:00 E-10-4 Use of Aluminum-Doped Zinc-Oxide Film as a Strain-Relief and Schottky Blocking Layer for the Fabrication of Vertical Structure Metal Substrate GaN-Based Light-Emitting Diodes H. Y. Kuo ¹ , W. C. Lee ¹ , S. J. Wang ¹ , K. M. Uang ² , T. M. Chen ² , J. C. Chou ¹ , C. W. Yao ¹ and H. Kuan ³ , ¹ National Cheng Kung Univ., ² WuFeng Inst. of Tech. and ³ Southern Taiwan Univ. of Tech. (Taiwan)
	16:35 B-10-5 Discrete Dopant Fluctuated Transient Behavior in 16-nm-Gate CMOS Y. Li, C. H. Hwang, T. C. Yeh, H. W. Cheng and T. Y. Li, <i>National Chiao Tung Univ. (Taiwan)</i>			16:15 E-10-5 ZnO/Si Heterostructured Light-emitting Diodes by MOCVD S. T. Tan ¹ , J. L. Zhao ² , X. W. Sun ^{1,2} , J. D. Ye ¹ , G. Q. Lo ¹ , K. L. Teo ³ and D. L. Kwong ¹ , ¹ Inst. of Microelectronics, ² Nanyang Technological Univ. and ³ National Univ. of Singapore (Singapore)

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Area 12: Spintronic Materials and Devices		Area 9: Physics and Applications of Novel Functional Materials and Devices	Area 10: Organic Materials Science, Device Physics, and Applications	
		16:00 H-10-4 Characteristics of Magnetic Film Inductors with FePt Nano-Dots W. C. Jeong ¹ , K. Kiyoyama ¹ , M. Murugesan ² , T. Fukushima ¹ , T. Tanaka ¹ and M. Koyanagi ¹ , ¹ Tohoku Univ. and ² NEDO (Japan)	16:00 I-10-4 Suppression of the Performance Dispersion of Organic Field-effect Transistors Employing Annealing Precess K. Fukuda, T. Sekitani and T. Someya, <i>Univ. of Tokyo (Japan)</i>	
		16:15 H-10-5 Study of GaN Nano-rods and Free-standing Layers Grown on Si(111) by Plasma-assisted Molecular Beam Epitaxy J. C. Chang, T. H. Yang, S. G. Shen, Y. C. Chen, J. T. Ku and C. Y. Chang, <i>National Chiao Tung Univ. (Taiwan)</i>	16:15 I-10-5 Analysis of Interface Trap Density of Organic-Organic Interface with Capacitance-Voltage Characteristics S. H. Jeong, S. M. Kim and C. K. Song, <i>Dong-A Univ. (Korea)</i>	

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Engineering for
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Area 7: Photonic
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Area 12: Spintronic
Materials and
Devices

Area 9: Physics
and Applications of
Novel Functional
Materials and
Devices

Area 10: Organic
Materials Science,
Device Physics, and
Applications

16:30 I-10-6

Carrier Injection
and Accumulation
of Pentacene Field
Effect Transistor with
P(VDF-TeFE) Gate
Insulator

R. Tamura, S. Yoshita,
E. Lim, T. Manaka,
and M. Iwamoto,
Tokyo Tech. (Japan)