Tuesday, November 13

Room C (The Terrace Room (1F))

13:00-16:45 Technical Seminar "EUV Lithography Tutorial" in Japanese

Park Hall (3F)

17:20-19:20 Welcome Reception

Wednesday, November 14

Room P1 (Emelald, 3F)

14P-1: Plenary Session I
Chairs: Y. Ono (Shizuoaka Univ.) and K. Nishiguchi (NTT)

14P-1-0 9:30-10:00
Opening Remarks: S. Kasai (Hokkaido Univ.), Award Presentation: Y. Ono (Shizuoka Univ.) and S. Kasai (Hokkaido Univ.)
Local Announcement from Committee: T. Kozawa (Osaka Univ.)

14P-1-1 9:50
AI Based Self-Driving Vehicles and Its Relation with Nano Electronics (Plenary)
T. Nobe, Intel and Ngoya Univ., Japan

Coffee Break

14P-1-2 10:50
EUV Lithography at Threshold of High-Volume Manufacturing and Beyond (Plenary)
A. Yen, ASML, USA

14P-1-3 11:30
Materials innovation and integration for new computing paradigms (Plenary)
K. Moselund, IBM Research Zurich, Switzealnd

Lunch

Room A (Park Plaza A (B2F))	Room B (Park Plaza D (B2F))	Room C (The Terrace Room (1F))	Room D (Emina (1F))
14A-2: Symp. A: Nano-Metrology for Exploring the Limit I Chairs: T. Sato (Toshiba Memory) T. Azuma (EIDEC)	**14B-2: Microsystem Technology and MEMS I** Chairs: R. Takigawa (Kyushu Univ.) Y. Hasegawa (Hiroshima City Univ.)	**14C-2: Nano-Tool** Chairs: R. Kometani (Univ. of Tokyo) T. Hoshino (Hirosaki Univ.)	**14D-2: Inorganic Nanomaterials I** Chairs: T. Tsuchiya (NIMS) M. Suzuki (AIST)
14A-2-1 **13:30** Applications of Dynamic Light Scattering (Invited) R. Borsali, Univ. of Grenoble Alpes, France	**14B-2-1** **13:30** Highly Sensitive Spintronic Strain-Gauge Sensor and Spin-MEMS Microphone (Invited) Y. Fuji, Y. Higashi, S. Kaji, K. Masunishi, A. Yuzawa, T. Nagata, K. Okamoto, S. Baba, T. Ono and M. Hara, Toshiba, Japan	**14C-2-1** **13:30** Application of Helium Ion Microscopy (HIM) to Nano-Electronics and bio-science (Invited) S. Ogawa, AIST, Japan	**14D-2-1** **13:30** Low-Temperature Formation of GeSn Nanodots by Tin Mediation H. Okamoto 1, K. Takita 1, K. Tsushima 1, T. Tawara 2, K. Tateno 2, G. Zhang 2, and H. Gotoh 2, 1 Hirosaki Univ. and 2 NTT, Japan
14A-2-2 **14:00** CD SEM Metrology for the 5nm Technology Node and Beyond (Invited) G.F. Lorusso 1, N. Horiguchi 1, J. Bömmels 1, C.J. Wilson 1, G. Van den bosch 1, G.S. Kar 1, T. Ohashi 2, T. Sutani 3, R. Watanabe 3, Y. Takemasa 3, M. Ikota 3, 1 imec, Belgium, 2 Hitachi and 3 Hitachi High-Technologies, Japan	**14B-2-2** **14:00** A Study of Membrane Patterning and Sacrificial-Layer Removal Process for SiGe MEMS Enabling High-Sensitivity and Low-Power Inertial Sensors H. Tomizawa, T. Saito, A. Fujimoto, Y. Kurui and A. Kojima, Toshiba, Japan	**14C-2-2** **14:00** Damage-Free Nano Sampling Technique for Carbon Nanotube Characterization K. Beppu 1, A. Fukui 1, A. Takakura 2, T. Nishihara 2, Y. Miyauchi 3, K. Itami 2 and T. Namazu 1, 1 Aichi Inst. of Technol., 2 Nagoya Univ. and 3 Kyoto Univ., Japan	**14D-2-2** **13:50** Excited Spin Engineering of $In_{0.5}Ga_{0.5}As$ Quantum Dots by an Adjacent Two-Dimensional $In_{0.1}Ga_{0.9}As$ Quantum Well Potential S. Hiura 1, K. Takeishi 1, J. Takayama 1, T. Kiba 2 and A. Murayama 1, 1 Hokkaido Univ. and 2 Kitami Inst. of Technol., Japan
14A-2-3 **14:30** Advanced CD-SEM Metrology for Novel Patterning Technologies (Invited) T. Kato, Hitachi High-Technologies, Japan	**14B-2-3** **14:20** Long-Term Mechanical Reliability of SiGe Film for MEMS Y. Matsuo 1, A. Uesugi 2, A. Fujimoto 3, T. Saito 3, H. Tomizawa 3 and T. Namazu 1, 1 Aichi Inst. of Technol., 2 Kobe Univ. and 3 Toshiba, Japan	**14C-2-3** **14:20** Temporal-Stop of Microtubule Movement by Electrical Stimulation on Virtual Cathode K. Hatazawa 1, H. Miyazako 2, R. Kawamura 3 and T. Hoshino 1,2, 1 Univ. of Hirosaki, 2 Univ. of Tokyo and 3 Saitama Univ., Japan	**14D-2-3** **14:10** Broadband Anti-Reflection Effect Based on Oblique Angle Deposition for InGaAsP/InGaAs Double Junction Solar Cells G. Oh, C.W. Ahn and E.K. Kim, Hanyang Univ., Korea
		14C-2-4 **14:40** Removal of Surface Adsorbed Kinesin by Multi-Photon Laser Ablation and Reloading toward Arbitral Patterning of Microtubule Driving Track K. Meguriya, S. Kikuchi, N. Kobayashi, H.Y. Yoshikawa, S. Nakabayashi and R. Kawamura, Saitama Univ., Japan	**14D-2-4** **14:30** Solution-Processed All-Inorganic Silicon Nanocrystal Thin Film for Electronic Device Application S. Kano and M. Fujii, Kobe Univ., Japan
		14C-2-5 **15:00** Development of Optomechanical Nanoresonators Elastically Coupled in Series for Q Factor Independent Wavelength Measurement K. Tanaka, S. Warisawa and R. Kometani, Univ. of Tokyo, Japan	

		14C-2-6 **15:20** Development of 3D Formed Tactile Sensor by High Temperature Punch Creep Forming Technique K. Nimura, K. Osaka, T. Toyoda, A. Uesugi, K. Sugano and Y. Isono, Kobe Univ., Japan	
Author's Interview: none	Author's Interview: 16:35-16:45	Author's Interview: 15:40-15:50	Author's Interview: 16:45-16:55
Room P2 (Park Plaza BC (B2F)			
Coffee Break			
Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
14A-3: Symp. A: Nano-Metrology for Exploring the Limit II Chairs: T. Sato (Toshiba Memory) T. Azuma (EIDEC)	**14B-3: Microsystem Technology and MEMS II** Chairs: Y. Tomizawa (Toshiba) D. Yamane (Tokyo Inst. of Technol.)	**14C-3: Nanodevices I** Chairs: Y. Ishikawa (NAIST)	**14D-3: Inorganic Nanomaterials II** Chairs: T. Tsuchiya (NIMS) M. Suzuki (AIST)
14A-3-1 **15:15** X-Ray Based Dimensional Metrology for The Semiconductor Industry (Invited) D.F. Sunday and J. Kline, NIST, USA	**14B-3-1** **14:55** Geometrical Compensation for Mode-Matching of (100) Silicon Ring Resonator for Vibratory Gyroscope Y. Shu, Y. Hirai, T. Tsuchiya and O. Tabata, Kyoto Univ., Japan	**14C-3-1** **16:05** Control of Heat and Charge Transport in Carbon-Nanotube-Based Thermoelectric Materials Using Bionanoparticles (Invited) M. Nakamura, NAIST, Japan	**14D-3-1** **15:05** Amorphous Transitional Metal Oxide Photocatalysts for Hydrogen Evolution Z.Y. Lin, C. Du, B. Yan and G.W. Yang, Sun Yat-sen Univ., China
14A-3-2 **15:45** X-Ray Nanoscopic Phase Imaging with Grating Interferometry (Invited) A. Momose Tohoku University, Japan	**14B-3-2** **15:15** 2D Fe-Based Metallic Glass Micromirror Driven by Electromagnetic Actuator C.-H. Ou 1, Y.-C. Lin 2, Y. Keikoin 3, T. Ono 2, M. Esashi 2 and Y.-C. Tsai 1, 1 Natl. Chung Hsing Univ., Taiwan, 2 Tohoku Univ. and 3 MEMS-CORE, Japan	**14C-3-2** **16:35** Anomalous Phonon Diffusion in Isotopically Disordered Armchair-Edge Graphene Nanoribbons N. Mori, T. Kamioka and G. Mil'nikov, Osaka Univ., Japan	**14D-3-2** **15:25** Investigation of Conducting Ni-Co Spinel Oxide Thin Film for Photoelectrochemical Cell Applications S.-Y. Tsa 1, K.-Z. Fung 1 and H.-C. Yang 2, 1 Natl. Cheng Kung Univ. and 2 Kun Shan Univ., Taiwan
14A-3-3 **16:15** Development of EUV Phase Imaging Microscope for Mask-3D-Effect and Defect Evaluation (Invited) T. Harada, Univ. of Hyogo, Japan	**14B-3-3** **15:35** 5 MHz p-n Diode Longitudinal Extensional Mode Resonator with High Efficiency K. Umeda, F. Miyazaki, H. Tanigawa, T. Furutsuka and K. Suzuki, Ritsumeikan Univ., Japan	**14C-3-3** **16:55** External Electric Field Induced Metal Insulator Transition in VO_2 Thin Films for Critical Thermal Switching Device S. Jessadaluk 1,2, N. Khemasiri 1,2, P. Rattanawarinchai 1, S. Rahong 1,2, A. Rangkasikorn 1,2, N. Kayunkid 1,2, S. Wirunchit 1,2, A. Klamchuen 3 and J. Nukeaw 1,2, 1 King Mongkut Inst. of Technol. Ladkrabang, 2 Ministry of Education and 3 NANOTEC, Thailand	**14D-3-3** **15:45** Fabrication of Micro-Heater Integrated Pt Decorated ZnO Nanorods for MEMS Compatible High Performance Miniaturized Methane Gas Sensor V.V. Kondalkar, U.-H. Lim, Y.B. Lee and K. Lee, Ajou Univ., Korea
	14B-3-4 **15:55** A Flexible Triboelectric Nanogenerator with Artificial Petal Surface G.-R. Chen, Y.-F. Huang, Y.-Y. Chen, C.-Y. Wu and Y.-C. Tsai, Natl. Chung Hsing Univ., Taiwan		**14D-3-4** **16:05** Enhancement on Densification and Crystallization of Conducting $La_{0.7}Sr_{0.3}VO_3$ Perovskite Anode Derived from Hydrothermal Process C.-Y. Liu, S.-Y. Tsai, C.-T. Ni, K.-Z. Fung and C.-Y. Cho, Natl. Cheng Kung Univ., Taiwan
	14B-3-5 **16:15** Development of Three Layered Tube Type Flow Sensor For Human Respiration Measurement Y. Mitsunari 1, S. Watanabe 1, Y. Hasegawa 1, M. Matsushima 2, T. Kawabe 2 and M. Shikida 1, 1 Hiroshima City Univ. and 2 Nagoya Univ., Japan		**14D-3-5** **16:25** Formation of Graphene-Like Films on Quartz and Si Substrates by Carbonization of Rigid-Chain Polyimide Langmuir-Blodgett Films V.V. Luchinin 1, S.I. Goloudina 1, V.M. Pasyuta 1, D.A. Kirilenko 2,3, A.N. Smirnov 2, G.A.Konoplev 1, V.V. Andrushkin 1, V.P. Sklizkova 4, I.V. Gofman 4, V.M. Svetlichnyi 4, V.V. Kudryavtsev 4, 1 St. Petersburg State Electrotechnical Univ., 2 Ioffe Inst., 3 ITMO Uni. and 3 Inst. of Macromolecular Compounds, RAS, Russia
Author's Interview: none	Author's Interview: 16:35-16:45	Author's Interview: 17:15-17:25	Author's Interview: 16:45-16:55
Room A (Park Plaza D (B2F) and Room P2 (Park Plaza BC (B2F))			
17:35-19:00 Happy Hour			

Thursday, November 15

Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
15A-4: Resist and Directed Self-Assembly Chairs: T. Azuma (EIDEC) T. Nagai (JSR)	**15B-4: Nanocarbons I** Chairs: S. Okada (Univ. of Tsukuba) K. Yanagi (Tokyo Metropolitan Univ.)	**15C-4: Nanodevices II** Chairs: M. Seki (Univ. of Tokyo) Y. Ishikawa (NAIST)	**15D-4: Microsystem Technology and MEMS III** Chairs: Y. Tomizawa (Toshiba) T. Nakakubo (Canon)
15A-4-1 **9:00** Defect Reduction Strategies for Directed Self-Assembly Process (Invited) H.S. Suh 1, P.R. Delgadillo 1, D. Bae 1,2, J. Li 1, N. Vandenbroeck 1, G. Mannaert 1, A. Nair 1 and T.-G. Kim 1, 1 imec, Belgium and 2 KAIST, Korea	**15B-4-1** **9:00** Energetics and Spin-State Tuning of Triangular h-BN Nanoflakes by an Electric Field M. Maruyama and S. Okada, Univ. of Tsukuba, Japan	**15C-4-1** **9:00** Study on Electrical Discrimination of 2D Random Nanostructures Embedded in a Si MOSFET K. Shimizu 1, Y. Ueba 2, M. Kitamura 2, Y. Ohyagi 2, M. Hoga 3, N. Tate 4, M. Naruse 5, T. Matsumoto 6 and S. Kasai 1, 1 Hokkaido Univ., 2 Dai Nippon Printing, 3 Compass Two-One, 4 Kyushu Univ., 5 NICT and 6 Yokohama Natl. Univ., Japan	**15D-4-1** **9:00** Surface Activated Bonding of $LiNbO_3$ and Si for Optical Microsystem (Invited) R. Takigawa, Kyushu Univ., Japan
15A-4-2 **9:30** Effect of Molecular Shape on Buckling Instabilities of Smectic Lamellar Phases M. Sakamoto and I. Hanasaki, Tokyo Univ. of Agriculture and Technol., Japan	**15B-4-2** **9:20** Electrostatic Actuation of Cantilevered h-BN Sheet D. Yoshikawa, Y. Miyamoto, K. Takei, T. Arie and S. Akita, Osaka Pref. Univ., Japan	~~**15C-4-2**~~ **Withdrawn** ~~**9:20**~~ ~~Novel Stacked Floating Fin Structure Gate All Around Field Effect Transistor for Design and Power Optimization~~ ~~M. Kim 1,2, K. Lee 1, S. Kim 1, S. Kim 1, S. Kim 1,2, K.H. Cho 2, S. Kim 3 and B. G. Park 1, 1 Seoul Natl. Univ., 2 Samsung Electronics Semiconductor R&D ctr. and 3 Ajou Univ., Korea~~	**15D-4-2** **9:30** Seamless Fabrication Technique for 3D Structures from Micro to Milli Scales by Using 3D Printer and Backside Exposure Method T. Tamura 1, K. Yamada 1 and T. Suzuki 1,2, 1 Gunma Univ. and 2 JST-PREST, Japan
15A-4-3 **9:50** Absorption Mechanism of Metal Precursors in Resist Polymer for Improving Etch Resistance K. Asakawa, N. Sasao and S. Sugimura, Toshiba Memory, Japan	**15B-4-3** **9:40** Synthesis of Sulfur- And Phosphorous-Doped Graphene H. Omachi 1, Z. Syrgiannis 2, T. Inoue 1, S. Hatao 3, H. Shinohara 1, H. Yoshikawa 3, M. Prato 2, 1 Nagoya Univ., Japan, 2 Univ. di Trieste, Italy and 3 Kwansei Gakuin Univ., Japan	**15C-4-3** **9:40** Impact of Gate Oxide Densification Methods on P-Type Pi-Gate Poly-Si Junctionless Accumulation Mode (JAM) FinFETs D.-R. Hsieh, K.-C. Lin and T.-S. Chao, Natl. Chiao Tung Univ., Taiwan	**15D-4-3** **9:50** Fracture Strength of a Silicon Torsional Mirror Resonator Fully Coated with Submicrometer-Thick PECVD DLC Film W. Zhang, K. Obitani, Y. Hirai, T. Tsuchiya and O. Tabata, Kyoto Univ., Japan
15A-4-4 **10:10** Improvement of Sensitivity of Chemically Amplified Resists by Adding Diphenyl Sulfone Derivatives S. Kawai 1, K. Okamoto 2, H. Yamamoto 3 and T. Kozawa 2, 1 Hokkaido Univ., 2 Osaka Univ. and 3 Quantum and Radiological Sci. and Technol., Japan	**15B-4-4** **10:00** Wearable Strain Sensor with Electrothermal Property Based on Reduced Graphene Oxide Modified Conductive Fabric D. Li 1, D. Wang 1 and Y. Fu 1,2, 1 Jiangnan Univ. and 2 Nantong Univ., China	**15C-4-4** **10:00** Charge Coupling between Polyoxometalate Molecule and a GaAs-Based Nanowire for Readout of Molecular Multiple Charge State K. Sasaki 1, S. Okamoto 1, S. Tashiro 2, T. Asai 1 and S. Kasai 1, 1 Hokkaido Univ. and 2 Univ. of Tokyo, Japan	**15D-4-4** **10:10** Micro-Fabricated Alkali Vapor Cells Sealed at Low Temperature Using asymmetric Au-in-Based Transient Liquid Phase (TLP) Bonding Y. Wang 1,2, Y. Wu 2, X. Xia 2, B. Zhang 2 and P. Jin 1, 1 Harbin Inst. of Technol. and 2 Chinese Academy of Sci., China
15A-4-5 **10:30** Reaction Mechanism of Zr Metal Resist Y. Yamashita 1, T. Chikyow1 J. Santillan 2 and T. Itani 2, 1 NIMS and 2 EIDEC, Japan		**15C-4-5** **10:20** Shape Change Dynamics of Cu Filament in Double Layer CBRAM R. Ishikawa 1, A. Tsurumaki-Fukuchi 1, M. Arita 1, Y. Takahashi 1, M. Kudo 2 and S. Matsumura 2, 1 Hokkaido Univ. and 2 Kyushu Univ., Japan	
Author's Interview: 10:50-11:00	Author's Interview: 10:20-10:30	Author's Interview: 12:35-12:45	Author's Interview: 10:30-10:40
Room P2 (Park Plaza BC (B2F)			
Coffee Break			
Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
15A-5: Electron and Ion Beam Technologies Chairs: H. Yamashita (NuflareTechnol.) J. Yanagisawa (Univ. of Shiga Pref.)	**15B-5: Inorganic Nanomaterials III** Chairs: K. Tsukagoshi (NIMS) M. Osada (Nagoya Univ.)	**15C-5: Nanodevices III** Chairs: T. Yanagida (Kyushu Univ.) M. Seki (Univ. of Tokyo)	**15D-5: Organic Nanomaterials I** Chairs: A. Masuhara (Yamagata Univ.) R. Hayakawa (NIMS)
15A-5-1 **11:10** Sources of Resist Surface Charging in Electron Beam Lithography (Invited) N. Nakayamada, H. Nomura and T. Kamikubo, NuFlare Technol., Japan	**15B-5-1** **10:45** Heterojunction Based on Atomically Thin Semiconductor and Its Application (Invited) K. Tsukagoshi, NIMS, Japan	**15C-5-1** **10:55** Selective ZnO Deposition on Polysilicon Nanobelt Device via Atomic Layer Deposition and Device-Localized Joule Heating for H_2 Sensing Y.-S. Lin and J.-T. Sheu, Natl. Chiao Tung Univ., Taiwan	**15D-5-1** **10:55** Composite Nanomaterial Semiconductor Inks for High Performance Printed Transistors and Near Infrared Photodectors (Invited) Y.-Y. Noh, Dongguk Univ., Korea

15A-5-2 **11:40** Experimental Demonstration of Large Depth of Focus Using Annular Illumination Scanning Electron Microscope M. Kimura 1, M. Enyama 1, K. Hamada 1, H. Kazumi 2 and K. Kurosawa 2, 1 Hitachi and 2 Hitachi High-Technol., Japan	**15B-5-2** **11:15** Controlled Synthesis and Transport Properties of 2D Oxide Nanosheets Y. Shi 1, M. Osada 1,2, T. Sasaki 2, 1 Nagoya Univ. and 2 NIMS, Japan	**15C-5-2** **11:15** Super-Nernstian pH Sensors Based on Hydrothermally Grown NiO Nanosheets with Sputtered WO_3 Nanoparticles C.-Y. Kuo, S.-J. Wang, R.-M. Ko and S.-Y. Wang, Natl. Cheng Kung Univ., Taiwan	**15D-5-2** **11:25** Coordination Polymers Boost Nano- and Micro-Fabrication (Invited) K. Hirai, Hokkaido Univ., Japan
15A-5-3 **12:00** A Novel Ion Beam Generator Using a Micromachined Si Emitter with an Integrated Ionic Liquid Flow Control Structure N. Van Chinh, L.Van Minh, T. Ono and H. Kuwano, Tohoku Univ., Japan	**15B-5-3** **11:35** Integration of Functional Oxide Nanosheets for Solution-Processed Ultra-Thin Electromagnetic Shielding T. Taniguchi, S. Li, H. Takehira, M. Osada, NIMS, Japan	**15C-5-3** **11:35** Modification of Photoanode by Means of Localized Surface Plasmon Resonance from Au-NPs Decorated on ZnO-NRs for Photoelectrochemical Applications N. Khemasiri 1,2, N. Soyeux 3, P. Rattanawarinchai 1, S. Jessadaluk 1, A. Klamchuen 4, A. Rengkasikorn 1, 2, S. Wirunchit 1,2, S. Rahong 1,2, N. Kayunkid 1,2 and J. Nukeaw 1,2, 1 King Mongkut Inst. of Technol. Ladkrabang, 2 Ministry of Education, 3 Univ. of Burgundy and 4 Natl. Sci. Technol. Develop. Agency, Thailand	**15D-5-3** **11:55** Organic Anti-Ambipolar Transistor for Multivalued Logic Circuit K. Kobashi 1,2, R. Hayakawa 1, T. Chikyow 1 and Y. Wakayama 1,2, 1 NIMS and 2 Kyushu Univ., Japan
15A-5-4 **12:20** Characterization of Proximity Effects in Helium Ion Beam Lithography by Direct Monte Carlo Simulation and Resist Calibration C.-L. Lee, S.-W. Chien, K.-Y. Tsai, Natl. Taiwan Univ., Taiwan	**15B-5-4** **11:55** Atomic Layer Engineering of 2D Perovskite Nanosheets M. Osada 1,2 and T. Sasaki 2, 1 Nagoya Univ. and 2 NIMS, Japan	**15C-5-4** **11:55** High Resonsivity of Solar-Blind Photodetectors Based on an Exfoliated β-Ga_2O_3 Flakes S. Oh and J. Kim, Korea Univ., Korea	
		15C-5-5 **12:15** Nano-Junction Effect on Electroluminescence Colors of *n*-ZnO Wire or Disk Arrays/*p*-GaN Film Heterojunction Light-Emitting Diodes J. Jeong and Y.J. Hong, Sejong Univ., Korea	
Author's Interview: 12:40-12:50	Author's Interview: 12:05-12:15	Author's Interview: 12:35-12:45	Author's Interview: 12:15-12:25
Lunch			
Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
15A-6: Photolithography and Patterning Chairs: T. Uchiyama (Toshiba Memory) T. Harada (Univ. of Hyogo)	**15B-6: Inorganic Nanomaterials IV** Chairs: K. Tsukagoshi (NIMS) M. Osada (Nagoya Univ.)	**15C-6: Symp. C: Thermal and Electronic Properties of Nanoscale Interfaces** Chairs: S. Okada (Univ. of Tsukuba) K. Yanagi (Tokyo Metropolitan Univ.)	**15D-6: Organic Nanomaterials II** Chairs: A. Masuhara (Yamagata Univ.) R. Hayakawa (NIMS)
15A-6-1 **14:10** EUV Material Challenges and Solutions (Invited) G. Vandenberghe, imec, Belgium	**15B-6-1** **13:50** Room Temperature coating of Ceramic Film by Aerosol Deposition (Invited) J. Akedo, AIST, Japan	**15C-6-1** **13:40** Thermal and Thermoelectric Transport in Metal-Coordinated Polymers:Towards Flexible Devices (Invited) S.K. Yee, Georgia Inst. of Technol., USA	**15D-6-1** **13:40** Quaternized Polysulfone/N,N-dimethyl Chitosan Based Anion Conducting Membrane for Fuel Cell Applications C.Y. Kim, G. Das, N.P.K. Thinh, B.H. Kim and H.H. Yoon, Gachon Univ., Korea
15A-6-2 **14:40** How to Measure Accurately True LER Occurring in EUV Lithography (Invited) H. Kawada, T. Kawasaki, J. Kakuta, T. Kondo and M. Ikota, Hitachi High-Technologies, Japan	**15B-6-2** **14:20** Solution-Processed 2D Organic Crystals for Transistor Applications (Invited) Y. Li, Nanjing Univ., China	**15C-6-2** **14:10** Study of the Thermal Properties of Nanoscale Interface with High Temporal Resolution (Invited) W. Ma, C. Dong and X. Zhang, Tsinghua Univ. China	**15D-6-2** **14:00** Fabrication of Polymer pn Homo-Junction Diodes by Spray Deposition S. Sakiyama, T. Komura, N. Mizutani and K. Fujita, Kyushu Univ., Japan
15A-6-3 **15:20** Fabrication Challenge: Standard Sample with Programmed Defect for Evaluation of beyond-7 nm-Node Pattern Inspection Tool S. Iida and T. Uchiyama, EIDEC, Japan	**15B-6-3** **14:50** Conductivity Modulation in $SrVO_3$-Based All-Solid-State Redox Transistor with Ion Transport of Li^+ or H^+ M. Takayanagi 1,2, T. Tsuchiya 2, W. Namiki 1,2, Y. Kitagawa 1,2, T. Higuchi 1 and K. Terabe 2, 1 Tohoku Univ. and 2 NIMS, Japan	**15C-6-3** **14:40** Measurements of Charge, Heat and Spin Transport in Organic Semiconductors (Invited) D. Venkateshvaran 1, S.-J. Wang 1, M. Statz 1, R.D. Pietro 2 and H. Sirringhaus 1, 1 Univ. of Cambridge and 2 Hitachi Cambridge Lab., UK	**15D-6-3** **14:20** Room-Temperature Printing Techniques for Fabricating Organic Electronics X. Liu 1, 2, M. Kanehara 2 and M. Takeo 2, 1 Zhengzhou Univ., China and 2 NIMS, Japan

	15B-6-4 **15:10** Photoelectron Spectroscopic Study on Electronic State and Surface Structure of in-Situ Cleaved In_2O_3 (111) Single Crystal T. Nagata 1, O. Bierwagen 2, Z. Galazka 3, M. Imura 1, S. Ueda 1, Y. Yamashita 1 and T. Chikyow 1, 1 NIMS, Japan, 2 Paul-Drude-Institut für Festkörperelektronik, 3 Leibniz Inst. for Crystal Growth, Germany	**15C-6-4** **15:10** Tuning of the Thermoelectric Properties of High-Purity Single-Chirality Single-Walled Carbon Nanotubes by Electrolyte Gating Y. Ichinose, A. Yoshida, K. Fukuhara, J. Eda, H. Okubo, Y. Yomogida and K. Yanagi, Tokyo Metropolitan Univ., Japan **15C-6-5** **15:30** Thermal Conductivity Measurement of a Suspended Single-Walled Carbon Nanotube by Photoluminescence Spectroscopy S. Chiashi 1,2, K. Yoshino 2, T. Kato 2, Y. Saito 2, J. Shitaba 2, T. Hanashima 2, K. Nagano 2 and Y. Homma 2, 1 Univ. of Tokyo and 2 Tokyo Univ. of Sci., Japan	
Author's Interview: 15:40-15:50	Author's Interview: 15:30-15:40	Author's Interview: 15:50-16:00	Author's Interview: 14:40-14:50
Room P (Park Plaza BC (B2F)			
Coffee Break			
Room P2 (Park Plaza BC (B2F))			
15P-7: Poster Session I (16:00-18:00, Nov. 15)			
Photolithography and Patterning		Chair:A. Yamaguchi (Hitachi)	
15P-7-1 Fabrication of High-Aspect-Ratio Transmission Grating Using Dry Development Process for 10-nm EUV Resist Evaluation by EUV Interference Lithography M. Yoshifuji, S. Niihara, T. Harada, and T. Watanabe Univ. of Hyogo, Japan	**15P-7-2** Application of Projection Exposure Using a Gradient Index Lens Array and Wet Etching to Texturing and Hydrophobic-Property Control of Stainless-Steel Plates T. Horiuchi, Y. Kazama, H. Yoshida, A. Yanagida and H. Kobayashi, Tokyo Denki Univ., Japan	**15P-7-3** Development and Its Application of One-Step Fabrication Process for Multi-Angled Micro-Structure via Synchrotron X-ray Lithography K. Kim, K. Park, G. Lim and J.H. Kim, POSTECH, Korea	
Electron and Ion Beam Technologies		Chair: J. Yamamoto (Hitachi)	
15P-7-4 Periodic Diamond Pattern Formation on Resist by Simple Orthogonally-Crossed Two Line-Scans of the Electron Beam K. Okada, T. Hioki, M. Ichimiya and J. Yanagisawa, Univ. of Shiga Pref., Japan	**15P-7-5** Three-Dimensional Trajectory Simulation of Fogging Electrons in Scanning Electron Microscope Y. Ito, T. Donga, K. Morimoto and M. Kotera, Osaka Inst. of Technol., Japan	**15P-7-6** Energy Analysis of Fogging Electrons by The Same Electric Field H. Mizuno, S. Nisimura, K. Kubo and M. Kotera, Osaka Inst. of Technol., Japan	**15P-7-7** Energy Analysis of Fogging Electrons in Scanning Electron Microscope K. Morimoto, T. Donga, Y. Ito and M. Kotera, Osaka Inst. of Technol., Japan
15P-7-8 60 keV Ar Ion Irradiation Effect on Ge(110) Surfaces R. Tsukamoto 1, M. Ichimiya 1, K. Takamiya 2, A. Kinomura 2 and J. Yanagisawa 1, 1 Univ. of Shiga Pref. and 2 Kyoto Univ., Japan	**15P-7-105L** Simulation of Resist Exposure in sub-10nm Ion Beam Lithography with FIB S.I. Zaitsev and Y.L. Shabelnikova, Inst. of Microelectronics Technol. RAS, Russia	**15P-7-106L** Investigation of Non-Charging Condition of Resist in Electon Beam Lithography S. Nishimura, H. Mizuno and M. Kotera, Osaka Inst. of Technol., Japan	**15P-7-107L** Stochastic Simulation of Pattern Formation for Chemically Amplified Resist in Electron Beam Lithography M. Koyama, M. Shirai, H. Kawata, Y. Hirai and M. Yasuda, Osaka Pref. Uuniv., Japan
Resist and Directed Self-Assembly		Chair: H. Oizumi (Gigaphoton) and S. Nagahara (Tokyo Electron)	
15P-7-9 Refractive Index Tunable Metamaterial Fabrication by Block Copolymer Self-Assembly K.H. Han, J.Y. Kim, J. Shin and S.O. Kim, KAIST, Korea	**15P-7-10** Rapid Self-Assembly of Large Area, Sub-10 nm Nanopattern with High Flory-Huggins Interaction Parameter Block Copolymer by Flash Light J.H. Kim, H.M. Jin , D.y. Park, K.J. Lee and S.O. Kim, KAIST, Korea	**15P-7-11** Laser Writing Block Copolymer Self-Assembly on the Chemically Modified Graphene Light Absorbing Layer G.G. Yang, H.M. Jin and S.O. Kim, KAIST, Korea	**15P-7-12** Au and Ag Nanoparticles Dual-Coated Calcium Alginate Fibers with Uniform Single-Layered Structure Fabricated by Molecule-Directed Self-Assembly L. Dong 1, X. Li 2, L. Yao 1, S. Xu 1, S. Xu 1 and G. Zhang 1, 1 Nantong Univ., China and 2 Shinshu Univ., Japan
15P-7-13 The Revolution of Machine Learning to Accelerate The Development of Nanotechnologies is Becoming a Reality A. Derville, G. Gey, J. Baderot, S. Martinez, G. Bernard, J. Foucher, POLLEN Metrology, France	**15P-7-108L** Lamellar Orientation of PS-PMMA Block Copolymer via Electron-Beam Induced Porlarity Switch in Nitrophenyl Self-assembled monolayer (SAM) H. Yamamoto 1, G. Dawson 2, T. Kozawa 3, A.P.G. Robinson 2, 1 QST, Japan, 2 Univ. of Birmingham, UK and 3 Osaka Univ., Japan		

Nanocarbons		Chairs: S. Chiashi (Univ. of Tokyo)	
15P-7-14 Synthesis of S Doped g-C_3N_4 Pinhole Nanosheet for Selectively Detection of Silver Ion A.N. Kadam, W.S. Jung, S.H. Park and S.W. Lee, Gachon Univ., Korea	**15P-7-15** Geometric and Electronic Structures of Two-Dimensionally Polymerized Triptycene Y. Fujii, M. Maruyama and S. Okada, Univ. of Tsukuba, Japan	**15P-7-16** Hydrogen Boride Sheets Showing Catalytic Activity As Solid Acid Catalyst A. Fujino 1, H. Nisino 1, R. Ishibiki 1, S. Ito 2, T. Fujitani 1,3, J. Nakamura 1, H. Hosono 2, T. Kondo 1,2, 1 Univ. of Tsukuba, 2 Tokyo Inst. of Technol. and 3 AIST, Japan	**15P-7-17** Composite of Nanocellulose with SnO_2 As Electrode Materials Q.N. Tran, I.T. Kim, J. Hur, C.W. Bark, H.W. Choi and S.J. Park, Gachon Univ., Korea
15P-7-18 Mechanism of Oxygen Reduction Reaction Studied with Model Catalysts of Pyridinic-N Containing Molecules on HOPG T. Akimitsu, R. Shibuya, K. Takeyasu, T. Kondo and J. Nakamura, Univ. of Tsukuba, Japan	**15P-7-19** Temperature Dependence of Catalytic Activity in Graphitization for Sn Nanoparticles M.I. Araby, S. Sharma, S. Elnobi, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan	**15P-7-20** Theoretical Study on Adsorption/Desorption of Hydrogen Molecule to the Surface of Graphene Nanoflakes H. Kawabata and H. Tachikawa, Hokkaido Univ., Japan	**15P-7-21** Improvement of Power Generating Ability of "Thermoelectric Power Generating Threads" Using Carbon-Nanotube-Composite Threads R. Arakaki and T. Oya, Yokohama Natl. Univ., Japan
15P-7-22 Facile Process for Additive-Free Electrode Fabrication with Reduce Graphene Oxide by High-Kinetic Spray for Flexible Lithium Ion Battery Anodes S.D. Kim 1, J.-G. Lee 2, T.-G. Kim 2, K. Rana 3, J.Y. Jeong 1, J.H. Park 1, S.S. Yoon 2 and J.-H. Ahn 1 ,1 Yonsei Univ., 2 Korea Univ., Korea and 3 Ctr Power Res. Inst., India	**15P-7-23** Evaluation of MoS_2 Film Fabricated by DC Bias Sputtering Method with Raman Spectroscopy Y. Oyanagi 1, S. Ishihara 1,3, Y. Hibino 1,3, N. Sawamoto 1, T. Ohashi 2, K. Matsuura 2, H. Wakabayashi 2 and A. Ogura 1, 1 Meiji Univ., 2 Tokyo Inst. of Technol. and 3 JSPS, Japan	**15P-7-24** Structural and Electrical Properties of Graphene-Polymer Composites Observed under Transmission Electron Microscope N.F. Hasmuni, I. Sudin, M. Aziz, A.Z.A. Kadir and M.Z.M. Yusop, Univ. Teknologi Malaysia, Malaysia	**15P-7-25** Direct Electroluminescence Imaging of Polycrystalline Monolayer Transition Metal Dichalcogenide Light-Emitting Devices H. Matsuoka 1, T. Juliette 1, L.-J. Li 2, T. Sakanoue 1, J. Pu 1 and T. Takenobu 1, 1 Nagoya Univ., Japan and 2 KAUST, Saudi Arabia
15P-7-26 Electrical and Transport Properties of Single Hybrid Graphite-Diamond Nanowire Grown via a Wet Chemical Route L.-C. Li and K.W. Sun, Natl. Chiao Tung Univ., Taiwan	**15P-7-109L** Spatial Distribution of Graphene Lattice Strain Induced with Nanoscale Rods H. Tomori and A. Kanda, Univ. of Tsukuba, Japan		
Nanodevices		Chair: S. Hara (Hokkaido Univ.)	
15P-7-27 Ultra-Low Leakage Technology for Sub 10nm FinFET and GAAFET by Optimized Anti Punch-Through Implantation S. Kim 1,2, S. Kim 1,2, K. Lee 1, S. Kim 1, S. Kim 1, S. Kim 1,2, K.H. Cho 2, S. Kim 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Samsung Electronics and 3 Ajou Univ., Korea	**15P-7-28** Investigation of SOI-CMOS Integrated Thermocouple and Heater for Antenna-Coupled Bolometer D. Elamaran, H. Satoh, N. Hiromoto and H. Inokawa, Shizuoka Univ., Japan	**15P-7-29** Exploring the Origin of Vth Fluctuation Caused by Ion Implantation to Source and Drain Extensions of SOI Tri-Gate FinFETs by 3D Process and Device Simulations T. Tsutsumi, Meiji Univ., Japan	**15P-7-30** Self-Consistent Simulations of Transport Characteristics in-Plane MoS_2/WS_2 Heterojunction Tunnel Transistors T. Kuroda, F. Hashimoto and N. Mori, Osaka Univ., Japan
15P-7-31 Double-Gate Single-Electron Transistor Characteristics of Single-Layer Fe-MgF_2 Granular Films T. Gyakushi, Y. Asai, A. Tsurumaki-Fukuchi, M. Arita and Y. Takahashi, Hokkaido Univ., Japan	**15P-7-32** Fabrication and Evaluation of Multi Layered Nanoparticles Embedded V-Grooved Junctionless-FET T. Ban 1, M. Uenuma 2, S. Migita 3, I. Yamasita 2, Y. Uraoka 2 and S. Yamamoto 1, 1 Ryukoku Univ., 2 NAIST and 2 AIST, Japan	**15P-7-33** Nonequilibrium Green Function Simulation of Coupled Electron-Phonon Transport in One-Dimensional Nanostructure Y. Kajiwara and N. Mori, Osaka Univ., Japan	**15P-7-34** Green Nano-Second Laser Annealing for S/D Dopants Activation in n-Channel Polycrystalline-Germanium Thin-Film Transistors via Continuous Wave Laser Crystallization Y.-S. Li, H.-H. Liang, C.-Y. Wu and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan
15P-7-35 A Stand-Alone Synaptic Transistor Embedding SiGe Quantum Well And Charge-Trap Layer with Capabilities of Short- and Long-Term Potentiation in The Biological System E. Yu 1, S. Cho 1, and B.-G. Park 2, 1 Gachon Univ. and 2 Seoul Natl. Univ., Korea	**15P-7-36** Sub-Bandgap Photodetection from Plasmonic Titanium Nitride and Germanium Heterostructure S.L. Shinde 1, S. Ishii 1 and T. Nagao 1,2, 1 NIMS and 2 Hokkaido Univ., Japan	**15P-7-37** Fabrication and Evaluation of TiN-Ag Nano Cone Array toward Localized Surface Plasmon Resonance-Based Optical Sensor Applications D. Kawasaki 1, H. Yamada 1, K. Maeno 1, K. Sueyoshi 1, H. Hisamoto 1 and T. Endo 1,2, 1 Osaka Pref. Univ. and 2 JST-PRESTO, Japan	**15P-7-38** ZnO Nanowire Functionalized Gold Nanoparticles Electrochemical Electrodes for Label-Free Glucose Detection P. Rattanawarinchai 1, N. Khemasiri 1,2, N. Soyeux 3, S. Jessadaluk 1, A. Klanchuen 4, S. Wirunchit 1,2, A. Rengkasikorn 1,2, N. Kayunkid 1,2, D. Phromyothin 1, S. Rahong 1,2 and J. Nukeaw 1,2, 1 King Mongkut Inst. of Technol. Ladkrabang, 2 Ministry of Education, Thailand, 3 Univ. of Burgundy, France and 4 Natl. Sci. Technol. Develop. Agency, Thailand
15P-7-39 Carbon Nanotube Sheet-Based Gas Sensor to Detect Carbon Monoxide Gas Molecules J.Y. Lee 1,2, J.K. Kim 1,2, S.H. Kong 1 and D. Jung 2, 1 Kyungpook Natl. Univ. and 2 KITECH, Korea	**15P-7-40** Carbon-Based Conductive Fiber with Elastic Micro-Beads for Highly Sensitive Strain Sensors S. Jang, J. Lee and C. Pang, Sungkyunkwan Univ., Korea	**15P-7-41** Fabrication and Characterization of Perovskite Solar Cells with $ZnGa_2O_4$ Mixed TiO_2 Photoelectrode H. Lee, C.w. Bark and H.W. Choi, Gachon Univ., Korea	**15P-7-42** Fabrication and Performance Evaluation of Enzyme-Type Biofuel Cell Using Electrode Modified with Two Det-Type Enzymes by Covalent Bonding H. Fujita, Y. Nishioka and S. Imai,

			Nihon Univ., Japan
15P-7-110L Dual-Mode Metasurfaces Combining Hologram and Color Printing G. Yoon 1, D. Lee 1, K.T. Nam 2 and J. Rho 1,3, 1 POSTECH, 2 Seoul Natl. Univ. and 3 Natl. Inst. of Nanomaterials Technology, Korea	**15P-7-111L** Pulse Generation Behavior of Single-Walled Carbon Nanotube/Polyoxometalate Complex Random Network X. Yu 1, D.G.O. Hernowo 1, T. Ishizuka 2, T. Kojima 2, T. Ogawa 3, H. Tanaka 1, 1 Kyushu Inst. of Technol. and 2 Tsukuba Univ. and 3 Osaka Univ., Japan	**15P-7-112L** Tailoring of Phase Transition Temperature on Doped Bismuth Titanates by Dielectric Measurement R. Tang, C.W. Bark and I.T. Kim, Gachon Univ., Korea	**15P-7-113L** Design and Performance Testing of Zinc Oxide based Surface Acoustic Wave Devices G. Rius 1, J. Sacristan1, H. Ogura 2, S. Takayanagi 2, K. Abe 2, and M. Tanemura 2, 1 Institut de Microelectr?nica de Barcelona, Spain and 2 Nagoya Inst. of Technol., Japan
Nanofabrication		Chair: Y. Liu (AIST)	
15P-7-43 Threshold Switching of NbOx Device Prepared by DC Reactive Sputtering R. Nakajima, A. Azuma, T. Shimizu, T. Ito and S. Shingubara, Kansai Univ., Japan	**15P-7-44** Preparation of Ion-Track Nanopores with Different Profiles: Precise Control of Depth-Energy Deposition Distribution Y. Sato 1, H. Koshikawa 2, S. Yamamoto 2, M. Sugimoto 2, S. Sawada 2 and T. Yamaki 1,2, 1 Gunma Univ. and 2 Quantum and Radiological Sci. and Technol., Japan		
Inorganic Nanomaterials		Chair: J. Kano (Okayama Univ.)	
15P-7-45 Enhanced Leakage Current Properties for *C*-Axis Preferred Bismuth Titanate Ceramic Films Prepared by Aerosol Deposition Method M. Suzuki, T. Tsuchiya and J. Akedo, AIST, Japan	**15P-7-46** Nickel Nanoparticles Supported on MIL-101 as a Potential Catalyst for Urea Electro-Oxidation H.S. Gil, N.T.Q. Tran, D.T. Nhac and H.H. Yoon, Gachon Univ., Korea	~~**15P-7-47**~~ **Withdrawn** ~~Self-Aligned Oxide Thin Film Transistors Using Metal Masking on Gas Teatment~~ ~~S.H. Jung, C.H. Ahn and H.K. Cho, Sungkyunkwan Univ., Korea~~	**15P-7-48** TiO_2-Intercalated Graphene Oxides with Highly Efficient Photocatalytic Degradation for Methylene Blue S. Xu 1, L. Dong 1, S. Xu 1, G. Zhang1 and C. Zhu 1, 1 Nantong Univ., China and 2 Shinshu Univ., Japan
15P-7-49 Preparation of Mesoporous Thin Films by Using Cobalt/Chitosan on Fluorine-Doped tin Oxide Glass H.-C. Yang 1 and J.-C. Tsai 2, 1 Kun Shan Univ. and 2 TSMC, Taiwan	**15P-7-50** Improvement of Crystallinity of ZnO with Inserting Multi-buffer Layer by RF Magnetron Sputtering A. Mori 1, C. Takada 1, S. Guan 1, S. Komuro 2 and X. Zhao 1, 1 Tokyo Univ. of Sci. and 2 Toyo Univ., Japan	**15P-7-51** Optical Study on Thermal Activation Processes of Carrier Dynamics in $In_{0.3}Ga_{0.7}N$ Nanodisks Y. Chen 1, T. Kiba 2, J. Takayama 1, A. Higo 3, T. Tanikawa 3, S. Samukawa 3 and A. Murayama 1, 1 Hokkaido Univ., 2 Kitami Inst. of Technol. and 3 Tohoku Univ., Japan	**15P-7-52** Modal Gain at Excited States in High-Density InGaAs Quantum Dots Investigated by Variable Stripe Length Method A. Ohtake, S. Hiura, A. Washida, J. Takayama and A. Murayama, Hokkaido Univ., Japan
15P-7-53 Temperature-Persistent High Spin Polarization and Its Dynamics in InGaAs Quantum Dots Embedded in a GaAs Quantum Well M. Takishita, S. Hiura, J. Takayama and A. Murayama, Hokkaido Univ., Japan	**15P-7-54** The Effect of Yttrium Addition on the Microstructures and Electrical Properties of Cu-Mn Alloy Thin Film Y.-T. Lee and Y.-C. Lee, Natl. Pingtung Unvi. of Sci. & Technol., Taiwan	**15P-7-55** Synthesis and Characterization of Iron-Doped Chalcogenide Spinel Nanoparticles C.-L. Pan, A. Spivakov, B.-Y. Chen, Y.-C. Chang, H.-S. Hsu, Y.-T. Tseng and C.-R. Lin, Natl. Pingtung Univ., Taiwan	**15P-7-56** Spectroscopic Studies of Well-Dispersed Magnetite Nanoparticles Synthesized under Atmospheric Pressure Y.-C. Chang, A. Spivakov, C.-L. Pan, B.-Y. Chen, H.-S. Hsu, Y.-T. Tseng and C.-R. Lin, Natl. Pingtung Univ., Taiwan
15P-7-57 MCD Peak Shift of Mn-Ga Co-Doped ZnO Thin Films Fabricated by RF Magnetron Sputtering Y. Tamamoto, M. Yamanobe and X. Zhao, Tokyo Univ. of Sci., Japan	**15P-7-58** Characteristics of Calcium, Strontium and Vanadium Doped TiO_2 Nanoparticles by Solid-State Reaction Method for Perovskite Solar Cells H.V. Quy, D.H. Truyen, H. Rui, M. Kim, S. Kim and C.W. Bark, Gachon Univ., Korea	**15P-7-59** Facile Synthesis of Cubic Hematite (α-Fe_2O_3) with Nanosized Gold Deposition and Its Enhanced Photocatalytic Activity W.S. Jung, S.H. Park, A.N. Kadam and S.W. Lee, Gachon Univ., Korea	**15P-7-60** Properties of $SrMnO_3$ Films Grown on the $SrTiO_3$ Substrate by Rf Sputtering with off-Axis Angle H. Rui, S.M. Kim, D.H. Truyen, H.V. Quy, N.T. Nguyen, T. Rui and C.W. Bark, Gachon Univ., Korea
15P-7-61 Magnetic Behavior of FeO@Carbon Core-shell Nanoparticles Prepared by Thermal Pyrolysis B.-Y. Chen, C.-L. Pan, Y.-C. Chang, Y.-T. Tseng and C.-R. Lin, Natl. Pingtung Univ., Taiwan	**15P-7-114L** Analysis of Ni-coated Nanoporous Silicon as Photocathode for Photoelectrochemical Water Splitting Application Y.-H. Yeh, Y.-H. Chou and V.K.S. Hsiao, Natl. Chi Nan Univ., Taiwan	**15P-7-115L** Strontium-Substituted Hydroxyapatite Nanofibers with a Mesoporous Structure as Drug Delivery Carriers F.-Y. Hsu, W.-X. Yu and Y.-W. Hsu, Natl. Taiwan Ocean Univ., Taiwan	**15P-7-116L** Subwavelength All-Inorganic Perovskite Nanolaser Z. Liu 1, J. Yang 2, J. Du 1, Z. Hu 2, T. Shi 1, Z. Zhang 1, Y. Liu 1, X. Tang 2, Y. Leng 1, R. Li 1, 1 Chinese Academy of Sci. and 2 Chongqing Univ., China
Organic Nanomaterials		Chair: A. Masuhara (Yamagata Univ.)	
15P-7-62 Equilibrium Studies of the Adsorption of Copper Ion onto Nanobiomaterials H.-C. Yang and H.-H. Chou, Kun Shan Univ., Taiwan	**15P-7-63** Silver Nanoparticles@Dendron-Exfoliated Reduced Graphene Oxide Nanohybrids for Surface-Enhanced Raman Scattering (SERS) Detection Y.-W. Cheng 1, C.-H. Wu 1, W.-T. Chen 2, T.-Y. Liu 2 and R.-J. Jeng 1, 1 Natl. Taiwan Univ. and 2 Ming Chi Univ. of Technol., Taiwan	**15P-7-64** Anion Exchange Membranes Based on Poly(phenylene oxide)/Cellulose Composites D.H. Kang, G.Das and H.H. Yoon, Gachon Univ., Korea	**15P-7-65** Properties of Water-Gated Organic Field-Effect Transistors Depending on Surface Morphology, Electrode Metals and Lipid Membrane T.R. Nguy 1,2, R. Hayakawa 1, V. Klinic 3, M. Petit 3, J.M. Raimundo 3, A. Charrier 3 and Y. Wakayama 1,2, 1 NIMS, 2 Kyushu Univ., Japan and 3 CNRS, France

15P-7-66 Transport Studied of Perovskites by 1/f Noise and Piezoelectric Photothermal Spectroscopy K. Lin, A*STAR, Singapore	**15P-7-67** Ion Conducting Hybride Electrolyte Using Functionalized Silica Particle for Li-Ion Batteryon B.M. Jung 1, U.H. Choi 2 and S.-B. Lee 1, 1 Korea Inst. of Materials Sci. and Pukyong Natl. Univ., Korea	**15P-7-68** Observation of Ambipolar Carrier Transport in Diarylethene-Photochromic-Channel Transistors Y. Kurokawa 1,2, R. Hayakawa 1, S. Shimada 3, K. Higashiguchi 3, Y. Noguchi 2, K. Matsuda 3 and Y. Wakayama 1, 1 NIMS, 2 Meiji Univ. and 3 Kyoto Univ., Japan	**15P-7-69** Fabricating Novel Carbon Electrode Membrane by RAFT Polymerization Method for PEFC T. Nohara 1, S. Keiji 1, Y. Takahashi 1, S. Sekine1, T. Arita 2, A. Masuhara 1, 1 Yamagata Univ. and 2 Tohoku Univ., Japan
15P-7-70 Performance Research of Polypropylene Fibers Treated by Nano Titanium Dioxide(Nano-TiO_2) Anti-Ultraviolet Finishing M. Zhu, S. Li and C. Zang, Nantong Univ., China	**15P-7-71** Nanometer-Scale Observation of Dielectric Breakdown Path in Insulating Epoxy Resin by Using Micro-Gap Electrode Device R. Sankawa 1, T. Onishi 1, K. Takahashi 1, M. Tomita 1, T. Nakamura 2, K. Mura 2, T. Yoshimitsu 2, and T. Watanabe 1. 1 Waseda Univ. and 2 Toshiba Mitsubishi-Electric Industrial Systems, Japan	**15P-7-72** Molecular Design of High-Performance π-Stacking Materials Caused by Hole Capture R. Iura and H. Tachikawa, Hokkaido Univ., Japan	**15P-7-73** Significant Improvement of The Thermoelectric Properties of Pedot:Pss by The Synergetic Effect of Nitric Acid and the Pressure of N_2 Gas M.T.Z. Myint 1, A.K.K. Kyaw 2, T. Yoshiyama 1, H. Inoue 1, T. Nishikawa 1, M. Hada 1 and Y. Hayashi 1, 1 Okayama Univ., Japan and 2 Southern Univ. of Sci. and Technol., China
15P-7-74 Controlling The Orientation of Metal-Organic Framework Crystals on Si wafer by The Carboxylic Acid Treatment on Surface C. Lee, S. Shin, C.J. Park, M. Kim and M.W. Shin, Yonsei Univ., Korea	**15P-7-117L** Fab-Compatible Nano-Lens Array Integration for Optically Efficient Top-Emitting Organic Light Emitting Diodes Y.-S. Park 1,2, J. Kwon 1,2, D.-H. Cho 1, O.E. Kwon 1, K.M. Lee 1, J. Moon 1, S. Ahn 1, N.S. Cho 1, J.-I. Lee 1 and B. Yu 1, 1 ETRI and 2 UST, Korea		
NanoTool		Chair: K. Sugano (Kobe Univ.)	
15P-7-75 Graphene Device Modification by Using Helium Ion Beam M.E. Schmidt 1, M. Haque 1, S. Kubo 1, M. Muruganathan 1, S. Ogawa 2 and H. Mizuta 1,3, 1 JAIST, 2 AIST, Japan and 3 Hitachi Europe, UK	**15P-7-76** Structural Analysis of Germanene on Al(111) by Ion Scattering Spectroscopy S. Kinoshita, O. Kubo, H. Kagitani, R. Sugahara, H. Tabata and M. Katayama, Osaka Univ., Japan	**15P-7-77** Real-Space Characterization of Reactivity towards Hydrogen Atoms at Sb_2Te_3(111) Surface S.H. Su 1 and J.C.A. Huang 1,2, 1 Natl. Cheng Kung Univ. and 2 Ministry of Sci. and Technol., Taiwan	**15P-7-78** Interaction between Eddy Currents Induced by Oscillating Magnetic Moment in Magnetic-Force Microscopy F. Wakaya and K. Oosawa, Osaka Univ., Japan
15P-7-79 Development of Multiple-Probe AFM Combined with SEM for Investigation of Neuromorphic Nanowire Network System Y. Shingaya 1, R. Higuchi 1, M. Li 1, Q. Li 1,2 and T. Nakayama 1,2, 1 NIMS and 2 Univ. of Tsukuba, Japan	**15P-7-80** Delivery of External Substance into Mouse Myoblast by Femtosecond Laser Induced Microbubbles R. Yasukuni 1, A. Koyanagi 1, G. Moran 2, K. Okano 1, S. Yamada 1, R. Meallet-Renault 2 and Y. Hosokawa 1, 1 NAIST and 2 Univ. d'Orsay Paris-Sud, France	**15P-7-81** Introduction of Megadalton Molecules into Tobacco BY-2 Cells by Femtosecond Laser Photoporation T.I. Rukmana 1, S. Yamada 1, K. Okano 1 and M. Ohtani 1, G. Moran 2, T. Demura 1, R. Yasukuni 1 and Y. Hosokawa 1, 1 NAIST, Japan and 2 Univ. d-Orsay Paris-Sud, France	**15P-7-82** Porous Silicon Chips Grafted with Flexible Styrenic Fragment for the Sensitive Detection of Volatile Organic Compounds V.-T. Vo, T.-A. Nguyen and S.-W. Lee, Gachon Univ., Korea
15P-7-83 Nonlinear Response of Oxygen Adsorption on ZnO Nanorods: the Development of Room Temperature Gas Sensor F.-M. Chang, S. Brahma, C.-W. Yang, C.-H. Wu, T.-J. Wu, C.-S. Huang and K.-Y. Lo, Natl. Cheng Kung Univ., Taiwan	**15P-7-84** Surface-Enhanced Raman Spectroscopy of DNA Bases Using Gold Nanoparticle Dimer Array K. Maruoka, K. Ikegami, A. Uesugi, K. Sugano and Y. Isono, Kobe Univ., Japan	**15P-7-85** Wavelength Detection by Optomechanical Resonator with Spiral Bull's Eye Antenna K. Penekwong 1, S. Warisawa 1, T. Sugaya 2, S. Hashimoto 2, Y. Kawano 2 and R. Kometani 1, 1 Univ. of Tokyo and 2 Tokyo Inst. of Technol., Japan	**15P-7-86** Fabrication of Movable MIM Metamaterial with Air Gap Structures S. Sekiguchi, Y. Kanamori and K. Hane, Tohoku Univ., Japan
15P-7-118L Thermal Scanning Probe Lithography for Nano Wire and Photonic Sensors C. Rawlings 2, M. Spieser 2, Z.M. Wu 2, P. Paul 2, D. Urbanas 1, H. Wolf 1, 1 IBM Res. and 2 SwissLitho, Switzerland			
Microsystem Technology and MEMS		Chairs: Y. Tomizawa (Toshiba) and R. Takigawa (Kyushu Univ.)	
15P-7-87 Enhancing the Current state of Aluminum Nitride Contour-Mode Resonators by Minimizing the Damping and Optimizing the Bottom Electrode Design S.I. Jung, C. Ryu and H.J. Kim, DGIST, Korea	**15P-7-88** Influence of Porosity on Tensile Mechanical Properties of Sintered Porous Silver Films K. Wakamoto 1, Y. Mochizuki 2, T. Otsuka 1, K. Nakahara 1 and T. Namazu 2, 1 ROHM and 2 Aichi Inst. of Technol., Japan	**15P-7-89** Time-Resolved X-ray Diffraction Measurement during Exothermic Reaction of Al/Ni Multilayer Powder by synchrotron Radiation with High-Speed Two-Dimensional Detector S. Miyake, R. Yamamoto 1, S. Kanetsuki 2, T. Namazu 2 and T. Koganezawa 3, 1 Kobe City College of Technol., 2 Aichi Inst. of Technol. and 3	**15P-7-90** Micro-Machined Flow Sensor Formed on Copper on Polyimide Substrate and Its Respiration Measurement Application A. Kato 1, Y. Hasegawa 1, K. Taniguchi 1, M. Matsushima 2, T. Kawabe 2 and M. Shikida 1, 1 Hiroshima City Univ. and 2 Nagoya Univ., Japan

		Japan Synchrotron Radiation Res. Inst., Japan	
~~15P-7-91~~ **Withdrawn** ~~Process Dependence of Electrical Properties of a Si/TiN Structure for Microbolometer Applications~~ ~~H. S. Jeon and W. G. Lee, Natl. Nanofab Ctr, Korea~~	**15P-7-92** Fabrication of Tunable Fabry-Perot Interferometer-Based Infrared Micro-Spectrometer Utilizing Electromagnetic Force D. Jung 1, J.Y. Lee 1,2, J.K. Kim 1,2, S.H. Kong 1 and D. Jung 2, 1 Kyungpook Natl. Univ. and 2 KITECH, Korea	**15P-7-93** Modification of Frequency Properties of Surface Acoustic Wave Devices Using Thin Films of Aluminum nitride S. Murakami, S. Rikimaru and T. Ito, Kyushu Inst. of Technol., Japan	**15P-7-94** Grinding and Chemical Mechanical Polishing Process of Micropore X-ray Optics Fabricated with Deep Reactive Ion Etching A. Fukushima 1, Y. Ezoe 1, K. Ishikawa 2, M. Fujitani 1, M. Numazawa 1, D. Ishi 1, R. Otsubo 1, H. Nagatoshi 1, H. Suzuki 1, T. Yuasa 1, T. Ohashi 1 and K. Mitsuda 2, 1 Tokyo Metropolitan Univ. and 2 JAXA, Japan
15P-7-95 Development of Humidity Sensor for Real-Time Monitoring of Insulating Oil in Electric Transformer G. Ryu, V. kondalkar, Y. Lee and K. Lee, Ajou Univ., Korea	**15P-7-96** Development of Pd-based MEMS Hydrogen Sensor for Transformer Oil M. Lee, V.V. Kondalkar, U. Lim and K. Lee, Ajou Univ., Korea	**15P-7-97** Development of Battery-Free Underground Sensors and Its Wireless Measurement System S. Kim, L. xiang, J. Kim and K. Lee, Ajou Univ., Korea	**15P-7-98** Effect of Oxidation Temperature on the Thermoelectric Performance of the Plate-Type Thermoelectric Power Generator N. Ogi and H. Tohmyoh, Tohoku Univ., Japan
15P-7-99 The Implantation of GaN Deep Etchnig for Flip-Chip Micro-LED Arrays C. Liou, M. Hsieh, F. Shih, Y. Huang, Z. Hu and C. Tsou, Feng Chia Univ., Taiwan	~~15P-7-100~~ **Withdrawn** ~~Design and Fabrication of a Coupled Dual-Coil for Fingerprint Sensor Application~~ ~~S. Lin, M. Hsieh, Y. Huang, F. Shih, Z. Hu and C. Tsou, Feng Chia Univ., Taiwan~~	**15P-7-101** Elctrowetting Device With Liquid Organic Semiconductor Emulsion H. Kuwae 1, A. Fujiwara 1, K. Sakamoto 1, J. Oshima 2, S. Shoji 1 and J. Mizuno 1, 1 Waseda Univ. and 2 Nissan Chemical, Japan	**15P-7-102** Stacking of Through-Silicon-via Chip Formed by Notchless Si Etching and Wet Cleaning of First Metal Layer N. Watanabe 1, H. Kikuchi 2, A. Yanagisawa 2, H. Shimamoto 1, K. Kikuchi 1, M. Aoyagi 1, A. Nakamura 2 and K. Yabe 2, 1 AIST and 2 LAPIS Semidonductor, Japan
15P-7-103 Fabrication and Operation of Suspended-Polymer-Based Spatial Light Modulator Y. Hanabusa , T. Ikuta and K. Maehashi, Tokyo Univ. of Agriculture and Technol., Japan	**15P-7-104** Laterally-Driven MEMS Tuning Fork Resonator with a p-n Diode Actuator and p-n Diode Sensor D. Nagai, F. Miyazaki, H. Tanigawa, T. Furutsuka and K. Suzuki, Ritsumeikan Univ., Japan	**15P-7-119L** Advanced Capacitive Tactile Sensor for up-to-Sixfold Sensitivity Enhancement by Reduced Structural Rigidity Y.-H. Gao, Y.-H. Jen and C.-Y. Lo, Natl. Tsing Hua University, Taiwan	**15P-7-120L** Sensitivity Enhancement in Thermoresistive Strain Sensor by Inkjet-Printed Concealing Layer C.-H. An, K.-H. Liao and C.-Y. Lo. Natl. Tsing Hua Univ., Taiwan
15P-7-121L A Sub-1mG Tri-Axis MEMS Accelerometer with Multiple Segmented Capacitance Detection Electrodes S. Otobe 1, T. Koga 1, K. Atsumi 1, D. Yamane 1, T. Konishi 2, T. Safu 2, S. Iida 2, H. Ito 1, N. Ishihara 1, K. Machida 1 and K. Masu 1, 1 Tokyo Inst. of Technol. and 2 NTT-AT, Japan			
Room P1 (Emelald, 3F)			
18:20-20:20 Banquet			

Friday, November 16

Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
16A-8: Symp. B: Recent Progress of Atomic Layer Processing (ALP) Technology Chairs: T. Nabatame (NIMS) H. Arimoto (AIST)	**16B-8: Nanocarbons II** Chairs: D. Kondo (Fujitsu Labs.) K. Yanagi (Tokyo Metropolitan Univ.)	**16C-8: Symp. D: BioMEMS, Lab on a Chip, and Nanobiotechnology** Chairs: A. Miura (Hokkaido Univ.) S. Kumagai (Toyota Technological Inst.)	**16D-8: Nanofabrication I** Chairs: R. Hasunuma (Tsukuba Univ.) K. Tomioka (Hokkaido Univ.)
16A-8-1 **9:00** Ultra-Thin Ferroelectric HfZrO2 by Atomic-Layer Deposition (ALD) for Steep Slope Transistors Application (Invited) M.H. Lee 1, C.-Y. Liao 1, G.-Y. Siang 1, C. Lo 1, H.-Y. Chen 1, S.-Y. Chen 1, Y.-J. Tseng 1, K.-T. Chen 1,2, S.T. Chang 2, and K.-S. Li 3, 1 Natl. Taiwan Normal Univ., 2 Natl. Chung Hsing Univ. and 3 Natl. Applied Res. Labs., Taiwan	**16B-8-1** **9:00** Bottom-Up Chemical Synthesis of Atomically Precise Graphene Nanoribbons and Their Potentials (Invited) A. Narita and K. Müllen, Max Planck Inst. for Polymer Res., Germany	**16C-8-1** **9:00** Three Dimensional UV Lithography Technologies for Microphysiological Systems (Invited) Y. Hirai, Kyoto Univ., Japan	**16D-8-1** **9:00** Etched Ge Surface Treatment for Ge NW/fin FETs (Invited) Y.-J. Lee, Natl. Nano Device Labs., Taiwan
16A-8-2 **9:30** Consecutive Area-Selective Deposition Using Self-Assembled Monolayer (Invited) J. Kim 1, H.S. Kim 1, J. Huang 1, J. Mohan 1, L. Cheng 1, S. Kim 1, M.M. Sung 2 and J. Lee 3, 1 Univ. of Texas Dallas, USA, 2 Hanyang Univ. and 3 Kookmin Univ., Korea	**16B-8-2** **9:30** Thermal Stability and Chemical Stability of Hydrogen Boride Sheets R. Ishibiki 1, A. Fujino 1, T. Goto 1, H. Nishino 1, S. Ito 2, N.T. Cuong 1, M. Miyauchi 2, J. Nakamura 1, H. Hosono 1,2, and T. Kondo 1, 1 Univ. of Tsukuba and 2 Tokyo Inst. of Technol., Japan	**16C-8-2** **9:30** Stimulation of Cells by Cold Atmospheric Plasma for Wound Treatment (Invited) T. Shimizu, AIST, Japan	**16D-8-2** **9:30** Evaluation of Thermal Conductivity Characteristics in Si Nanowire Covered with Oxide by UV Raman Spectroscopy R. Yokogawa 1,2, M. Tomita 1,3 T. Watanabe 2 and A. Ogura 1, 1 Meiji Univ., 2 JSPS and 3 Waseda Univ., Japan
16A-8-3 **10:00** Study of High-k Gate Insulator for GaN Power Device by Atomic Layer Deposition (Invited) T. Nabatame 1, Y. Irokawa 1, K. Shiozaki 2 and Y. Koide 1, 1 NIMS and 2 Nagoya Univ., Japan	**16B-8-3** **9:50** Energetics and Formation Mechanisms of in-Plane Heterostructures of Graphene and h-BN H. Sawahata 1, A. Yamanaka 2, M. Maruyama 1 and S. Okada 1, 1 Univ. of Tsukuba and 2 RIST, Japan	**16C-8-3** **10:00** Toward a Data-Driven Strategy for Designs of Biomaterials (Invited) T. Hayashi, Tokyo Inst. of Technol. and JST-PRESTO, Japan	**16D-8-3** **9:50** Multi-Optical Analyses on Implanted Si and Embedded SiGe Ultra Shallow Junction: the Evolution of Structure and Chemical State within 10 nm via Annealing Y. Chen, Z.-Z. Wu, F.-Y. Lee, F.-M. Chang and K.-Y. Lo, Natl. Cheng Kung Univ., Taiwan
16A-8-4 **10:30** Single Reaction Control in Atomic Layer Etching for LSI Device Fabricatrion (Invited) M. Kurihara, Hitachi, Japan	**16B-8-4** **10:10** In Situ TEM Study of Mechanical Folding of MoS_2 Crystals Grown on Graphite S. Sharma, R. Mahyavanshi, G. Kalita and M. Tanemura, Nagoya Inst. of Technol., Japan	**16C-8-4** **10:30** Next Breakthroughs in Pluripotent Stem Cell Applications (Invited) K. Tomoda Osaka Medical College, Japan	**16D-8-4** **10:10** Effect of Additives for Preparation of Vertical Holes in Si Substrate Using Metal-Assisted Chemical Etching R. Niwa, T. Shimizu, T. Ito and S. Shingubara, Kansai Univ., Japan
Author's Interview: none	Author's Interview: 12:05-12:15	Author's Interview: none	Author's Interview: 11:50-12:00

Room P2 (Park Plaza BC (B2F))

Coffee Break

Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
16A-9: Nanoimprint, Hybrid-NIL, Biomimetics, and Functional Surfaces I Chairs: A. Miyauchi (Tokyo Medical and Dental Univ.) J. Taniguchi (Tokyo Univ. of Sci.)	**16B-9: Nanocarbons III** Chairs: M. Tanemura (Nagoya Inst. of Technol.) K. Yanagi (Tokyo Metropolitan Univ.)	**16C-9: BioMEMS, Lab on a Chip, and Nanobiotechnology I** Chairs: A. Matsumoto (Tokyo Medical and Dental Univ.)	**16D-9: Nanofabrication II** Chairs: T. Shimizu (Kansai Univ.) T. Kawashima (Tohoku Univ.)
16A-9-1 **11;15** Nanoimprint Lithography of Oxides via Better Chemistry (Invited) M.S.M. Saifullah, A*STAR, Singapore	**16B-9-1** **10:45** Field Emission Properties of Graphene Edges: The Edge Shape and Functionalization Y. Gao and S. Okada, Univ. of Tsukuba, Japan	**16C-9-1** **11:15** Development of Microwave Scattering Field Tomography for Next-Generation Breast Cancer Screening (Invited) K. Kimura 1,5, A. Inagaki 1, Y. Mima 2,5, K. Doi 2,5, N. Kimura 2,5, N. Yamamoto 3,5, T. Tsuruhara 3,5, N. Watanabe 3,5, Y. Konishi 3,5, K. Okamoto 3,5, Y. Sachiko 4,5, H. Matsumoto 4,5 and K. Yamagami 4,5, 1 Kobe Univ., 2 Integral Geometry Sci. 3 Okamoto Clinic, 4 Shinko Hosp. and 5	**16D-9-1** **10:50** Pillar Patterning of Silicon / III-V Vertical Nanowire FET for 7nm Node and beyond BT. Chan 1, Z. Tao 1, E. Altamirano 1, A. Veloso 1, A. Singh 2 and J.-F. de Marneffe 1, 1 imec and 2 K.U. Leuven, Belgium

		AMED-SENTAN, Japan	
16A-9-2 **11:45** Realization of Butterfly Colours by Imprinting of Undercut Features I. Prinz 1, A. Prinz 1, A. Moharana 2, H. Außerhuber 2, H. Wanzenboeck 4, S. Ruttloff 3, D. Nees 3, M.R. Belegratis 3, P. Schaeffner 3 and M. Muehlberger 2, 1 STRATEC Consumables, 2 PROFACTOR, 3 JOANNEUM RES. Forschungsgesellschaft and 4 Vienna Technical Univ., Austria	**16B-9-2** **11:05** A Flexible and Highly Sensitive Tactile Sensor with CB/CNT Composite Film Y.-S. Lin, Y.-Y. Chen, Y.-F. Huang and Y.-C. Tsai, Natl. Chung Hsing Univ., Taiwan	**16C-9-2** **11:45** Optically Driven Nano-Robots and Chemical IC Chip for Micro-RNA Detection and Tissue Enginneing Based on 3D Micro/Nano Fabrication (Invited) K. Ikuta, Univ. of Tokyo, Japan	**16D-9-2** **11:10** Fabrication of InAs Quantum Dots on SiO_x Films by Molecular Beam Deposition A. Makaino, Y. Tanaka and K.Yamaguchi, Univ. of Electro-Comm., Japan
16A-9-3 **12:05** High Volume Semiconductor Manufacturing Using Nanoimprint Lithography A. Yabuki 1, Z. Hamaya 1, J. Seki 1, T. Asano 1, K. Sakai 1, A. Aghili 2 , M. Mizuno 2, J. Choi 2 and C. Jones 2, 1 Canon, Japan and 2 Canon Nanotechnologies, USA	**16B-9-3** **11:25** NaCl-Assisted CVD Synthesis of MoS_2 and Its Application for Phototransistors A. Ando, M. Okada, T. Mori and T. Irisawa, AIST, Japan **16B-9-4** **11:45** Room Temperature Valley Polarized Light-Emitting Diodes of Monolayer Transition Metal Dichalcogenides J. Pu 1, W. Zhang 2, Y. Kobayashi 3, Y. Takaguchi 3, Y. Miyata 3, K. Matsuda 2, Y. Miyauchi 2 and T. Takenobu 1, 1 Nagoya Univ., 2 Kyoto Univ. and 3 Tokyo Metropolitan Univ., Japan		**16D-9-3** **11:30** Ultra-Fine H-ELGP Pt-Based Nanogap Electrodes Y.Y. Choi, A. Kwon and Y. Majima, Tokyo Inst. of Technol., Japan
Author's Interview: 12:25-12:35	Author's Interview: 12:05-12:15	Author's Interview: none	Author's Interview: 11:50-12:00
Lunch			
Room A (Park Plaza A (B2F)	Room B (Park Plaza D (B2F)	Room C (The Terrace Room (1F))	Room D (Emina (1F))
16A-10: Nanoimprint, Hybrid-NIL, Biomimetics, and Functional Surfaces II Chair: Y. Shimazaki (Hitachi) K. Suzuki (AIST)	**16B-10: Nanocarbons IV** Chairs: A. Ando (AIST) K. Yanagi (Tokyo Metropolitan Univ.)	**16C-10: BioMEMS, Lab on a Chip, and Nanobiotechnology II** Chairs: A. Matsumoto (Tokyo Medical and Dental Univ.) T. Hayashi (Tokyo Inst. of Technol.)	**16D:10: Nanofabrication III** Chairs: T. Hasegawa (Waseda Univ.) H. Tanaka (Kyushu Inst. of Technol.)
16A-10-1 **13:50** Biomimetics: Emulation of Biological “Bricolage" for Sustainable Paradigm Shift toward Survival in Anthropocene (Invited) M. Shimomura, Chitose Inst. of Sci. and Technol., Japan	**16B-10-1** **13:30** (Invited) S.C. Jun, Yonsei Univ., Korea	**16C-10-1** **13:30** Injection Molding of Micro and Nanostructures for Diagnostic Applications I. Prinz 1, A. Prinz 1, G. Hawa 2, L. Sonnleitner 2, A. Missbichler 2, G. Bauer 1, C. Mauracher 1, 1 STRATEC Consumables and 2 Fianostics, Austria	**16D-10-1** **13:40** Cu-Based Three-Dimensional Microfabrication Using Femtosecond Laser Pulse-Induced Reduction of Cu_2O Nanospheres M. Mizoshiri 1, Y. Kondo 2 and A. Tanokuchi 1, 1 Nagaoka Univ. and 2 Nagoya Univ., Japan
16A-10-2 **14:20** Improvement of Efficiency of Water-Splitting Photoanode by 3D Au/SnO_2/$BiVO_4$ Micro-Cone Structure S. Ju, J. Jun, P.-H. Jung, S. Son, J. Park, M. Byun, J.-H. Jung and H. Lee, Korea Univ., Korea	**16B-10-2** **14:00** Effect of Persistent Photoconductivity on MoS_2 Mechanical Resonator T. Inoue 1, T. Saito 2, K. Takei 1 T. Arie 1, Y. Miyata 2 and S. Akita 1, 1 Osaka Pref. Univ. and 2 Tokyo Metropolitan Univ., Japan	**16C-10-2** **13:50** A Wireless Powered Smart Soft Contact Lens for Bioapplications T. Takamatsu, L. Chen and T. Miyake, Waseda Univ., Japan	**16D-10-2** **14:00** Fabrication of Fe_3O_4 Nanostructures and Investigation of Relationship between Diameter and Coercivity of Nanoparticles R. Akutsu 1, Y. Hara 2, R. Niwa 3, K. Yoshikawa 3, T. Shimizu 3, S. Shingubara 3, K. Sugawa 1, T. Toyama 1 and K. Takase 1, 1Nihon Univ, 2 Natl. Inst. of Technol. Ibaraki Colle and 3 Kansai Univ., Japan
16A-10-3 **14:40** Increase of a Liquid Rising Velocity of Biomimetic Microfine Structures by Sequence Regulations T. Yaeo, T. Kashima, K. Muto, K. Kawai and D. Ishii, Nagoya Inst. of Technol., Japan	**16B-10-3** **14:20** Electronic Structure of Thin Films of Hydrocarbon Molecules under an External Electric Field M. Matsubara and S. Okada, Univ. of Tsukuba, Japan	**16C-10-3** **14:10** Fabrication of Protein Microarray by Combination of Sortase-Mediated Peptide Ligation and Microintaglio Printing Y. Shirakata 1, R. Wakai 1, S. Ueno 1,2 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan	**16D-10-3** **14:20** Microstructure and Electrical Properties of HfO_2 Thin Films Using $La(NO_3)_3{\cdot}6H_2O$ Solution As an Oxidant S.Y. Kim, Y.C. Jung, S. Seong, T. Lee, I.-S. Park and J. Ahn, Hanyang Univ., Korea
16A-10-4 **15:00** Fabrication Technique of a Hydrophobicity 3D Hybrid Structure Using UV-Curable EB Resist K. Goto, T. Okabe and J. Taniguchi,	**16B-10-4** **14:40** Topological Dipoles and Quadrupoles F. Liu and K. Wakabayashi, Kwansei Gakuin Univ., Japan	**16C-10-4** **14:30** Development of Immuno-Wall Device for Biomarker Detection in Clinical Diagnosis K. Nishiyama 1, T. Kasama 2,3 M. Maeki 1, A. Ishida 1, H. Tani 1, and M.	**16D-10-4** **14:40** Fabrication and Evaluation of Multi-Walled Carbon Nanotube Polymer Actuator Using Electrospinning Method K. Kida, H. Kato, K. Sato and M.

Tokyo Univ. of Sci., Japan		Tokeshi 1,3, 1 Hokkaido Univ., 2 Univ. of Tokyo and 3 Nagoya Univ., Japan	Kushida, Chiba Univ., Japan
	16B-10-5 **15:00** Charge Transfer Interaction in CuI and MoS_2 Layer p-n Heterojunction R.D. Mahyavanshi, P. Desai, A.K. Ranade and M. Tanemura and G. Kalita, Nagoya Inst. of Technol., Japan	**16C-10-5** **14:50** PDMS Replica Leaf Surfaces for Phyllosphere Microbiology R. Soffe, M. Bernach, N. Altenhuber, M. Remus-Emsermann and V. Nock, Univ. of Canterbury, New Zealand	
Author's Interview: 15:20-15:30	Author's Interview: 15:20-15:30	Author's Interview: 15:10-15:20	Author's Interview: 15:00-15:10

Room P2 (Park Plaza BC (B2F)

Coffee Break

Poster Session II (15:30-17:30, Nov. 16)

Nanocarbons		Chair: K. Yanagi (Tokyo Metropolitan Univ.)	
16P-11-1 pH-Sensible Carbon Dot Coated Surface for Evaluation of Antifouling Activity-Based Fluorescence ON/OFF P.T.M. Phuong and S.Y. Park, Korea Natl. Univ. of Transportation, Korea	**16P-11-2** Preparation of Fluorescent Polymer Dot from The Carbonized of MnO_2 Nanosheets Encapsulated Hyaluronic Acid for Smart Redox-Responsive Release of Paclitaxel B. Ryplida and S.Y. Park, Korea Natl. Univ. of Transportation, Korea	**16P-11-3** Observation of the Interaction between Avidin and Iminobiotin Using Graphene FET on SiC Substrate Y. Taniguchi, T. Miki, Y. Ohno, M. Nagase, Y. Arakawa, and M. Yasuzawa, Tokushima Univ., Japan	**16P-11-4** Vertically Aligned Single-Walled Carbon Nanotube Growth from Ir Catalysts by Alcohol Gas Source Method T. Okada, K.P. Sharma, T. Saida, S. Naritsuka and T. Maruyama, Meijo Univ., Japan
16P-11-5 Comparative Study of Direct and Mediated Electron Transfer in Biosensors with Flavin Adenine Dinucleotide Glucose Dehydrogenase K. Ishida 1, A. Suzuki 1, K. Orihara 1,2, H. Muguruma, 1,2, H. Iwasa 2, A. Hiratsuka 2, K. Tsuji 3 and T. Kishimoto 3, 1 Shibaura Inst. of Technol., 2 AIST and 3 TOYOBO, Japan	**16P-11-6** Electrochemical Determination of Individual Catechins in Green Tea with Electrode Fabricated by Long-Length Carbon Nanotube Dispersed Solution S. Murakami 1, S. Takahashi 1, H. Muguruma 1, N. Osakabe 1, H. Inoue 2, and T. Ohsawa 2, 1 Shibaura Inst. of Technol. and 2 Nippon Shizai, Japan	**16P-11-7** Carbon Nanotube-Based Strain Sensor for Structural Health Monitoring J.Y. Lee 1,2, J.K. Kim 1,2, S.H. Kong 1 and D. Jung 2, Kyungpook Natl. Univ. and 2 KITECH, Korea	**16P-11-8** Biosensors and Biofuel Cells Based on Anode with Single-Walled Carbon Nanotube and Flavin Adenine Dinucleotide-Dependent Glucose Dehydrogenase K. Orihara 1,2, H. Muguruma 1,2, H. Iwasa 2, A. Hiratsuka 1,2 and H. Uzawa 2, 1 Shibaura Inst. of Technol. and 2 AIST, Japan
16P-11-9 Energetics of Water Migration through Unstitched Grain Boundaries of Graphene K. Yasuraoka, M. Maruyama and S. Okada, Univ. of Tsukuba, Japan	**16P-11-10** Topological Edge States Induced by Zak's Phase in A_3B Monolayers T. Kameda, F. Liu and K. Wakabayashi, Kwansei Gakuin Univ., Japan	**16P-11-11** The Nanoporous and Flat Substrate Effect for Graphene Humidity Sensors Y.-T. Huang 1, Y.-Y. Chen 1, C.-C. Huang 2, C.-Y. Su 2 and Y.-C. Tsai 1, 1 Natl. Chung Hsing Univ. and 2 Natl. Central Univ., Taiwan	**16P-11-12** Synthesis of Graphene and Its Application for Solar Cells X. Jin, N. Ye, Y. Kong, T. Liang and M. Xu, Zhejiang Univ., China
16P-11-13 Mechanical Properties of Graphene Nanoribbons under the Structural Modulations K. Yoneyama 1, A. Yamanaka 2 and S. Okada 1, 1 Univ. of Tsukuba and 2 RIST, Japan	**16P-11-101L** Shielding Properties of Electromagnetic Interference of Vertically-Aligned Carbon Nanotube Sheets M. Norimatsu 1, D. Kondo 1, K. Suzuki 1, M. Horibe 2, K. Watanabe 2, S. Hirose 1, T. Iwai 1 and S. Sato 1, 1 Fujitsu Labs. and 2 AIST, Japan	**16P-11-102L** Achieving High Efficiency Perovskite Solar Cells by Grain Engineering Using Semiconducting Single-Walled Carbon Nanotube S. Seo 1, I. Jeon 1, H. Zhang 1, S. Okawa 1, T. Ogamoto 1, R. Nishikubo 2, A. Saeki 2, T. Tanaka 3, H. Kataura 3, Y. Matsuo 1,4, S. Maruyama 1,3, 1 Univ. of Tokyo, 2 Osaka Univ., 3, AIST, Japan and 4 Univ. of Sci. and Tehnol. of China, China	
Nanodevices		Chair: S. Hara (Hokkaido Univ.)	
16P-11-14 Carrier Polarity Control of $MoTe_2$ Crystal by Laser Irradiation and Device Application K. Kamiya 1, H. Ouchi 1, K. Sakanashi 1, K. Ueno 2, P. Krüger 1, K. Miyamoto 1, T. Omatsu 1 J.P. Bird 1,3 and N. Aoki 1, 1 Chiba Univ. and 2 Saitama Univ., Japan and 3 SUNY Buffalo, USA	**16P-11-15** Comparative Performance of GaInNAs/GaAs Multi Quantum Well Photodetector for 1.0μm Wavelength M.S. Nordin 1, A.R. Mohmad 2, A. Boland-Thoms 1, K.A. Mohamad 3, A. Alias 3, M. Othman 4 and A.J. Vickers 1, 1 Univ. of Essex, UK, 2 Univ. Kebangsaan Malaysia, 3 Univ. Tun Hussein Onn Malaysia and 4 Univ. Sains Islam Malaysia, Malaysia	**16P-11-16** Electric-Field Optical Device Controlling Electron-Spin Polarity of InGaAs Quantum Dots H. Chen, J. Takayama, S. Hiura, K. Sueoka and A. Murayama, Hokkaido Univ., Japan	**16P-11-17** Spin Valves Comprising $Fe_3Si/FeSi_2/Fe_3Si$ Trilayer Films K. Sakai 1, Y. Asai 2, K. Ishibashi 2 and T. Yoshitake 2, 1 Kurume Col. and 2 Kyushu Univ., Japan
16P-11-18 Metal/Insulator Multilayered Thermally Conductive Films M. Xu 1, T. Zhan 1 ,R. Yamato 1, H. Takezawa 1, K. Mesaki 1, M. Tomita 1, Y. Xu 2 and T. Watanabe 1, 1 Waseda Univ. and 2 NIMS, Japan	~~**16P-11-19**~~ **Withdrawn** ~~Fabrication of Lateral Type Spin-Valves Comprising Epitaxially-Grown β-$FeSi_2$ Interlayers by Electron Beam Lithography~~ ~~H. Ishimoto 1, K. Kudo 1, T. Tabei 2, K. Sakai 3 and T. Yoshitake 1, 1 Kyushu Univ., 2 Hiroshima Univ. and 3 Kurume Col, Japan~~	**16P-11-20** Effect of Oxygen Content on Ferroelectricity of Undoped Hafnium Oxide J.-D. Luo 1, H.-X. Zhang 1, Z.-Y. Wang 3, S.-S. Gu 3, H.-T. Chung 1, K.-C. Chuang 1, C.-Y. Liao 1, W.-S. Li 1, Y.-S. Li 1, K.-S. Li 2, M.-H. Lee 3 and H.-C. Cheng 1, 1 Natl. Chiao Tung Univ., 2	**16P-11-21** Effective Doping of Semiconductors *via* Dopant Containing Homopolymer Brushes M. Perego 1, G. Seguini 1, E. Arduca 1,2, A. Nomellini 1,2, F. Caruso 1,2, K. Sparnacci 3, D. Antonioli 3, V. Gianotti 3, M. Laus 3, 1 IMM-CNR, 2

		NARLabs. and 3 Natl. Taiwan Normal Univ., Taiwan	Univ. degli Studi di Milano and 3 Univ. del Piemonte Orientale, Italy
16P-11-22 Effective Wet Chemical Etching for n^+-p-n-p^+ Thyristor Structures as Application of Memory Device J. Yoo, G. Oh, M.-W. Kim, S.-D. Yoo, T.-H. Shim and E.K. Kim, Hanyang Univ., Korea	**16P-11-23** Coexistence of Unipolar Resistive Switching and Bipolar Resistive Switching Behaviors in Pt/NiO/ITO Structure H.-H. Tang 1, Y.-K. Su 1,2 and T.-J. Whang, 1 Natl. Cheng Kung Univ. and 2 Kun Shan Univ., Taiwan	**16P-11-24** DC and AC Electrical Characteristics of Ta_2O_5-Based ReRAM Cells T. Miyatani, Y. Nishi and T. Kimoto, Kyoto Univ., Japan	**16P-11-25** Self-Erasable Antireflection Films via Nanopatterning on Shape Memory Polymers Y. Han 1, P. Li 2 and P. Jin 1, 1 Harbin Inst. of Technol. and 2 Heilongjiang Univ., China
16P-11-26 A Study on the Effects of Microplasma Depending on the Detection Area of GM-APD H. Yoo, B.-T. Lim, J.-W. Park, B.-J. Lee, W.-S. Sul, Natl. Nanofab Ctr., Korea	**16P-11-27** Vertically Stacked Graphene Tunnel Junction with Ultrathin Water Layer Barrier J. Du, Y. Kimura, M. Tahara, K. Matsui, H. Teratani, Y. Ohno and M. Nagase, Tokushima Univ., Japan	**16P-11-28** Directivity for SOI Photodiode with Gold 2D Hole Array Grating A. Nagarajan 1, S. Hara 1, H. Satoh 1, A.P. Panchanathan 2 and H. Inokawa 1, 1 Shizuoka Univ. and 2 SRMIST, India	**16P-11-29** Immobilization Technology of Hydrolyzed Pt Nanoparticles on Polyacrylonitrile-Based Nanofiber Paper S.Y. Kwon, D.G. Jung, Y.C. Choi, J.Y. Lee, S.D. Kim and S.H. Kong, Kyung Pook Natl. Univ., Korea
16P-11-103L Sophisticated Conductivity Control of Gradual RRAM Cross-Point Array for Reinforcement Learning M.-H. Kim 1, S. Hwang 1, S. Bang 1, T.-H. Kim 1, D.K. Lee 1, S. Kim 2, S. Cho 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Chungbuk Natl. Univ. and 3 Gachon Univ., Korea	**16P-11-104L** Ultrasensitive Photodection Based on Hybrid Intercalated Graphene/Quantum Dots Meta-Nano-Material W. Chen, S. Ahn and O. Vazquez-Mena, Univ. of San Diago, USA	**16P-11-105L** Scaling Effect of Ti/HfO2/Si-p+ Stacked Resistive Switching Device for Neuromorphic Application D.K. Lee 1, M.-H. Kim 1, S. Bang 1, T.-H. Kim 1, Y.-J. Choi 1, K. Hong 1, C. Kim 1, S. Kim 2, S. Cho 3 and B.-G. Park 1, 1 Seoul Natl. Univ., 2 Chungbuk Natl. Univ. and 3 Gachon Univ., Korea	**16P-11-106L** A Study of ZnO/PEDOT:PSS Based UV Sensors with RF Sputter S.G. Shin, J. Hur and H.W. Choi, Gachon Univ., Korea
16P-11-107L L-Shaped TFET with Stacked-Gates to Suppress the Corner Effect S.S. Shin 1, J.H. Kim 2 and S. Kim 1, 1 Ajou Univ. and 2 SK hynix, Korea			
Nanofabrication		Chairs: Y. Liu (AIST) and K. Takase (Nihon Univ.)	
16P-11-30 Influences of Ti Seed Layers on the Structure of Self-Organized Au-Ag Alloy Nanodots on MgO(001) Substrates M. Kamiko 1, W.-S. Kim 2, T.-H. Kim 2, T.-W. Um 2 and J.-G, Ha 2, 1 Univ. of Tokyo, Japan and 2 Kwangwoon Univ., Korea	**16P-11-31** Investigation of Simple and Easy Functionalization Method for Single Conical Pore with a Polydopamine Layer Y. Horiguchi, T. Goda and Y. Miyahara, Tokyo Medical and Dental Univ., Japan	**16P-11-32** Fabrication of Graphitic Nanostructure with Catalytic Activity From Precursor Polymer Utilizing High Temperature-Electron Beam Irradiation A. Idesaki 1, Y. Kanuma 2, S. Yamamoto 1, M. Sugimoto 1 and T. Yamaki 1,2, 1 Natl. Inst. for Quantum and Radiological Sci. and Technol. and 2 Gunma Univ., Japan	**16P-11-33** Evaluation of Inter-Particle Distance of Gold Nanoparticles Dispersed on Silane-Treated Substrates for Fabrication of Dithiol-Connected Arrays T. Yagai 1, K. Matsumoto 1, M. Moribayashi 1, M. Moriya 1, H. Shimada 1, A. Hirano-Iwata 2, F. Hirose 3 and Y. Mizugaki 1, 1 Univ. of Electro-Comm., 2 Tohoku Univ. and 3 Yamagata Univ., Japan
16P-11-34 Optical Strong Coupling of Localized Surface Plasmon Resonance with Q-Bands of Tetraphenyl Porphyrin over an Entire Visible Region N. Takeshima, S. Jin, K. Sugawa and J. Otsuki, Nihon Univ., Japan	**16P-11-35** Far-Field Enhancement of Triplet-Triplet Annihilation Upconverted Luminescence in Solid Thicker Films S. Yoshinari, N. Takeshima, S. Jin, K. Sugawa and J. Otsuki, Nihon Univ., Japan	**16P-11-36** Optical Propertieproas of Au(Core)/Cu_2O(Shell)-Type Nanospheres As a Photothermal Therapy Agent J. Honda, K. Sugawa and J. Otsuki, Nihon Univ., Japan	**16P-11-37** Surface-Enhanced Raman Scattering of Rhodamine 6G on Mie Resonance-Responsive Cu_2O Particle Assemblies M. Danno, W. Inoue, S. Igari, K. Sugawa and J. Otsuki, Nihon Univ., Japan
16P-11-38 Thickness Modulated MoS_2 Film for Transistor-Based pH Sensing Application Y. Jang 1, Y. Jeong 1,2, Y. Wakayama 2 and J.-S. Bae 1, 1 Korea Basic Sci. Inst., and 2 NIMS, Japan	**16P-11-39** Photo-Thermal Processing of Metal-Oxide Nano-Thin Film Using Ultra-Violet Laser for ReRAM Applications C.J. Park, C. Lee, S. Shin, M. Kim and M.W. Shin, Yonsei Univ., Korea	**16P-11-40** Investigation of Optical Transitions for InAs/GaSb Quantum Ring by Photoreflectance Spectroscopy M.G. So 1, J.S. Kim 1, V. Dahiya 2, S. Krishna 2, M. Zamiri 3, J.O. Kim 4, S.J. Lee 4 and Y. Kim 5, 1 Yeungnam Univ.,, Korea, 2 Ohio State Univ., 3 Univ. of Wisconsin-Madison, USA, 4 Korea Res. Inst. of Standards and Sci. and 5 Dankook Univ., Korea	**16P-11-41** Thermal Oxidation Kinetics of Vertically-Aligned Si Nanowires S.R. Chang, C.H. Lo and S.L. Cheng, Natl. Central Univ., Taiwan
16P-11-42 Electron Paramagnetic Resonance Spectra of Polyethylene with Grafted Phthalocyanine and Nanoparticles A. Reznickova 1, L. Grulich 1, E. Cizmar 2, M. Orendac 2, A. Zelenakova 2, Z. Kolska 3, F. Prusa 1 and V. Svorcik 1, 1 UCT Prague, Czech, 2 P.J. Safarik Univ. and 3 J.E. Purkyne Univ., Czech	**16P-11-43** Microfabrication of Si-Based Concave Micromirror Array for Microbial Cell Trapping by XeF_2 Vapor Etching A. Matsutani, M. Sato, K. Hasebe and A. Takada, Tokyo Inst. of Technol., Japan	**16P-11-44** Enlargement of Neutron Absorption Grating Area in the Process of Oblique Gadolinium Evaporation T. Samoto, H. Takano and A. Momose, Tohoku Univ., Japan	**16P-11-45** Removing Process of the Three-Dimension Periodic Nanostructure Fabricated from KMPR Photoresist X.D.F. Wang, Y. Ishikawa, M. Uenuma and Y. Uraoka, NAIST, Japan

16P-11-46 Surface-Enhanced Raman Scattering of Bioorthogonal Reporter on Gold and Silver Nanostructures A. Suzuki, S. Yoshinari, K. Sugawa and J. Otsuki, Nihon Univ., Japan	**16P-11-47** Expansion of Driving Wavelength of Photothermal Conversion of Gold Nanosphere Using Upconverted Fluorescence Based on Triplet-Triplet Annihilation S. Jin, N. Takeshima, K. Sugawa, J. Otsuki, Nihon Univ., Japan	**16P-11-48** Metal-Enhanced Fluorescence Based on Gold Nanoparticle Assemblies: Nanoparticle Size Dependence on Fluorescence Enhancement S. Igari, K. Sugawa and J. Otsuki, Nihon Univ., Japan	**16P-11-108L** Nano-Mechanical Device Using a Ag2S-C60 system Y. Ishikawa 1, T. Hasegawa 1 and C. Joachim 2, 1 Waseda Univ., Japan and 2 CEMES-CNRS, France
16P-11-109L Enhancing Performance of Perovskite Solar Cells by Using Feffoelectricity H.T. Dang, N.T. Nguyen, S. Kim and C.W. Bark, Gachon Univ., Korea	**16P-11-110L** Formation of Low Resistance Contacts to p-type 4H-SiC by Using Laser Doping with Al Thin-Film Dopant Source K. Okamoto 1, T. Kikuchi 1, A. Ikeda 2, H. Ikenoue 1 and T. Asano 1, 1 Kyushu Univ. and 2 Sojo Univ., Japan	**16P-11-111L** Dependence of Si Nanowire Orientation on Vapor-Liquid-Solid Growth Conditions Y. Kitazawa 1*, R. Kodaira 1, R. Horiguchi 1, W. Jevasuwan 2, N. Fukata 2 and S. Hara 1, 1 Hokkaido Univ. and 2 NIMS, Japan	**16P-11-112L** Channel Thickness and Interfacial Trap Variation Induced by Selective-Channel-Etching in Stacked Gate-All-Around MOSFETs having Multi-Channel-Width S. Kim 1, K. Lee 1, M. Kim 1,2, S. Kim 1,3, S. Kim 1,2, S. Kim 4 and B.-G. Park 1, 1 Seoul National Univ., 2 Samsung Electronics Semiconductor R&D Ctr., 3 Samsung Electronics and 4 Ajou Univ., Korea
16P-11-113L Characteristics of Highly-Oriented Bismuth Titanate Nanocrystals Directly on Si(100) Substrates for Ferroelectric Memory Device A. Kohno 1, G. Fujiki 2, H. Murakami 2 and T. Tajiri 1, 1 Fukuoka Univ. and 2 Natl. Inst. of Technol., Kurume college, Japan			
Inorganic Nanomaterials		Chair: M. Suzuki (AIST)	
16P-11-49 Effects of Defects, Strains, and Strain Fluctuations on the Electrical Properties of CVD-Grown Monolayer Graphene Films H. Rho 1, T. Lee 1 and M.J. Kim 2, 1 Chonbuk Natl. Univ. and 2 KIST, Korea	**16P-11-50** Chlorpyrifos Organophosphate Detection Based on Magnetic Molecularly Imprinted Polymers K. Chattrairat and D. Phromyothin, King Mongkut Inst. of Technol. Ladkrabang, Thailand	**16P-11-51** Study on the Formation Mechanism of Bismuth-Mediated Ge Nanodots Fabricated by Vacuum Evaporation K. Tsushima 1, K. Takita 1, H. Nakazawa 1, T. Tawara 2, K. Tateno 2, G. Zhang 2, H. Gotoh 2 and H. Okamoto 1, 1 Hirosaki Univ. and 2 NTT, Japan	**16P-11-52** Electrochemical Analysis of Cypermethrin Using Gold Printed Circuit Board Electrode Modified with Poly(Methyl Methacrylate) P. Leepheng and D. Phromyothin, King Mongkut Inst. of Technol. Ladkrabang, Thailand
16P-11-53 Fabrication of Gold Nanostructures Heterogeneously Grown on Micro Glass Bead N. Sekimoto, Y. Bando, S. Yanagiya and A. Furube, Tokushima Univ., Japan	**16P-11-54** Atomistic Simulation of Thermoelectric Properties of High-Entropy Alloy Nanostructures K. Nakamura 1,2, 1 Kyoto Univ., Japan and 2 Egypt-Japan Univ. of Sci. and Technol., Egypt	**16P-11-55** Magnetic and Dielectric Properties of $CuBO_2$ Delafossite Oxide S. Traiphop, P. Thongbai and T. Kamwanna, Khon Kaen Univ., Thailand	**16P-11-56** Oxide Ion and Proton Conduction Controlled in Nano-Grained Yttria Stabilized ZrO_2 Thin Films Prepared by Pulse Laser Deposition D. Etoh 1,2, T. Tsuchiya 1,2, M. Takayanagi 1,2, T. Higuchi 2 and K. Terabe 1, 1 NIMS and 2 Tokyo Univ. of Sci., Japan
16P-11-57 Correlation between Surface Nano Triangle Pattern Features and Ferromagnetism in (In, Si)-Codoped ZnO Memory Device S.-S. Li 1 and Y.-K. Su 1,2, 1 Natl. Cheng Kung Univ. and 2 Kun Shan Univ., Taiwan	**16P-11-58** Excitonic Luminescence of Comb-Like ZnO Grown by Vapor Transport M.-A. Wu, W.S. Yeoh, C.-H. Liao, D.-Y. Chiu, W.-L. Yeh, D. Yuan and Y.-L. Huang, Natl. Dong Hwa Univ., Taiwan	**16P-11-59** Controlling Thermoelectric Properties of Nanocomposite Thin Films with Bi_2Te_3 Nanoplates and SWCNT Y. Hosokawa, N. Nakazato, K. Tomita and M. Takashiri, Tokai Univ., Japan	**16P-11-60** Fabrication of Sliver Nanoparticles Coated Wetlace Nonwoven Fabric Based on Amino-Terminated Hyperbranched Polymer G. Zhang, D. wang, X. Huang and S. Wu, Nantong Univ., China
16P-11-61 Effect of Substrate Self-Bias and Nitrogen Flow Rate on Non-Polar AlN Film Growth by Reactive Sputtering K. Tatejima 1,2, T. Nagata 2, K. Ishibashi 2,3, K. Takahashi 2,3, S. Suzuki 2,3, A. Ogura 1 and T. Chikyow 2, 1 Meiji Univ., 2 NIMS and 3 COMET, Japan	**16P-11-62** Solution- Processed Nickel Oxide Nanoparticles for Resistive Memory Devices C.-Y. Tai 1,2, W.-S. Yeh 1,2, C.-C. Yang 1,2 and Y.-K. Su 1,2, 1 Natl. Cheng Kung Univ. and 2 Kun Shan Univ., Taiwan	**16P-11-63** Sulfidation Reaction-Dependent Structure and Photocatalytic Performance of ZnO-ZnS Nanorods Y.C. Liang and C.C. Wang, Natl. Taiwan Ocean Univ. Taiwan	**16P-11-64** Temperature Dependence of Interdot Spin Dynamics in Laterally Coupled InGaAs Quantum Dots S. Sato, S. Hiura, J. Takayama and A. Murayama, Hokkaido Univ., Japan

16P-11-65 Perpendicular Magnetic Properties of Magneto-Optical Cavity Effect on [CoPt/AZO] Multilayered Films H. Yamane 1, K. Takeda 2, Y. Isaji 2, Y. Yasukawa 2 and M. Kobayashi 2, 1 Akita Industrial Technol. and 2 Chiba Inst. of Technol., Japan	**16P-11-114L** Formation of Graphene-Like Films on Quartz and Si Substrates by Carbonization of Rigid-Chain Polyimide Langmuir-Blodgett Films V.V. Luchinin 1, S.I. Goloudina 1, V.M. Pasyuta 1, D.A. Kirilenko 2,3, A.N. Smirnov 2, G.A. Konoplev 1, V.V. Andrushkin 1, V.P. Sklizkova 4, I.V. Gofman 4, V.M. Svetlichnyi 4 and V.V. Kudryavtsev 4, 1 St. Petersburg State Electrotechnical Univ., 2 Ioffe Institute, RAS, 3 ITMO Univ., 4 Inst. of Macromolecular Compounds RAS, Russia	**16P-11-115L** Structural Investigation of Bended MnAs/InAs Heterojunction Nanowires T. Kadowaki, R. Kodaira and S. Hara, Hokkaido Univ., Japan	**16P-11-116L** Magnetic Domain Structures Depending on Applied Magnetic Fields in MnAs Nanodisks Selectively-Grown on Si (111) Substrates K. Suzuki, R. Horiguchi, M. Iida and S. Hara, Hokkaido Univ., Japan
Nanoimprint, Hybrid-NIL, Biomimetics, and Functional Surfaces		Chair: N. Sakai (Samsung R&D Inst. Japan)	
16P-11-66 Effect of Bumps on The Stability of Water Droplets on The Pillar Surface Y. Shimazaki 1 and A. Miyauchi 2, 1 Hitachi and 2 Tokyo Medical and Dental Univ., Japan	**16P-11-67** Drug-Coating on Bioabsorbable Stent for Eluting in Carotid Artery Disease Applications J. Kim 1, S.A. Park 2, J. Kim 2 and J. Lee 1, 1 KIMM and 2 Chungnam Natl. Hospital, Korea	**16P-11-68** Dynamic Characteristics of Micro-Droplets on Inclined Surfaces with Arrayed Micro-Pillars to Transport Droplets in Microfluidics Devices S. Oshima, R. Sakuma, Y. Nagashima, R. Sugiyama, Y. Hayasaka, and S. Imai, Nihon Univ., Japan	**16P-11-69** Pattern Printing Represented by Structural Colors M. Yoshimura, Y. Oda and M. Kawashita, Toppan Printing, Japan
16P-11-70 Surface Modification of Polyimide Laser-Drilled Screen-Printing Masks for Low-Viscosity Liquids in Print-and-Imprint Method T. Nakamura, N. Endo and M. Nakagawa, Tohoku Univ., Japan	**16P-11-71** Electrical Properties of In_2O_3 and in-Sn-O Films Prepared by Direct Nanoimprinting P. Jain, K. Haga and E. Tokumitsu, JAIST, Japan	**16P-11-72** Morphological Changes in Positive-Tone EB Resist Patterns Induced by Sequential Infiltration Synthesis and Solvent Annealing Y. Ozaki, S. Ito, T. Nakamura and M. Nakagawa, Tohoku Univ., Japan	**16P-11-73** Fabrication of Radio-Frequency Identification Antenna Patterns on an IC Chip by Ultraviolet Nanoimprint Lithography K. Suzuki 1, Y. Kurashima 1, S.-W. Youn 1, H. Takagi 1, H. Hiroshima 1, K. Ohshima 2 and H. Kobayashi 2, 1 AIST and 2 SK-Electronics, Japan
16P-11-74 Wafer Level Nanoimprinting with Precise Control on Contact Force and Mold Deformation J.-L. Chang and Y.-C. Lee, Natl. Cheng Kung Univ., Taiwan	**16P-11-75** 'Invisible" Nanostructuring Provides Antifouling in Underwater Windows: a Bioinspired Approach N. Akhtar and B. Holst, Univ. of Bergen, Norway	**16P-11-76** Computational Study of Tribological Phenomena at Interfaces between Polymers and Substrates with Atomic-scale Roughness K. Tada 1, Y. Miyashita 1, S. Takahata 1, M. Yasuda 2, Y. Hirai 2, 1 Natl. Inst. of Technol., Toyama College and 2 Osaka Pref. Univ., Japan	**16P-11-77** Relationship between Pattern Shape and Molecular Behaviors in Nanoimprint Lithography: Molecular Dynamics Study R. Sakata, H. Kawata, Y. Hirai and M. Yasuda, Osaka Pref. Univ., Japan
16P-11-78 Fabrication of Antireflection Structure on The Aspheric Lens by Using UV-Curable Inorganic-Organic Hybrid Polymer I. Mano and J. Taniguchi, Tokyo Univ. of Sci., Japan	**16P-11-79** Study of Metamaterials Using Biomimetic Technology T. Nishino 1, H. Tanigawa 1, H. Mayama 2 and A. Sekiguchi 3, 1 Ritsumeikan Univ. and 2 Asahikawa Medical Univ. and 3 Litho Tech Japan, Japan		
BioMEMS, Lab on a Chip, and Nanobiotechnology		Chairs: A. Miura (Hokkaido Univ.) and R. Tero (Toyohashi Univ. of Technol.)	
16P-11-80 Prototyping of Flexible and Biocompatible Enzymatic Biofuel Cell Using Gel Electrode with Conductive Layers Formed by Electrolytic Polymerization T. Wakebe, K. Nakajima, T. Doi, T. Ogino, and S. Imai, Nihon Univ., Japan	**16P-11-81** Non-Uniform Dynamics of Nanoparticle Clusters at a Solid-Liquid Interface by Laser Trapping I. Hanasaki 1 and C. Hosokawa, 1 Tokyo Univ. of Agriculture and Technol. and 2 AIST, Japan	**16P-11-82** Influence of Annealing Temperature on the Structural and Sensing Characteristics of Sol-Gel Derived Y_2O_3 Sensing Membrane for pH Detection K. Singh, S.P. Bag, P. Garu, B.-S. Lou, J.-L. Her and T.-M. Pan, Chang Gung Univ., Taiwan	**16P-11-83** Super-Nernstian Sensitivity of $CeTiO_3$ Sensing Films for pH Detection C.-H. Lin 1, J.-L. Her 1 and K. Koyama 2 and T.-M. Pan 1, 1 Chang Gung Univ. and 2 Kagoshima Univ., Japan
16P-11-84 Magnetic Field-Controllable Cluster Nanoparticles for Surface Enhanced Raman Scattering K. Shibusawa, T. Hase and K. Tsukada, Keio Univ., Japan	**16P-11-85** Microscale Sap Dynamic Sensor Using Heat Pulse Method N. Hara, Y. Hara, H. Ishizuka, K. Terao, H. Takao, and F. Shimokawa, Kagawa Univ., Japan	**16P-11-86** Nanostraw Membrane Stamping for Direct Delivery of Molecules into Adhesive Cells Z. Bowen 1, S. Yiming 1, K. Nakazawa 2, T. Miyake 1, 1 Waseda Univ. and 2 Univ. of Kitakyushu, Japan	**16P-11-87** Micro/Nano Particle-Based Oxygen Sensing Film for Monitoring Respiration of Cells Cultured in a Microfluidic Device Y. Yabuki, J. Yokoyama and K. Tsukada, Keio Univ., Japan
16P-11-88 High Performance pH Sensors Based on Pyramidal Textured Silicon C.-Y. Kuo, S.-J. Wang, S.-Y. Wang and R.-M. Ko, Natl. Cheng Kung Univ., Taiwan	**16P-11-89** Micro Integration Method for Three-Dimensional Cell Culture by Using Adhesiveness and Detachability of Thick Photoresist H. Ueno 1,2, K. Yamada 1 and T. Suzuki 1, 1 Gunma Univ. and 2 JSPS, Japan	**16P-11-90** Development of Bowl-Shaped Plasmonic Cavity for Optical Guiding-Type Biosensor Based on Template of Self-Assembled Microspheres K. Yamada, M. Tamura, Y. Yamamoto, S. Tokonami and T. Iida, Osaka Pref. Univ., Japan	**16P-11-91** Development of High-Density Microarray-Based Aptamer Screening System A. Jain 1, S. Ueno 1,2, S. Sato 1,2 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan

16P-11-92 Controlling The Orientation of C_2C_{12} Cells Using Suspended Microstructured Mesh Substrates Y. Kibe, K.O. Okeyo and T. Adachi, Kyoto Univ., Japan	**16P-11-93** Excitation Ratiometry of Supported Lipid Bilayer Containing Voltage-Sensitive Dye to Evaluate Sub-Strate-Induced Membrane Potentia Y. Sano and R. Tero, Toyohashi Univ. of Technol., Japan	**16P-11-94** Synthesis and Application of Boronic Acid-Functionalized Magnetic Nanoparticles for Sensing Dopamine Molecules J.K. Kook, E.-b. Lim and S.W. Lee, Gachon Univ., Korea	**16P-11-95** Plasma-Assisted Electrospray Deposition for Micropattern Fabrication K. Hashimoto 1, H. Takehara 1,2 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan
16P-11-96 Graphene-Based Epidural Electronic Devices for Epilepsy Electrotherapy J. Kim 1, S.-W. Park 2, S. Yang 3, S. Yang 2, J.-H. Ahn 1, 1 Yonsei Univ., 2 Incheon Natl. Univ., Korea and 3 City Univ. of Hong Kong, Hong Kong	**16P-11-97** Micromolding Process for Bioabsorbable Poly L-Lactic Acid (PLLA) Using Polydimethylsiloxane (PDMS) Replica Mold H. Takehara 1,2, Y. Kanda 1, Y. Hadano 1 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan	**16P-11-98** Lipid Bilayer Formation on Ion Image Sensor and Measurement of Time Response of Ion Concentration K. Imai, T. Horio, T. Hattori, K. Sawada and R. Tero, Toyohashi Univ. of Technol., Japan	**16P-11-99** Equivalent Circuit Model Modified for Free-Standing Bilayer Lipid Membranes beyond 1 TΩ Y. Tomioka 1, S. Takashima 1, M. Moriya 1, H. Shimada 1, F. Hirose 2, A. Hirano-Iwata 3 and Y. Mizugaki 1, 1 Univ. of Electro-Comm., 2 Yamagata Univ. and 3 Tohoku Univ., Japan
16P-11-100 Electrical Detection of DNA via Nanoparticles under Light-induced Assembly K. Ohashi 1, Y. Yamamoto 1, M. Tamura 1, Y. Nishimura 2, S. Tokonami 1 and T. Iida 1, 1 Osaka Pref. Univ. and 2 Osaka City Univ., Japan	**16P-11-117L** Study of Seamless Combination of Imaging Cell Sorting and Gene Analysis Technology Utilizing Characteristics of Alginate Microdroplets M. Odaka 1,2, A. Hattori 1,2, K. Matsuura 1,2, M. Iwamura 1, Y. Yamanaka 1, K. Iida 1, A. Kawai 1 and K. Yasuda 1, 1 Waseda Univ., Jpaan and 2 Waseda Biosci. Res., Singapore	**16P-11-118L** Electrosprayed 3-Dimensional Interconnects for Contact Lens Sensor Platform H. Kim 1,2, J. Kim 1, J. Kang 2 and Y.-W. Song 1,2,3, 1 KIST and 2 Kyung Hee Univ. and 3 Korea Univ. of Sci. and Technol., Korea	**16P-11-119L** Microscale Parallel Facing Electrodes for Adherent Cell Monitoring by Electrochemical Impedance Spectroscopy S. Tanaka 1, K. Kimura 1, K. Miyamoto 2, Y. Yanase 3 and S. Uno 1, 1 Ritsumeikan Univ., 2 Tohoku Univ. and 3 Hiroshima Univ., Japan