

Opening & Plenary Sessions (WINC HALL)

Opening Session

Chair: M. Hori, Nagoya Univ.

9:30

Welcome Address

S. Zaima, Nagoya Univ.

Non-Technical Plenary Session

Chair: T. Fukui, Hokkaido Univ.

9:40 PL-1-1

Social Contribution and Next Giant Leap of Semiconductors M. Fukuma, Semiconductor Industry Research Institute Japan, Japan

SSDM Award / Paper Award Presentation

S. Zaima, Nagoya Univ.

Technical Plenary Sessions

Chair: T. Fukui, Hokkaido Univ.

10:45 PL-2-1

A Car Guy's Expectations for Electronics M. Yoshida, Toyota Motor Corporation, Japan

11:30 PL-2-2

Electronics Proliferation through Diversification.

Tsu-Jae King Liu, University of California at Berkeley, USA

12:15-13:30 Lunch

5F Hall 1	5F Hall 2	10F 1002	10F 1003	11F 1101	11F 1102	11F 1103
<p>A-1: GaN FET Technologies (Area 6) (13:30-15:15) Chairs: T. Tanaka (Panasonic Corp.) S. Tanaka (Shibaura Institute of Tech.)</p>	<p>BL-1: Organic Photovoltaics (1) (Area 10&14) (13:30-15:15) Chairs: A. Masuda (AIST) E. Itoh (Shinshu Univ.)</p>	<p>B-1: OLEDs (Area 10) (13:30-15:15) Chairs: K. Takimoto (Canon Inc.) T. Lee (GIST)</p>	<p>C-1: Future Interconnect (Area 2) (13:30-15:15) Chairs: S. Ogawa (AIST) M. Sato (AIST)</p>	<p>D-1: Modeling and Circuits (Area 3) (13:30-15:10) Chairs: E. Yoshida (Fujitsu Semiconductor Ltd.) N. Mori (Osaka Univ.)</p>	<p>E-1: Ge-MOS (Area 1) (13:30-15:20) Chairs: T. Nabatame (NIMS) B. H. Lee (GIST)</p>	<p>F-1: STT-RAM (Area 4) (13:30-15:00) Chairs: G. H. Koh (Samsung Electronics Co., Ltd) S. Miura (NEC Corp.)</p>
<p>13:30 A-1-1 (Invited) InAlN/GaN HEMTs: Recent Progress and Challenges for the Future <i>J. Kuzmik^{1,2}, ¹Slovak Academy of Sciences and ²TU Vienna (Slovakia)</i></p>	<p>13:30 BL-1-1 Determination of Carrier Lifetime in Bulk-heterojunction Solar Cells by Continuous-wave Photoinduced Absorption Spectroscopy <i>Y. Terada¹, W. Shinke¹, T. Kobayashi¹, T. Nagase¹ and H. Naito^{1,2}, ¹Osaka Prefecture Univ. and ²CREST-JST (Japan)</i></p>	<p>13:30 B-1-1 Solution-processed small molecular phosphorescent organic light emitting devices with a mixed single layer <i>Z. Wang, S. Naka and H. Okada, Univ. of Toyama (Japan)</i></p>	<p>13:30 C-1-1 (Invited) TSV and Cu-Cu direct bonding: two key technologies for High Density 3D <i>N. Sillon, H. Ben Jamaa, P. Leduc, L. Di Cioccio, S. Cheramy and T. Signamarcheix, CEA-Leti, Minatec campus (France)</i></p>	<p>13:30 D-1-1 Simple and Efficient MASTAR Threshold Voltage and Subthreshold Slope Models for Double Gate Structures <i>J. Lacord^{1,2}, J. L. Huguenin^{1,2}, G. Ghibaudo¹, T. Skotnicki¹ and F. Boeuf¹, ¹STMicroelectronics and ²IMEP-LAHC (France)</i></p>	<p>13:30 E-1-1 (Invited) Investigation of the Electrical Properties of Ge/High-k Gate Stack: GeO₂ VS Si-cap <i>J. Mitard, F. Bellenger, L. Witters, B. De Jaeger, B. Vincent, L. Nyns, K. Martens, E. Vrancken, G. Wang, D. Lin, R. Loo, M. Caymax, K. De Meyer, M. Heyns and N. Horiguchi, IMEC (Belgium)</i></p>	<p>13:30 F-1-1 (Invited) Magnetoresistive Random Access Memory with Spin Transfer Torque Write (Spin RAM) -Present and Future- <i>H. Ohno, Tohoku Univ. (Japan)</i></p>
<p>14:00 A-1-2 High-Power and High-Gain S-band AlGaIn/GaN HEMTs with Source Field Plates on Si Substrate <i>S. Nakazawa, N. Tsurumi, M. Nishijima, Y. Ando, M. Ishida, T. Ueda and T. Tanaka, Panasonic Corp. (Japan)</i></p>	<p>13:45 BL-1-2 Analysis of anomalous discharging processes in pentacene/C₆₀ double-layer organic solar cell <i>X. Chen, D. Taguchi, K. Lee, T. Manaka and M. Iwamoto, Tokyo Tech (Japan)</i></p>	<p>13:45 B-1-2 Hole Injection Enhancement in Organic Light-emitting Diodes by Introducing an Au Nanoparticle Layer <i>D. Wang and K. Fujita, Kyushu Univ. (Japan)</i></p>	<p>14:00 C-1-2 Fabrication of Graphene Directly on SiO₂ without Transfer Processes by Annealing Sputtered Amorphous Carbon <i>M. Sato¹, M. Inukai², E. Ikenaga², T. Muro², S. Ogawa³, Y. Takakuwa⁴, H. Nakano¹, A. Kawabata¹, M. Nihei¹ and N. Yokoyama¹, ¹AIST/GNC, ²JASRI/Spring-8 and ³Tohoku Univ. (Japan)</i></p>	<p>13:50 D-1-2 Accurate and Ready-to-use Parasitic Capacitances Models for Advanced 2D/3D CMOS Device Structure Comparison <i>J. Lacord^{1,2}, D. Hoguet¹, D. Rideau¹, G. Ghibaudo¹ and F. Boeuf¹, ¹STMicroelectronics and ²IMEP-LAHC (France)</i></p>	<p>14:00 E-1-2 1.2 nm-EOT Al₂O₃/Ge Gate Stack with GeO₂-free Interface <i>T. Tabata^{1,2}, C. H. Lee^{1,2}, T. Nishimura^{1,2}, S. K. Wang^{1,2}, K. Kita^{1,2} and A. Toriumi^{1,2}, ¹Univ. of Tokyo and ²CREST-JST (Japan)</i></p>	<p>14:00 F-1-2 Studies on Static Noise Margin and Scalability for Low-Power and High-Density Nonvolatile SRAM using Spin-Transfer-Torque (STT) MTJs <i>T. Ohsawa, F. Iga, S. Ikeda, T. Hanyu, H. Ohno and T. Endoh, Tohoku Univ. (Japan)</i></p>
<p>14:15 A-1-3 RF power characteristics of high-thermal-efficiency AlGaIn/GaN HEMTs on diamond <i>K. Hiram, M. Kasu and Y. Taniyasu, NTT Basic Res. Labs. NTT Corp. (Japan)</i></p>	<p>14:00 BL-1-3 Probing electric field distribution of P3HT in ITO/PI/P3HT/Au by using EFISHG measurement <i>R. Miyazawa, D. Taguchi, T. Manaka and M. Iwamoto, Tokyo Tech (Japan)</i></p>	<p>14:00 B-1-3 Improvement on Electroluminescence of Red Organic Light Emitting Diode by Doping with Sensitizers <i>S. H. Yang, C. H. Chuang, S. C. Huang and P. J. Shih, National Kaohsiung Univ. of Applied Sciences (Taiwan)</i></p>	<p>14:20 C-1-3 Initial Growth Observation of Multilayer Graphene on SiO₂/Si substrates Using Raman Spectroscopy and XPS <i>Y. Ojiro¹, S. Ogawa¹, M. Inukai², M. Sato^{1,3}, E. Ikenaga², T. Muro², M. Nihei², Y. Takakuwa⁴ and N. Yokoyama¹, ¹Tohoku Univ., ²JASRI/Spring-8 and ³AIST/GNC (Japan)</i></p>	<p>14:10 D-1-3 An Accurate Prediction Model of Temperature Dependent Current Mismatch in All Inversion and Influence of Sub-threshold Hump on Mismatch Characteristics <i>K. Sakakibara and K. Arimoto, Renesas Electronics Corp. (Japan)</i></p>	<p>14:20 E-1-3 Effective Passivation of Interface Dipole in TiN-Gate Ge-MOS Capacitor with Ultrathin SiO₂/GeO₂ Bilayer by Nitrogen Incorporation <i>K. Sakamoto, Y. Iwamura, K. Yamamoto, H. Yang, D. Wang and H. Nakashima, Kyushu Univ. (Japan)</i></p>	<p>14:20 F-1-3 A Study for Adopting PMOS Memory Cell for 1T1R STT-RAM with Asymmetric Switching Current MTJ <i>H. Koike and T. Endoh, Tohoku Univ. (Japan)</i></p>

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11F 1104	11F 1107	12F 1201	12F 1202	12F 1203	12F 1204	12F 1207	12F 1208
<p>GH-1: Image Sensor and MEMS Technology (I) (Area 5&11) (13:30-15:10) Chairs: S. Sugawa (Tohoku Univ.) T. Tokuda (NAIST)</p>		<p>I-1: Optical Link and Related Devices (Area 7) (13:30-15:15) Chairs: Y. Ishikawa (Univ. of Tokyo) N. Iizuka (Toshiba Corp.)</p>		<p>K-1: CNT Property (Area 13) (13:30-15:15) Chairs: S. Akita (Osaka Prefecture Univ.) Y. Ohno (Nagoya Univ.)</p>	<p>L-1: Quantum Well& III-V Solar Cell (Area 14) (13:30-15:15) Chairs: F. Finger (FZ Julich) N. Kojima (Toyota Technological Inst.)</p>	<p>M-1: Nitrides (Area 8) (13:30-15:15) Chairs: T. Nagata (NIMS) K. Hara (Shizuoka Univ.)</p>	
<p>13:30 GH-1-1 (Invited) High Speed Vision for Gesture UI, Dynamic Image Control and Visual Feedback <i>M. Ishikawa, Univ. of Tokyo (Japan)</i></p>		<p>13:30 I-1-1 (Invited) Lens-integrated surface-emitting DFB laser arrays for short-reach optical links <i>K. Adachi^{1,2}, K. Shinoda^{1,2}, T. Kitatani^{1,2}, Y. Matsuoka¹, T. Sugawara¹ and S. Tsuji^{1,2}, ¹Hitachi,Ltd. and ²PETRA (Japan)</i></p>		<p>13:30 K-1-1 (Invited) Carbon Nanotube Clamped Metal Atomic Chain: Fabrication, Structure and Property <i>D. M. Tang, L. C. Yin, C. Liu and H. M. Cheng, Chinese Academy of Sciences (China)</i></p>	<p>13:30 L-1-1 (Invited) Quantum Well Solar Cells <i>(UK)</i></p>	<p>13:30 M-1-1 (Invited) Progress in Nonpolar and Semipolar GaN-base Materials and Devices <i>J.S. Speck, Univ. of California, Santa Barbara (USA)</i></p>	
<p>14:00 GH-1-2 A 2-D Optical Pulse Receiver/Imager with Two-Port Pixels for Simultaneously Producing Image and Communication Signals <i>S. Kawahito¹, S. Itoh¹, Y. Iwama¹, I. Takai¹, M. Andoh¹, K. Yasutomi¹ and K. Kagawa¹, ¹Shizuoka Univ. and ²Toyota Central R&D Labs, Inc. (Japan)</i></p>		<p>14:00 I-1-2 Performance of Low-Loss and Low-Cost Optoelectronic Module with Polynorbornene Waveguide for 10-Gbps Data Transmission. <i>Y. Ito¹, S. Terada¹, S. Arai¹, M. Fujiwara¹, T. Mori¹, K. Choki¹, T. Fukushima¹ and M. Koyanagi¹, ¹Sumitomo Bakelite Co., Ltd. and ²Tohoku Univ. (Japan)</i></p>		<p>14:00 K-1-2 Fabrication of Carbon Nanowalls on Carbon Fiber Paper <i>S. Mitsuguchi¹, M. Hiramatsu¹, H. Kondo², M. Hori² and H. Kano³, ¹Meijo Univ., ²Nagoya Univ. and ³NU Eco Eng. Co., LTD. (Japan)</i></p>	<p>14:00 L-1-2 Non-Radiative Carrier Recombination in the Strain-Balanced InGaAs/GaAsP Multiple Quantum Wells for Solar Cell Application <i>T. Aihara¹, Y. Nakano¹, A. Fukuyama¹, Y. Wang², M. Sugiyama², Y. Nakano² and T. Ikari¹, ¹Univ. of Miyazaki and ²Univ. of Tokyo (Japan)</i></p>	<p>14:00 M-1-2 Tilted domain and indium content of MOVPE-grown InGaN layer on <i>m</i>-plane GaN substrate <i>K. Shojiki¹, T. Hanada^{1,2}, T. Shimada¹, Y. Liu^{1,2}, R. Katayama^{1,2} and T. Matsuoka^{1,2}, ¹Tohoku Univ. and ²CREST-JST (Japan)</i></p>	
<p>14:20 GH-1-3 Improved Near-Infrared Sensitivity for a Side-Illuminated Photo Sensor <i>T. Ariyoshi, N. Uryu, A. Baba and Y. Arima, Kyushu Inst. of Tech. (Japan)</i></p>		<p>14:15 I-1-3 Low Voltage InGaAs/InAlAs Quantum Well Mach-Zehnder Modulator with Single Microring Resonator <i>H. Kaneshige, Y. Ueyama, H. Yamada, T. Arakawa and Y. Kokubun, Yokohama National Univ. (Japan)</i></p>		<p>14:15 K-1-3 Alignment of Carbon Nanotubes on Sapphire Surfaces with Strong Interactions <i>S. Jeong¹ and A. Oshiyama², ¹Chonbuk Nat. Univ. and ²Univ. of Tokyo (Korea)</i></p>	<p>14:15 L-1-3 Kinetics of strain relaxation in lattice-mismatched III-V heteroepitaxy <i>T. Sasaki¹, K. Shimomura¹, H. Suzuki², M. Takahashi¹, I. Kamiya¹, Y. Ohshita¹ and M. Yamaguchi¹, ¹Toyota Tech. Inst., ²Univ. of Miyazaki and ³JAEA (Japan)</i></p>	<p>14:15 M-1-3 Effect of Phase Purity on Dislocation Density of PR-MOVPE-Grown InN <i>T. Iwabuchi¹, Y. Liu^{1,2}, T. Kimura^{1,2}, Y. Zhang^{1,2}, K. Prasertsuk¹, R. Katayama^{1,2} and T. Matsuoka^{1,2}, ¹Tohoku Univ. and ²CREST-JST (Japan)</i></p>	

Wednesday, September 28

5F Hall 1	5F Hall 2	10F 1002	10F 1003	11F 1101	11F 1102	11F 1103
A-1: GaN FET Technologies (Area 6)	BL-1: Organic Photovoltaics (1) (Area 10&14)	B-1: OLEDs (Area 10)	C-1: Future Interconnect (Area 2)	D-1: Modeling and Circuits (Area 3)	E-1: Ge-MOS (Area 1)	F-1: STT-RAM (Area 4)
<p>14:30 A-1-4 Improvement of Current Collapse in Deeply Recessed Gate AlGaIn/GaN High Electron Mobility Transistors without Field Modulating Structure <i>A. Imai, K. Yamanaka, Y. Suzuki, T. Nanjo, M. Suita, K. Shiozawa, Y. Abe, E. Yagyu and A. Shima, Mitsubishi Electric Corp. (Japan)</i></p> <p>14:45 A-1-5 Temperature Dependence and Current Collapse of AlGaIn/GaN Super Hetero-junction Field Effect Transistor <i>S. Yagi¹, S. Hirata¹, Y. Sumida¹, A. Nakajima², H. Kawai¹ and E. M. Sankara Narayanan³, ¹POWDEC, K. K. and ²Univ. Sheffield (Japan)</i></p> <p>15:00 A-1-6 Sputtered amorphous AlN gate dielectric for AlGaIn/GaN metal-insulator-semiconductor heterojunction field-effect transistor <i>H. A. Shih, M. Kudo, M. Akabori and T. Suzuki, JAIST (Japan)</i></p>	<p>14:15 BL-1-4 Designing of Organic Solar Cell Module for Obtaining Maximum Performance <i>H. Ogo, T. Miyadera, T. Taima, A. Masuda and Y. Yoshida¹, AIST (Japan)</i></p> <p>14:30 BL-1-5 In situ monitoring of organic solar cells during thermal annealing <i>K. T. Hung, C. Y. Hsiao, H. T. Wu, S. W. Fu, H. J. Chen and C. F. Shih, National Cheng Kung Univ. (Taiwan)</i></p> <p>14:45 BL-1-6 RF-Sputtered High-Mobility Indium Molybdenum Thin Films for Organic Solar Cell Applications <i>H. J. Chang, W. F. Chen, S. S. Cheng, K. M. Huang, T. H. Huang, C. L. Ho and M. C. Wu, National Tsing Hua Univ. (Taiwan)</i></p> <p>15:00 BL-1-7 Comprehensive Studies of Solvent Annealing on Organic Photovoltaics <i>H. T. Wu, C. Y. Hsiao, K. T. Hung, H. J. Chen, S. W. Fu, S. H. Wu and C. F. Shih, National Cheng Kung Univ. (Taiwan)</i></p>	<p>14:15 B-1-4 White Organic Light-Emitting Diodes Combining Blue Organic Light-Emitting Diodes with a Sr₂SiO₄:Eu³⁺ Color Conversion Layer <i>S. H. Su, W. Y. Wang and M. Yokoyama, I-Shou Univ. (Taiwan)</i></p> <p>14:30 B-1-5 Pattern Formation of Phosphorescent Polymer Thin Films by Spin-Coated Photoreactive Monomer Films <i>D. Miyagawa, M. Muroyama, K. Tanaka and H. Usui, Tokyo Univ. of Agri. and Tech. (Japan)</i></p> <p>14:45 B-1-6 Device Parameters Determination by Novel Schottky Model Fitting for Organic Light-Emitting Diodes (OLEDs) <i>T. Hirai, K. Weber, M. Bown and K. Ueno, CSIRO (Australia)</i></p> <p>15:00 B-1-7 (Late News) Three Terminal Nano-Scale Electrode for Molecular Transistor Evaluation <i>K. Tsutsui, M. Morita, M. Tokuda, H. Takagi, Y. Ito and Y. Wada, Toyo Univ. (Japan)</i></p>	<p>14:40 C-1-4 STC: Single-Tube Characterization Methodology for Experimental and Analytical Evaluation of Carbon Nanotube Synthesis <i>H. Y. Chen, A. Lim, L. S. Liyanage, C. Beasley, N. Patil, H. Wei, S. Mitra and H. S. P. Wong, Stanford Univ. (USA)</i></p> <p>15:00 C-1-5 (Late News) Effect of H₂ gas addition on Si Oxidation Process with Ar and O₂ Mixture Surface Wave Plasma <i>K. Takeda and M. Hori, Nagoya Univ. (Japan)</i></p>	<p>14:30 D-1-4 A Stacked Inverter-based CMOS Power Amplifier in 65nm CMOS Process <i>H. Kiumarsi, Y. Mizuochoi, H. Ito, N. Ishihara and K. Masu, Tokyo Tech (Japan)</i></p> <p>14:50 D-1-5 Design of Power-Efficient 130GHz Common-Source Amplifiers <i>K. Katayama¹, M. Motoyoshi², K. Takano² and M. Fujishima¹, ¹Hiroshima Univ. and ²Univ. of Tokyo (Japan)</i></p>	<p>14:40 E-1-4 Defect Control in Germanium Oxide Film Thermally Grown on Germanium Substrate <i>Y. Oniki and T. Ueno, Tokyo Univ. of Agri. and Tech. (Japan)</i></p> <p>15:00 E-1-5 High-Electron-Mobility Ge n-MOSFET with TiN Metal Gate <i>T. Yamanaka, K. Yamamoto, K. Sakamoto, H. Yang, D. Wang and H. Nakashima, Kyushu Univ. (Japan)</i></p>	<p>14:40 F-1-4 Novel 2step Writing Method for STT-RAM to Improve Switching Probability and Write Speed <i>F. Iga, Y. Suzuki, T. Ohsawa, S. Ikeda, T. Hanyu, H. Ohno and T. Endoh, Tohoku Univ. (Japan)</i></p>
Coffee Break						
A-2: III-V HBTs and FETs (Area 6) (15:40-16:55) Chairs: K. Maezawa (Univ. of Toyama) Y. Miyamoto (Tokyo Tech)	BL-2: Organic Photovoltaics (2) (Area 10&14) (15:40-17:25) Chairs: S. H. Su (I-Shou Univ.) N. Kojima (Toyota Technological Inst.)	B-2: Organic device fabrication process and interface control (Area 10) (15:40-17:25) Chairs: H. Usui (Tokyo Univ. of Agri. & Tech.) K. Takimoto (Canon Inc.)		D-2: Device & Characteristics (Area 3) (15:40-17:00) Chairs: K. Okano (Toshiba Corp.) F. Boeuf (STMicroelectronics)	E-2: Characterization in Gate Stacks (Area 1) (15:45-17:15) Chairs: S. Tsujikawa (Sony Corp.) H. Nohira (Tokyo City Univ.)	F-2: FeRAM/DRAM/SRAM (Area 4) (15:40-17:30) Chairs: K. Hamada (Elpida Memory, Inc.) T. Eshita (Fujitsu Semiconductor Ltd.)
<p>15:40 A-2-1 (Invited) Extending the Bandwidth and Functionality of High Performance InP HBT Technologies <i>M. Urteaga¹, R. Pierson¹, J. Bergman¹, D. H. Kim¹, P. Rowell¹, B. Brar¹ and M. Rodwell², ¹Teledyne Scientific Corp. and ²Univ. of California, Santa Barbara (USA)</i></p> <p>16:10 A-2-2 Low-turn-on voltage heterojunction bipolar transistors with a C-doped In_{0.5}Ga_{0.5}As_{0.5}Sb_{0.5} base grown by metalorganic chemical vapor deposition <i>T. Hoshi, H. Sugiyama, H. Yokoyama, K. Kurishima and M. Ida, NTT Corp. (Japan)</i></p>	<p>15:40 BL-2-1 Optimization of Carrier Collection Structure in Graded Organic Solar Cells <i>T. Horioka¹, Z. Wang¹, S. Naka¹ and H. Okada^{1,2}, ¹Univ. of Toyama and ²Center for Basic Res. and Development in Natural Sciences (Japan)</i></p> <p>15:55 BL-2-2 Solution Processable Thin Film Organic Photovoltaic Cells based on Far Red Sensitive Soluble Squaraine Dyes <i>S. S. Pandey, T. Mizuno, S. K. Das, Y. Ogomi and S. Hayase, Kyushu Inst. of Tech. (Japan)</i></p>	<p>15:40 B-2-1 (Invited) Nanotransfer Direct Printing Methods <i>M. M. Sung, Hanyang Univ. (Korea)</i></p> <p>16:10 B-2-2 Work Function controlled Zn:Cu electrode for all-printed polymer diode <i>M. Yoshida, S. Uemura, H. Tokuhisa, N. Takada and T. Kamata, AIST (Japan)</i></p>		<p>15:40 D-2-1 Current Drive Enhancement of Strained Ge nMISFET with SiGe Stressors by Uniaxial Tensile Stress <i>Y. Kamimuta, Y. Moriyama, K. Ikeda, M. Oda and T. Tezuka, MIRAI-Toshiba (Japan)</i></p> <p>16:00 D-2-2 Experimental Study of Si Monolayers for Future Extremely-Thin SOIs (ETSOLs): Phonon Confinement Effects and Strain due to Si Bending <i>T. Mizuno¹, K. Tobe¹, Y. Maruyama¹ and T. Sameshima², ¹Kanagawa Univ. and ²Tokyo Univ. of Agri. and Tech. (Japan)</i></p>	<p>15:45 E-2-1 (Invited) In depth characterization of electrical effects of dopants (Al, La, Mg, N) in high-k/metal gate stacks <i>G. Reimbold¹, M. Cassé¹, X. Garros¹, C. Leroux², M. Charbonnier¹, L. Brunet^{2,1}, S. Baudouin¹, P. Caubert¹, C. Fenouillet-Béranger^{1,2}, F. Andrieu¹, O. Weber¹, P. Perreau^{1,2} and F. Martin¹, ¹CEA-LETI/MI-NATEC and ²STMicroelectronics (France)</i></p> <p>16:15 E-2-2 Role of Al atoms in (TaC)_{1-x}Al_x gate electrode on V₀ for HfO₂ gate stack <i>M. Kimura¹, T. Nabatame², H. Yamada¹, A. Oh¹, T. Chikyow³ and T. Ohishi¹, ¹Shibaura Inst. of Tech. and ²MANA Foundry and ³MANA Advanced Device Materials Group, National Inst. for Materials Sci. (Japan)</i></p>	<p>15:40 F-2-1 (Invited) An Overview of Embedded Ferroelectric Memory Technology <i>K. R. Udayakumar, T. S. Moise, S. R. Summerfelt, J. Rodriguez, M. Ball, L. Wang, H. McAdams and S. Madan, Texas Instruments Inc. (USA)</i></p> <p>16:10 F-2-2 Data Disturbance-free NAND-type Ferroelectric-gate Thin Film Transistor Array using Solution-processed ITO and Stacked (BLT/PZT) Gate Insulator <i>B. N. Q. Trinh¹, T. Miyasako¹, T. Kaneda¹, B. V. Thanh¹, P. T. Tue², E. Tokumitsu^{1,3} and T. Shimoda^{1,2}, ¹JST, ²JAIST and ³Tokyo Tech (Japan)</i></p>

Wednesday, September 28

11F 1104	11F 1107	12F 1201	12F 1202	12F 1203	12F 1204	12F 1207	12F 1208
<p>GH-1: Image Sensor and MEMS Technology (1) (Area 5&11)</p> <p>14:40 GH-1-4 (Invited) RF MEMS Switch Technology in OMRON <i>T. Seki, Y. Uno, K. Narise, T. Masuda, K. Inoue and F. Sato, OMRON Corp. (Japan)</i></p>		<p>I-1: Optical Link and Related Devices (Area 7)</p> <p>14:30 I-1-4 Magnetically Controllable Optical Intensity and Mode Redistribution in Semiconductor Active Optical Isolators <i>H. Shimizu, K. Uehara and K. Tazawa, Tokyo Univ. of Agri. & Tech. (Japan)</i></p> <p>14:45 I-1-5 An inverted InAlAs/InGaAs avalanche photodiode with low-high field profile <i>M. Nada, Y. Muramoto, H. Yokoyama, N. Shigekawa, T. Ishibashi and S. Kodama, NTT Photonics Labs. (Japan)</i></p> <p>15:00 I-1-6 Responsivity Characteristics of InP/InGaAs Heterojunction Phototransistors with Strained InAs/InGaAs Multiquantum Well Absorption Layers <i>H. Egusa¹, H. Fukano¹, S. Tane¹, T. Sato² and M. Mitsuhashi^{2,3},¹Osaka Univ. and ²NTT Photonics Labs. (Japan)</i></p>		<p>K-1: CNT Property (Area 13)</p> <p>14:30 K-1-4 Sensing Property of Horizontally Aligned Carbon Nanotube Field-Effect Transistor on Quartz Substrate <i>S. Okuda, S. Okamoto, Y. Ohno, K. Maehashi, K. Inoue and K. Matsu-moto, Osaka Univ. (Japan)</i></p> <p>14:45 K-1-5 Estimation of height of defect-induced barriers in metallic CNTs <i>Y. Okigawa, Y. Ohno, S. Kishimoto and T. Mizutani, Nagoya Univ. (Japan)</i></p> <p>15:00 K-1-6 Room Temperature Single Charge Memory by Carbon Nanotube Transistor With SiN_x/Al₂O₃ Wrapped Double Gate Insulator Layers <i>T. Kamimura^{1,2,3}, Y. Hayashi^{2,3} and K. Matsumoto^{1,2,3},¹Osaka Univ., ²CREST-JST and ³AIST (Japan)</i></p>	<p>L-1: Quantum Well& III-V Solar Cell (Area 14)</p> <p>14:30 L-1-4 InGaN/GaN solar cells grown on wet-etched patterned sapphire substrates <i>C. H. Yang, Y. C. Yao, C. M. Cheng, M. H. Lee and Y. J. Lee, National Taiwan Normal Univ. (Taiwan)</i></p> <p>14:45 L-1-5 Effect of Thermal Stress on a N-related Recombination Center in GaAsN Grown by Chemical Beam Epitaxy <i>B. Bouzazi, N. Kojima, Y. Ohshita and M. Yamaguchi, Toyota Tech. Inst. (Japan)</i></p> <p>15:00 L-1-6 2-dimensional mapping of power consumption due to series resistance evaluated by simulator for concentrator photovoltaic module <i>Y. Ota and K. Nishioka, Univ. of Miyazaki (Japan)</i></p>	<p>M-1: Nitrides (Area 8)</p> <p>14:30 M-1-4 Surface Supersaturation in Nucleus and Spiral Growth of GaN in MOVPE <i>T. Akasaka, Y. Kobayashi and M. Kasu, NTT Basic Res. Labs. (Japan)</i></p> <p>14:45 M-1-5 Growth of Nitrogen-Polar 2H-AlN on Step-Height-Controlled 6H-SiC (000-1) Substrate by Molecular-Beam Epitaxy <i>H. Okumura, T. Kimoto and J. Suda, Kyoto Univ. (Japan)</i></p> <p>15:00 M-1-6 A Novel Chemical Lift-Off Process based on Embedded Nano-rods Template <i>S. S. Yen, W. Y. Chen, J. R. Chang, S. P. Chang, P. M. Tu, Y. C. Hsu, Y. J. Li, Y. C. Chen, K. P. Sou and C. Y. Chang, National Chiao Tung Univ. (Taiwan)</i></p>	

Coffee Break

<p>GH-2: Image Sensor and MEMS Technology (2) (Area 5&11) (15:40-17:20) Chairs: K. Sawada (Toyoashi Univ. of Tech.) H. Morimura (NTT Microsystem Integration Labs.)</p> <p>15:40 GH-2-1 (Invited) WLAN(IEEE 802.11n)/m-WiMAX(IEEE 802.16e) 2x2 MIMO FRONT-END MODULE USING MEMS & LTCC TECHNOLOGY <i>K. Chun¹, S. Kang¹, Y. Jang¹, J. C. Kim², C. S. Kim³ and I. S. Song²,¹Soeul National Univ., ²Korea Electronics Tech. Inst. and ³Samsung Advanced Inst. of Tech. (Korea)</i></p> <p>16:10 GH-2-2 Manipulation of Dispersed Magnetic Beads for On-chip Immunoassay <i>T. Ishikawa^{1,2}, J. S. Lee¹ and R. Miyake^{1,2},¹Hiroshima Univ. and ²CREST-JST (Japan)</i></p>		<p>I-2: Photonic Crystals (Area 7) (15:40-17:10) Chairs: M. Tokushima (AIST) S. Saito (Hitachi Ltd.)</p> <p>15:40 I-2-1 (Invited) Photonic Crystal Devices Fabricated by CMOS-Compatible Process <i>T. Baba^{1,2},¹Yokohama National Univ. and ²CREST-JST (Japan)</i></p> <p>16:10 I-2-2 An Epitaxially Regrown GaAs Based Photonic Crystal Surface Emitting Laser <i>D. M. Williams¹, K. M. Groom¹, B. J. Stevens¹, Q. Jiang¹, D. T. D. Childs¹, R. J. Taylor¹, S. Khamsi¹, R. A. Hogg¹, N. Ikeda² and Y. Sugimoto²,¹Univ. of Sheffield and ²NIMS (UK)</i></p>		<p>K-2: CNT Device (Area 13) (15:40-17:25) Chairs: K. Maehashi (Osaka Univ.) S. Saito (AIST)</p> <p>15:40 K-2-1 Resistance distribution of CNT network measured by conductive atomic force microscopy <i>K. Housayama, Y. Okigawa, S. Kishimoto, Y. Ohno and T. Mizutani, Nagoya Univ. (Japan)</i></p> <p>15:55 K-2-2 Theoretical Study of AC Response of Defective Carbon Nanotubes: Tube Diameter Dependence <i>D. Hirai¹, T. Yamamoto^{1,2} and S. Watanabe¹,¹Univ. of Tokyo and ²Tokyo Univ. of Sci. (Japan)</i></p>	<p>L-2: Thin-Film Silicon Solar Cells (Area 14) (15:40-17:25) Chairs: A. Masuda (AIST) K. Ohdaira (JAIST)</p> <p>15:40 L-2-1 (Invited) Materials for thin film silicon solar cells <i>F. Finger, R. Carius, T. Chen, A. Lambertz and V. Sminov, IEK5 - Photovoltaik, Forschungszentrum Jülich (Germany)</i></p> <p>16:10 L-2-6 Effect of Hydrogen Radical-Injection on Growth Property and Crystallinity of Microcrystalline Silicon Thin Film <i>Y. Abe, A. Fukushima, Y. Lu, K. Takekanda, H. Kondo, K. Ishikawa, M. Sekine and M. Hori, Nagoya Univ. (Japan)</i></p>	<p>M-2: Oxides (Area 8) (15:40-17:25) Chairs: K. Hara (Shizuoka Univ.) T. Nagata (NIMS)</p> <p>15:40 M-2-1 (Invited) Multi-dimensional Nanostructured Oxide Devices <i>H. Taknaka, A. Ono, T. Kusizaki, K. Fujiwara and A. Hattori, Osaka Univ. (Japan)</i></p> <p>16:10 M-2-2 Crystal growth and optical characterizations of nonpolar m-plane ZnO on the m-plane sapphire substrate by PLD <i>C. C. Kuo¹, B. H. Lin^{1,2}, W. R. Liu², C. H. Hsu^{1,2} and W. F. Hsieh¹,¹National Chiao Tung Univ. and ²National Synchrotron Radiation Research Center (Taiwan)</i></p>	
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Wednesday, September 28

5F Hall 1	5F Hall 2	10F 1002	10F 1003	11F 1101	11F 1102	11F 1103
<p>A-2: III-V HBTs and FETs (Area 6)</p>	<p>BL-2: Organic Photovoltaics (2) (Area 10&14)</p>	<p>B-2: Organic device fabrication process and interface control (Area 10)</p>		<p>D-2: Device & Characteristics (Area 3)</p>	<p>E-2: Characterization in Gate Stacks (Area 1)</p>	<p>F-2: FeRAM/DRAM/SRAM (Area 4)</p>
<p>16:25 A-2-3 Effects of Plasma-PH₃ passivation on Mobility Degradation Mechanisms and Current Conduction Mechanisms of In_{0.53}Ga_{0.47}As N-MOSFET A. B. S. Sumarlina^{1,2}, H. J. Oh¹, A. Du² and S. J. Lee¹, ¹National Univ. of Singapore and ²GLOBALFOUNDRIES Singapore Pte.Ltd. (Singapore)</p>	<p>16:10 BL-2-3 Highly Efficient Organic Solar Cell Employing a Solution Processed Hole Transporting Layer W. K. Lin, S. H. Su, Y. F. Lin, J. R. Wang, J. L. Huang and M. Yokoyama, I-shou Univ. (Taiwan)</p>	<p>16:25 B-2-3 Interface Control of ITO and Spin-Coated Polymer by Reactive Self-Assembled Monolayer S. H. Kim¹, H. Ohtsuka¹, M. C. Tria², R. C. Advincula¹ and H. Usui¹, ¹Tokyo Univ. of Agri. and Tech. and ²Univ. Houston (Japan)</p>		<p>16:20 D-2-3 Lateral Source Relaxed/Strained Layer Heterostructures for Ballistic CMOS: Physical Relaxation Mechanism for Strained Layers by O⁻ Ion Implantation T. Mizuno, J. Takehi and S. Tanabe, Kanagawa Univ. (Japan)</p>	<p>16:35 E-2-3 Impurity Profile Extraction of Semiconductor Devices from STM Tunneling Currents by Current Continuity Based Simulation K. Fukuda¹, M. Nishizawa¹, T. Tada¹, L. Bolotov², K. Suzuki³, S. Sato³, H. Arimoto¹ and T. Kanayama¹, ¹AIST, ²Univ. of Tsukuba and ³Fujitsu Semiconductor Ltd. (Japan)</p>	<p>16:30 F-2-3 Process Development of ALD-Rutile-TiO₂/Ru(O₂) for DRAM MIMcap Application and its Leakage Mechanism Analysis K. Tomida¹, M. Popovici¹, J. Swerts¹, W. C. Wang², B. Kaczer¹, M. A. Pawlak¹, S. Van Elshocht¹, M. S. Kim¹, I. Debusschere¹, V. V. Afanasiev², L. Altimime¹ and J. A. Kittl¹, ¹IMEC and ²Catholic Univ. of Leuven (Belgium)</p>
<p>16:40 A-2-4 In_{0.53}Ga_{0.47}As Channel N-MOSFETs with Shallow Metallic S/D Extension Z. Zhu, X. Gong, Ivana and Y. C. Yeo, National Univ. of Singapore (Singapore)</p>	<p>16:25 BL-2-4 Sodium Doping at CuPc/C60 Interface for Photovoltaic Application H. J. Chen, K. T. Hung, C. Y. Hsiao, S. W. Fu, H. T. Wu, S. H. Wu and C. F. Shih, National Cheng Kung Univ. (Taiwan)</p>	<p>16:40 B-2-4 Field induced selective growth of organic conductive wires and molecular break junction by Joule heating M. Sakai¹, Y. Urabe¹, H. Yamauchi¹, M. Nakamura² and K. Kudo¹, ¹Chiba Univ. and ²NAIST (Japan)</p>		<p>16:40 D-2-4 Recovery Characteristic of Anomalous Stress Induced Leakage Current of 5.6nm Oxide Films T. Inatsuka, Y. Kumagai, R. Kuroda, A. Teramoto, S. Sugawa and T. Ohmi, Tohoku Univ. (Japan)</p>	<p>16:55 E-2-4 Influence of channel area scaling on Weibull distribution of TDDB for poly-Si channel FET I. Hirano, M. Saito, T. Numata and Y. Mitani, Toshiba Corp. (Japan)</p>	<p>16:50 F-2-4 Optimization and Variation Studies of BJT-based Ultra Thin Body Capacitor-less DRAM Cell M. H. Cho, C. Shin and T. J. King Liu, UC, Berkeley (USA)</p>
	<p>16:40 BL-2-5 Charge trapping in organic solar cells with plasmonic silver nanoparticles M. Weiss¹, K. Vegso¹, P. Siffalovic¹, M. Jergel¹, E. Majkova¹, K. Lee², X. Chen², L. Zhang², D. Taguchi², T. Manaka² and M. Iwamoto², ¹Slovak Academy of Sci. and ²Tohoku Tech (Slovakia)</p>	<p>16:55 B-2-5 Bulk crystal growth of organic semiconductors for thermoelectric applications Y. Ikuta, Y. Tsuchida, N. Muraya, T. Nagahama and T. Shimada, Hokkaido Univ. (Japan)</p>				<p>17:10 F-2-5 A Compact Half Select Disturb Free SRAM Cell with Stacked Vertical MOS-FET H. Na^{1,2} and T. Endoh^{1,2}, ¹Tohoku Univ. and ²CREST-JST (Japan)</p>
	<p>16:55 BL-2-6 Effects of the Film Thickness on the Photocurrent Generation from Polythiophene-fullerene Thin films Containing of Silver Nanoparticles J. You¹, Y. Takahashi¹, H. Yonemura¹, T. Akiyama² and S. Yamada¹, ¹Kyushu Univ. and ²Univ. of Shiga Prefecture (Japan)</p>	<p>17:10 B-2-6 Geometric characterization of superoleophobic film K. Tsuji and S. Shiratori, Keio Univ. (Japan)</p>				
	<p>17:10 BL-2-7 Improvement of Short-Circuit Current in Plasmonic Organic Solar Cells Based on Grating Structures A. Baba, D. Murashima, N. Aoki, K. Shinbo, K. Kato and F. Kaneko, Niigata Univ. (Japan)</p>					

Banquet/Young Researcher Award (16F, Tower Ball Room, Marriott Associa Hotel)

Wednesday, September 28

11F 1104	11F 1107	12F 1201	12F 1202	12F 1203	12F 1204	12F 1207	12F 1208
<p>GH-2: Image Sensor and MEMS Technology (2) (Area 5&11)</p> <p>16:30 GH-2-3 In-pixel type small-scale integrated C-V converter with chopper stabilized CMOS inverter <i>R. Kodama¹, H. Miyao¹, M. Ishida¹ and H. Takao^{1,2}, ¹Toyoashi Univ. of Tech. and ²Kagawa Univ. (Japan)</i></p> <p>16:50 GH-2-4 A Monolithically-Integrated, Batch Post-Processed 17.8 V Silicon Solar Cell for Remote MEMS Driving <i>I. Mori, S. Morishita, M. Kubota, K. Watanabe and Y. Mita, Univ. of Tokyo (Japan)</i></p> <p>17:05 GH-2-5 A novel CMOS image sensor with on-chip micro LED array for spatiotemporally controlled light stimulation and on-chip imaging of a neuronal tissue <i>A. Nakajima¹, T. Kobayashi^{1,2}, T. Noda^{1,2}, K. Sasagawa^{1,2}, T. Tokuda^{1,2}, Y. Ishikawa^{1,2}, S. Shiosaka^{1,2} and J. Ohita^{1,2}, ¹NAIST and ²CREST-JST (Japan)</i></p>		<p>I-2: Photonic Crystals (Area 7)</p> <p>16:25 I-2-3 Photonic Crystal Band-edge Laser on a Flexible Substrate <i>K. S. Hsu^{1,2}, T. T. Chiu^{1,2} and M. H. Shih^{1,2}, ¹RCAS and ²National Chiao Tung Univ. (Taiwan)</i></p> <p>16:40 I-2-4 Large Area of Ultraviolet GaN-based Photonic Quasicrystal Laser <i>C. C. Chen¹, M. Y. Kuo², C. H. Chiu¹, P. M. Tu¹, M. H. Shih², S. P. Chang¹, J. K. Huang¹, H. C. Kuo¹, H. W. Zan¹ and C. Y. Chang¹, ¹National Chiao Tung Univ. and ²RCAS (Taiwan)</i></p> <p>16:55 I-2-5 Optical Characteristics Improvement of High Q Microcavity Light Emitting Diodes with Buried AlN Current Blocking Apertures <i>Y. L. Wu, B. S. Cheng, T. C. Lu, C. H. Chiu, C. H. Chen, P. M. Tu, H. C. Kuo and S. C. Wang, National Chiao Tung Univ. (Taiwan)</i></p>		<p>K-2: CNT Device (Area 13)</p> <p>16:10 K-2-3 Argon Ion Bombardment to Improve Contacts in Solution-Processed Single-Walled Carbon Nanotube Thin Film Transistor <i>X. Yi, G. Nakagawa, H. Ozawa, T. Fujigaya, N. Nakashima and T. Asano, Kyushu Univ. (Japan)</i></p> <p>16:25 K-2-4 Optimization of Source/Drain Doping Concentration of Carbon Nanotube FETs to Suppress Off-state Leakage Current while Keeping Ideal On-state Current <i>B. P. Algul and K. Uchida, Tokyo Tech (Japan)</i></p> <p>16:40 K-2-5 Spin-Related Novel Optical Phenomena in Single-Walled Carbon Nanotubes <i>S. Konabe^{1,2} and S. Okada^{1,2}, ¹Univ. of Tsukuba and ²CREST-JST (Japan)</i></p> <p>16:55 K-2-6 Carbon Nanotube Photonics: Light emission in silicon and optical gain <i>N. Izard¹, E. Gaufres^{1,2}, A. Beck¹, A. Noury¹, X. L. Roux² and L. Vivien¹, ¹Univ. Paris-Sud and ²Univ. Montréal (France)</i></p>	<p>L-2: Thin-Film Silicon Solar Cells (Area 14)</p> <p>16:25 L-2-3 Development of the TCO Layer for Nanocrystalline Cubic Silicon Carbide / Silicon Heterojunction Solar Cells with Aluminum Oxide Passivation Layers <i>J. Irikawa, S. Miyajima, T. Watahiki and M. Konagai, Tokyo Tech (Japan)</i></p> <p>16:40 L-2-4 Embedded Biomimetic Nanostructures for Enhanced Optical Absorption in Thin-Film Solar Cells <i>H. W. Han¹, M. A. Tsai¹, Y. L. Tsai¹, P. C. Tesng¹, P. Yu¹, H. C. Kuo¹, C. H. Shen¹, J. M. Shieh^{1,2}, S. H. Lin¹ and C. C. Lin¹, ¹National Chiao Tung Univ. and ²National Nano Device Labs. (Taiwan)</i></p> <p>16:55 L-2-5 Photovoltaic Property of Wide-Gap Nanocrystalline Silicon Layers <i>R. Mentek, B. Gelloz and N. Koshida, Tokyo Univ. of Agri. and Tech. (Japan)</i></p> <p>17:10 L-2-2 Medium Range Order (MRO) in Hydrogenated Amorphous Si Detected by a Non-Vanishing Ligand Field Splitting, Δ LF, in Si L_{2,3} Core Level X-ray Spectra <i>G. Lucovsky¹, G.N. Parsons¹, D. Zeller¹, R. Lujan² and R.A. Stree², ¹North Carolina State Univ. and ²Palo Alto Research Center (USA)</i></p>	<p>M-2: Oxides (Area 8)</p> <p>16:25 M-2-3 Processing Induced Pre-Existing Vacated (Empty) O-atom Defect Sites in Remote Plasma Deposited GeO₂ and SiO₂ Gate Dielectrics <i>G. Lucovsky, J. Kim, K. Wu, D. Zeller, B. Papas and J. L. Whitten, North Carolina State Univ. (USA)</i></p> <p>16:40 M-2-4 Epitaxy of Spinel Zn₂TiO₄ (111) on GaN (001) for MOS Application <i>S. W. Fu, J. C. Wu, C. Y. Hsiao, K. T. Hung, S. H. Wu, H. J. Chen, H. T. Wu and C. F. Shih, National Cheng Kung Univ. (Taiwan)</i></p> <p>16:55 M-2-5 Functional Oxides Integrated Epitaxially onto Semiconductors <i>R. Droopad, G. Radhakrishnan, R. Contreras-Guerro, W. Priyantha and N. Theodoropoulou, Texas State Univ. (USA)</i></p>	

Banquet/Young Researcher Award (16F, Tower Ball Room, Marriott Associa Hotel)