

Tuesday, November 10

Room A (203 and 204, 2F)

13:10-16:45 MNC 2015 Technical Seminar "Nanoimprint Technology" in Japanese

Lobby (3F)

17:10-19:10 Get Together Party**Wednesday, November 11**

Room P (3F)

11P-1: Plenary Session (9:30-12:10)

Chairpersons: M. Nagase (Univ. of Tokushima), T. Sato (Toshiba) and K. Nishiguchi (NTT)

9:30-9:50

Opening Remarks: Y. Miyamoto (Tokyo Inst. of Technol.)

Award Presentation: M. Nagase (Univ. of Tokushima) and Y. Miyamoto (Tokyo Inst. of Technol.), MNC 2014 Outstanding Paper, Most Impressive Presentation, Most Impressive Poster and Young Author's Award Announcement from Committee: Y. Ono (Univ. of Toyama)

11P-1-1 9:50-10:30

Current Policy and R&D Activities for Nano - Technology in MEXT (Plenary)

M. Nishijo, Ministry of Education, Culture, Sports, Sci. and Technol., Japan

Lobby (3F)

Coffee Break

11P-1-2 10:50-11:30

Bio-Inspired Computing with Memristors (Plenary)

D.B. Strukov, UC Santa Barbara, USA

11P-1-3 11:30-12:10

EUV Lithography, Status and Prospects (Plenary)

J. Benschop, ASML, The Netherlands

Lunch

Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
11A-2: Symposium A: Symp. on "Big Data" for Advanced Patterning I S. Nagahara (Tokyo Electron) J. Miyazaki (ASML)	11B-2: Organic Nanomaterials S. Takami (Tohoku Univ.) H. Kasai (Tohoku Univ.)	11C-2: Carbon Nanotube M. Tanemura (Nagoya Inst. of Technol.) D. Kondo (Fujitsu Labs.)	11D-2: BioMEMS, Lab on a Chip I A. Matsumoto (Tokyo Med. and Dent. Univ.) Y. Takamura (JAIST)
11A-2-0 13:30 Greeting S. Nagahara, Tokyo Electron, Japan	11B-2-1 13:30 Novel Crystallization Process in a Hybrid of "Sublimation and Recrystallization" via Ionic Liquid for Organic Semiconductor Materials: H. Enomoto, S. Maruyama and Y. Matsumoto, Tohoku Univ., Japan	11C-2-1 13:30 Carbon Nanomaterials for Energy Harvesting and Storage in Autonomous Electronics (Invited) G.A.J. Amaratunga, Univ. of Cambridge, UK	11D-2-1 13:30 Single Cell and Molecule Analysis by Micro- and Nanofluidic Devices (Invited) N. Kaji 1,2 and Y. Baba 1,2, 1 Nagoya Univ. and 2 AIST, Japan
11A-2-1 13:35 Potential of Open Science to Change the Framework of Manufacturing beyond Industry 4.0 (Invited) K. Hayashi, Natl. Inst. of Sci. and Technol. Policy, Japan	11B-2-2 13:50 Size-Dependence of Nonlinear Optical Properties of PolyDCHD Nanocrystals H. Maki 1, T. Onodera 1, H. Kasai 1, R. Sato 2, Y. Takeda 2 and H. Oikawa 1, 1 Tohoku Univ. and 2 NIMS, Japan	11C-2-2 14:00 Dependence of Thermoelectric Properties on Chiralities of Single Wall Carbon Nanotubes Y. Oshima, Y. Kitamura, H. Kawai, Y. Maniwa and K. Yanagi, Tokyo Metropolitan Univ., Japan	11D-2-2 14:00 A Silicon Nanobiosensing System for Rapid Detection of Botulinum Neural Toxins C.W. Chen 1, Y.B. Chiu 2, B.-S. Yip 2 and J.-T. Sheu 1, 1 Natl. Chiao Tung Univ. and 2 Natl. Taiwan Univ. Hospital, Taiwan
11A-2-2 14:05 Technology and Design Co-Optimization for era of "Big Data" Low k1 Imaging (Pitch Scale) to Cost Scale (Invited) J. Kye, Globalfoundries, USA	11B-2-3 14:10 Direct Observation of Anodic Dissolution and Filament Growth Behavior in PEO-Based Atomic Switch Structures K. Krishnan, T. Tsuruoka and M. Aono, NIMS, Japan	11C-2-3 14:20 Adsorption Effects on the Optical Properties of Single-Walled Carbon Nanotubes S. Chiashi 1,2, K. Kono 1, N. Homma 1, A. Beniya 1, T. Yamamoto 1 and Y. Homma 1, 1 Tokyo Univ. of Sci. and 2 Univ. of Tokyo, Japan	11D-2-3 14:20 Simple Detection of Interleukin-6 on a ZnO-Coated Plasmonic Chip with a Fluorescence Microscope K. Tawa 1,2, C. Sasakawa 1,2, T. Sujino 3 and M. Umetsu 3, 1 Kwansai Gakuin Univ., 2 AIST and 3 Tohoku Univ., Japan
11A-2-3 14:35 OPC: a Cross Road of Data Flows (Invited) P.D. Bisschop, IMEC, Belgium	11B-2-4 14:30 Organic-Inorganic Hybrid Dielectric Material Fabricated by Molecular-Atomic Layer Deposition (MALD) for Thin Film Transistor (TFT) Applications J. Huang 1, M. Lee 1,2, A. Lucero 1, L. Cheng 1, M.-W. Ha 3 and J. Kim 1, 1 Univ. of Texas, USA, 2 Dongjin Semichem and 3 Myongji Univ., Korea	11C-2-4 14:40 Electrostatic Actuation of Carbon Nanotube Cantilever on Planar Substrate K. Inotani, K. Takeji, T. Arie, and S. Akita, Osaka Pref. Univ., Japan	11D-2-4 14:40 Selective-Layer-Free Blood Inologram Using a 0D Nanotransistor Biosensor R. Sivakumarasamy 1, K. Nishiguchi 2, A. Fujiwara 2 and N. Clément 2, 1 CNRS, France and 2 NTT, Japan

11A-2-4 15:05 Lots of Data as Small Nodes – Overcoming Mask Synthesis Challenges in IC Manufacturing (Invited) <i>W. Demmerle 1, T. Schmöller 1, H. Taoka 2 and D. Yim 2, 1 Synopsys, Germany and 2 Nihon Synopsys G.K., Japan</i>	11B-2-5 14:50 Photon Upconversion in Organic Nanomaterials (Invited) <i>N. Yanai 1,2, 1 Kyushu Univ. and 2 JST-PRESTO, Japan</i> 11B-2 Author's Interview: 15:20-15:30	11C-2 Author's Interview: 15:00-15:10	11D-2,3 Author's Interview: 17:25-17:35
Lobby (2F)			
Coffee Break			
Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
11A-3: Resist and Directed Self-Assembly T. Nagai (JSR) H. Yoshida (Hitachi)	11B-3: Nanofabrication I K. Makihara (Nagoya Univ.) Y. Liu (AIST)	11C-3: Inorganic Nanomaterials I K. Terabe (NIMS) X.W. Zhao (Tokyo Univ. of Sci.)	11D-3: BioMEMS, Lab on a Chip II K. Tawa (Kwansei Gakuin Univ.) H. Nagai (AIST)
11A-3-1 15:55 High-Sensitivity Metal-based Resists for EUV Lithography (Invited) <i>J.J. Santillan, M. Toriumi and T. Itani, EIDEC, Japan</i>	11B-3-1 15:55 Growth and Doping Control of Ge/Si and Si/Ge Core-Shell Nanowires (Invited) <i>N. Fukata 1, M. Yu 1, W. Jevasuwan 1, M. Mitome 1, Y. Bando 1 and Z.L. Wang 2, 1 NIMS, Japan and 2 Georgia Inst. of Technol., USA</i>	11C-3-1 15:35 I-III-VI ₂ Colloidal Semiconductor Quantum Dots; the Present and the Future (Invited) <i>T. Omata, Osaka Univ., Japan</i>	11D-3-1 15:25 Micro and Nano Robotics and BioMedical Applications (Invited) <i>F. Arai, Nagoya Univ., Japan</i>
11A-3-2 16:25 Shot Noise Limit of Sensitivity of Chemically Amplified Resists Used for Extreme-Ultraviolet (EUV) Lithography <i>S. Fujii 1, T. Kozawa 2, K. Okamoto 1, J.J. Santillan 3 and T. Itani 3, 1 Hokkaido Univ., 2 Osaka Univ. and 3 EIDEC, Japan</i>	11B-3-2 16:25 Controlling Nickelidation Process of Si Nanowire by Ar ⁺ Ion Irradiation <i>S. Asada 1, S. Hashimoto 1, K. Takei 1, J. Sun 1, X. Zhang 1, T. Xu 1, T. Usuda 1, M. Tomita 1,2,3, R. Imai 3, A. Ogura 3, T. Matsukawa 4, M. Masahara 4 and T. Watanabe 1, 1 Waseda Univ., 2 JSPS, 3 Meiji Univ. and 4 AIST, Japan</i>	11C-3-2 16:05 Characteristics of Cu-doped NiO Thin Films Formed by RF Magnetron Sputtering <i>K. Sato 1, S. Kim 1, S. Komuro 2 and X. Zhao 1, 1 Tokyo Univ. of Sci. and 2 Toyo Univ., Japan</i>	11D-3-2 15:55 A Microfluidic Chip-based System for Analyzing Nanobioparticles <i>T. Akagi, S. Oniyanagi and T. Ichiki, Univ. of Tokyo, Japan</i>
11A-3-3 16:45 High χ Carbohydrate-Based Block Copolymer Nanostructured Thin Films for Nanolithography <i>D. Ouhab 1,2, S. Halila 1, R. Tiron 2 and R. Borsali 1, 1 Univ. Grenoble Alpes and 2 CEA-LETI, France</i>	11B-3-3 16:45 Periodic Arrays of Tapered Silicon Nanowires Fabricated by the O₂ Plasma Modified Colloidal Lithography and Wet Etching <i>Y.Y. Lin, C.F. Chuang and S.L. Cheng, Natl. Ctr. Univ., Taiwan</i>	11C-3-3 16:25 Photoluminescence of Nanocrystalline Zinc Stannate Phosphor Powders <i>M. T. Tsai, C. J. Jian and S. W. Lu, Natl. Formosa Univ., Taiwan</i>	11D-3-3 16:15 Super-Fine Inkjetting of Sub-Femtoliter Agarose Microbeads for Compartmentalized in Vitro Selection <i>M. Biyani, B. Sharma, T. Shimoda and Y. Takamura, JAIST, Japan</i>
11A-3-4 17:05 Morphologies of Symmetric Diblock Copolymers in Nanotrench <i>A. Yoshida, K. Yoshimoto and M. Ohshima, Kyoto Univ., Japan</i>	11B-3-4 17:05 Impact of Embedded Mn-Nanodots on Resistive Switching Properties of Si-rich Oxides <i>T. Arai, A. Ohta, K. Makihara and S. Miyazaki, Nagoya Univ., Japan</i>	11C-3-4 16:25 Atomically Flat KBr(111) Crystal Growth via Ionic Liquid Flux in a Vacuum <i>M. Yamauchi, S. Maruyama, N. Ohashi and Y. Matsumoto, Tohoku Univ., Japan</i>	11D-3-4 16:35 Cardiotoxicity Prediction Analysis Using Electrophysiological Signals in Lined Up Cardiomyocyte-Network <i>F. Nomura, H. Kurotobi, Y. Sugio, H. Terazono and K. Yasuda, Tokyo Med. and Dent. Univ., Japan</i>
11A-3 Author's Interview: 17:25-17:35	11B-3 Author's Interview: 17:25-17:35	11C-3-5 16:45 Highly Durable Co ₃ O ₄ Co-Catalyst on GaN Photo-Electrode for Energy Conversion System <i>K. Noda, S. Yotsuhashi, H. Hashiba, M. Deguchi and Y. Yamada, Panasonic, Japan</i> 11C-3 Author's Interview: 17:05-17:15	11D-3-5 16:55 Synergistic Effect of Chemo-Photothermal Therapy Using Remotely Triggerable Polymer Microneedles <i>M.-C. Chen and Z.-W. Lin, Natl. Cheng Kung Univ., Taiwan</i> 11D-2,3 Author's Interview: 17:15-17:25
Room A (203 and 204, 2F)			
17:35-19:00 Happy Hour (Sponsored by Technical Exhibitors) 17:35-17:40 Happy Hour Remark 17:40-17:45 JPK Instruments AG 17:45-17:50 Nihon Synopsys G.K. 17:50-17:55 Quantum Design Japan, Inc / SwissLitho AG 17:55-18:00 GenISys		18:00-18:05 Kyodo International, Inc. 18:05-18:10 Nanotechnology Platform Japan, Nanofabrication Platform Consortium 18:10-18:15 ADVANTEST 18:15-18:20 THERMO RIKO Co., LTD	

Thursday, November 12

Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
12A-4: Symposium C: Next Generation Lab on a Chip I T. Tsuchiya (Kyoto Univ.) N. Miki (Keio Univ.)	12B-4: Nanodevices I S. Hara (Hokkaido Univ.) K. Uchida (Keio Univ.)	12C-4: Symposium B: Two Dimensional Nanomaterials I M. Tanemura (Nagoya Inst. of Technol.) S. Okada (Univ. of Tsukuba)	12D-4: Nanoimprint, Nanoprint and Rising Lithography I J. Taniguchi (Tokyo Univ. of Sci.) A. Yokoo (NTT)
12A-4-1 9:00 Quartz and Glass Analytical Microsystems (Invited) C. Zhang, E. Freeman, G. Hatipoglu, H. Min, D. Gaddes and S. Tadigadapa, Pennsylvania State Univ., USA	12B-4-1 9:00 Semiconductor Nanowires for Optoelectronic Device Applications (Invited) H. Tan, Australian Natl. Univ., Australia	12C-4-1 9:00 Molecular Beam Epitaxy of Large Area Metal Dichalcogenide 2D Semiconductors and van der Waals Heterostructures on A1N(0001)/Si(111) and Sapphire Substrates (Invited) A. Dimoulas, N.C.S.R. "Demokritos", Greece	12D-4-1 9:00 2D or not 2D – the Challenge of 3D Topography (Invited) H. Schiff, Paul Scherrer Inst., Switzerland
12A-4-2 9:30 Micro/Nano Fabrications for Biophysical Studies of Motor Proteins (Invited) R. Yokokawa, Kyoto Univ., Japan	12B-4-2 9:30 Temperature Dependence of Electrical Characteristics in Gate-All-Around Poly-Si Nanowire Junctionless Thin Film Transistors C.-T. Tso, T.-Y. Liu, F.-M. Pan and J.-T. Sheu, Natl. Chiao Tung Univ., Taiwan	12C-4-2 9:30 Formation of Trion in CVD Grown Large-area WSe ₂ Monolayer K. Matsuki 1, J. Pu 1, D. Kozawa 1, K. Matsuda 2, L.-J. Li 3 and T. Takenobu 1, 1 Waseda Univ., 2 Kyoto Univ., Japan and 3 KAUST, Saudi Arabia	12D-4-2 9:30 Resin Concentration Dependence of Residual Layer Thickness in UV Reversal Nanoimprinting N. Sugano, M. Okada, Y. Haruyama and S. Matsui, Univ. of Hyogo, Japan
12A-4-3 10:00 Plant-on-a-Chip: Towards Improving Global Crop Productivity (Invited) H. Hida, Kobe Univ., Japan	12B-4-3 9:50 Investigation of Drift Effect on Silicon Nanowire Field Effect Transistor Based pH Sensor S. Kim, D.W. Kwon, R. Lee, D.H. Kim and B.-G. Park, Seoul Natl. Univ., Korea	12C-4-3 9:50 Transition Metal Dichalcogenide Based Back-Gate FETs for Dopamine Detection T.T. Nguyen 1,2, T. Komeda 1, E. Watanabe 3, H. Oosato 3, D. Tsuya 3 and A. Ando 2, 1 Tohoku Univ., 2 AIST and 3 NIMS, Japan	12D-4-3 9:50 Bubble-Free and High-Speed UV Nanoimprint Lithography Using Condensable Gas with Very Low Global Warming Potential K. Suzuki, S.-W. Youn and H. Hiroshima, AIST, Japan
	12B-4, 5 Author's Interview: 11:45-11:55	12C-4-4 10:10 Local Optical Absorption Spectra of Transition Metal Dichalcogenide Monolayer by Scanning Near-field Optical Microscopy Measurements J. Nozaki 1, S. Mori 1, Y. Miyata 1,2, Y. Maniwa 1 and K. Yanagi 1, 1 Tokyo Metropolitan Univ. and 2 JST-PRESTO, Japan	12D-4-4 10:10 A-Black photoresist Embedded Photomask for Soft Contact Lithography at Sub-Micrometer Scale H. Hsieh and Y.-C. Lee, Natl. Cheng Kung Univ., Taiwan
		12C-4, 5 Author's Interview: 11:55-12:05	12D-4, 5 Author's Interview: 11:45-11:55
Lobby (2F)			
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12A-5: Symposium C: Next Generation Lab on a Chip II S. Tadigadapa (Univ. of Tokyo) H. Kotera (Kyoto Univ.)	12B-5: Nanodevices II T. Yanagida (Kyushu Univ.) N. Banno (NEC)	12C-5: Symposium B: Two Dimensional Nanomaterials II K. Maehashi (Tokyo Univ. of Agric. and Technol.) D. Kondo (Fujitsu Labs.)	12D-5: Nanoimprint, Nanoprint and Rising Lithography II H. Schiff (Paul Scherrer Inst., Switzerland) H. Hiroshima (AIST)
12A-5-1 10:45 Microstructured Meshes as Platforms for Cell Culture and Induction of Self-Assembly-Mediated Organoid Formation (Invited) O. Kennedy 1, O. Kurosawa 1, S. Yamazaki 1, H. Oana 1, H. Kotera 2 and M. Washizu 1, 1 Univ. of Tokyo and 2 Kyoto Univ., Japan	12B-5-1 10:25 Nanoscale Localized Joule Heating in Phase-Change Memory for Ultra-Low Operation Current Y. Yin, Gunma Univ., Japan	12C-5-1 10:45 Bandgap Engineering and Substitutional Doping of Graphene Nanoribbons (Invited) R.R. Cloke 1, T. Marangoni 1, G.D. Nguyen 1, T. Joshi 1, D.J. Rizzo 1, C. Bronner 1, T. Cao 1, S.G. Louise 1, M.F. Crommie 1,2 and F.R. Fischer 1,2, 1 Univ. of California Berkeley and 2 Lawrence Berkeley Natl. Lab., USA	12D-5-1 10:45 Fabrication of Reusable TiO ₂ Templates for Nanometer and Micrometer-scale Protein Patterning by Imprint Lithography M. Moxey 1,2, A. Johnson 1, O. El-Zubir 1, M. Cartron 1, S.S. Dinachali 2, C.N. Hunter 1, M.S.M. Saifullah 2, K.S.L. Chong 2 and G.J. Leggett 1, 1 Univ. of Sheffield, UK and 2 A*STAR, Singapore
12A-5-2 11:15 On-chip Electrical Lysis and Extraction of Cytoplasmic RNA and Genomic DNA from Single Cells (Invited) H. Shintaku 1,2, K. Kuriyama 2 and J.G. Santiago 2, 1 Kyoto Univ., Japan and 2 Stanford Univ., USA	12B-5-2 10:45 Structural Property of Amorphous Thin Ta ₂ O ₅ Films Deposited by Different Methods and its Impact on Their Resistive Switching Characteristics C. Mannequin 1, T. Tsuruoka 1, T. Hasegawa 2 and M. Aono 1, 1 NIMS and 2 Waseda Univ., Japan	12C-5-2 11:15 Formation of Particular Graphene Structures through H ₂ Induced Anisotropic Etching R. Papon, S. Sharma, S.M. Shinde, A. Thangaraja, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan	12D-5-2 11:05 Development of under 100 nm Resolution Mold and Silver Ink Patterning Process N. Ito 1, M. Abe 1, T. Kitada 1, Y. Miyazawa 1, M. Ataka 2, T. Kishiro 2 and S. Matsui 3, 1 Asahi Kasei, 2 Holon and 3 Univ. of Hyogo, Japan

12A-5-3 11:45 On-Chip Direct Cytoplasmic Transfer between Live Single Cells (Invited) <i>K. Wada, RIKEN, Japan</i>	12B-5-3 11:05 High-Performance InGaZnO Thin-Film Transistor with a HfO ₂ /Lu ₂ O ₃ /HfO ₂ Stacked Gate Dielectric <i>T.-M. Pan, C.-W. Wang, H.-X. Xie and J.-L. Her, Chang Gung Univ., Taiwan</i>	12C-5-3 11:35 Fabrication and Electrical Properties of Unzipped Single-Layer Graphene Nanoribbon <i>H. Tanaka 1, P. Liu 1, T. Fujiwara 1, S. Kasai 2, X. Yin 2, T. Yamada 3, R. Negishi 4, Y. Kobayashi 4, M. Fukumori 4 and T. Ogawa 4, 1 Kyushu Inst. of Technol., 2 Hokkaido Univ., 3 Chiba Univ. and 4 Osaka Univ., Japan</i>	12D-5-3 11:25 Nano-Hole and Dot Patterning on Quartz Substrate by R- Θ EB Lithography and Nanoimprinting <i>T. Watanabe, K. Taniguchi, K. Suzuki, H. Iyama, S. Kishimoto, T. Sato and H. Kobayashi, HOYA, Japan</i>
	12B-5-4 11:25 Reducing Source/Drain Resistance of α -IGZO Thin-Film Transistors Using an n+-ZnO Buffer Layer <i>C.H. Hung, S.-J. Wang, 2, C. Lin, C.-H. Wu, Y.-H. Chen, P.-Y. Liu, Y.-C. Tu and T.-H. Lin, Natl. Cheng Kung Univ., Tainan</i>	12C-4, 5 Author's Interview: 11:55-12:05	12D-4, 5 Author's Interview: 11:45-11:55
Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
12A-6: Electron and Ion Beam Technologies <i>H. Yamashita (NuflareTechnol.) J. Yanagisawa (Univ. of Shiga Pref.)</i>	12B-6: Nanofabrication II <i>T. Hasegawa (Waseda Univ.) K. Tomioka (Hokkaido Univ.)</i>	12C-6: Inorganic Nanomaterials II <i>T. Higuchi (Tokyo Univ. of Sci.) T. Ohno (Tohoku Univ.)</i>	12D-6: NanoTool <i>K. Sugano (Kobe Univ.) R. Kometani (Univ. of Tokyo)</i>
12A-6-1 13:30 Multi-Beam SEM Technology for High Speed Imaging and Defect Inspection (Invited) <i>T. Kemen, D. Zeidler and G. Dellemann, Carl Zeiss Microscopy, Germany</i>	12B-6-1 13:30 Van der Waals Epitaxial Growth of Semiconductor Nanostructures (Invited) <i>Y.J. Hong, Sejong Univ., Korea</i>	12C-6-1 13:30 Redox Reactions and Metal Ion Transport in Cu(Ag)/Ta ₂ O ₅ /Pt Atomic Switch Structures <i>T. Tsuruoka 1, I. Valov 2,3, T. Hasegawa 4, R. Waser 2,3 and M. Aono 1, 1 NIMS, Japan, 2 Jülich Res. Ctr., 3 RWTH Aachen, Germany and 4 Waseda Univ., Japan</i>	12D-6-1 13:30 Filament Erasure in Cu/MoO _x ReRAM investigated by in-Situ TEM <i>M. Arita, Y. Ohno, A. Tsurumaki-Fukuchi and Y. Takahashi, Hokkaido Univ., Japan</i>
12A-6-2 14:00 EBM-9000 : Features and Requirements in Electron-Beam Mask Writer for Product Mask Fabrication of 16 nm Half-Pitch Generation and Beyond (Invited) <i>H. Takekoshi, T. Kamikubo, S. Yoshitake, K. Saito and M. Suganuma, NuFlare Technologies, Japan</i>	12B-6-2 14:00 Development of High-Precision Digital Wet Etching Technique for GaAs-Based Nanostucture Formation <i>R. Kuroda, M. Sato and S. Kasai, Hokkaido Univ., Japan</i>	12C-6-2 13:50 Ta ₂ O ₅ -Based Redox Memory Formed by Neutral Beam Oxidation <i>T. Ohno^{1,2} and S. Samukawa 1, 1 Tohoku Univ. and 2 JST-PRESTO, Japan</i>	12D-6-2 13:50 Dynamic Patterning of Organic Molecules in Aqueous Solutions Using an Inverted Electron-Beam Lithography System <i>H. Miyazako, K. Ishihara, K. Mabuchi and T. Hoshino, Univ. of Tokyo, Japan</i>
12A-6-3 14:30 Method of Improving Image Sharpness for Annular-Illumination Scanning Electron Microscopes <i>M. Enyama 1, K. Hamada 1, M. Fukuda 2 and H. Kazumi 2, 1 Hitachi and 2 Hitachi High-Technol., Japan</i>	12B-6-3 14:20 Oxidation of CuSn Alloy Nano-Tree and Application for Gas Sensors <i>N. Kaneko 1, T. Shimizu 1, Y. Tada 2 and S. Shingubara 1, 1 Kansai Univ. and 2 Murooran Inst. of Technol., Japan</i>	12C-6-3 14:10 Ionic Conductivity Effect on Response Speed of All-Solid-State Electric-Double-Layer Transistor <i>T. Tsuchiya 1,2, M. Ochi 2, T. Higuchi 2, K. Terabe 1 and M. Aono 1, 1 NIMS and 2 Tokyo Univ. of Sci., Japan</i>	12D-6-3 14:10 Visualizing Three-Dimensional Hydration Structure at Solid-Liquid Interfaces with Sub Nanometer Resolution by Frequency Modulation Atomic Force Microscopy <i>K. Miyazawa 1, H. Asakawa 1 and T. Fukuma 1,2, 1 Kanazawa Univ. and 2 JSTA, Japan</i>
12A-6-4 14:50 Simulation of Charging Process of PMMA Film on Si Substrate under Electron Beam Irradiation <i>A. Fukuzawa, K. Terada and M. Kotera, Osaka Inst. of Technol., Japan</i>	12B-6-4 14:40 Formation and Characteristics of BaTiO ₃ Nanoparticles in the Pores of Mesoporous Silica Thin Films <i>A. Kohno and T. Tajiri, Fukuoka Univ., Japan</i>	12C-6-4 14:30 Interface Stability of Electrode/Bi-contained Relaxor Ferroelectric Oxide Stack Structure for High Temperature Operational Capacitor <i>T. Nagata, S. Kumaragurubaran, Y. Tsunekawa, Y. Yamashita, S. Ueda, K. Takahashi, S.-G. Ri, S. Suzuki, S. Oh and T. Chikyow, NIMS, Japan</i>	12D-6-4 14:30 Mapping of Local Electronic Density of States of Silicene Nanoribbons Using Scanning Tunneling Microscope <i>O. Kubo, R. Omura, N. Nakashima, M. Shigehara, R. Kuga, H. Tabata, N. Mori and M. Katayama, Osaka Univ., Japan</i>
12A-6 Author's Interview: 15:10-15:20	12B-6 Author's Interview: 15:00-15:10		
		12C-6-5 14:50 Backscattered Electron and Magnetic Force Microscopy Analyses of MnAs/InAs Heterojunction Nanowires <i>K. Kabamoto, R. Kodaira, S. Sakita and S. Hara, Hokkaido Univ., Japan</i>	12D-6-5 14:50 Influence of Focused-Ion-Beam Process and Annealing Treatment on Resonance of Graphene Nanomechanical Resonator <i>R. Kometani, K. Kosugi, K. Tsushima, S. Chiashi, S. Maruyama and E. Maeda, Univ. of Tokyo, Japan</i>

		12C-6 Author's Interview: 15:10-15:20	12D-6-6 15:10 Influence of Vacuum Annealing on the Strength and Fracture Mechanism of Micro and Nanoscale FIB-fabricated Silicon Structures <i>Y. Goshima 1, T. Fujii 2, S. Inoue 2 and T. Namazu 2, 1 Horiba and 2 Univ. of Hyogo, Japan</i>
12D-6 Author's Interview: 15:30-15:40			
Lobby (2F)			
Coffee Break			
Lobby, 2F and 3F			
12P-7: 16:00-18:00 POSTER SESSION I			
Lobby, 2F			
Electron and Ion Beam Technologies			
Chairperson: J. Yamamoto (Hitachi)			
12P-7-1 Solid Immersion Optics for Surface Plasmon Excitation in a Transmission Mode Photoemission Electron Microscope <i>V. Viswanathan, A.S. Yusuf, N.R. Shami, H. Hao and D.S. Pickard, Natl. Univ. of Singapore, Singapore</i>	12P-7-2 — To Oral Session Simulation of Charging Process of PMMA film on Si Substrate under Electron Beam Irradiation <i>A. Fukuzawa, K. Terada and M. Kotera, Osaka Inst. of Technol., Japan</i>	12P-7-3 Negative Tone 40 nm-Line and 60 nm-Space Pattern Fabrication by Electron Beam Lithography Using NEB-22 <i>M. Okada and S. Matsui, Univ. of Hyogo, Japan</i>	12P-7-4 Complex System of Micrometer-Sized Material Modification and In-Situ Elemental and Luminescence Analysis Using Proton Microbeam Probe <i>S. Kawabata 1,2, W. Kada 1, Y. Matsubara 1, K. Miura 1, T. Satoh 2, M. Koka 2, N. Yamada 2, T. Kamiya 2 and O. Hanaizumi 1, 1 Gunma Univ. and 2 JAEA, Japan</i>
12P-7-5 Fabrication and in-Situ Evaluation of Completely-Flexible MZ Waveguide Structure Embedded in PDMS Thin Film Using Focused Proton Microbeam <i>R.K. Parajuli 1, R. Saruya 1, K. Miura 1, W. Kada 1, S. Kawabata 1,3, Y. Matsubara 1, H. Kato 2, A. Yokoyama 1,3, M. Koka 3, T. Satoh 3, Y. Ishii 3, T. Kamiya 3, H. Nishikawa 2 and O. Hanaizumi 1, 1 Gunma Univ., 2 Shibaura Inst. of Technol. and 3 JAEA, Japan</i>	12P-7-110L Dependence of Charging of Insulator Film by Electron Beam Irradiation on the Bias-Voltage <i>Y. Handa, M. Toukai, T. Kawamoto and M. Kotera, Osaka Inst. of Technol., Japan</i>		
Resist and Directed Self-Assembly			
Chairperson: K. Yoshimoto (Kyoto Univ.)			
12P-7-6 Nanohaiga: Creative Use of Visual Art and Haiku Poems for Demonstration of Electron Resist and Direct Self-assembly Related Materials and Processes <i>N. Panova, A. Gangnaik, T. Ghoshal, Y.M. Georgiev and J.D. Holmes, Univ. College Cork, Ireland</i>	12P-7-7 Investigation of the Micro-Phase Separation Limit of PS-b-PMMA Doped with Organic Acid Compounds for Sub-10nm Line Density Multiplication <i>Y. Kawamozen, N. Kihara, Y. Seino, H. Sato, Y. Kasahara, K. Kobayashi, K. Kodera, H. Kanai, H. Kubota, K. Miyagi, S. Minegishi, T. Tobana, M. Shiraiishi and T. Azuma, EIDEC, Japan</i>	12P-7-8 Ordering Analysis of in-Plane Cylindrical Domains of Polystyrene-b-Polydimethylsiloxane Formed by Thermal Annealing <i>T. Yamaguchi and A. Fujiwara, NTT, Japan</i>	12P-7-9 Computational Study of a Combining Process of Block-Copolymer Self-Assembly with Electrohydrodynamic Jet Printing <i>S.-K. Kim, Hanyang Univ., Korea</i>
12P-7-10 Sub-20nm Contact Holes Using Directed Self-Assembly of Block Copolymers: Process Flow and Electrical Verification <i>P. Rincon-Delgadillo 1, B.T. Chan 1, J. Doise 1,2 and R. Gronheid 1, 1 imec and 2 Katholieke Univ. Leuven, Belgium</i>			

Nanocarbons

Chairperson: M. Tanemura (Nagoya Inst. of Technol.)

12P-7-11 First-Principles Calculations for Desolvation of Li(EC) ₄ at the Graphite Edge with Hydrogen/Carbonylic Terminations <i>T. Kawai 1,2, S. Okada 2 and M. Otani 3, 1 NEC, 2 Univ. of Tsukuba and 3 AIST, Japan</i>	12P-7-12 Direct Observation of Graphitization for Ge-Incorporated Carbon Nanofibers by in Situ Transmission Electron Microscopy <i>Y. Yaakob 1,2, M.Z.M. Yusop 1,3, Y. Kuwataka 1, M.S. Rosmi 1,4, S. Sharma 1, G. Kalita 1 and M. Tanemura 1, 1 Nagoya Inst. of Technol., Japan, 2 Univ. Putra Malaysia, 3 Univ. Teknologi Malaysia and 4 Univ. Pendidikan Sultan Idris, Malaysia</i>	12P-7-13 The Densification Effect on Carbon Nanotube Pillars Array for Field Emission <i>K.-Y. Wang and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan</i>	12P-7-14 Super-Strong and Ultra-Lightweight Carbon Nanotube Spinning Threads from Carbon Nanotube Forest towards Low-Carbon Societies <i>Y. Hayashi 1, T. Iijima 1, D. Suzuki 1, H. Kinoshita 1, T. Tokunaga 2, S. Ichimura 1, Z. Lin 1, K.P. Selvam 1 and T. Nishikawa 1, 1 Okayama Univ. and 2 Nagoya Univ., Japan</i>
12P-7-15 Electronic Properties of CNT Thin Films under an Electric Field <i>U. Ishiyama and S. Okada, Univ. of Tsukuba, Japan</i>	12P-7-16 High Quality Graphene on SiC Formed by the Surface Structure Control Technique <i>T. Aritsuki, T. Nakashima, K. Kobayashi, Y. Ohno and M. Nagase, Univ. of Tokushima., Japan</i>	12P-7-17 In situ TEM Observation of the Graphitization of Copper-Carbon Composite Nanoneedles Induced by Joule Heating <i>M.S. Rosmi 1,2, Y. Yaakob 1,3, S. Sharma 1, M. Zamri 4, G. Kalita 1 and M. Tanemura 1, 1 Nagoya Inst. of Technol., Japan, 2 Univ. Pend. Sultan Idris2, 3 Univ. Putra Malaysia and 4 Univ. Tech. Malaysia, Malaysia</i>	12P-7-18 Geometric and Electronic Structures of One-Dimensionally Polymerized Coronene Molecules <i>K. Narita and S. Okada, Univ. of Tsukuba, Japan</i>
12P-7-19 Hybrid Structure of Vertically Aligned Li ₄ Ti ₅ O ₁₂ Nanowire and Freestanding Ultrathin Graphite Film as an Anode for Flexible Lithium Ion Batteries <i>S.D. Kim, K. Rana and J.-H. Ahn, Yonsei Univ., Korea</i>	12P-7-20 Transmission, Reflection, and Absorption Spectroscopy of Graphene Microribbons in the Terahertz Region <i>S. Suzuki, M. Takamura and H. Yamamoto, NTT, Japan</i>	12P-7-21 Computer Aided-Molecular Design of Functionalized Fullerenes and Graphenes: Density Functional Theory (DFT) Study <i>H. Tachikawa and H. Kawabata, Hokkaido Univ., Japan</i>	12P-7-22 First-Principles Study on Bottom-up Fabrication Process of Atomically Precise Graphene Nanoribbons <i>T. Kaneko 1, N. Tajima 1 and T. Ohno 1,2, 1 NIMS and 2 Univ. of Tokyo, Japan</i>
12P-7-23 Resonance Control of Carbon Nanotube Mechanical Resonator by Electron Beam Induced Electrostatic Attraction <i>M. Yasuda, K. Takei, T. Arie and S. Akita, Osaka Pref. Univ., Japan</i>	12P-7-24 Design of Novel Elemental Semiconductors: Two-Dimensional Covalent Networks of Fused C ₃₆ Fullerenes <i>M. Maruyama 1, N.T. Cuong 2 and S. Okada 1, 1 Univ. of Tsukuba and 2 NIMS, Japan</i>	12P-7-25 Effect of the Force Constant on the Electrical-Mechanical Response of Carbon Nanofiber - Atomic Force Microscopy Probes <i>G Rius 1, M. Lorenzoni 2, K. Taniyama 1, M. Tanemura 1 and F. Perez-Murano 2, 1 Nagoya Inst. of Technol., Japan and 2 IMB-CNM-CSIC, Spain</i>	12P-7-26 Selective Diamond Etching by Solid Solution Reaction of Carbon to Nickel <i>K. Nakanishi, D. Miyata, N. Tokuda and T. Inokuma, Kanazawa Univ., Japan</i>
12P-7-27 Synthesis of WS ₂ Crystals on CVD Grown Graphene and h-BN Films <i>A. Thangaraja, S.M.Shinde, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan</i>	12P-7-28 Top-Gated Graphene Field-Effect Transistors by Low-Temperature Synthesized SiNx Insulator on SiC Substrates <i>Y. Ohno 1, M. Nagase 1 and K. Matsumoto 2, 1 Univ. of Tokushima. and 2 Osaka Univ., Japan</i>	12P-7-111L Morphology of MoS ₂ on Al ₂ O ₃ (0001) Substrate <i>H. Jippo, K. Hayashi, S. Sato and M. Ohfuchi, Fujitsu Labs., Japan</i>	12P-7-112L Electrical Properties of MoS ₂ Transistors Doped with F4-TCNQ <i>L. Jiang 1, N. Harada 1,2, S. Sato 1,2, and N. Yokoyama 1,2, 1 AIST and 2 Fujitsu Labs., Japan</i>
12P-7-113L The Role of Dangling Bonds at {1-100} Step in Fabricating Ribbon-Shaped (6√3 × 6√3) R30° Graphene Precursor Layer on 4H-SiC (0001) <i>D. Dojima, Y. Kutsuma, K. Ashida and T. Kaneko, Kwansai Gakuin Univ., Japan</i>	12P-7-114L First-principles Study of Electronic Structures of Graphene on Y ₂ O ₃ <i>T. Kaneko 1,2 and T. Ohno 1,2,3, 1 NIMS, 2 Materials Res. Consortium for Energy Efficient Electronic Devices and 3 Univ. of Tokyo, Japan</i>	12P-7-115L Inducing Strain to Encapsulated Graphene <i>H. Tomori 1,2, R. Hiraide 1, Y. Ootuka 1, K. Watanabe 3, H. Taniguchi 3 and A. Kanda 1, 1 Univ. of Tsukuba, 2 JST-PREST and 3 NIMS, Japan</i>	

Nanodevices

Chairperson :T. Yanagida (Kyushu Univ.)

12P-7-29 On the Indium Mole Fraction Distribution of InGaP/InGaAs Pseudomorphic Triple Doping-channel Field-Effect Transistors <i>Y.-T. Chao and J.-H. Tsai, Natl. Kaohsiung Normal Univ., Taiwan</i>	12P-7-30 The Effect of Dual-Spacer Dielectrics on Low-Power Performance of Sub-10 nm Tunneling Field-Effect Transistor <i>Y.J. Yoon 1, J.H. Seo 1, S. Cho 2, H.-I. Kwon 3, J.-H. Lee 1 and I.M. Kang 1, 1 Kyungpook Natl. Univ. and 2 Gachon Univ. and 3 Chung-Ang Univ., Korea</i>	12P-7-31 Fabrication of Triple-Dot Single-Electron Transistor and its Turnstile Operation <i>M. Jo 1, T. Uchida 1, A. Tsurumaki-Fukuchi 1, M. Arita 1, A. Fujiwara 2, Y. Ono 3, K. Nishiguchi 2, H. Inokawa 4 and Y. Takahashi 1, 1 Hokkaido Univ., 2 NTT, 3 Univ. of Toyama and 4 Shizuoka Univ., Japan</i>	12P-7-32 Accurate Quantitative Analysis of Top Gate Effect of Triple-Gate FinFET Using 3D Device Simulation <i>T. Tsutsumi, T. Nakamura, S. Fukuoka and N. Yokoyama, Meiji Univ., Japan</i>
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12P-7-33 Drain Doping Dependence on Switching Characteristics of Tunnel Field-Effect Transistor (TFET) Inverters <i>D.W. Kwon, J.H. Kim, E. Park, J. Lee, T. Park, R. Lee, S. Kim and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-34 Synaptic Device and CMOS Neuron Circuit Using Floating Body MOSFET with Spike Timing-Dependent Plasticity <i>M.-W. Kwon, J. Park, H. Kim and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-35 Analysis on Temperature Dependent Current Mechanism of Tunneling Field-Effect Transistors <i>J. Lee, H.W. Kim, D.W. Kwon, J.H. Kim, E. Park, T. Park, S. Kim, R. Lee, J.-H. Lee and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-36 Withdrawn Atmospheric Pressure Gas Ionization Sensor with Horizontal-Aligned CNT Electrodes on Flexible Substrate <i>K.-Y. Wang and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan</i>
12P-7-37 Thin Film Growth of (110) Rutile TiO ₂ on (100) Ge Substrate by Pulsed Laser Deposition <i>Y. Suzuki 1,2, T. Nagata 2,3, Y. Yamashita 2, T. Nabatame 2, A. Ogura 1 and T. Chikyow 2, 1 Meiji Univ., 2 NIMS and 3 JST-PRESTO, Japan</i>	12P-7-38 Study on the Super-Linear Onset of Tunneling Field-Effect Transistors <i>J.H. Kim, D.W. Kwon, J. Lee, E. Park, T.-H. Park and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-39 Theoretical Framework to Realize Terahertz Emitters by Considering Realistic Boundary Conditions for Strained Silicon Resonant Plasma-Wave Transistors <i>J.Y. Park, S.-H. Kim and K.R. Kim, Ulsan Natl. Inst. of Sci. and Technol., Korea</i>	12P-7-40 New Analysis of 6T-SRAM and its Extensibility to Multi-Bit SRAM Based on Negative Differential Resistance and Transconductance Characteristics <i>S. Shin and K.R. Kim, Ulsan Natl. Inst. of Sci. and Technol., Korea</i>
12P-7-116L Reduction Method of Gate-to-Drain Capacitance by Oxide Spacer Formation in Tunnel Field-Effect Transistor (TFET) with Elevated Drain <i>D.W. Kwon, J.H. Kim, E. Park, J. Lee, T. Park, R. Lee, S. Kim, and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-117L Effects of Pillar Thickness on DC/AC Characteristics of Tunnel Field-Effect Transistor (TFET) with Vertical Structures <i>D.W. Kwon, J.H. Kim, E. Park, J. Lee, T. Park, R. Lee, S. Kim, and B.-G. Park, Seoul Natl. Univ., Korea</i>	12P-7-118L In Situ Transmission Electron Microscopy of Single-Particle Junctions Assembled Using Carbon Nanocapsules Encapsulating Lanthanum Carbide <i>M. Tedura and T. Kizuka, Univ. of Tsukuba, Japan</i>	12P-7-129L High-Resolution Transmission Electron Microscopy of Melting Action of Tantalum Nanocontacts <i>T. Kizuka, Y. Suzuki, M. Tedura, and S. Murata, Univ. of Tsukuba, Japan</i>

Nanofabrication

Chairperson: H. Tanaka (Kyushu Inst. of Technol.)

12P-7-41 Withdrawn Growth and Properties of Pyroelectric Nano-crystals <i>S. Berger, Technion-Israel Inst. of Technol., Israel</i>	12P-7-42 EDX Analysis of Si Sidewall Surface Etched by Deep-RIE Process <i>A. Matsutani, M. Sato, K. Nishioka and D. Shoji, Tokyo Inst. of Technol., Japan</i>	12P-7-43 One-Step Fabrication of Nanostructure-Covered Microstructures Using Selective Aluminum Anodization Based on Non-Uniform Electric Field <i>Y.M. Park, E.D. Han, B.H. Kim and Y.H. Seo, Kangwon Natl. Univ., Korea</i>	12P-7-44 Fabrication of High Transmittance SiO ₂ Nanotexture with Optimal Spin-coating Method <i>C.-C. Hsu 1, C.-T. Meng 1, C.-C. Cheng 1, C.-C. Wu 2 and C.-L. Dai 3, 1 Yuan Ze Univ., 2 Tamkang Univ. and 3 Natl. Chung Hsing Univ., Taiwan</i>
12P-7-45 Origin of Preferential Diffusion of Ni along Si/SiO ₂ Interface in Si Nanowire <i>S. Hashimoto 1, K. Takei 1, J. Sun 1, S. Asada 1, X. Zhang 1, T. Xu 1, T. Usuda 1, M. Tomita 1,2,3, R. Imai 3, A. Ogura 3, T. Matsukawa 4, M. Masahara 4 and T. Watanabe 1, 1 Waseda Univ., 2 JSPS, 3 Meiji Univ. and 4 AIST, Japan</i>	12P-7-46 Electrostatic Assembly of HO-PAEs Capped TiO ₂ Nanoparticles on Cotton Fabric <i>S.J. Xu 1, F. Zhang 2, S.Y. Chen 3, J. C. Song 1, H. Morikawa 1, Y.Y. Chen 3 and H. Lin 3, 1 Shinshu Univ., Japan, 2 Shazhou Inst. of Technol. and 3 Soochow Univ., China</i>	12P-7-47 Self-Formation of Asymmetric Microporous Polysulfone Hollow Fiber Using a Single Spinneret and Reduction of Phase-Inversion Speed <i>C.S. Jang, H.J. Kim, Y.H. Lee, B.H. Kim and Y.H. Seo, Kangwon Natl. Univ., Korea</i>	12P-7-48 Hierarchical and Broadband Light Harvesting Structures for c-Si Solar Cells Fabricated by Different Etching Process <i>M.-L. Lee 1, S.-H. Lin 2, C.-H. Hsu 1 and C.-H. Kuan 1, 1 Natl. Taiwan Univ. and 2 Tung Hai Univ., Taiwan</i>
12P-7-49 Fabrication of Micro-Materials Array Using Buried Structure by Electromigration <i>Y. Kimura and M. Saka, Tohoku Univ., Japan</i>	12P-7-50 Depth Effect of Randomly Distributed Nanoholes on Specular Structural Colors <i>W.K. Jang, Y.M. Park, D.H. Min, B.H. Kim and Y.H. Seo, Kangwon Natl. Univ., Korea</i>	12P-7-119L Fabrication and Optical Property of Nanoparticle Using Anodic Porous Alumina Membrane <i>K. Takase 1, T. Shimizu 2, K. Sugawa 1, T. Aono 1, Y. Shirai 1, T. Nishida 2 and S. Shingubara 2, 1 Nihon Univ. and 2 Kansai Univ., Japan</i>	12P-7-120L Synthesized and Characterization of Perovskite Sm-Doped LaFeO ₃ Nanopowders Prepared by Sol-Gel Method <i>A. Karaphun and E. Swatsitang, Khon Kaen Univ., Thailand</i>

Inorganic Nanomaterials

Chairperson: K. Kobayashi (NIMS)

12P-7-51 Photoluminescence and Local Structure Analysis of Nd-Doped TiO ₂ Thin Films with Al Co-Doping <i>Y. Yanagida 1, Y. Aizawa 1, S. Komuro 2, T. Izumi 3 and X. Zhao 1, 1 Tokyo Univ. of Sci., 2 Toyo Univ. and 3 JAEA, Japan</i>	12P-7-52 Electrical and Structural Properties of Pt/TiO ₂ /Pt Thin Film Prepared by RF Magnetron Sputtering Using Oxygen Radical <i>K. Kawamura 1, N. Suzuki 1, T. Tsuchiya 1, M. Minohara 2, H. Kumigashira 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 KEK, Japan</i>	12P-7-53 Fabrication and Characterization of TiO ₂ /Water Solid-Liquid Heterojunction Solar Cell Based on TiO ₂ Hollow Spheres Constructed Three-Dimensional Nanomaterial <i>W.-J. Lee, Y. Tseng, J.S. Lee and C.-R. Lin, Natl. Pingtung Univ., Taiwan</i>	12P-7-54 Withdrawn Photoexcited Hole Cooling Dynamics in PbSe/CdSe Core/Shell Quantum Dots <i>Y. Zhang 1, J. Chang 1, T. Izushi 1, K. Ono 1, Y. Ogomi 2,4, S. Hayase 2,4, K. Katayama 3, T. Toyoda 1,4 and Q. Shen 1,4, 1 Univ. of Electro-Communications, 2 Kyushu Inst. of Technol., 3 Chuo Univ. and 4 JST-CREST, Japan</i>
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12P-7-55— Withdrawn Low Temperature Growth High Quality Germanium Epilayers on Silicon Substrates Using Reduce Pressure Chemical Vapor Deposition <i>W.-C. Kuo, W.-C. Chen, H.-C. Hsieh, J.-Y. Chang and C.-C. Lee, Natl. Ctr. Univ., Taiwan</i>	12P-7-56 Physical and Electrical Characteristics of $Pb_{1.2}(Zr_{0.53}Ti_{0.47})O_3$ Thin-Films for the Applications of Tunable Energy Harvesting and Sensing Devices <i>S.P. Bag, T.-M. Pan and J.-L. Her, Chang Gung Univ., Taiwan</i>	12P-7-57 Enhanced Oxidation of Si Using Low-Temperature Oxidation Catalyst $SrTi_{1-x}Mg_xO_{3-\alpha}$ <i>L. Li, A. Ikeda and T. Asano, Kyushu Univ., Japan</i>	12P-7-58— Withdrawn Hydrothermal Synthesis of Cubic Hematites Using Dimaines <i>K.-W. Kim, S.-B. Bae, T.A. Nguyen and S.-W. Lee, Gachon Univ., Korea</i>
12P-7-59— Withdrawn Dependence of Substrate Crystal Orientation on Adsorption, Ionization Potential, and Photoinduced Electron Transfer Dynamics of CdSe Quantum Dots/TiO ₂ System <i>T. Toyoda 1,5, W. Yindeesuk 1, K. Kamiyama 2, K. Katayama 3, S. Hayase 4,5 and Q. Shen 1,5, 1 Univ. of Electro-Commun., 2 Bunkoikeiki, 3 Chuo Univ., 4 Kyushu Inst. of Technol. and 5 JST-CREST, Japan</i>	12P-7-60 Effect of Interface Passivation on Photovoltaic Properties and Carrier Recombination of Sb ₂ S ₃ Sensitized Solid Solar Cells <i>K. Yamazaki 1, K. Sato 1,2, T. Toyoda 1,4, K. Katayama 2, Y. Ogomi 3,4, S. Hayase 3,4 and Q. Shen 1,4, 1 Univ. of Electro-Commun., 2 Chuo Univ., 3 Kyushu Inst. of Technol. and 4 JST-CREST, Japan</i>	12P-7-61 Control of Higher-Order Facet Structures for Novel Electron Emissive Surfaces with Negative Electron Affinity (NEA) Nature <i>S. Tanaka 1, M. Hirao 1, K. Matsuo 1, H. Iijima 1, T. Shiokawa 2 and T. Meguro 1, 1 Tokyo Univ. of Sci. and 2 RIKEN, Japan</i>	12P-7-62 Effects of Metal Oxidation Reactions to In-Ga-Zn-O Thin Film Transistors Based Sol-Gel Precursor at Low Temperature <i>S.-H. Kim, K.-W. Jo and W.-J. Cho, Kwangwoon Univ., Korea</i>
12P-7-121L Realization of Thin-Film-Transistors with Channel Regions Formed by Sprayed n-type and p-type ZnO Nano Particle Layers <i>D. Itohara, T. Yoshida and Y. Fujita, Shimane Univ., Japan</i>	12P-7-122L Electrical and Structural Characterization of Anodically Etched GaAs Nanowires towards Functional Electronic Devices <i>S. Aikawa 1, K. Yamada 1, H. Asoh 1, H. Hashimoto 1, Y.-I. Kim 2, E. Nishikawa 2 and S. Ono 1, 1 Kogakuin Univ. and 2 Tokyo Univ. of Sci., Japan</i>	12P-7-123L Fatigue Strength of Nanostructured Ni-Pd Film Fabricated by LIGA Process <i>Y. Ichinosawa 1, Y. Saotome 2, S. Kinuta 1 and S. Saito 3, 1 Optics Precision, 2 Tohoku Univ. and 3 Ashikaga Inst. of Technol., Japan</i>	

Organic Nanomaterials

Chairperson: S. Takami (Tohoku Univ.)

12P-7-63 Fabrication of DBTTF-TCNQ Complex Organic Crystals by Vacuum Co-Deposition into Ionic Liquid Layer <i>K. Kuroishi 1, N. Ohashi 2, S. Maruyama 1 and Y. Matsumoto 1, 1 Tohoku Univ. and 2 AIST, Japan</i>	12P-7-64 Chemical Structures of Flexible Conducting Polymer/metal Compounds Investigated with X-Ray Photoemission Spectroscopy <i>D. Gerlach, J. Kawakita and T. Chikyow, NIMS, Japan</i>	12P-7-65 Synthesis and Characterization of InP QDs Loaded Poly (Methyl Methacrylate) Nanocomposites <i>Y. Kwon and J. Kim, Gachon Univ., Korea</i>	12P-7-66 Photoreponsive and Fluorescence Behaviors of Azobenzene-Containing Block Copolymers <i>C.-T. Lo and T.-L. Lee, Natl. Cheng Kung Univ., Taiwan</i>
12P-7-67 Exceptionally Low Thermal Conductivity of Poly(3-hexylthiophene) Single Nanowire <i>L.-C. Li and K.W. Sun, Natl. Chiao Tung Univ., Taiwan</i>	12P-7-68 Fabrication of Titania Pastes Containing Biological Ink Particles for Dye-Sensitized Solar Cells <i>T. Matsuura 1, S. Nagai 2, K. Ogasawara 1, M. Sakai 3, K. Minato 2 and T. Ueno 2, 1 Hokkaido Univ., 2 Hakodate Natl. College of Technol. and 3 Fisheries Res. Agency, Japan</i>	12P-7-69 N-(4-tert-butylphenyl)-N-phenyl-4-(9,10-diphenylanthracen-3-yl)benzenamine for Blue Organic Light-Emitting Diodes <i>Y.S. Kim 1, D.Y. Kim 1, S.E. Lee 2, Y.K. Kim 2 and S.S. Yoon 1, 1 Sungkyunkwan Univ. and 2 Hongik Univ., Korea</i>	12P-7-70 Blue Emitting Materials Containing Dibenzo[b,d]furan and Dibenzo[b,d]thiophene for Organic Light-Emitting Diodes <i>H.W. Lee 1, S.J. Jeong 1, S.E. Lee 2, Y.K. Kim 2 and S.S. Yoon 1, 1 Sungkyunkwan Univ. and 2 Hongik Univ., Korea</i>
12P-7-71 Preparation and Characterization of Electropolymerized PEDOT Thin Films with Different Dopant Anions <i>T. Deguchi, H. Tomeoku and M. Takashiri, Tokai Univ., Japan</i>	12P-7-72— Withdrawn Chitosan and Chondroitin Sulfate Nanoparticles as Drug Delivery for Fluorouracil <i>H.-C. Yang 1, H.-H. Chou 1 and S.-K. Ning 2, 1 Kun Shan Univ. and 2 Natl. Univ. of Kaohsiung, Taiwan</i>	12P-7-124L Molecular Design of Functionalized Nano-Carbon Materials: Styrene-Functionalized Graphene and C ₆₀ <i>T. Fukuzumi, T. Iyama, H. Kawabata and H. Tachikawa, Hokkaido Univ., Japan</i>	12P-7-125L Computer Aided Molecular Design of Electronic Device of the Smallest Fullerene C ₂₀ : Interaction with Alkali ion and Atom, Solvation Process <i>H. Kawabata and H. Tachikawa, Hokkaido Univ., Japan</i>

NanoTool

Chairperson: R. Kometani (Univ. of Tokyo)

12P-7-73 Interface Characterization of Nanometer Scale CdS Buffer Layer in Chalcopyrite Solar Cell <i>S.-H. Lin 1 and T.-H. Cheng 2, 1 Tung Hai Univ. and 2 LiveStrong Optoelectronics, Taiwan</i>	12P-7-74 Ultrathin High-k/Metal Gate Multilayer Thin Films Thickness Evaluation by X-Ray Reflectivity and Electron Microscopy Technology <i>Y.-S. Chien 1, M.-C. Chen 2, S.-Y. Lu 2, M.-L. Chen 2, B.-C. He 1, G.-D. Chen 1, Y.-S. Su 1 and W.-E. Fu 1, 1 ITRI and 2 TSMC, Taiwan</i>	12P-7-75 Effects of Dehydration and Critical Point Drying on Human Chromosome Inner Structure Observed by FIB/SEM <i>K. Kaneyoshi 1, S. Fukuda 1, A. Dwiranti 1, J. Kato 2, Y. Otsuka 2, H. Takata 1, S. Uchiyama 1, S. Ogawa 1,3 and K. Fukui 1, 1 Osaka Univ., 2 Toray Res. Ctr. and 3 AIST, Japan</i>	12P-7-76 Silicon Membrane Reshaping Technique Using Ga Ion Implantation <i>T. Kozeki, S. Inoue and T. Namazu, Univ. of Hyogo, Japan</i>
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12P-7-77 Programmable Polymerization of DNA Origami Structures with Double Crossovers Connection <i>Z. Ma 1, N. Yamashita 1, S. Park 1, K. Kawai 2, Y. Hirai 1, T. Tsuchiya 1 and O. Tabata1, 1 Kyoto Univ. and 2 Osaka Univ., Japan</i>	12P-7-78 Fabrication and Development of Micro-magnetic Tags to Transport Biological Information <i>Y. Fujiwara 1, H. Ishikawa 1 and Y. Yamanishi 1,2, 1 Shibaura Inst. of Technol. and 2 JST-PRESTO, Japan</i>	12P-7-79 Biosensor Using Vanadium Oxide Microthermistors <i>N. Inomata 1, L. Pan 1, Z. Wang 2, M. Kimura 2 and T. Ono 1, 1 Tohoku Univ. and 2 Tohoku Gakuin Univ., Japan</i>	12P-7-80 Photonic Absorber with Nano-Fins for Wavelength Detection with Mechanical Resonator in Near-infrared Region <i>E. Maeda and R. Kometani, Univ. of Tokyo, Japan</i>
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Nanoimprint, Nanoprint and Rising Lithography

Chairperson: M. Okada (Univ. of Hyogo)

12P-7-81 Analysis of Demolding Process of Bi-Layer Structure Using Nanoimprinting <i>Q. Wang, X. Zheng and R. Zhang, Shandong Univ. of Sci. and Technol., China</i>	12P-7-82 Anisotropic Oxygen Reactive Ion Etching for Residual Layer Removal of UV Nanoimprinted 45-nm-Wide Line Patterns <i>T. Uehara, S. Kubo, N. Hiroshiba and M. Nakagawa, Tohoku Univ., Japan</i>	12P-7-83 Development of Silicon-containing Additives to Improve Etching Durability for sub-50 nm Patterning by UV Nanoimprint Lithography <i>S. Ito 1, H. Sato 2, K. Watanuki 2, N. Nemoto 2 and M. Nakagawa 1, 1 Tohoku Univ. and 2 Nihon Univ., Japan</i>	12P-7-84 Evaluation of Mold Fixing Methods in Ultrasonic Nanoimprint Lithography Aimed at Low Energy Loss <i>H. Mekaru 1 and T. Yano 2, 1 AIST and 2 Inst. of Molecular Sci., Japan</i>
12P-7-85 Discharge of Droplets of Viscous UV-Curable Resins by Screen Printing for UV Nanoimprint Lithography <i>A. Tanabe 1, T. Uehara 1, K. Nagase 2, H. Ikedo 2, N. Hiroshiba 1 and M. Nakagawa 1, 1 Tohoku Univ. and 2 Mino Group, Japan</i>	12P-7-86 New Organic Photo-Curable Soft NIL Resist "mr-NIL210" for Industrial Mass Fabrication Using "UV-PDMS" Stamps <i>M. Messerschmidt 1, A. Greer 2, F. Schlachter 3, J. Barnett 3, M.W. Thesen 1, N. Gadegaard 2 and G. Grütznera, 1 micro resist technol., Germany, 2 Univ. of Glasgow, UK and 3 AMO, Germany</i>	12P-7-87 Fabrication of Isolated Metal Dot Pattern in Hole Features Using Roll to Roll Machine and Silver Ink <i>K. Ojima, N. Unno and J. Taniguchi, Tokyo Univ. of Sci., Japan</i>	12P-7-88 Impact of Molecular Weight on Line Edge Roughness in Nanoimprint Lithography by Molecular Dynamics Study <i>N. Iwata, M. Yasuda, H. Kawata and Y. Hirai, Osaka Pref. Univ., Japan</i>

BioMEMS, Lab on a Chip

Chairperson: Y. Murakami (Toyohashi Univ. of Technol.)

12P-7-89 Plasmon-Enhanced Optical Trapping of Nanoparticles on a Plasmonic Chip <i>K. Miyauchi 1,2, K. Tawa 1,2, S.N. Kudoh 2, T. Taguchi 3, C. Hosokawa 1,2, 1 AIST, 2 Kwansai Gakuin Univ. and 3 NICT, Japan</i>	12P-7-90 High-Speed Microfluidic RT-qPCR <i>H. Nagai, M. Takashima, N. Naruishi and S. Furutani, AIST, Japan</i>	12P-7-91 Resonance Laser Effect on Optical Trapping of Cell Adhesion Molecules on Neurons <i>C. Hosokawa 1, N. Takeda 1,2, S.N. Kudoh 2 and T. Taguchi 3, 1 AIST, 2 Kwansai Gakuin Univ. and 3 NICT, Japan</i>	12P-7-92 Embeddable Polymeric Microneedles as a Sustained Delivery System of Goserelin for Prostate Cancer Treatment <i>Y.-Y. Chen, S.-Y. Chen and M.-C. Chen, Natl. Cheng Kung Univ., Taiwan</i>
12P-7-93 DNA Aptamer-based Label-free Protein Sensing Using Extended Gate Field-Effect Transistors <i>T. Goda, A. Matsumoto and Y. Miyahara, Tokyo Med. and Dent. Univ., Japan</i>	12P-7-94 Identification of Normal-Cancer Cells by the Difference in their Adhesion on Organosilane Monolayer Templates: a Feasibility Study <i>Y. Takeuchi 1, R. Sakamoto 1, H. Wakabayashi 1, H. Yamamoto 2, Y. Sato 3 and T. Tanii 1, 1 Waseda Univ., 2 Tohoku Univ. and 3 Japanese Red Cross College of Nursing, Japan</i>	12P-7-95 Morphology Imaging Microdroplet Sorting System for Identification and Acquisition of Target Objects in Droplets <i>M. Girault 1, A. Hattori 1, H. Kim 1,2, S. Kawada 2, K. Tatsuura 1, M. Odaka 1, H. Terazono 1,2 and K. Yasuda 1,2, 1 Kanagawa Academy of Sci. and Technol. and 2 Tokyo Med. and Dent. Univ., Japan</i>	12P-7-96 Identification of Cell Clusters in Cancer Cell-implanted Rat Bloods Based on Measurements of Imaging Biomarkers Using on-Chip Multi-Imaging Flow Cytometry System <i>M. Odaka 1,2, H. Kim 1,2, M. Girault 2, A. Hattori 2, H. Terazono 1,2, K. Matsuura 2, F. Nomura 1 and K. Yasuda 1,2, 1 Tokyo Med. and Dent. Univ. and 2 Kanagawa Academy of Sci. and Technol. Japan</i>
12P-7-97 High Throughput Monodisperse Water-in-oil Droplets Formation for in Vitro Compartmentalization Using Electrostatic Inkjet Technology <i>B. Sharma, Y. Takamura, T. Shimoda and M. Biyani, JAIST, Japan</i>	12P-7-98 Sensitivity Enhancement of Electrical Impedance Immunosensor by Deposition of Nanoparticle on Interdigitated Electrode <i>A.K. Yagati, J. Park and S. Cho, Gachon Univ., Korea</i>	12P-7-126L Bright Field/Fluorescent Dual Imaging Cell Sorter System for Precise Purification of Circulating Tumor Cells <i>H. Kim 1,2, M. Odaka 1,2, M. Girault 1, A. Hattori 1, H. Terazono 1,2, K. Yasuda 1,2, 1 Kanagawa Academy of Sci. and Technol. and 2 Tokyo Med. Dent. Univ., Japan</i>	

Microsystem Technology and MEMS

Chairperson: T. Tsuchiya (Kyoto Univ.)

12P-7-99 Evaluation of Polymer-Based Candle-like Microneedle Electrodes for Electroencephalogram Measurement from the Hairy Part of the Scalp <i>M. Arai 1, Y. Kudo 1 and N. Miki 1,2, 1 Keio Univ. and 2 JST-PRESTO, Japan</i>	12P-7-100 Highly Sensitive PVDF-Based Infrared Sensor and its Wireless Measurement System <i>H. Choi and K. Lee, Ajou Univ., Korea</i>	12P-7-101 Metachronal Wave of Artificial Cilia Array Actuated by Applied Magnetic Field <i>R. Marume, F. Tsumori, A. Saijo, K. Kudo, T. Osada and H. Miura, Kyushu Univ., Japan</i>	12P-7-102 Effect of Temperature and Scale on Plastic Deformation of Single Crystal Si <i>K. Ueno and T. Ando, Ritsumeikan Univ., Japan</i>
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<p>12P-7-103 Improvement of a Nonthermal Atmospheric-Pressure Plasma-Jet Nozzle <i>H.J. Bae, T.J. Kim and S.S. Yang, Ajou Univ., Korea</i></p>	<p>12P-7-104 Scan-Projection Lithography onto Overall Circumferences of Small-Diameter Pipes <i>T. Horiuchi, T. Furuhashi and H. Muro, Tokyo Denki Univ., Japan</i></p>	<p>12P-7-105 Investigation on Metal Contamination Generated by a TSV Reveal Process Using Direct Si/Cu Grinding and Residual Metal Removal <i>N. Watanabe 1, M. Aoyagi 1, D. Katagawa 2, T. Bandoh 3, T. Mitsui 3 and E. Yamamoto 3, 1 AIST, 2 Apprecia Technol. and 3 Okamoto Machine Tool Works, Japan</i></p>	<p>12P-7-106 Development of 3D Printing System for Magnetic Elastomer with Control of Magnetic Anisotropy in the Structure <i>H. Kawanishi 1, F. Tsumori 2, K. Kudo 2, T. Osada 2 and H. Miura 2, Kyushu Univ., Japan</i></p>
<p>12P-7-107 Evaluation on 60 MHz Single-Crystal Silicon Pn Diode Vibration Sensors <i>K. Baba, H. Tanigawa, T. Nishino, T. Furutsuka and K. Suzuki, Ritsumeikan Univ., Japan</i></p>	<p>12P-7-108 Direct Fabrication of Micro-Temperature Sensor Using Femtosecond Laser Reduction Patterning <i>M. Mizoshiri, Y. Ito, S. Arakane, J. Sakurai and S. Hata, Nagoya Univ., Japan</i></p>	<p>12P-7-109 Atmospheric Vapor Phase Deposition of Nanometer-Thick Anti-stiction Coatings of Fluoropolymer for Silicon Surface <i>S. Itoh 1, K. Takahashi 2, H. Morita 1, K. Fukuzawa 1 and H. Zhang 1, 1 Nagoya Univ. and 2 Toyohashi Univ. of Technol., Japan</i></p>	<p>12P-7-127L Fabrication of Metal-Insulator-Metal Sub-Micron Gratings by High Aspect Ratio Nanoimprint <i>M. Mitsudome 1, H. Honma 1,2, S. Itoh 3, M. Ishida 1, K. Sawada 1 and K. Takahashi 1, 1 Toyohashi Univ. of Technol., 2 JSPS, 3 Nagoya Univ., Japan</i></p>
<p>12P-7-128L Bonding Dynamics of Compliant Micro-Bump During Ultrasonic Bonding Investigated by Using Si Strain Gauge <i>K. Iwanabe 1,2, K. Nakadozono 1, Y. Senda 1 and T. Asano 1,2, 1 Kyushu Univ. and 2 JST-CREST, Japan</i></p>			

ANA Crowne Plaza Toyama (Room Ohtori, 3F)

18:20-20:20 Banquet

Friday, November 13

Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
13A-8: Symposium A: Symp. on "Big Data" for Advanced Patterning II A. Yamaguchi (Hitachi) H. Yamashita (NuflareTechnol.)	13B-8: Nanofabrication III S. Shingubara (Kansai Univ.) R. Hasunuma (Tsukuba Univ.)	13C-8: Nanocarbon Application I K. Yanagi (Tokyo Metropolitan Univ.) S. Chiashi (Univ. of Tokyo)	13D-8: Microsystem Technology and MEMS I T. Namazu (Univ. of Hyogo) E. Iwase (Waseda Univ.)
13A-8-1 9:00 Holistic Lithography: a Data Driven Framework for Advanced Patterning Optimization (Invited) S. Hunsche and Y. Zou, ASML/Brion Technologies, USA	13B-8-1 9:00 Si-Based Light Trapping Nano-Structures for Device Applications (Invited) J. Xu, Nanjing Univ., China	13C-8-1 9:00 Wearable Electronics Using Carbon Hybrid Nanostructures (Invited) J.-U. Park, UNIST, Korea	13D-8-1 9:00 MEMS-Based Information Communication Technology (Invited) N. Miki 1,2, 1 Keio Univ. and 2 JST-PRESTO, Japan
13A-8-2 9:30 Litho Turnkey Solution with Smart Data Management (Invited) T. Matsuyama, H. Aoyama, S. Kudo, H. Kono, A. Sugiyama, P. Seemooon and K. Masaki, Nikon, Japan	13B-8-2 9:30 Synthesis of Ge-core/Si-shell Nanowires with Conformal Shell Thickness Deposited after Au Removal M. Simanullang, G.B.M. Wisna, T. Noguchi, K. Usami and S. Oda., Tokyo Inst. of Technol., Japan	13C-8-2 9:30 Photovoltaic Performance of Perovskite Solar Cells Using Carbon Nanotubes/Graphene Oxide Layer F. Wang 1, M. Endo 1, S. Mouri 1, Y. Miyauchi 1, Y. Ohno 2, A. Wakamiya 1, Y. Murata 1 and K. Matsuda 1, 1 Kyoto Univ. and 2 Nagoya Univ., Japan	13D-8-2 9:30 Information Transfer Using Wearable Thin Electro Tactile Displays with Micro Needle Electrodes M. Tezuka 1, N. Kitamura 1 and N. Miki 1,2, 1 Keio Univ. and 2 JST-PRESTO, Japan
	13B-8-3 9:50 Switching and Magnetoresistance Characteristics Observed in the ReRAM Device with Ferromagnetic Electrodes H. Yoshida, D. Itou, T. Shimizu, T. Ito and S. Shingubara, Kansai Univ., Japan	13C-8-3 9:50 Carbon Nanotube Mechanical Resonator Controlled by Graphene Induced Van-der-Waals Interaction A. Nagataki 1,2, K. Takei 1, T. Arie 1 and S. Akita 1, 1 Osaka Pref. Univ. and 2 NIMS, Japan	13D-8-3 9:50 Finger-Tip Size Quantitative Real-time PCR Device for Early Detection of Cancer Y. Kimura, M. Ikeuchi and K. Ikuta, Univ. of Tokyo, Japan
	13B-8,9 Author's Interview: 11:45-11:55	13C-8-4 10:10 Electrical Detection of Polymerase Chain Reaction Using Graphene Field-Effect Transistors M. Okano 1, S. Norhayati 1, V. Rajiv 1, T. Ono 1, Y. Kanai 1, Y. Ohno 1,2, K. Maehashi 1,3, K. Inoue 1, F. Takei 4, K. Nakatani 1 and K. Matsumoto 1, 1 Osaka Univ., 2 Univ. of Tokushima., 3 Tokyo Univ. of Agric. and Technol. and 4 Natl. Defense Med. College, Japan	13D-8-4 10:10 Surface Fluorination of Sputter-deposited TiO ₂ Thin Films for Accelerating Response of Optically-Driven Capillary Pump T. Kobayashi, H. Maeda and S. Konishi, Ritsumeikan Univ., Japan
		13C-8, 9 Author's Interview: 11:55-12:05	13D-8, 9 Author's Interview: 11:45-11:55
Lobby (2F)			
Coffee Break			
Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)
13A-9: Symposium A: Symp. on "Big Data" for Advanced Patterning III T. Sato (Toshiba) T. Azuma (EIDEC)	13B-9: Nanofabrication IV A. Kohno (Fukuoka Univ.) K. Takase (Nihon Univ.)	13C-9: Nanocarbon Application II S. Okada (Univ. of Tsukuba) K. Yanagi (Tokyo Metropolitan Univ.)	13D-9: Microsystem Technology and MEMS II R. Takigawa (Kyushu Univ.) M. Ikeuchi (Univ. of Tokyo)
13A-9-1 10:15 Advanced Manufacturing Insight : A Framework for Big Data Analytics in Semiconductor Manufacturing (Invited) B.E. Stine, R. Burch, K. Subramanian and L. Zhu, PDF Solutions, USA	13B-9-1 10:25 Formation of Artificial Two-Dimensional Electron Systems Using Atom Manipulation Technique M. Nantoh and K. Ishibashi, RIKEN, Japan	13C-9-1 10:45 Improving Composite Properties and Biosensors Sensitivity Using Low Cost Nanostructured Carbons (Invited) P. Jagdale 1, F.R. Hernandez 2, D. Demarchi 1 and A. Tagliaferro 1, 1 Politecnico Torino, Italy and 2 Univ. of Houston, USA	13D-9-1 10:45 FIB-Induced-Damage Recovery Mechanism of Silicon Nanowires by Vacuum Annealing T. Fujii 1,2, T. Kozeki 1, K. Sudoh 3, E. Miura-Fujiwara 1, S. Inoue 1 and T. Namazu 1, 1 Univ. of Hyogo, 2 JSPS and 3 Osaka Univ. Japan
13A-9-2 10:45 Small Number, Big Data – Patterning Challenges for Nano Scale (Invited) K. Nawa, Tokyo Electron, Japan	13B-9-2 10:45 Hydrogel-Encapsulated Silica Core combined with Chitosan Chains as an Efficient Drug Delivery System S.B. Bae and S.W. Lee, Gachon Univ., Korea	13C-9-2 11:15 Polythiophene-Molecular-Based Transistor with Graphene Nanogap Electrodes T. Ikuta 1, S. Tamba 1, Y. Kanai 1, T. Ono 1, Y. Ohno 1,2, K. Maehashi 1,3, K. Inoue 1, Y. Ie 1, Y. Aso 1, K. Matsumoto 1, 1 Osaka Univ., 2 Univ. of Tokushima and 3 Tokyo Univ. of Agric. and Technol., Japan	13D-9-2 11:05 Thermoreflectance-Based Spatially-Resolved Stress Distribution Measurement Technique for Single Crystal Silicon Structures S. Miyake 1, T. Kato 1, H. Taguchi 1 and T. Namazu 2, 1 Kobelco Res. Inst. and 2 Univ. of Hyogo, Japan

13A-9-3 11:15 "Big data" in Semiconductor Metrology and Inspection: Why and How? (Invited) <i>H. Fukuda, Hitachi-Hightechnologies, Japan</i>	13B-9-3 11:05 Nanofabrication Technique for High Density Magnetic RAMs <i>T. Sugii, H. Noshiro, Y. Yamazaki, C. Yoshida and Y. Iba, Fujitsu, Japan</i>	13C-9-3 11:35 Graphene-Based Flexible Capacitive Touch Panels and their Performance <i>M. Kang and J.-H. Ahn, Yonsei Univ., Korea</i>	13D-9-3 11:25 A Stiffness Tunable Device Encapsulating Magnetorheological Fluids into Thin Flexible Polymer Structure <i>H. Ishizuka and N. Miki, Keio Univ., Japan</i>	
	13B-9-4 11:25 Fabrication and Electrical Properties of Nanogap Electrodes Using Semiconductor Process <i>Y. Yoshimizu, Y. Tanaka, H. Tomita and K. Asakawa, Toshiba, Japan</i>	13C-8, 9 Author's Interview: 11:55-12:05		13D-8, 9 Author's Interview: 11:45-11:55
	13B-8,9 Author's Interview: 11:45-11:55			
Room A (203 and 204, 2F)	Room B (202, 2F)	Room C (201, 2F)	Room D (Special Conf. Room, 2F)	
13A-10: Advanced Photolithography <i>J. Miyazaki (ASML)</i> <i>T. Uchiyama (Toshiba)</i>	13B-10: Nanodevices III <i>T. Maemoto (Osaka Inst. of Technol.)</i> <i>Y. Ishikawa (Nara Inst. of Sci. and Technol.)</i>	13C-10: Nanocarbon Application III <i>K. Yanagi (Tokyo Metropolitan Univ.)</i> <i>S. Chiashi (Univ. of Tokyo)</i>	13D-10: Microsystem Technology and MEMS III <i>T. Tsuchiya (Kyoto Univ.)</i> <i>S. Nagasawa (Shibaura Inst. of Technol.)</i>	
13A-10-1 13:30 Extending EUV lithography to Sub-8nm Resolution (Invited) <i>J.T. Neumann and R. Garreis, Carl Zeiss SMT, Germany</i>	13B-10-1 Withdrawn 13:30 Improvement of Efficiency Droop in Blue InGaN Light Emitting Diode With p-InGaN/GaN SPS Last Barrier and p-AlGaN/GaN SPS-EBL <i>R.K. Lin 1, C.K. Wang 1, Y.Z. Chiou 1, S.P. Chang 2 and S.J. Chang 2, 1 Southern Taiwan Univ. of Sci. and Technol. and 2 Natl. Cheng Kung Univ., Taiwan</i>	13C-10-1 13:30 Effect of Metal Contact on Transport Properties of Graphene Field Effect Devices <i>Y. Ito 1, K. Katakura 1, H. Sonoda 1, S. Higuchi 1, Y. Ootuka 1, H. Tomori 1, 2 and A. Kanda 1, 1 Univ. of Tsukuba and 2 JST-PRESTO, Japan</i>	13D-10-1 13:30 Development of Two Dimensional Scanning Micro-Mirror Made by Magnetic Polymer Composite <i>J. Suzuki 1, K. Terao 1, H. Takao 1, F. Shimokawa 1, F. Oohira 2, T. Namazu 3 and T. Suzuki 4, 1 Kagawa Univ., 2 Open Univ. of Japan, 3 Univ. of Hyogo and 4 Gunma Univ., Japan</i>	
13A-10-2 14:00 Observation Result of Actual Phase Defects on an EUV Mask Using Micro Coherent EUV Scatterometry Microscope <i>H. Hashimoto 1, T. Harada 1, T. Amano 2, H. Kinoshita 1 and T. Watanabe 1, 1 Univ. of Hyogo and 2 EIDEC, Japan</i>	13B-10-2 13:50 Design of Dual Pass Color Filter for Multi-spectral Imaging Applications <i>M.G. Shin and Y.M. Song, Pusan Natl. Univ., Korea</i>	13C-10-2 13:50 Electron-State Tuning of Bilayer Graphene by Defects <i>K. Kishimoto and S. Okada, Univ. of Tsukuba, Japan</i>	13D-10-2 13:50 The Three-Dimensional Actuation of the MEMS Scanner with Single Pair of Beams and Single Driving System <i>Y. Oguchi, C. Iino and E. Iwase, Waseda Univ., Japan</i>	
13A-10-3 14:20 Measurement Result of an EUV Collector Mirror Using a Large Reflectometer at NewSUBARU <i>H. Iguchi 1, H. Hashimoto 1, M. Kuki 1, T. Harada 1, H. Kinoshita 1, T. Watanabe 1, Y.Y. Platonov 2, M.D. Kriese 2 and J.R. Rodriguez 2, 1 Univ. of Hyogo, Japan and 2 Rigaku Innovative Technol., USA</i>	13B-10-3 14:10 Investigation of Sensor Performance in Tunneling Field Effect Transistor (TFET) as Highly Sensitive and Multi-Sensing Biosensors <i>R. Lee, D.W. Kwon, S. Kim, D.H. Kim and B.-G. Park, Seoul Nat. Univ., Korea</i>	13C-10-3 14:10 Position-Controlled Graphene Growth Using Micropatterning on Catalytic Copper Surface <i>Y. Mori 1, T. Ikuta 1, T. Ono 1, Y. Kanai 1, Y. Ohno 1,2, K. Maehashi 1,3, K. Inoue 1 and K. Matsumoto 1, 1 Osaka Univ., 2 Univ. of Tokushima. and 3 Tokyo Univ. of Agric. and Technol., Japan</i>	13D-10-3 14:10 First Demonstration of an X-Ray Mirror Using Focused Ion Beam <i>M. Numazawa 1, Y. Ezoe 1, K. Ishikawa 2, T. Ogawa 1, M. Sato 1, K. Nakamura 1, K. Takeuchi 1, M. Terada 1, T. Ohashi 1, K. Mitsuda 3, R. Kelly 4 and K. Murata 5, 1 Tokyo Metropolitan Univ., 2 RIKEN, 3 JAXA, Japan, 4 FEI, USA and FEI Japan Nanoport, Japan</i>	
13A-10 Author's Interview: 14:40-14:50	13B-10-4 14:30 Cryogenic Charge Pumping Using Silicon on Insulators <i>T. Watanabe 1, M. Hori 1, T. Saruwatari 1, A. Fujiwara 2 and Y. Ono 1, 1 Univ. of Toyama and 2 NTT, Japan</i>	13C-10-4 14:30 Electric Double Layer Light-Emitting Diodes of Monolayer WSe ₂ <i>T. Fujimoto 1, J. Pu 1, J.-K. Huang 2, L.-J. Li 2, T. Sakanoue 1 and T. Takenobu 1, 1 Waseda Univ, Japan and 2 KAUST, Saudi Arabia</i>	13D-10-4 Withdrawn 14:30 Characterization of Transfer Printed Ultrathin Piezoelectric Strain Sensor <i>T. Yamashita 1,2, S. Takamatsu 1,2, H. Okada 1,2, T. Itoh 2,3 and T. Kobayashi 1,2, 1 AIST, 2 NIMEMS Technol. Res. Organization and 3 Univ. of Tokyo, Japan</i>	
	13B-10 Author's Interview: 14:50-15:00	13C-10 Author's Interview: 14:50-15:00	13D-10 Author's Interview: 14:30-14:40	
Lobby (2F)				
Coffee Break				

Lobby, 2F and 3F

13P-11: 15:20-17:20 POSTER SESSION I

Lobby, 2F

Advanced Photolithography

Chairperson: J. Miyazaki (ASML)

13P-11-1 Novel 3-Dimensional Photolithography Using Coherent Proximity Exposure <i>T. Tanaka, H. Kikuta, H. Kawata, M. Yasuda, M. Sasago and Y. Hirai, Osaka Pref. Univ., Japan</i>	13P-11-2 Thermal Behavior Analysis of Multi-Stack Extreme-Ultraviolet Pellicle <i>S.-G. Lee, E.-S. Park, J.-H. Lee and H.-K. Oh, Hanyang Univ., Korea</i>	13P-11-3 Improvement of Bandwidth Stability in ArF Excimer Laser for Multiple-Patterning Immersion Lithography <i>K. Ishida, T. Kumazaki, A. Kurosu, H. Tsushima, S. Tanaka, T. Ohta, T. Matsunaga and H. Mizoguchi, Gigaphoton, Japan</i>	13P-11-100L Computational Study of Pattern Formation in Extreme Ultra Violet Lithography <i>M. Yasuda, A. Iwai, S. Hitomi, H. Kawata and Y. Hirai, Osaka Pref. Univ., Japan</i>
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Electron and Ion Beam Technologies

Chairperson: H. Yamamoto (Osaka Univ.)

13P-11-4 UV-Curable Hybrid Polymers for the Manufacturing of Individually Designed 3D (Micro)optical Elements <i>J.J. Klein 1, A. Schleunitz 1, M.M. Russew 1, R. Houbertz 2 and G. Grützner 1, 1 micro resist technol. and 2 Multiphoton Optics, Germany</i>	13P-11-5 Pulse Radiolysis in Concentrated Poly(4-hydroxystyrene) Solution: Acid Generation Dynamics in EUV and Electron Beam Chemically Amplified Resist <i>K. Okamoto 1, T. Ishida 1, H. Yamamoto 2, T. Kozawa 2, R. Fujiyoshi 1 and K. Umegaki 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan</i>	13P-11-6 Development of in-Situ Outgas Monitoring System by Quadrupole Mass Spectrometry During Heating and/or Electron Irradiation to Resist <i>S. Takahashi, Y. Minami, M. Kadoi, Y. Matsumoto and A. Sekiguchi, Litho Tech Japan, Japan</i>	13P-11-101L Effect of Acid Generator Concentration on Dissolution Behavior of Chemically Amplified Resist Used for Ionizing Radiations <i>A. Konda 1, H. Yamamoto 1, S. Yoshitake and T. Kozawa 1, 1 Osaka Univ. and 2 NuFlare Technol., Japan</i>
13P-11-102L Radiation Chemistry of Fluorinated Compounds with 2-Hydroxyhexafluoro-Isopropyl Group :Reaction Mechanism of Extreme Ultraviolet Resist <i>N. Nomura 1, K. Okamoto 1, H. Yamamoto 2, T. Kozawa 2, R. Fujiyoshi 1 and K. Umegaki 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan</i>			

Lobby, 3F

Nanocarbons

Chairperson: K. Hirahara (Osaka Univ.)

13P-11-7— Withdrawn Understanding the Nanoindentation Mechanisms of a Fullerene Monolayer on Silicon Substrate <i>W.-J. Lee 1, 2 and M.-S. Ho 2, and 1 Natl. Ctr. For High-Performance Computing and 2 Natl. Chung Hsing Univ., Taiwan</i>	13P-11-8 Effect of Access Length on I-V Characteristic of Graphene Memory <i>K. Lee, POSTECH, Korea</i>	13P-11-9 Energetics of Edge Formation Processes of Graphene <i>A. Yamanaka and S. Okada, Univ. of Tsukuba, Japan</i>	13P-11-10 Effect of Filler Particle Sizes on Dielectric Properties of Carbon Nanotube-BaTiO ₃ /Polyvinylidene Fluoride Three-Phase Composites <i>K. Silakaew, W. Saijingwong, E. Swatsitang and P. Thongbai, Khon Kaen Univ., Thailand</i>
13P-11-11 Electric Field Screening of Fullerene Cages: Energetics of a Water Molecule Encapsulated in Fullerenes <i>J. Sorimachi and S. Okada, Univ. of Tsukuba, Japan</i>	13P-11-12 Fabrication of Ni-P Alloy / Graphene Composite Films by Electroless Plating and Evaluation of Their Heat Dissipation Characteristics <i>N. Noguchi 1, S. Arai 1, Y. Suwa 2, K. Kawamura 2, 1 Shinshu Univ. and 2 Shinko Electric Industries, Japan</i>	13P-11-13 Growth of Carbon Nanoflakes on Glass Substrates by RF Sputtering for Electron Field Emission Application <i>W.-C. Shih 1, K.-Y. Lee 2 and C.-H. Lai 2, 1 Tatung Univ. and 2 China Univ. of Sci. and Technol., Taiwan</i>	13P-11-14 Boron and Nitrogen Co-Doped Graphene Synthesized by Microwave-hydrothermal Method for Metal-Free Electro-Catalyst <i>I.T. Kim, M.J. Song, Y.B. Kim and M.W. Shin, Yonsei Univ., Korea</i>
13P-11-15 Electrical Properties of Trimetallic Nitride Endohedral Fullerene Y ₃ N@C ₈₀ Solid <i>K. Sezaimaru and Y. Sun, Kyushu Inst. of Technol., Japan</i>	13P-11-16 Theoretical Analyses on NH ₄ Adsorbed Graphene Nanoribbons for Gas Sensing Material <i>N. Harada and S. Sato, Fujitsu Labs., Japan</i>	13P-11-17 A Structural Investigation of the Spherical Carbon by the Methane Decomposition with Oxidized Diamond-Supported Copper-Nickel Catalysts <i>M. Shiraishi 1, R. Shiraishi 1, K. Komatsu 1, H. Ota 1, K. ando 1, K. Nakagawa 2, H. Gamo 3, M. Eguchi 4, T. ando 5, T. Katsumata 1 and M.N.-Gamo 1, 1 Toyo Univ., 2 Kansai Univ., 3 Toppan Printing and 4 Ibaraki Univ. and 5 NIMS, Japan</i>	13P-11-18 Effect of Electrodeposition Conditions on Morphology of Tin Film Deposited on Cu/MWCNT Composite Film <i>K. Matsunaga and S. Arai, Shinshu Univ., Japan</i>

13P-11-19 Properties of Single-Layer MoS ₂ Film Fabricated by Combination of Sputtering Deposition and Post-Deposition Sulfurization Annealing Using (t-C ₄ H ₉) ₂ S ₂ S. Ishihara 1, Y. Hibino 1, N. Sawamoto 1, K. Suda 1, T. Ohashi 2, K. Matsuura 2, H. Machida 3, M. Ishikawa 3, H. Sudoh 3, H. Wakabayashi 2 and A. Ogura 1, 1 Meiji Univ., 2 Tokyo Inst. of Technol. and 3 Gas-phase Growth, Japan	13P-11-20 Thermoelectric Properties of CVD-Grown Transition Metal Dichalcogenide Monolayers K. Kanahashi 1, J. Pu 1, N.T. Cuong 2, L.-J. Li 3, S. Okada 4, H. Ohta 5 and T. Takenobu 1, 1 Waseda Univ., 2 NIMS, Japan, 3 KAUST, Saudi Arabia, 4 Univ. of Tsukuba and 5 Hokkaido Univ., Japan	13P-11-21 Characterization of X-Ray Charge Neutralizer Using Carbon-Nanotube Field Emitter S. Okawaki, S. Abo, F. Wakaya, H. Yamashita, M. Abe and M. Takai, Osaka Univ., Japan	13P-11-22 Rayleigh Scattering Spectroscopy of Single Walled Carbon Nanotubes under Various Environment T. Osawa, T. Okochi, Y. Furukawa, S. Chiashi and S. Maruyama, Univ. of Tokyo, Japan
13P-11-23 H ₂ Induced Anisotropic Etching of Chemical Vapor Deposited Hexagonal Boron Nitride (hBN) S. Sharma, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan	13P-11-24 Single-Walled Carbon Nanotube Growth Using Pd Catalyst by Alcohol Gas Source Method in High Vacuum H. Kiribayashi, S. Ogawa, A. Kozawa, T. Saida, S. Naritsuka and T. Maruyama, Meijo Univ., Japan	13P-11-25 Effect of Copper Foil Annealing Process on Large Graphene Crystal Growth by Atmospheric Pressure Chemical Vapor Deposition (AP-CVD) K.P. Sharma, S. Sharma, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan	13P-11-103L Influence of Deformations of Carbon Nanotubes on Carrier Accumulation under an Electric Field A. Hasegawa and S. Okada, Univ. of Tsukuba, Japan
13P-11-104L Electron Emission Using Multilayered-Graphene/SiO ₂ /Si Heterodevice Driven with Low-Voltage Supply in Low Vacuum D. Yoshizumi 1,2, K. Nishiguchi 1, Y. Sekine 1, K. Furukawa 1, A. Fujiwara 1 and M. Nagase 2, 1 NTT and 2 Tokushima Univ., Japan	13P-11-105L High Performance Self-Aligned Graphene Transistors using Contamination-Free Process G.-H. Park, H. Fukidome, T. Suemitsu, T. Otsuji and M. Suemitsu, Tohoku Univ., Japan	13P-11-106L Thermal Convective Inclinator Using Carbon Nanotube Yarn D.-W. Jung 1,3, Y.-H. Hwang 1, D.G. Jung 2, B.M. Sung 2, S.J. Bang 2, S.H. Kong 2 and G.S. Lee 3, 1 Korea Inst. of Industrial Technol., 2 Kyungpook Natl. Univ., Korea and 3 Univ. of Texas at Dallas, USA	13P-11-107L Quantum Interference of 2D-Band Raman Modes of Carbon Nanotubes Observed by Tip-Enhanced Raman Spectroscopy S. Chaunchaiyakul, T. Yano, K. Khoklang, P. Krukowski, M. Akai-Kasaya, A. Saito and Y. Kuwahara, Osaka Univ., Japan
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Chairperson: Y. Ishikawa (Nara Inst. of Sci. and Technol.)			
13P-11-26 The Study of Optical Cavity Structure for High-Sensitivity LTPS Lateral PIN Photo Detector with 40 Nanometer Thick Absorption Layer Y.-C. Wei, I.-C. Lee and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan	13P-11-27 Optimization of Current Injection for High-Power Light-Emitting Diode (LED) by Novel Contact Structuring S. Kim 1,2, S. Kim 1, S. Cho 3, G. Kim 2 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Samsung Electronics and 3 Gachon Univ., Korea	13P-11-28 — Withdrawn Investigation the Effect of Nitride-based LEDs with Different Growing Temperature in the hole Injection Layer K.W. Chiang 1, C.K. Wang 1, Y.Z. Chiou 1, S.W. Wang 2 and S.J. Chang 2, 1 Southern Taiwan Univ. of Sci. and Technol. and 2 Natl. Cheng Kung Univ., Taiwan	13P-11-29 Gate Tunable Schottky Barriers in Few-layer Graphene/MoS ₂ Transistors D. Qiu and E.K. Kim, Hanyang Univ., Korea
13P-11-30 Single TiO ₂ Nanotube Devices Using Ion and Electron Beam-Assisted Deposition M. Lee 1, D. Cha 1, M.-W. Ha 2 and J. Kim 1, 1 Univ. of Texas, USA and 2 Myongji Univ., Korea	13P-11-31 — Withdrawn Hot Electroluminescence in Nanowire Devices A. Lugstein, S. Glassner, S. Kral and E. Bertagnolli, Technical Univ. of Vienna, Austria	13P-11-32 Micro-fabricated Devices for Investigating One-Dimensional Thermoelectric Properties in Si Nanowires T.-S. Lee, Y.-J. Tseng, and S.-W. Lee, Natl. Ctrl. Univ., Taiwan	13P-11-33 — Withdrawn The Performance Improvement of LaAlO₃/ZrO₂/IGZO TFTs with AP PECVD by KrF Excimer Laser Annealing C.-H. Wu 1, B.-W. Huang 2, K.-M. Chang 2 and S.-J. Wang 3, 1 Chung Hua Univ., 2 Natl. Chiao Tung Univ. and 3 Natl. Cheng Kung Univ., Taiwan
13P-11-34 Structural and Electrical Characteristics of High-κ Yb ₂ O ₃ Gate Dielectrics for InGaZnO Thin-Film Transistors T.-M. Pan, C.-H. Chen, H.-J. Wang and J.-L. Her, Chang Gung Univ., Taiwan	13P-11-35 Sub 10 ns Fast Switching and Resistance Control in Lateral GeTe-Based Phase-Change Memory Y. Yin, Y. Zhang, Y. Takehana, R. Kobayashi, H. Zhang and S. Hosaka, Gunma Univ., Japan	13P-11-36 Withdrawn Impact of Thickness and Compliance Current on Resistive Switching Behavior of SiNx-Based RRAM for 3D Vertical Resistive Random Access Memory Application S. Kim 1, S. Jung 1, M. H. Kim 1, H. D. Kim 2, S. Cho 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Sejong Univ. and 3 Gachon Univ., Korea	13P-11-37 Design of Thermal-Noise-Harnessing Single-Electron Circuit for Efficient Signal Propagation R. Hirashima and T. Oya, Yokohama Natl. Univ., Japan
13P-11-108L Withdrawn Self-Rectifying Resistive Switching Behavior Observed in Silicon Nitride-Based Resistive Switching Memory Using Low Pressure Chemical Vapor Deposition H. D. Kim 1, M. Yun 1, S. Kim 1, S. Kim 2 and B. G. Park 2, 1 Sejong Univ. and 2 Seoul Natl. Univ., Korea	13P-11-109L Withdrawn Stable Nonpolar Resistive Switching Characteristics of Fully Transparent Resistive Switching Memory Using Only ITO Films H. D. Kim 1, M. Yun 1, S. Kim 1, S. Kim 2 and B.-G. Park 2, 1 Sejong Univ. and 2 Seoul National Univ., Korea	13P-11-110L Withdrawn Controlling Tunnel Barrier in Si₃N₄-Based RRAM Embedding SiO₂ for Low-Power and High Density Cross-Point Array Applications S. Kim 1, S. Jung 1, M. H. Kim 1, H. D. Kim 2, S. Cho 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Sejong Univ. and 3 Gachon Univ., Korea	13P-11-111L Negative Bias Temperature Instability and Channel Hot Carrier Characteristics under Different Gate Structure S. Park 1,2, C. Lee 2, S.-H. Lee 1 and B.-G. Park 1, 1 Seoul Natl. Univ. and 2 Samsung Electronics, Korea

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13P-11-38 A Novel Fabrication Method of Microneedle Masters Using Mass-Transport-Limited Etching <i>M. Chiaranairungroj, W. Luangveeraa, A. Pimpin and W. Srituravanich, Chulalongkorn Univ., Thailand</i>	13P-11-39 Anomalous Mobility Improvement in Ultra-Low-Temperature Polycrystalline-Silicon Thin-Film Transistors on Flexible Substrate after Laser Lift-off Process <i>Y.-C. Wei, I.-C. Lee and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan</i>	13P-11-40 Flower-like Au Nanostructure Electrodeposited on Graphene Oxide-modified ITO Glass as a Highly Efficient SERS Substrate <i>T.-A. Nguyen and S.-W. Lee, Gachon Univ., Korea</i>	13P-11-41 Fabrication of Nanocone Arrays Using Two Step Metal Assisted Chemical Etching Method <i>N. Tanaka, T. Shimizu, T. Ito and S. Shingubara, Kansai Univ., Japan</i>
13P-11-42 Continuous Synthesis of Monodisperse Inorganic Nanoparticles by a Dry Process in Open Air Using an Atmospheric Plasma Jet and a Metal Wire <i>O. Shimizu and Y. Hakuta, AIST, Japan</i>	13P-11-43 CaCu ₃ Ti ₄ O ₁₂ Nanocrystalline Powder Prepared by a Gel Combustion Method Using Glycine as Fuel: Preparation, Characterization, and its Bulk Non-Ohmic and Giant Dielectric Properties <i>T. Nachaithong, E. Swatsitang and P. Thongbai, Khon Kaen Univ., Thailand</i>	13P-11-44 Patterning of Sapphire Substrates with Displacement Talbot Lithography for LED Fabrication <i>H.H. Solak, L. Wang, C. Dais and F. Clube, Eulitha, Switzerland</i>	13P-11-45— Withdrawn Investigation of Removal Mechanism of the Tungsten Thin Film in CMP Process <i>T. Momozaki, M. Mizutani, H. Ono, H. Sakurai and S. Nomura, Hitachi, Japan</i>
13P-11-46 Ultra Shallow (<14 nm) p ⁺ /n Junction in Silicon Using Nano-Second Laser Thermal Annealing <i>S.M. Jung, C.J. Park, H.S. Jeong and M.W. Shin, Yonsei Univ., Korea</i>	13P-11-47 Preparation of Al ₂ O ₃ Thin Film at Extremely Low Pressure by Using Liquid Precursor Delivery System <i>J.H. Lee and B.H. Choi, KITECH, Korea</i>	13P-11-48 Formation of Mn-Ge Nanodots Induced by Remote Hydrogen Plasma <i>Y. Wen, K. Makihara, A. Ohta and S. Miyazaki, Nagoya Univ., Japan</i>	13P-11-49 Na _{0.5} Y _{0.5} Cu ₃ Ti ₄ O ₁₂ Nanocrystalline Synthesized by a Urea Combustion Method: Preparation, Characterization, and their High Dielectric Permittivity <i>P. Saengwong 1, B. Putasaeng 2, E. Swatsitang 1, P. Thongbai 1 and S. Maensiri 3, 1 Khon Kaen Univ., 2 Natl. Sci. and Technol. Develop. Agency and 3 Suranaree Univ. of Technol., Thailand</i>
13P-11-112L Growth Mechanism and Phonon Confinement Effect in a Single CuO Nanowire <i>P.-H. Shih and S.Y. Wu, Natl. Dong Hwa Univ., Taiwan</i>	13P-11-113L Silicon Window for Low-Price Thermal Imaging System <i>B.M. Sung 1, S.H. Son 1, S.Y. Kwon 1, S.Y. Kwon 1, W.I Jang 2 and S.H. Kong 1, 1 Kyungpook Natl. Univ. and 2 ETRI, Korea</i>		
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13P-11-50 Pure VO ₂ (M) with Rod and Star-Liked Morphologies Synthesized by Controlling Hydrothermal Pressure <i>Y.C. Lu 1, C.Y. Kuan 2 and M.H. Hon 1, 1 Natl. Cheng Kung Univ. and 2 Thintech Materials Technol., Taiwan</i>	13P-11-51— Withdrawn Effect of Nanostructured Morphology on Electronic Structures of TiO₂ Photoelectrodes: Inverse Opal and Nanoparticulate Cases <i>T. Toyoda 1,4, W. Yindeesuk 1, T. Okuno 1, M. Akimoto 1, K. Kamiyama 2, S. Hayase 3,4 and Q. Shen 1,4, 1 Univ. of Electro-Commu., 2 Bunkoukeiki, 3 Kyushu Inst. of Technol. and 4 JST-CREST, Japan</i>	13P-11-52 First-Principles Simulation on Seebeck Coefficient in Semiconducting Nanomaterials <i>K. Nakamura 1,2, 1 Kyoto Univ., Japan and 2 Egypt-Japan Univ. of Sci. and Technol., Egypt</i>	13P-11-53 Raman Mapping Investigation of Semiconductor Nanowires <i>H. Rho 1, H. Kim 1 and J.D. Song 2, 1 Chonbuk Natl. Univ. and 2 KIST, Korea</i>
13P-11-54 Facile Single-Step Ammonolysis of Microcrystalline Gallium Phosphide GaP to Nanocrystalline Powders of Wide-bandgap Semiconductor Gallium Nitride GaN <i>J.F. Janik, M. Drygas and M.M. Bucko, AGH Univ. of Sci. and Technol., Poland</i>	13P-11-55 Metal Organic Frameworks-Derived Co ₃ O ₄ /Carbon Composites for Non-Aqueous Lithium-Air Battery <i>M.J. Song, I.T. Kim, Y.B. Kim and M.W. Shin, Yonsei Univ., Korea</i>	13P-11-56 Electrical and Structural Properties of BaCe _{0.85} Ru _{0.05} Y _{0.10} O _{3-δ} Thin Film Prepared by RF Magnetron Sputtering <i>M. Ochi 1, N. Suzuki 1, T. Suetsugu 1, S. Yamaguchi 1, M. Minohara 2, H. Kumigashira 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 KEK, Japan</i>	13P-11-57 Metal-Insulator Transition of VO ₂ Thin Film with Oxygen Vacancies <i>T. Suetsugu 1, T. Tsuchiya 1, M. Kobayashi 2, M. Minohara 2, K. Horiba 2, H. Kumigashira 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 KEK, Japan</i>
13P-11-58 Electronic Structure of α-Fe ₂ O ₃ Thin Film with Lattice Distortion Prepared by RF Magnetron Sputtering <i>K. Kawamura 1, N. Suzuki 1, S. Yamaguchi 1, M. Ochi 1, T. Tsuchiya 1, M. Minohara 2, M. Kobayashi 2, K. Horiba 2, H. Kumigashira 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 KEK, Japan</i>	13P-11-59 Structure, Magnetic and Electrochemical Properties of Cu-Doped BiFeO ₃ Nanoparticles Prepared by a Simple Solution Method <i>J. khajonrit and S. Maensiri, Suranaree Univ. of Technol., Thailand</i>	13P-11-60 Magneto-plasmonics on Perpendicular Magnetic CoPt Nanostructures Formed by Surface Agglomerations of Ag and Au <i>H. Yamane 1, K. Takeda 2 and M. Kobayashi 2, 1 Akita Industrial Technol. Ctr. and 2 Chiba Inst. of Technol., Japan</i>	13P-11-61 Ni-doped La _{0.5} Sr _{0.5} TiO ₃ Nanofibers: Fabrication and Intrinsic Ferromagnetism <i>W. Ponhan 1, V. Amornkitbamrung 1 and S. Maensiri 2, 1 Suranaree Univ. of Technol. and 2 Khon Kaen Univ., Thailand</i>

13P-11-114L Hydrophobicity C-Functional Groups on TiO ₂ for Removing Low-Concentration Elemental Mercury C. Y. Tsai 1, Y.H. Tseng 2, C.W. Liu 1, T.H. Kuo 3, Y.T. Pan 4 and H.C. His 1, 1 Natl. Taiwan Univ., 2 Taiwan Univ. of Sci. and Technol., 3 Tungnan Univ. and 4 Natl. Taipei Univ. of Technol., Taiwan	13P-11-115L Exploring the Size Effect of Nickel Doping in Zn-Ferrite Nanoparticles Y.-T. Tseng 1, O.A. Li 1,2, K.-Y. Shih 1, C.-R. Lin 1, H.-M. Chung 1, K.-W. Wu 1, H.-Y. Chen 1, H.-S. Hsu 1, J.-S. Lee 1, I.S. Edelman 3, 1 Natl. Pingtung Univ., 2 Siberian Federal Univ., 3 Kirensky Inst. of Physics, Taiwan	13P-11-116L Luminescence Property of BaSiO ₃ :Eu ³⁺ Phosphor with H ₃ BO ₃ as Flux K.-Y. Shih, C.-R. Lin, H.-M. Chung, Y.-T. Tseng and T.-C. Kuo, Natl. Pingtung Univ., Taiwan	13P-11-117L Novel Y Doped BiVO ₄ Thin Film Electrodes for Enhanced Photoactivity of Rhodamine B Degradation Y. Zhang 1, Z. Yi 2, G. Wu 3 and Q. Shen 1,4, 1 Univ. of Electro-Commun., Japan 2 Fujian Inst. of Res. on the Structure of Matter, China, 3 Nihon Univ. and 4 JST-CREST, Japan
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Chairperson: K. Sugano (Kobe Univ.)			
13P-11-62 Visualization of Hydration Structures at Aqueous Interface of SrTiO ₃ (100) by 3D Force Mapping Method Based on FM-AFM S. Hasegawa, K. Kobayashi and H. Yamada, Kyoto Univ., Japan	13P-11-63 Direct Visualization of Proteins in Aqueous Solution by Frequency Modulation Atomic Force Microscopy Z. Cui 1, M. Miyamoto 1, H. Kominami 1, K. Kobayashi 1, Y. Hirata 2 and H. Yamada 1, 1 Kyoto Univ. and 2 AIST, Japan	13P-11-64 A Negative-Charged Platinum-Silicide Nanoparticle-Modified Si Tip Apex for Electrostatic Force Microscopy C.-T. Lin 1, Y.-W. Chen 2, J. Su 1, C.-T. Wu 1, C.-N. Hsiao 1, M.-H. Shiao 1, M.-N. Chang 2, 1 Natl. Applied Res. Labs. and 2 Natl. Chung Hsing Univ., Taiwan	13P-11-65 Energy-Level Alignment and Electronic Coupling at Single-Molecule Junctions of Pyridyl-Anchoring Group on Au, Pd, and Pt S.-T. Chuang, M.-J. Huang and C.-H. Chen, Natl. Taiwan Univ., Taiwan
13P-11-66 Gold Nanoparticle Synthesis Using High-Speed Pulsed Mixing Microfluidic Device K. Sugano, A. Maedomari, Y. Tanaka and Y. Isono, Kobe Univ., Japan	13P-11-67 Surface Enhanced Raman Spectroscopy of Graphene by Gold Nanoparticles with Micro Beads H. Matsumura, S. Yanagiya, H. Kishikawa and N. Goto, Univ. of Tokushima., Japan	13P-11-68 Optical Assembling of Light-Absorbing Nanoparticles and Microparticles M. Miyai, Y. Yamamoto, Y. Nishimura, S. Tokonami and T. Iida, Osaka Pref. Univ., Japan	13P-11-69 Challenge to Control 5-nm-Sized Dot Arrays with a Pitch of <10 nm in a Long-Range Order along EB-Drawn Guide Lines Using PS-PDMS Self-assembly H. Zhang, S. Hosaka and Y. Yin, Gunma Univ., Japan
13P-11-118L A Constrained Rigid Body Brownian Dynamics Simulation for On-Chip Size-Separation of Cross-linked DNA Origami Tiles S. Park 1, Z. Ma 1, N. Yamashita 1, K. Kawai 2, D.-N. Kim 3, Y. Hirai 1, T. Tsuchiya 1 and O. Tabata 1, 1 Kyoto Univ., 2 Osaka Univ. and 3 Seoul Natl. Univ., Korea	13P-11-119L Temporal Control of Bacteriophage T4 DNA Concentration on a Nanopore by Using Inverted-Electron Beam Lithography A. Hoshino and K. Mabuchi, Univ. of Tokyo, Japan		
Nanoimprint, Nanoprint and Rising Lithography			
Chairperson: M. Okada (Univ. of Hyogo)			
13P-11-70 Chlorine-Based Inductively Coupled Plasma Etching of GaAs Using Tripodal Paraffinic Triptycene (TripC ₁₂) as a Nanoimprint Resist Mask A. Matsutani 1, F. Ishiwari 1, Y. Shoji 1, T. Uehara 2, M. Nakagawa 2 and T. Fukushima 1, 1 Tokyo Inst. of Technol. and 2 Tohoku Univ., Japan	13P-11-71 Computational Study on Mechanism of Peeling Release Method in Nanoimprint Lithography T. Tochino, F. Chalvin, T. Iida, M. Yasuda, H. Kawata and Y. Hirai, Osaka Pref. Univ., Japan	13P-11-72 Withdrawn Tunable Optical Strain Sensor by High-Index Contrast Grating with Nano Imprint Lithography J.-H. Huh, H.-J. Choi, Y.-H. Seong, P. Jung, J. Jun, M.-S. Byun, Y.-J. Yoo, C. Kim and H. Lee, Korea Univ., Korea	13P-11-73 Study of the Durability of Antisticking Layer against Repeated Ultra Violet Nanoimprinting S. Iyoshi, M. Okada, Y. Haruyama and S. Matsui, Univ. of Hyogo, Japan
13P-11-74 Withdrawn Fabrication of Anti-Reflection Glass with Sub-Wavelength Structures based on Roll-to-Sheet Nanoimprinting C.-H. Chuang, K.-C. Wang and P.-H. Wang, Southern Taiwan Univ. of Sci. and Technol., Taiwan	13P-11-75 Evaluation of Molecular Orientation of Photo-Cross-Linkable Liquid Crystalline Polymer in 200 nm-Line and Space Pattern by Measuring Diffraction Efficiency M. Okada 1, Y. Taniguchi 1, Y. Haruyama 1, H. Ono 2, N. Kawatsuki 1 and S. Matsui 1, 1 Univ. of Hyogo and 2 Nagaoka Univ. of Technol., Japan	13P-11-76 Metallic Antireflection Structure Made from Silver Ink Using Liquid Transfer Imprint Technique T. Uchida, N. Unno and J. Taniguchi, Tokyo Univ. of Sci., Japan	13P-11-77 Fast Hot Embossing Process for Large Size Light Guide Plate Fabrication H.-C. Wang and F.-Y. Chang, Taiwan Univ. of Sci. and Technol., Taiwan
13P-11-120L Patterning of Different Substrate Materials with Thermoplastic Hardmask Resist SiPol D. Virganavicius, V.J. Cadarso, M. Bednarzik and H. Schiff, Paul Scherrer Inst., Switzerland	13P-11-121L Sub-20 nm Lift-off Techniques without Charged Particle Damage Using Thermal Scanning Probe Lithography C. Rawlings 1, S. Bonanni 2, M. Spieser 2, P. Mensch 1, S. Karg 1, P. Paul 2, H. Wolf 1, U. Duerig 1, A. Knoll 1 and F. Holzner 2, 1 IBM Res. and 2 SwissLitho, Switzerland		

BioMEMS, Lab on a Chip

Chairperson: Y. Murakami (Toyohashi Univ. of Technol.)

<p>13P-11-78 Withdrawn Needle-Free Insulin Delivery Systems for Diabetic Patients: Polymeric Microcubes for Sustained Transdermal Delivery of Insulin <i>M.H. Ling and M.-C. Chen, Natl. Cheng Kung Univ., Taiwan</i></p>	<p>13P-11-79 Immunoreaction-Period Independent Microfluidic Diagnosis Device for Detection of Prostate Specific Antigen <i>H.J. Kim, E.D. Han, Y.H. Seo and B.H. Kim, Kangwon Natl. Univ., Korea</i></p>	<p>13P-11-80 Label-Free Detection of Exosomes for Cancer Diagnosis Using Optical Diffraction by Nanostructures <i>T. Ajiri 1, T. Yasui 2, A. Ishida 1, H. Tani 1, Y. Baba 2 and M. Tokeshi 1,2, 1 Hokkaido Univ. and 2 Nagoya Univ., Japan</i></p>	<p>13P-11-81 Matrix Effect on Mass Spectra of Cytochrome C in Pulse-Heating Ionization for on-Chip Mass Spectrometry <i>X. Luo, K. Sugiyama and Y. Takamura, JAIST, Japan</i></p>
<p>13P-11-82 Separation of Large DNA Molecules by Size Exclusion Chromatography Type Microchip with on-Chip Concentration Structure <i>N. Azuma, S. Itoh, K. Fukuzawa and H. Zhang, Nagoya Univ., Japan</i></p>	<p>13P-11-83 Laser-Scanning Photocatalytic Lithography of Organosilane Monolayers for Fabrication of Artificial Neuronal Circuits <i>K. Sekine 1, H. Yamamoto 2, S. Kono 1, S. Fujishiro 1, T. Ikeda 3, A. Kuroda 3 and T. Tani 1, 1 Waseda Univ., 2 Tohoku Univ. and 3 Hiroshima Univ., Japan</i></p>	<p>13P-11-84 Two-Dimensional Micropatterning of Cells using Cell-Surface Specific binding of Hetero-Bifunctional DNA Aptamers <i>H. Terazono, H. Kim, A. Hattori, F. Nomura and K. Yasuda, Tokyo Med. and Dent. Univ., Japan</i></p>	<p>13P-11-85 Optical Control of Biomolecular Recognition with Metallic Nanoparticles <i>T. Iida, M. Tamura, Y. Nishimura and S. Tokonami, Osaka Pref. Univ., Japan</i></p>
<p>13P-11-86 Predictive Human Cardiotoxicity Measurement Assay Using a Lined-Up Thousand Cardiomyocyte Cell Network <i>A. Hattori 1, F. Nomura 2, H. Kim 1, H. Terazono 2, K. Matsuura 1, M. Odaka 1, M. Girault 1 and K. Yasuda 1,2, 1 Kanagawa Academy of Sci. and Technol. and 2 Tokyo Med. and Dent. Univ., Japan</i></p>	<p>13P-11-87 Direct Digital Manufacturing of Autonomous Centrifugal Microfluidic Device <i>Y. Ukita 1, Y. Takamura 2, and Y. Utsumi 3, 1 Univ. of Yamanashi, 2 JAIST and 3 Univ. of Hyogo, Japan</i></p>		

Microsystem Technology and MEMS

Chairperson: T. Namazu (Univ. of Hyogo)

<p>13P-11-88 Workload Assessment Aided by Non-invasive and Unobtrusive Micro-fabricated Optical Sensors <i>C.C.C. Torres 1, K. Sampei 1, H. Riyogo 1, N. Miki 1,2, 1 Keio Univ. and 2 JST-PRESTO, Japan</i></p>	<p>13P-11-89 Shape, Size, and Porosity Control of Porous Silica Nanoparticles Using Atomized Heating Method <i>K. Kiyohara, K. Inoue, S. Inoue and T. Namazu, Univ. of Hyogo, Japan</i></p>	<p>13P-11-90 Temperature Dependence of the Electrical Conductance in p-Type 3C-SiC Thin Films Transferred on Glass Substrates Using FIB <i>H.-P. Phan 1, T. Kozeki 2, T. Dinh 1, G. Ina 2, A. Qamar 1, T. Namazu 2, N.-T. Nguyen 1 and D.V. Dao 1, 1 Griffith Univ., Australia and 2 Univ. of Hyogo, Japan</i></p>	<p>13P-11-91 A Long-range Focal Length Controllable Convex Micromirror Actuated by Electromagnetic Force <i>M.M. Hossain, W. Bin and S.H. Kong, Kyungpook Natl. Univ., Korea</i></p>
<p>13P-11-92 Vortex Flows Pulsated by Thermoplasmonic Marangoni Effect <i>T. Sono, K. Namura and M. Suzuki, Kyoto Univ., Japan</i></p>	<p>13P-11-93 Fabrication of the Electroformed Long-Period Fiber Grating by MEMS Process for Temperature Sensing Application <i>C.-C. Chiang, K.-X. Lin and J.-W. Wu, Natl. Kaohsiung Univ. of Applied Sci., Taiwan</i></p>	<p>13P-11-94 Fabrication of Thermoelectric Generators with Anti-Reflection Structures Using Self-Assembled Silica Microspheres <i>T. Kondou, M. Mizoshiri, M. Mikami, Y. Itou, J. Sakurai and S. Hata, Nagoya Univ., Japan</i></p>	<p>13P-11-95 Study on Reducing Thermal Resistance in Reactively-Bonded Solder Joints <i>S. Kanetsuki 1, S. Miyake 1, J. Kuroishi 2 and T. Namazu 2, 1 Kobelco Res. Inst. and 2 Univ. Hyogo, Japan</i></p>
<p>13P-11-96 Design of MEMS Cantilever for Low Frequency Vibration Energy Harvesters <i>R. Takei 1, N. Makimoto 1, H. Okada 1, T. Itoh 1,2 and T. Kobayashi 1, 1 AIST and 2 Univ. of Tokyo, Japan</i></p>	<p>13P-11-97 Intensity and Direction Controls of Light Beam by Modulating SAW Gratings <i>Y.-O. Lee and K.K. Lee, Ajou Univ., Korea</i></p>	<p>13P-11-98 20 MHz Pn-diode Silicon Ring Resonator with in-Plane Vibration Mode <i>Y. Asahi, H. Tanigawa, T. Nishino, T. Furutsuka and K. Suzuki, Ritsumeikan Univ., Japan</i></p>	<p>13P-11-99 Electrodeposition and Characterization of CNTs-Cu Nanocomposite Thin Film <i>Z. An and T. Ono, Tohoku Univ., Japan</i></p>
<p>13P-11-122L Design Method for Cylindrical Self-Folding of Films using a Triple-Layered Structure with Internal Stress <i>S. Shimbo, T. Fujie and E. Iwase, Waseda Univ., Japan</i></p>	<p>13P-11-123L A Long-Wavelength Infrared Spectrometer Based on Tunable Fabry-Perot Interferometer <i>D.G. Jung 1, S.M. Baek 1, J.Y. Lee 1, S.Y. Kwon 1, W.I. Jang 2 and S.H. Kong 1, 1 Kyungpook Natl. Univ. and 2 ETRI, Korea</i></p>	<p>13P-11-124L Parallel Tensile-Mode Fatigue Testing of Silicon Microstructures with Integrated Piezoresistive Stain Sensors <i>A. Uesugi, Y. Hirai, T. Tsuchiya and O. Tabata, Kyoto Univ., Japan</i></p>	

12A-6-4 Withdrawn**14:50**~~Process Integration~~~~Achievements for Multiple E-Beam Direct Write~~~~I. Servin 1, P. Brandt 2, M.-L. Pourteau 1, J. Pradellos 1, P. Pimenta-Barros 1, L. Lattard 1 and M. Wielandb 1, 1 CEA-LETI, France and 2 MAPPER Lithography, The Netherlands~~**13P-11-110L Withdrawn**~~Controlling Tunnel Barrier in Si₃N₄-Based RRAM Embedding SiO₂ for Low Power and High Density Cross-Point Array Applications~~~~S. Kim 1, S. Jung 1, M. H. Kim 1, H. D. Kim 2, S. Cho 3 and B. G. Park 1, 1 Seoul Natl. Univ., 2 Sejong Univ. and 3 Gachon Univ., Korea~~~~**12P-7-36**~~~~Atmospheric Pressure Gas Ionization Sensor with Horizontal-Aligned CNT Electrodes on Flexible Substrate~~
~~K.-Y. Wang and H.-G. Cheng, Natl. Chiao Tung Univ., Taiwan~~~~**13P-11-36 Withdrawn**~~~~Impact of Thickness and Compliance Current on Resistive Switching Behavior of SiNx-Based RRAM for 3D Vertical Resistive Random Access Memory Application~~~~S. Kim 1, S. Jung 1, M.-H. Kim 1, H.-D. Kim 2, S. Cho 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Sejong Univ. and 3 Gachon Univ., Korea~~~~**12P-7-41**~~~~Growth and Properties of Pyroelectric Nano-crystals~~
~~S. Berger, Technion-Israel Inst. of Technol., Israel~~~~**13D-10-4 Withdrawn**~~~~14:30
Characterization of Transfer Printed Ultrathin Piezoelectric Strain Sensor~~~~T. Yamashita 1,2, S. Takamatsu 1,2, H. Okada 1,2, T. Itoh 2,3 and T. Kobayashi 1,2, 1 AIST, 2 NMEMS Technol. Res. Organization and 3 Univ. of Tokyo, Japan~~**11C-3-3****16:25**Photoluminescence of Nanocrystalline Zinc Stannate Phosphor Powders
M.-T. Tsai, C.-J. Jian and S.-W. Lu, Natl. Formosa Univ., Taiwan