

Tuesday, November 5

Room E (2F)

13:30-16:40 MNC 2013 Technical Seminar in Japanese

Room F (2F)

17:00-19:00 Get Together Party

Wednesday, November 6

Room A (Royton Hall A, 3F)

6A-1: Plenary Session

Chairpersons: T. Kozawa (Osaka Univ.) and M. Nagase (Univ. of Tokushima)

9:30-9:50

Opening Remarks: T. Meguro (Tokyo Univ. of Sci.)

Award Presentation: T. Kozawa (Osaka Univ.) and T. Meguro (Tokyo Univ. of Sci.)

MNC 2012 Outstanding Paper, Most Impressive Presentation, Most Impressive Poster and Young Author's Award

Announcement from Committee: Y. Miyamoto (Tokyo Inst. of Technol.)

6A-1-1

9:50

Strategy and Dreams of the Future Lithography (Plenary)

J.J.H. Chen, TSMC, Taiwan

Lobby (in front of Royton Hall, 3F)

Coffee Break

6A-1-2

10:50

STT-MRAM and NV-Logic for Low Power Systems (Plenary)

T. Endoh, Tohoku Univ., Japan

6A-1-3

11:30

Metal Oxide Resistive Switching Memory (RRAM): Devices, Fabrication, and Self-Assembly Patterning for Random Logic and Memory Devices (SRAM, NAND, RRAM) (Plenary)

H. Yi, Y. Wu, Z. Zhang, H.-Y. Chen, S. Yu, H.-S. P. Wong, Stanford Univ., USA

LUNCH

Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
<p>6A-2:Nanoimprint, Nanoprint and Rising Lithography Chairpersons: A. Yokoo (NTT)</p>	<p>6B-2:Functional Nanodevices Chairpersons: K. Nishiguchi (NTT) N. Clement (CNRS)</p>	<p>6C-2:Nano-Tool Chairpersons: K. Sugano (Kobe Univ.) O. Kubo (Osaka Univ.)</p>	<p>6D-2:Advanced Photolithography Chairpersons: T. Sato (Toshiba) J. Miyazaki (ASML)</p>
<p>6A-2-1 13:30 Large-area Nanoimprint Lithography and Industrial Applications (Invited) H. Lan 1,2, Y. Ding 2 and H. Liu 2, 1 Qingdao Technological Univ. and 2 Xi'an Jiaotong Univ., China</p>	<p>6B-2-1 13:30 Atomically Thin MoS₂: a Two Dimensional Semiconductor beyond Graphene (Invited) A. Castellanos Gomez, Delft Univ. of Technol., The Netherland</p>	<p>6C-2-1 13:30 MEMS-in-TEM for Characterization of Materials at the Nanoscale (Invited) T. Ishida 1 and H. Fujita 2, 1 Tokyo Inst. of Technol. and 2 Univ. of Tokyo, Japan</p>	<p>6D-2-1 13:30 Examination of Patterning Technologies Down to Sub-10nm Half Pitch (Invited) S. Mimotogi, Toshiba., Japan</p>
<p>6A-2-2 14:00 Study of Transparent Thin Film Transistors with Periodic Groove Channels Fabricated by Sol-Gel Process and Nano Imprint Technology H.J. H. Chen 1, S.-T. Liu 1 and S.-Z. Chen 2, 1 Natl. Chi Nan Univ. and 2 Natl. Tsing Hua Univ., Taiwan</p>	<p>6B-2-2 14:00 Fabrication and Characterization of InGaAs Axial Junction Nanowire Array Solar Cells E. Nakai 1, M. Yoshimura 1, K. Tomioka 1,2 and T. Fukui 1, 1 Hokkaido Univ. and 2 JST-PRESTO, Japan</p>	<p>6C-2-2 14:00 Dynamic Characteristics Evaluation of Nanomechanical Resonators by the Application of Stroboscopic Scanning Electron Microscope K. Nakano, S. Warisawa, S. Ishihara and R. Kometani, Univ. of Tokyo, Japan</p>	<p>6D-2-2 14:00 Performance and Volume Introduction of ASML's NXE Platform (Invited) J.-W. van Horst 1, R. Peeters 1, S. Lok 1, M. van Noordenburg 1, N. Harned 1, D. Smith 1, P. Kuerz 2, M. Lowisch 2, H. Keijer 1, D. Ockwell 1, J. Stoeldraijer 1, 1 ASML, The Netherlands and 2 Carl Zeiss, Germany</p>
<p>6A-2-3 14:20 Error Rate Analysis and Lifetime Estimation of Release Coated NIL Mold M. Okada and J. Taniguchi, Tokyo Univ. of Sci., Japan</p>	<p>6B-2-3 14:20 Reduced Thermal Conductivities of Si 1D Phononic Crystal and Nanowire J. Maire and M. Nomura, Univ. of Tokyo, Japan</p>	<p>6C-2-3 14:20 50-nm Resolution of Two-dimensional Patterning in Water by using Inverted-electron Beam Lithography T. Hoshino, H. Miyazako, A. Nakayama, O. Fukayama and K. Mabuchi, Univ. of Tokyo, Japan</p>	<p>6D-2-3 14:30 Extended Scalability with Self-Aligned Multiple Patterning K. Oyama, S. Yamauchi, S. Natori, A. Hara, M. Yamato and H. Yaegashi, Tokyo Electron, Japan</p>
<p>6A-2-4 14:40 Pphotonic Crystal Based on Plasticized PVC for Ion Sensing S. Aki, T. Endo, K. Sueyoshi and H. Hisamoto, Osaka Pref. Univ., Japan</p>	<p>6B-2-4 14:40 Seebeck Coefficient of Co-doped Si Nanowires for High-sensitive Thermopile Infrared Photodetector Y. Suzuki 1, F. Salleh 1,2, M. Shimomura 1, A. Ishida 1 and H. Ikeda 1, 1 Shizuoka Univ. and 2 JSPS, Japan</p>	<p>6C-2-4 14:40 Fabrication of Cup-shaped Superparamagnetic Metal Hemispheres for Size-selective Target Cell Collection H. Kim 1, H. Terazono 1,2, H. Takei 1,3 and K. Yasuda 1,2, 1 Kanagawa Academy of Sci. and Technol., 2 Tokyo Medical and Dental Univ. and 3 Toyo Univ., Japan</p>	<p>6D-2-4 14:50 Observation Result of Phase Defects using Micro Coherent EUV Scatterometry Microscope Y. Tanaka 1, T. Harada 1, T. Watanabe 1, Y. Usui 2 and H. Kinoshita 1, 1 Univ. of Hyogo and 2 EIDEC, Japan</p>

<p>6A-2: Author's Interview 16:55-17:05</p>	<p>6B-2-5 15:00 Dynamic Tuning SERS of Silver Interdigital Nanogratings under External Electric Field W.J. Sun, B.G. Quan, S.B. Tian, L. Li, Y.L. Li, J.J. Li and C.Z. Gu, Chinese Academy of Sci., China</p> <p>6B-2: Author's Interview 16:55-17:05</p>	<p>6C-2: Author's Interview 15:00-15:10</p>	<p>6D-2-5 15:10 Aerial Image Dependence on Extreme-ultraviolet Pellicle Support K.-H. Ko 1, G.-J. Kim 1, M. Yeung 2, E. Barouch 3 and H.-K. Oh 1, 1 Hanyang Univ., Korea, 2 Fastlitho and 3 Boston Univ., USA</p> <p>6D-2: Author's Interview 15:30-15:40</p>
Lobby (in front of Royton Hall, 3F)			
Coffee Break			
Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
<p>6A-3:Nanoimprint, Nanoprint and Rising Lithography II Chairpersons: J. Taniguchi (Tokyo Univ. of Sci.) H. Lan (Qingdao Technological Univ.)</p>	<p>6B-3:Nanoscale Memory Chairpersons: N. Banno (Leap) Y. Ishikawa (Nara Inst. of Sci. and Technol.)</p>	<p>6C-3:Electron and Ion Beam Technologies Chairpersons: H. Yamashita (HOYA) J. Yanagisawa (Univ. of Shiga Pref.)</p>	<p>6D-3:Nanofabrication Chairpersons: T. Hasegawa (NIMS) A. Kohno (Fukuoka Univ.)</p>
<p>6A-3-1 15:15 Patterning of InP by Nanoelectrode Lithography A. Yokoo 1, J. Chau 1, M. Fukuda 2 and M. Notomi 1, 1 NTT and 2 Hiroaki Univ., Japan</p>	<p>6B-3-1 15:35 Uniform Bipolar Switching, Large On/off Window, and Low Power in HfOx-based ReRAM with a Thin Barrier Layer S. Ban and O. Kim, POSTECH, Korea</p>	<p>6C-3-1 15:25 Helium Ion Microscopy (HIM) Technology for Imaging, Characterization, and nano-Fabrication for nano-Device Materials and Structures (Invited) S. Ogawa, AIST, Japan</p>	<p>6D-3-1 15:55 Formation of One-dimensionally Self-Aligned Si-based Quantum Dots and Its Application to Light Emitting Diodes (Invited) K. Makihara and S. Miyazaki, Nagoya Univ., Japan</p>
<p>6A-3-2 15:35 Towards Waferscale Nanostructuring of Oxides using Step-and-flash Imprint Lithography S.S. Dinachali 1,2, J. Dumond 1, M.S.M. Saifullah 1, K.K. Ansah-Antwi 1,2, R. Ganesan 3, E.S. Thian 2 and C. He 1,2, 1 A*STAR and 2 Natl. Univ. of Singapore, Singapore and 3 Birla Inst. of Technol. & Sci., India</p>	<p>6B-3-2 15:55 Fabrication of Nonvolatile Memory Devices with Metal-oxide Quantum Dots on Sandwiched Graphene Monolayer between SiO₂ Thin Films D.U. Lee 1, S.M. Sim 1, K.S. Lee 1, G. Oh 1, E.K. Kim 1 and H. Im 2, 1 Hanyang Univ. and 2 Dongguk Univ., Korea</p>	<p>6C-3-2 15:55 Development of Electron Projection Lithography using Wafer-size nc-Si Surface Electron Emitter A. Kojima 1,2, N. Ikegami 2, H. Ohyi 1, N. Koshida 2 and M. Esashi 3, 1 Crestec, 2 Tokyo Univ. of Agri. & Technol. and 3 Tohoku Univ., Japan</p>	<p>6D-3-2 16:25 Electrical Properties of the Thin Film Transistor with IGZO Channel and ZrO₂/LaAlO₃ Gate Dielectric Stack C.-H. Wu 1, K.-M. Chang 2, H.-Y. Hsu 2, W.-H. Hsu 2, S.-J. Wang 3, Y.-C. Liu 2 and J.-p. Leu 2, 1 Chung Hua Univ., 2 Natl. Chiao Tung Univ. and 3 Natl. Cheng Kung Univ., Taiwan</p>
<p>6A-3-3 15:55 High Quality GaN Template of a 2-inch Wafer using Nanometer-size SiO₂ Lattice Mask Structure fabricated by UV Nanoimprint Lithography A. Okada 1, H. Shinohara 2, H. Goto 2, H. Goto 3, H. Sunakawa 3, T. Matsueda 3, A. Usui 3, A.A. Yamaguchi 4, S. Shoji 1 and J. Mizuno 1, 1 Waseda Univ., 2 Toshiba Machine, 3 Furukawa and 4 Kanazawa Inst. of Technol., Japan</p>	<p>6B-3-3 16:15 Electroforming-free Resistive Switching Characteristics of GdO_x, TbO_x, and HoO_x Nonvolatile Memory Devices C.-Y. Chen 1, C.-H. Lu 1, J.-L. Her 1, K. Koyama 2 and T.-M. Pan 1, 1 Chang Gung Univ., Taiwan and 2 Kagoshima Univ., Japan</p>	<p>6C-3-3 16:15 Electron Beam Lithography Simulation for Nanometer-scale Patterning K. Michishita, M. Yasuda, H. Kawata and Y. Hirai, Osaka Pref. Univ., Japan</p>	<p>6D-3-3 16:45 Study on Conductive Filaments formed in ReRAM Devices through Temperature Dependence of Electrical Transport Properties Y. Hamada, D. Itou, S. Otsuka, T. Shimizu and S. Shingubara, Kansai Univ., Japan</p>
<p>6A-3-4 16:15 Analysis of Template Releasing Process based on Fracture Mechanics T. Shiotsu 1,2, S. Ooi 3, Y. Watanabe 3, T. Tochino 1, M. Yasuda 1,2, H. Kawata 1,2, T. Kobayashi 3 and Y. Hirai 1,2, 1 Osaka Pref. Univ., 2JST-CREST and 3 Mechanical Design, Japan</p>	<p>6B-3-4 16:35 Ultralow-write-current Nano-contact Phase-change Memory Y. Yin and S. Hosaka, Gunma Univ., Japan</p>	<p>6C-3-4 16:35 Miniaturization of Exposure Area for Electron Beam Lithography using Proximity Effect Correction toward Si Optical Circuits Y. Atsumi 1, N. Taksatorn 2, N. Nishiyama 1, Y. Miyamoto 1 and S. Arai 1, 1 Tokyo Inst. of Technol., Japan and 2 GenlSys, Germany</p>	<p>6D-3-4 17:05 Effect of Confining Filaments on the Current – Voltage Characteristics of Resistive Change Memory by using Anodic Porous Alumina Y. Tanimoto 1, Y. Hamada 2, S. Otsuka 2, T. Shimizu 2, S. Shingubara 2, T. Watanabe 1, Y. Takano 1 and K. Takase 1, 1 Nihon Univ. and 2 Kansai Univ., Japan</p>
<p>6A-3-5 16:35 Complex Nanoscale Structures by Nanoimprinting and Atomic Layer Deposition T. Haatainen, M. Kainlauri, S. Arpiainen, M. Markkanen, J. Marles, R.L. Puurunen and J. Ahopelto, VTT Technical Res. Ctr. of Finland, Finland</p> <p>6A-3: Author's Interview 16:55-17:05</p>	<p>6B-3: Author's Interview 16:55-17:05</p>	<p>6C-3: Author's Interview 16:55-17:05</p>	<p>6D-3: Author's Interview 17:25-17:35</p>
Lobby (in front of Royton Hall, 3F)			
<p>17:30-19:00 Happy Hour</p>			

Thursday, November 7

Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
7A-4: Symposium A: Directed Self-Assembly (DSA) Processes and Modeling I Chairpersons: T. Azuma (EIDEC) T. Yamaguchi (NTT)	7B-4: Nanostructure Engineered Devices Chairpersons: A.C. Gomez (Delft Univ. of Technol.) Y. Ishikawa (Nara Inst. of Sci. and Technol.)	7C-4: Graphene Chairpersons: K. Maehashi (Osaka Univ.) H. Fukidome (Tohoku Univ.)	7D-4: Inorganic Nanomaterials I Chairpersons: M. Sakurai (NIMS) K. Terabe (NIMS)
7A-4-1 9:00 An Overview of the Computational Requirements for a Full Chip Patterning solution using Directed Self Assembly (Invited) K. Lai 1, M. Ozlem 1, J.W. Pitera 2, C.-C. Liu 3, M. Guillorn 4, H. Tsai 4 and J. Cheng 2, 1 IBM Semiconductor, 2 IBM Almaden Res. Ctr., 3 IBM Nanotechnol. Ctr. and 4 IBM Yorktown Res. Ctr., USA	7B-4-1 9:00 High-charge-sensitivity Radio-frequency Field-effect Transistor with Large and Tunable Readout Frequency K. Nishiguchi 1, H. Yamaguchi 1, A. Fujiwara 1, H.S. J. van der Zant 2 and G.A. Steele 2, 1 NTT, Japan and 2 Delft Univ. of Technol., The Netherlands	7C-4-1 9:00 Graphenetrionics: from Growth to Applications (Invited) P.-W. Chiu, National Tsing Hua Univ., Taiwan	7D-4-1 9:00 Novel Functionalities Caused by Mechanical Strain in SnO ₂ -based Materials (Invited) M. Sakurai 1, K. Liu 1,2 and M. Aono 1, 1 NIMS, Japan and 2 Chinese Academy of Sci., China
7A-4-2 9:30 Fast, Simplified and Predictive Modeling of DSA (Invited) K. Yoshimoto, K. Fukawatase, Y. Hori and T. Taniguchi, Kyoto Univ., Japan	7B-4-2 9:20 Dual-gate Silicon Single-electron Transistor Threshold Voltage Mapping at Nanoscale with a Scanning Microwave Microscope N. Clément 1, F. Wang 1, K. Nishiguchi 2, A. Fujiwara 2, G. Patriarche 1, D. Troadec 1, B. Legrand 1, G. Dambine 1 and D. Théron 1, 1 CNRS, France and 2 NTT, Japan	7C-4-2 9:30 Intercalation of Molecules into Multi-layer Graphene for LSI Interconnects H. Nakano, B. Zhou, D. Kondo, K. Hayashi, S. Nakaharai, S. Sato and N. Yokoyama, AIST, Japan	7D-4-2 9:30 Fabrication and Characterization of Lateral MnAs Nanowires by Selective-Area Metal-Organic Vapor Phase Epitaxy H. Kato 1, S. Sakita 1, M. Fischer 2 and S. Hara 1, 1 Hokkaido Univ., Japan and 2 Justus-Liebig Univ. Giessen, Germany
7A-4-3 10:00 Process Variation Analysis for Graphoepitaxial Directed Self-assembly Lithography based on the Dissipative Particle Dynamics Method (Invited) K. Kodera, Y. Naka, H. Kanai, S. Maeda, S. Tanaka, S. Mimotogi, Y. Seino, H. Yonemitsu, H. Sato and T. Azuma, Toshiba, Japan	7B-4-3 9:40 Gate-all-around Poly-Si Nanowire Junctionless TFTs with an Improved ON/OFF Current Ratio T.-Y. Liu 1, S.-C. Lo 2 and J.-T. Sheu 1, 1 Natl. Chiao Tung Univ. and 2 ITRI, Taiwan	7C-4-3 9:50 Inducing Local Strain in Graphene without Direct E-beam Exposure H. Tomori, R. Hiraide, H. Tanaka, K. Katakura, Y. Itou, Y. Ootuka and A. Kanda, Univ. of Tsukuba, Japan	7D-4-3 9:50 Enhanced Relative Humidity Sensing Performance of Laterally Grown ZnO Nanosheets F.-S. Tsai, S.-J. Wang, Y.-C. Tu and T.-H. Lin, Natl. Cheng Kung Univ., Taiwan
7A-4: Author's Interview 12:15-12:25	7B-4-4 10:00 Fabrication of Ge/Si Core/shell Nanowire Quantum Dots K. Wada 1,2, R. Wang 1, T. Suzuki 1,2, R.S. Daecon 1, N. Fukata 3 and K. Ishibashi 1,2, 1 Riken, 2 Chiba Univ. and 3 NIMS, Japan	7C-4-4 Withdrawn 10:10 Stacking Structure Observation in Twisted Bilayer Graphene using Aberration-corrected Transmission Electron Microscopy J.M. Yuk 1,2,3, H.Y. Jeong 1, N.Y. Kim 1, M.J. Lee 1, J.Y. Lee 2,3 and Z. Lee 1, 1 UNIST, 2 Inst. for Basic Sci. and 3 KAIST, Korea	7D-4-4 10:10 Fabrication of Zinc Oxide and Zinc Hydroxide Nanosheets and the Photoluminescent Properties of their Layered Materials Ö. Sağlam 1, Y. Matsuda 2, A. Shigeta 2 and Y. Matsumoto 2,3, 1 Technische Universität München, Germany, 2 Kumamoto Univ. and 3 JST-CREST, Japan
	7B-4-5 10:20 Study on Weak Biological Signal Detection utilizing Stochastic Resonance in a GaAs-based Nanowire FET Y. Imai, M. Sato, T. Tanaka and S. Kasai, Hokkaido Univ., Japan	7C-4: Author's Interview 12:05-12:15	7D-4: Author's Interview 12:35-12:45
	7B-4-6 10:40 Improved Internal Quantum Efficiency of GaN-based Light Emitting Diodes using p-AlGaN Trench in Multi-quantum Well G. Kim 1, J. Kim 1, E. Park 1, D. Kang 2 and B.-G. Park 1, 1 Seoul Natl. Univ. and 2 Samsung Electronics, Korea		
	7B-4: Author's Interview 11:00-11:10		
Lobby (in front of Royton Hall, 3F)			
Coffee Break			
Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
7A-5: Symposium A: Directed Self-Assembly (DSA) Processes and Modeling II Chairpersons: S. Nagahara (Tokyo Electron) K. Yoshimoto (Kyoto Univ.)	7B-5: BioMEMS: Biochip Chairpersons: H. Hisamoto (Osaka Pref. Univ.) Y. Takamura (JAIST)	7C-5: Nanocarbon Application Chairpersons: M. Tanemura (Nagoya Inst. of Technol.) S. Chiashi (Univ. of Tokyo)	7D-5: Nanofabrication II Chairpersons: S. Shingubara (Kansai Univ.) Y. Liu (AIST)

<p>7A-5-1 10:45 Computational Studies of Defectivity in Directed Self-Assembly (Invited) T. Iwama 1,2, N. Laachi 2, K.T. Delaney 2, B. Kim 2, R. Bristol 3, D. Shykind 3, C.J. Weinheimer 3 and G.H. Fredrickson 2, 1 Asahi Kasei, Japan and 2 Univ. of California, USA</p>	<p>7B-5-1 11:25 Molecular Nanogap Transistor applied to DNA Sequencing Y.-S. Chen, C.-H. Lee, B.-H. Tsai and G.S. Huang, Natl. Chiao Tung Univ., Taiwan</p>	<p>7C-5-1 10:45 Graphene Oxide for Tissue Engineering Application E. Nishida 1, H. Miyaji 1, H. Takita 1, I. Kanayama 1, M. Tsuji 2, M. Kawanami 1, 1 Hokkaido Univ. and 2 Mitsubishi Gas Chemical Company, Japan</p>	<p>7D-5-1 10:55 Effect of the Thermal History on Ni Silicidation Rate in Si Nanowires H. Yamashita 1, H. Kosugiyama 1, Y. Shikahama 1, S. Hashimoto 1, K. Takei 1, J. Sun 1, T. Matsukawa 2, M. Masahara 2 and T. Watanabe 1, 1 Waseda Univ. and 2 AIST, Japan</p>
<p>7A-5-2 11:15 Review of Computational Simulations and Parametric Studies for DSA Process Development, DSA-friendly IC Design Exploration and Solution of the Inverse DSA Problem (Invited) A. Latypov, G. Garner, M. Preil, G. Schmid, W.-L. Wang, J. Xu and Y. Zou, GLOBALFOUNDRIES, USA</p>	<p>7B-5-2 11:45 Development of Robot-free High-density Protein Biochips for Global Proteomics Research M. Biyani 1,2, Y. Tanaka 1 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 JST-CREST, Japan</p>	<p>7C-5-2L 11:05 Graphene Field-effect Transistor-based Influenza-virus Detection T. Oe 1, Y. Ohno 1, K. Maehashi 1, K. Matsumoto 1, Y. Watanabe 1, K. Ikuta 1, T. Kawahara 2 and Y. Suzuki 2, 1 Osaka Univ. and 2 Chubu Univ., Japan</p>	<p>7D-5-2 11:15 Patterning Ability of a Mass-production-ready Anti-wear probe Y. Li 1, M. Sugiyama 2 and H. Fujita 2, 1 Toshiba and 2 Univ. of Tokyo, Japan</p>
<p>7A-5-3 11:45 Applicable simulation methods for DSA on OCTA system -From simulation technique to analysis method- (Invited) H. Morita, AIST, Japan</p>	<p>7B-5-3 12:05 Sensitive and Multi Detection of Interleukin-6 (IL-6) by Grating Coupled-surface Plasmon-field Enhanced Fluorescence Imaging M. Tsuneyasu 1,2, C. Sasakawa 1, N. Naruishi 1, Y. Tanaka 1, Y. Yoshida 1 and K. Tawa 1,2, 1 AIST and 2 Kwansai Gakuin Univ., Japan</p>	<p>7C-5-3 11:25 Stretchable Single-walled Carbon-nanotube Film Transistors H. Hamahata 1, Y. Nobusa 1, K. Yanagi 2 and T. Takenobu 1, 1 Waseda Univ. and 2 Tokyo Metropolitan Univ., Japan</p>	<p>7D-5-3 11:35 Patterned Growth of Gold Nanostructures on Silicon via Reaction between Induced Silicon Dangling Bonds and Protic Solvents H. Itasaka, M. Nishi and K. Hirao, Kyoto Univ., Japan</p>
<p>7A-5: Author's Interview 12:15-12:25</p>	<p>7B-5: Author's Interview 12:25-12:35</p>	<p>7C-5-4 11:45 Cantilevered Carbon Nanotube Hygrometer T. Kuroyanagi, Y. Terada, K. Takei, S. Akita and T. Arie, Osaka Pref. Univ., Japan</p>	<p>7D-5-4 11:55 Formation of Orientation-controlled Thin (-50nm) Ge(111)-on-Insulator by Rapid-melting Growth Combined with Narrow-stripping S. Muta 1, M. Anisuzzaman 1, A.M. Hashim 1,2 and T. Sadoh 1, 1 Kyushu Univ., Japan and 2 Univ. Teknologi Malaysia, Malaysia</p>
		<p>7C-5: Author's Interview 12:05-12:15</p>	<p>7D-5-5 12:15 Fabrication of Ag Nanowire on Glass by Nano Ion-exchange Lithography S. Esaki, T. Yano and T. Kishi, Tokyo Inst. of Technol., Japan</p>
			<p>7D-5: Author's Interview 12:35-12:45</p>
<i>LUNCH</i>			
<p>7A-6: Resist and Directed Self-Assembly Chairpersons: T. Hirayama (Tokyo Ohka) K. Okamoto (Hokkaido Univ.)</p>	<p>7B-6: BioMEMS: Cell and Membrane Chairpersons: K. Furukawa (NTT) T. Ichiki (Univ. of Tokyo)</p>	<p>7C-6: Organic Nanomaterials Chairpersons: K. Nagai (Tokyo Inst. of Technol.) T. Lee (Seoul Natl. Univ.)</p>	<p>7D-6: Nanofabrication III Chairpersons: T. Shinada (AIST) K. Takase (Nihon Univ.)</p>
<p>7A-6-1 14:00 Realizing sub-10 nm patterning through industrial and academic approaches I. Mori, T. Itani, S. Inoue and T. Azuma, EIDEC, Japan</p>	<p>7B-6-1 14:00 Cell-laden Microfiber for Bottom-up Tissue Engineering (Invited) S. Takeuchi, Univ. of Tokyo and JST-ERATO, Japan</p>	<p>7C-6-1 13:40 Organic Nanoparticles based p-n Junction for Full-spectrum-visible-light Photocatalyst (Invited) K. Nagai 1, P. Arunachalam 1, S. Zhang 1, T. Iyoda 1 and T. Abe 2, 1 Tokyo Inst. of Technol. and 2 Hirotsuki Univ., Japan</p>	<p>7D-6-1 14:00 Phase Shift Optics for 3D Nanopatterning (Invited) J.K. Hyun, J. Park, C. Ahn, E. Kim, D. Kim and S. Jeon, KAIST, Korea</p>
<p>7A-6-2 14:30 Effects of Effective Reaction Radius for Neutralization on Performance of Chemically Amplified Resists T. Kozawa 1, J.J. Santillan 2 and T. Itani 2, 1 Osaka Univ. and 2 EIDEC, Japan</p>	<p>7B-6-2 14:30 Microfluidic Fabrication of in-situ Gelable Chitosan-dextran Microgels C. Cha 1 and J. Oh 2, 1 Harvard Medical School, USA and 2 Chonbuk Natl. Univ., Korea</p>	<p>7C-6-2 14:10 Fabrication and Morphology Control of Fullerene Nanosheets and Nanocrystals H. Ogata, Y. Sano and K. Baba, Hosei Univ., Japan</p>	<p>7D-6-2 14:30 Optimization of SERS Active Three-Dimensional Gold Nanostructure with High Sensitivity R. Takahashi, T. Fukuoka and Y. Utsumi and A. Yamaguchi, Univ. of Hyogo, Japan</p>
<p>7A-6-3 14:50 Roughness Controllability using Photoresist Smoothing and Hardening M. Yamato 1, A. Hara 1, S. Natori 1, S. Yamauchi 1, K. Oyama 1, H. Yaegashi 1, M. Honda 2 and K. Kobayashi 2, 1 Tokyo Electron and 2 Tokyo Electron Miyagi, Japan</p>	<p>7B-6-3 14:50 Effects of Wrinkled PDMS Surface on Cell Survival Rate and Spreading C.K. Oh, W.H. Jeong, J.Y. Hong, D.G. Lee and O.C. Jeong, Inje Univ., Korea</p>	<p>7C-6-3 14:30 Rare-metal-free Organic Thin-film Solar Cells using a Plasmonic Electrode K. Takatori 1, T. Nishino 2, T. Okamoto 2, H. Takei 3, K. Ishibashi 2 and R. Micheletto 1, 1 Yokohama City Univ., 2 Riken and 3 Toyo Univ., Japan</p>	<p>7D-6-3 14:50 A Novel Method of Fabricating Large-area Nano-metal Meshes for Organic Device Applications Y. Hsu 1, X. Fang 2, H.-W. Zan 1, H.-F. Meng 1 and L.A. Wang 2, 1 Natl. Chiao Tung Univ. and 2 Natl. Taiwan Univ., Taiwan</p>

7A-6-4 15:10 Directed Self-Assembly of Liquid Crystalline Block Copolymer and Structural Transcription to Gold Nanorod Array N. Yamashita 1, M. Komura 1, K. Nagai 1, T. Iyoda 1, K. Aida 2, Y. Tada 2 and H. Yoshida 2, 1 Tokyo Inst. of Technol. and 2 Hitachi, Japan	7B-6-4 15:10 Importance of Spatial Arrangement of Cell Network Patterns for Precise and Stable Measurement of in Vitro Properties of Cells F. Nomura, T. Hamada, A. Hattori, K. Matsu-ura, H. Terazono and K. Yasuda, Tokyo Medical and Dental Univ., Japan	7C-6-4 14:50 Molecular- and Polymer-based Electronic Devices on Rigid and Flexible Substrates (Invited) T. Lee, Seoul National Univ., Korea	7D-6-4 15:10 10 nm Vertical In _{0.53} Ga _{0.47} As Line Etching Process for III-V MOSFET Fabrication by using Inductively Coupled Plasma (ICP) Etcher in Cl ₂ /CH ₄ /H ₂ Chemistry X. Li, O. Ignatova, M. Cao, U. Peralagu, M. Steer, M. Mirza, H. Zhou and I. Thayne, Univ. of Glasgow, UK
7A-6-5 15:30 Directed Self Assembly Materials for Sub 10nm Node S. Minegishi, Y. Anno, Y. Namie, T. Naruoka and T. Nagai, JSR, Japan	7B-6-5 15:30 Platform for Low Noise Biosensors using Microwells Sealed with Lipid Bilayers Y. Kashimura, R. Forbes and K. Sumitomo, NTT, Japan	7C-6-5 15:20 Via Filling Methods with Metal/Polymer Composite for 3D-LSI B. Horvath, J. Kawakita and T. Chikyow, NIMS, Japan	7D-6-5 15:30 Throughput Comparison of Multi-exposure and Multi-beam Laser Interference Lithography on Nano Patterned Sapphire Substrate Process T. Lin, T. Huang, Y. Yang and C. Fu, Natl. Tsing Hua Univ., Taiwan
7A-6: Author's Interview 15:50-16:00	7B-6: Author's Interview 15:50-16:00	7C-6-6 15:40 Numerical Investigation of Organic Thin-film Transistors using a Thermionic Field Emission Model K. Noda 1, Y. Wada 1 and T. Toyabe 2, 1 Keio Univ. and 2 Toyo Univ., Japan 7C-6: Author's Interview 16:00-16:10	7D-6: Author's Interview 15:50-16:00

Lobby (in front of Royton Hall, 3F)

Coffee Break

Room P (Royton Hall B and C, 3F)

7P-7: Poster Session I (16:20-18:20)

Resist and Directed Self-Assembly

Chairpersons: H. Yamamoto (Osaka Univ.) and J. Kon (Fujitsu)

7P-7-1 Placement Error of the Contact Hole Shrunk by Directed Self-assembly of Block Copolymers T. Druzhinina 1, S. Wuister 1, E.v.d. Heijden 1, D. Ambesi 1, J. Finders 1 and E. Peeters 2, ASML, The Netherlands	7P-7-2 Microphase Separation of a Nematic Liquid Crystalline Block Copolymer Thin Film assisted by Small Nematic Liquid Crystalline Molecules S. Kubo 1, S. Kobayashi 1, S. Hadano 2, M. Komura 3, T. Iyoda 3 and M. Nakagawa 1, 1 Tohoku Univ., 2 Kochi Univ. and 3 Tokyo Inst. of Technol., Japan	7P-7-3 Nanometrology of Sub-20 nm 2D Features from BCPs Self-assembly by NIL Technology C. Simão 1, W. Khunsin 1, D. Tuchapsky 2, N. Kehagias 1, A. Amann 2, M. A. Morris 2,3 and C.M. Sotomayor Torres 1,4, 1 Inst. Catalan of Nanotechnol., Spain, 2 Univ. College Cork 3 Trinity College Dublin, Ireland and 4 Catalan Inst. of Res. and Advanced Studies, Spain	7P-7-4 Contact Hole Shrink by Directed Self-assembly: Process Integration and Stability monitored on 300mm Pilot Line I. Servin 1, R. Tiron 1, A. Gharbi 1, M. Argoud 1, X. Chevalier 2, X. Bossy 1, J. Belledent 1, P. Pimenta Barros 1, C. Navarro 2, G. Cunge 1, S. Barnola 1, M. Asai 3 and C. Pieczulewski 4, 1 CEA-LETI, 2 ARKEMA, France, 3 Dainippon Screen, and 4 Sokudo, Japan
7P-7-5 Pulse Radiolysis Study of Polystyrene-based Polymers with Adding Photoacid Generators (PAGs): Molecular Dynamics of Extreme-ultraviolet and Electron Beam Resist K. Okamoto 1, K. Tominaga 1, T. Hori 1, H. Yamamoto 2, T. Kozawa 2, R. Fujiyoshi 1 and T. Sumiyoshi 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan	7P-7-6 Novel EUV Resist Materials based on Noria (Water-wheel Like Cyclic Oligomer) Derivatives with Pendant Ethoxy and Adamantyl Ester Groups S. Matsubara 1, H. Kudo 1, T. Watanabe 2, K. Emura 2 and H. Kinoshita 2, 1 Kansai Univ. and 2 Univ. of Hyogo, Japan	7P-7-7 Chemical Reaction Analysis of PHS CA Resist System for EUVL using Soft X-ray Absorption Spectroscopy K. Emura 1, T. Watanabe 1, M. Yamaguchi 1, H. Tanino 1, T. Fukui 1, D. Shiono 2, Y. Haruyama 1, Y. Muramatsu 1, K. Ohmori 2, K. Sato 2, T. Harada 1 and H. Kinoshita 1, 1 Univ. of Hyogo and 2 Tokyo Ohka Kogyo, Japan	7P-7-8 Simulation of Kinetics in High-density Ionization Extra-ultraviolet (EUV) Resist Process K. Nishino 1, K. Okamoto 1, T. Kozawa 2, R. Fujiyoshi 1 and T. Sumiyoshi 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan
7P-7-9 Viscosity Effect on Deprotonation Dynamics of Poly(4-hydroxystyrene) T. Ishida 1, K. Okamoto 1, H. Yamamoto 1, T. Kozawa 2, R. Fujiyoshi 1 and T. Sumiyoshi 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan	7P-7-10 Acid Generation Mechanism in Solid Poly(4-hydroxystyrene) upon Exposure to Electron Beam H. Yamamoto and T. Kozawa, Osaka Univ., Japan		

Nanocarbons

Chairpersons: M. Tanemura (Nagoya Inst. of Technol.) and S. Okada (Univ. of Tsukuba)

7P-7-11 Fabrication and Characterization of Ni-NiO/carbon Composite Nanofibers for Energy Storage Applications T. Sintprajim and S. Meansiri, Suranaree Univ. of Technol., Thailand	7P-7-12 In-situ Optical Microscopy of Initial Growth Stage of Carbon Nanocoils T. Gohara, T. Arie and S. Akita, Osaka Pref. Univ., Japan	7P-7-13 Removal of Metallic Single-walled Carbon Nanotubes using Molecular Glass Thin Films K. Otsuka, T. Inoue, S. Chiashi and S. Maruyama, Univ. of Tokyo, Japan	7P-7-14 Energetics and Electronic Structures of C ₆₀ included within [n]Cyclacene Molecules S. Kigure 1 and S. Okada 1,2, 1 Univ. of Tsukuba and 2 JST-CREST, Japan
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7P-7-15 Improvement of Adhesion of Ni-based Carbon Nanotube Composite Coating on Stainless Steels by using a Scanning Electroplating T. Suzuki and M. Kato, Yamagata Res. Inst. of Technol., Japan	7P-7-16 Low Temperature Synthesized Graphene by Surface Wave Plasma CVD as Effective Oxidation Barrier G. Kalita 1, D. Ghimire 2, K. Wakita 2, M. Umeno 2 and M. Tanemura 1, 1 Nagoya Inst. of Technol. and 2 Chubu Univ., Japan	7P-7-17 Graphene Fabrication from Decomposition of Hydrocarbons by using Non-transferred Arc Plasma J.-J. Baek, T.-H. Kim, S. Choi and D.-W. Park, Inha Univ., Korea	7P-7-18 Formation Mechanism of Carbon Nano-ribbons/Tetrahedra via Collapse of Multiwalled Carbon Nanotubes H. Kohno, T. Komine and S. Ichikawa, Osaka Univ., Japan
7P-7-19 Floating-Bridge Graphene Devices on Ionic Liquid Y. Yamashiro, Y. Ohno, K. Maehashi, K. Inoue and K. Matsumoto, Osaka Univ., Japan	7P-7-20 Growth of CdTe Structures on Graphene Y. Jung, G. Yang, S. Chan, D. Kim and J. Kim, Korea Univ., Korea	7P-7-21 Fabrication of Flexible Transparent Conductive Films with Graphene Nanosheets and Silver Nanowires P.H. Jian 1, M.J. Huang 1, N.W. Pu 2, Y.M. Liu 1 and M.D. Ger 1, 1 Natl. Defense Univ. and 2 Yuan Ze Univ., Taiwan	7P-7-22 Modification of Paraffin Phase Change Materials using Nanographite Additives C.W. Liao 1, C.H. Wu 1, G.N. Shi 1, N.W. Pu 2, Y.M. Liu 1 and M.D. Ger 1, 1 Natl. Defense Univ. and 2 Yuan Ze Univ., Taiwan
7P-7-23 Structural Dependence of Electronic Properties of Graphene Nanoribbons on an Electric Field A. Yamanaka 1 and S. Okada 1,2, 1 Univ. of Tsukuba and 2 JST-CREST, Japan	7P-7-24 Modulation of Carrier Mobility in Graphene Double Layer Structure by Dielectric Environment Effect K. Hosono and K. Wakabayashi, NIMS, Japan	7P-7-25 Two-dimensional sp^2 Carbon Network of Fused Pentagons: All Carbon Ferromagnetic Sheet M. Maruyama 1 and S. Okada 1,2, 1 Univ. of Tsukuba and 2 JST-CREST, Japan	7P-7-26 Direct Graphene Synthesis on Insulated Substrates using Ni/Pd Catalytic Layers T. Ikuta, Y. Ohno, K. Maehashi, K. Inoue and K. Matsumoto, Osaka Univ., Japan
7P-7-27 Amperometric Urea Biosensor based on Carbon Nanotubes and Metal Catalysts H. Wu, M.H. Koo, N.T.M. Linh and H.H. Yoon, Gachon Univ., Korea	7P-7-115L Enhanced Performance of 2D Graphene Oxide/ZnO Nanoparticle in Dye-sensitized Solar Cells C.-H. Hsu 1,2, C.-C. Chen 1, C.-C. Lai 2, L.-G. Chen 1 and P.-S. Chan 1, 1 Natl. Taipen Univ. of Technol. and 2 Bichen Technol., Taiwan	7P-7-116L	7P-7-117L Production of Carbon Nanocoils using a Spray Pyrolysis Chemical Vapor Deposition Method W.K. Huang 1, K.J. Chung 1, Y.M. Liu 1, N.W. Pu 2, M.D. Ger 1, M.J. Youh 3, 1 Natl. Defense Univ., 2 YuanZe Univ. and 3 Hsing Wu Univ., Taiwan
7P-7-118L Solution-processed Al_2O_3 for gate dielectrics in the Top-Gated Graphene Field Effect Transistors G.-H. Park, H. Fukidome, T. Suemitsu, T. Otsuji and M. Suemitsu, Tohoku Univ., Japan	7P-7-119L Responses for mechanical strain/stress of single walled carbon nanotube thin film deposited on piezoelectric flexible sheet T. Taira, T. Ikawa, H. Hotta, H. Tabata, O. Kubo and M. Katayama, Osaka Univ., Japan	7P-7-120L Computer-Aided Molecular Design of Functional Graphene Nano-flakes: DFT Study S. Abe and H. Tachikawa, Hokkaido Univ., Japan	

Nanodevices

Chairpersons: Y. Ishikawa (Nara Inst. of Sci. and Technol.) and N. Banno (Leap)

7P-7-28 Reusable Sodium Chloride Sensor with Poly-silicon Nanowire C.-C. Hsu 1, C.Y. Yang 1, W.-K. Ho 1, C.-J. Lai 1 and S.-C. Tseng 2, 1 Yuan Ze Univ. and 2 ITRI, Taiwan	7P-7-29 High Performance $GdTi_xO_y$ Electrolyte-insulator-semiconductor or Biosensors C.-W. Wang 1, T.-M. Pan 1 and L. Chi 2, 1 Chang Gung Univ., Korea and 2 Westfälische Wilhelms-Universität Münster, Germany	7P-7-30 Withdrawn Hybrid Nanostructure consisting of a Nanoneedle and Nanodot for Ionization Gas Sensing Application H. Liu and Y. Huang, Nanyang Technological Univ., Singapore	7P-7-31 Room Temperature Ammonia Gas Sensor Base on Hybridized P3HT: Au/ZnO NPs Films V. Kruefu 1, A. Wisitorsaat 2, A. Tuantranont 2 and S. Phanichphant 3, 1 Maejo Univ., 2 NECTEC and 3 Chang Mai Univ., Thailand
7P-7-32 Highly CO Sensitivity of ZnO Tetrapods modified by TiO_2 Powder T. Santhaveesuk 1,2, K. Shimano 3, M. Yuasa 3, D. Wongrataphisan 2 and S. Choojun 2, 1 Pibulsongkram Rajabhat Univ. and 2 Chiang Mai Univ., Thailand and 3 Kyushu Univ., Japan	7P-7-33 Characteristics of InGaP/InGaAs Field-effect Transistor Typed Hydrogen Sensor with Pd Nanoparticle Catalytic Metal J.-H. Tsai, Natl. Kaohsiung Normal Univ., Taiwan	7P-7-34 Structural and Electrical Properties of Electrolyte-insulator-metal Device based Anodic Aluminum Oxide with Variation of Second Anodizing time for Biosensor Y.-J. Kim, T.-H. Lee, J.-H. Yeo and S.-G. Lee, Gyeongsang Natl. Univ., Korea	7P-7-35 Light Trapping Performance in Thin Film Silicon Solar Cell using Indium Nanoparticle Plasmonics on the Different Thickness of TiO_2 Space Layer Y.-Y. Lee, W.-J. Ho, J.-J. Liu and C.-H. Lin, Natl. Taipei Univ. of Technol., Taiwan
7P-7-36 Novel Fabrication Technique of Amorphous Carbon Thin Film from Palm Oil Precursor by Bias-assisted Pyrolysis-CVD for Amorphous Carbon Solar Cells A. Ishak, K. Dayana and M. Rusop, Univ. Teknologi MARA, Malaysia	7P-7-37 A Study of Photoelectric Conversion Efficiency depending on Defect States of InAs Quantum Dot Solar Cell grown by Molecular Beam Epitaxy K.S. Lee 1, D.U. Lee 1, E.K. Kim 1 and W.J. Choi 2, 1 Hanyang Univ. and 2 KIST, Korea	7P-7-38 Novel Fabrication Method for Cu(In,Ga)Se ₂ Solar Cells P. Choi, D. Baek, H. Kim, K. Kim, H. Park, S. Kim and B. Choi, Sungkyunkwan Univ., Korea	7P-7-39 The Cu Concentration Effect on the Electro-optical Properties of $Cu_2ZnSnSe_4$ Thin Films Prepared by a Non-vacuum Solution-based Nano-inks Process P.-Y. Lee 1, S.-P. Chang 1, E.-H. Hsu 2, S.-J. Chang 1, 1 Natl. Cheng Kung Univ. and 2 Natl. Univ. of Tainan, Taiwan
7P-7-40 Fabrication of Aligned ZnO Nanorod Arrays on Sn-doped ZnO Seed Layer by Simple Sonicated Sol-gel Immersion for Dye-sensitized Solar Cells I. Saurdi, M.H. Mamat, N.D. Sidin, M.F. Malik and M. Rusop, Univ. Teknologi MARA, Malaysia	7P-7-41 Inorganic-organic CdSe/ZnS Quantum Dot-poly(Methyl Methacrylate) Composite-based Unipolar Resistive Switching Memory Y.-C. Chen 1, H.-C. Yu 1, Y.-K. Su 1,2, C.-Y. Huang 3, T.-H. Liu 1 and T.-H. Chang 1, 1 Natl. Cheng Kung Univ., 2 Kun Shan Univ. and 3 Natl. Taitung Univ., Taiwan	7P-7-42 Bipolar Resistive Switching Behavior in Au/Pt- Fe_2O_3 Core-shell Nanoparticles Assembly/Ti with 3 x 3 Crossbar Array Structure Q. Hu, J.H. Shim, T.-S. Lee, H.K. Lee, T.-S. Yoon, Y.J. Choi and C.J. Kang, Myongji Univ., Korea	7P-7-43 Analysis of Resistive Switching Characteristics of Nickel Oxide Thin Films M.R. Park 1, S.I. Lee 2, W.J. Song 1, D.H. Lee 2, T.S. Yoon 1, Y.J. Choi 1, B.H. Park 2 and C.J. Kang 1, 1 Myongji Univ. and 2 Konkuk Univ., Korea

<p>7P-7-44 Study of Reliability Testing in GaN-based Blue Light-emitting Diodes by Doping TiO₂ Nanoparticles in Encapsulation Silicon P.-C. Wang 1, C.-L. Lin 2, P.-C. Chien 2 and Y.-K. Su 1,2, 1 Natl. Cheng Kung Univ. and 2 Kun-Shan Univ., Taiwan</p>	<p>7P-7-45 Fabrication Technology of Large-area OLEDs Lightings with Shadow Mask Patterning Technology C.Y. Park, J.H. Lee and B.H. Choi, Korea Inst. of Industrial Technol., Korea</p>	<p>7P-7-46 Effects of Current Spreading in GaN-based Light-emitting Diodes using ITO Spreading Pillar J.H. Kim 1, G. Kim 1, J.K. Song 2, D.H. Kang 2 and B.-G. Park 1, 1 Seoul Natl. Univ. and 2 Samsung, Korea</p>	<p>7P-7-47 Improve Performance of β-Ga₂O₃ Nanowire Field Emitter by UV Irradiation Y.H. Lin, Y.L.Wu and S.J. Chang, Natl. Cheng Kung Univ., Taiwan</p>
<p>7P-7-48 Field emission and Photodetector Characteristics of GZO Nanorods C. S. Huang 1, C. H. Hsiao 2, M. Y. Chuang 2, Y. C. Chen 2, S. J. Young 3, Y. K. Su 2 and S. J. Chang 2, 1 Natl. Yunlin Univ. of Sci. and Technol., 2 Natl. Cheng Kung Univ. and 3 Natl. Formosa Univ., Taiwan</p>	<p>7P-7-121L Planar Junctionless Poly-si Thin-film Transistors with Single Gate and Double Gate C.H. Chou, I.-C. Lee, D.-C. Lei and H.-C. Cheng, Natl. Chiao Tung Univ., Taiwan</p>	<p>7P-7-122L Fabrication of the Field Emission Lamp and Morphology Transform Analysis of Carbon Nano-coils K.J. Chung 1, C.C. Chiang 1, Y.M. Liu 1, M.J. Youh 1, N.W. Pu 3 and M.D. Ger 1, 1 National Defense Univ. 2 Hsing Wu College and 3 Yuan Ze Univ., Taiwan</p>	

Nanofabrication

Chairpersons: A. Kohno (Fukuoka Univ.) and T. Shinada (AIST)

<p>7P-7-49 Study on Collective Morphology Dependence of Optical Reflectance Properties for a High Density Array of Silicon Nanowires T. Yamaguchi 1, T. Shimizu 1, Y. Morosawa 2, K. Takase 2 and S. Shingubara 1, 1 Kansai Univ. and 2 Nihon Univ., Japan</p>	<p>7P-7-50 Fabrication of Ultrahigh Density 10-nm-order sized C Nanodot Array as a Pattern-transfer Mask M. Huda, J. Liu, Y. Yin and S. Hosaka, Gunma Univ., Japan</p>	<p>7P-7-51 Electrical Characterization of Metal-ferroelectric-insulator-semiconductor having Double Layered Insulator for Memory Applications L.N. Ismail, M.H. Wahid, Z. Habibah, S.H. Herman, M.D. Rozana and M. Rusop, Univ. Teknologi MARA, Malaysia</p>	<p>7P-7-52 Effect of the Working Pressure on the Boron Trichloride based ICP-RIE of Lithium Niobate Substrate M.-H. Shiao 1, C.-M. Chang 1,2, J. Su 1, P.-L. Chen 1, W.-J. Hsueh 2 and C.-N. Hsiao 1, 1 Natl. Applied Res. Labs. and 2 Natl. Taiwan Univ., Taiwan</p>
<p>7P-7-53 Large Area Fabrication of Umbrella-like Silicon Cone Arrays Decorated with Au Nanospheres for Surface Enhanced Raman Scattering Z. Hu, B. Quan, Y. Li, J. Li and C. Gu, Chinese Academy of Sci., China</p>	<p>7P-7-54 Fabrication and Optical Properties of Organic-inorganic Nanohybrids based on Self-organizing Nature of Lead Halide-based Layered Perovskites M. Era, K. Soda, Y. Shironita and K. Sakaguchi, Saga Univ., Japan</p>	<p>7P-7-55 Angled Dry Etching Process of Nb-TiO₂ Substrate by SF₆ Plasma A. Matsutani 1, K. Nishioka 1, D. Shoji 1, M. Sato 1, D. Kobayashi 1, T. Isobe 1, A. Nakajima 1, T. Tatsuma 2 and S. Matsushita 1, 1 Tokyo Inst. of Technol. and 2 Univ. of Tokyo, Japan</p>	<p>7P-7-56 The Fabrication of PSI/ZnO Nanostructures as Chemical Sensors for the Detection of Ethanol Solution using an Electrochemical Impedance Technique F.S. Husairi, K.Eswar, Z.N Atikah, A. Azlinda, M. Rusop and S. Abdullah, Univ. Teknologi MARA, Malaysia</p>
<p>7P-7-57 Fabrication and Application of Nanostructures using AAO Mold Pre-textured by Self-assembled Nanospheres Template K.-H. Lu, R.-H. Hong, S.-P. Lin and S.-Y. Yang, Natl. Taiwan Univ., Taiwan</p>	<p>7P-7-58 Nanosilver Particles Composite Prepare by Isopropanol-Gold Plasma Interface Layer and UV graft PolyAAc for Post Reduction of Silver Ion on the Substrate K. S. Chen 1, Y. S. Wei 1, C. W. Chou 2, C. K. Feng 3 and W. Y. Chen 4, 1 Univ. of Tatung, 2 China Medical Univ., 3 Veterans General Hospital and 4 Natl. Taiwan Univ., Taiwan</p>	<p>7P-7-59 XANES Analysis of CoxMn_{1-x}Fe₂O₄ Nanoparticles prepared by Hydrothermal Method N. Wiriya 1, S. Maensiri 2 and E. Swatsitang 1, 1 Khon Kaen Univ. and 2 Suranaree Univ., Thailand</p>	<p>7P-7-123L Comparison of Electromagnetically Induced Transparency between Silver and Gold Metamaterials at Wavelengths around 800 nm R. Hokari, Y. Kanamori and K. Hane, Tohoku Univ., Japan</p>
<p>7P-7-124L Aluminum Doping of 4H-SiC using Chemical Wet Laser Processing D. Marui, A. Ikeda, K. Nishi, H. Ikenoue, T. Asano, Kyushu Univ., Japan</p>			

Inorganic Nanomaterials

Chairpersons: K. Terabe (NIMS) and X.W. Zhao (Tokyo Univ. of Sci.)

<p>7P-7-60 Low Temperature Crystallization of TiO_{2-x} Thin Film by RF Magnetron Sputtering using Oxygen Radical Y. Shimazu 1, T. Higuchi 1, T. Okumura 1, E. Sakai 2, H. Kumigasira 2, M. Okawa 1 and T. Saitoh 1, 1 Tokyoku Univ. of Sci. and 2 KEK, Japan</p>	<p>7P-7-61 Synthesis of ZnO Nanoparticles in Aqueous Solution and their Antibacterial Activities G. Zhang 1, H. Morikawa 1 and Y. Chen 2, 1 Shinshu Univ., Japan and 2 Soochow Univ., China</p>	<p>7P-7-62 Photocatalytic Efficiency of N/3SnO₂ Co-doped TiO₂ Thin Films coated on Glass Fibers P. Kongsong, L. Sikong, S. Niyomwas and V. Rachapech, Prince of Songkla Univ., Thailand</p>	<p>7P-7-63 Effect of Synthesis Temperature of h-MoO₃ on their Photochromic Properties P. Jittiporn, L. Sikong, K. Kooptanond and W. Taweepreda, Prince of Songkla Univ., Thailand</p>
<p>7P-7-64 Decolorization of Methylene Blue by Ag/SrSnO₃ composites under Ultraviolet Radiation P. Junploy, S. Thongtem and T. Thongtem, Chiang Mai Univ., Thailand</p>	<p>7P-7-65 Surface Modification of ZnO with Silver Particles and Its Photocatalytic Activity T. Srivorakul 1, K. Thongpanchang 1, C. Suwanchawalit 1, S. Buddee 2 and S. Wongnawa 2, 1 Silpakorn Univ. and 2 Prince of Songkla Univ., Thailand</p>	<p>7P-7-66 Synthesis, Characterization and Photocatalytic Property of Gd-doped ZnO Nanorods O. Yayapao 1, S. Thongtem 1, T. Thongtem 1 and A. Phuruangrat 2, 1 Chiang Mai Univ. and 2 Prince of Songkla Univ., Thailand</p>	<p>7P-7-67 Phase Transformation of VO₂ Nanoparticles assisted by Microwave Heating P. Phoempoon and L. Sikong, Prince of Songkla Univ., Thailand</p>

<p>7P-7-68 Synthesis and Characterization of Co-precipitation prepared La-doped BiFeO₃ Nanopowders and Its Bulk Dielectric Properties B. Yotburut 1, T. Yamwong 2 and S. Maensiri 1, 1 Suranaree Univ. of Technol. and 2 Natl. Metals and Materials Technol. Ctr., Thailand</p>	<p>7P-7-69 Hydrothermal Synthesis and Characterization of Bi₂MoO₆ Nanoplates and Their Photocatalytic Activities P. Dumrongrojthanath 1, A. Phuruangrat 2, S. Thongtem 1 and T. Thongtem 1, 1 Chiang Mai Univ. and 2 Prince of Songkla Univ., Thailand</p>	<p>7P-7-70 Fabrication of PIN Devices Consisting of ZnO Quantum Dots Embedded in Ga₂ZnO₄ Film X. Zhang 1, K. Kobayashi 1, Y. Kohono 1, Y. Tomita 1, Y. Maeda 1 and S. Matsushima 2, 1 Shizuoka Univ. and 2 Kitakyushu Natl. College of Technol., Japan</p>	<p>7P-7-71 Structural and Photoluminescence Properties of Ag-doped ZnO Nanoparticles synthesized by a Simple Solution Combusting Method M. Silambarasan 1, S. Saravanan 1,2 and T. Soga 2, 1 Sona College of Technol., India and 2 Nagoya Inst. of Technol., Japan</p>
<p>7P-7-72 Withdrawn Effect of Extra Pb Excess on Dielectric and Structural Property of PbTiO₃ Thin Films Capacitor Z. Nurbaya, L.N. Ismail, Z. Habibah and M. Rusop, Univ. Teknologi MARA, Malaysia</p>	<p>7P-7-73 Dielectric Properties of Bulk CoFe₂O₄ Ceramic Prepared from Nanocrystalline CoFe₂O₄ Powders A. Khamkongkao 1, T. Yamwong 2 and S. Maensiri 3, 1 Khon Kaen Univ., 2 Natl. Metal and Materials Technol. Ctr. and 3 Suranaree Univ. of Technol., Thailand</p>	<p>7P-7-74 Preparation of Mesoporous NiO-Ce_{0.8}Sm_{0.2}O_{1.9} Cermet for Anode Low-temperature Solid Oxide Fuel Cells S.J. Ma, S.M. Ham and S.-J. Park, Gachon Univ., Korea</p>	<p>7P-7-75 CeO₂ Nanoparticles using Lemongrass Plant Extracted Solution: Synthesis and Optical Properties S. Maensiri 1, S. Labauyai 2, P. Laokul 3, J. Klunkaewnarong 4 and E. Swatsitang 2, 1 Suranaree Univ. of Technol., 2 Khon Kaen Univ., Univ., Mahasarakham Univ. and Udon Thani Rajabhat, Thailand</p>
<p>7P-7-76 Preparation of TiO₂ Nanowire Arrays and their pH Sensing Characteristics F.-S. Tsai, S.-J. Wang and Y.-C. Huang, Natl. Cheng Kung Univ., Taiwan</p>			

Organic Nanomaterials

Chairpersons: S. Takami (Tohoku Univ.) and H. Kasai (Tohoku Univ.)

<p>7P-7-77 Size Estimation of Biological Ink Particles dispersed in Suspensions Utilizing Atomic Force Microscopy T. Matsuura 1, T. Saeki 1, T. Sasaki 1, K. Minato 2 and T. Ueno 2, 1 Hokkaido Univ. of Education and 2 Hakodate Natl. College of Technol., Japan</p>	<p>7P-7-78 Electrical Properties of Carbon Nanotubes Synthesis by Double Furnace Thermal-CVD Technique at Different Temperatures on Porous Silicon Template F.S. Husairi, S.A.M. Zobir, M. Rusop and S. Abdullah, Univ. Teknologi MARA, Malaysia</p>	<p>7P-7-79 Single Crystalline Electrospun P(VDF-TrFE) Nanofiber M. Noyori, Y.Neo and H.Mimura, Shizuoka Univ., Japan</p>	<p>7P-7-80 Template-free One-step Electrochemical Synthesis of Polypyrrole Nanoparticles A.A. Daryakenaria and J.-J. Delaunay, Univ. of Tokyo, Japan</p>
<p>7P-7-81 Fabrication of Fluorescent Copper Complex Nanoparticles through the Heterogeneous Reaction R. Suzuki, H. Noguchi, T. Onodera, H. Kasai and H. Oikawa, Tohoku Univ., Japan</p>	<p>7P-7-82 Fabrication of SN-38 Derivatives Nanoparticles and their Anticancer Properties Y. Koseki 1, Y. Ikuta 1, T. Murakami 2, T. Onodera 1, H. Oikawa 1 and H. Kasai 1, 1 Tohoku Univ. and 2 Kyoto Univ., Japan</p>	<p>7P-7-83 Stable Emission and Nano-particle Formation of P3HT in Electropray Deposition for Fabrication of Organic Solar Cell S. Baba, T. Kimura, N. Yamaguchi and T. Sakamoto, Kogakuin Univ., Japan</p>	<p>7P-7-84 Fabrication of Oled using Needle-electro-spray Deposition T. Okada, S. Izawa, S. Tutamori and T. Sakamoto, Kogakuin Univ., Japan</p>
<p>7P-7-85 Efficiency Enhancement of Tandem Organic Light-emitting Devices fabricated utilizing an Organic p-type HAT-CN and an Organic n-type BEDT-TTF Charge Generation Layer J.T. Cho, D.H. Kim and T.W. Kim, Hanyang Univ., Korea</p>	<p>7P-7-86 Preparation of Tripolyphosphate / Chitosan Nanoparticles Intended for Drug Delivery System H.-C. Yang, Kun Shan Univ., Taiwan</p>	<p>7P-7-125L Microcontact Printing of Thermo-sensitive Nano Pd Catalytic Ink For High Uniformity Nickel Pattern P.C. Wang, Y.C. Chen, W.K. Huang, C.P. Chang, Y.M. Liu and M.D. Ger, 1 Natl. Defense Univ., Taiwan</p>	

Nano-Tool

Chairpersons: T. Hoshino (Univ. of Tokyo) and R. Kometani (Univ. of Tokyo)

<p>7P-7-87 The Growth Height Correction on the Three-dimensional Nanostructure Fabrication using Focused-ion-beam Chemical Vapor Deposition R. Kometani, Y. Murao, S. Ishihara and S. Warisawa, Univ. of Tokyo, Japan</p>	<p>7P-7-88 Chromosome Higher Order Structure revealed by FIB/SEM T. Hamano 1, K. Kaneyoshi 1, S. Fukuda 1, H. Takata 1, S. Uchiyama 1, R. Kometani 2, M. Nakao 2 and K. Fukui 1, 1 Osaka Univ. and 2 Univ. of Tokyo, Japan</p>	<p>7P-7-89 Influence of Microwave Annealing on a Silver Nano-particle Probe Applied to High-sensitivity Scanning Kelvin Probe Microscopy M.-H. Yu 1, C.-T. Lin 2, C.-T. Wu 2, Y.-J. Lee 1,2, M.-H. Shiao 2, M.-N. Chang 1, 1 Natl. Chung Hsing Univ. and 2 NARL, Taiwan</p>	<p>7P-7-90 Calibration of a Micro-force Sensor using an Electrostatic Sensing and Actuating Force Measurement System S.-J. Chen, S.-S. Pan, Y.-S. Yeh and Y.-C. Lin, ITRI, Taiwan</p>
<p>7P-7-126L Electrical transport in multi-layered silicene measured by multiple-scanning-probe microscope O. Kubo^{1,2}, P. De Padova³, B. Olivieri⁴, C. Quaresima³, G. Le Lay⁵, M. Aono² and T. Nakayama^{2,6}, 1 Osaka Univ., 2 NIMS, Japan and 3 ISM, 4 ISAC, Italy, 5 Aix-Marseille Univ., France and Univ. of Tsukuba, Japan</p>			

Nanoimprint, Nanoprint and Rising Lithography

Chairpersons: Y. Hirai (Osaka Pref. Univ.) and H. Hiroshima (AIST)

<p>7P-7-91 Enhancement of Out-coupling Efficiency with Nano Sized High Refractive Index Pattern J.H. Choi, H.J. Choi and H Lee, Korea Univ., Korea</p>	<p>7P-7-92 Efficiency Enhancement of Organic Thin Film Solar Cells by using Electrodes with Nanoimprinted Light Guiding Structures J.-Y. Chen, M.-H. Yu, C.-Y. Chang, Y.-H. Chao, C.-S. Hsu and K.W. Sun, Natl. Chiao Tung Univ., Taiwan</p>	<p>7P-7-93 Nanoimprinting of Self-organized Atomic Scale Patterns of Minerals onto the Oxide Glass Surface N. Inoue 1, R. Yamauchi 1, G. Tan 1, H. Oi 2, M. Mita 2, N. Okuda 3, S. Kaneko 1,4, A. Matsuda 1 and M. Yoshimoto 1, 1 Tokyo Inst. of Technol., 2 Kyodo International, 3 SCIVAX and 4 Kanagawa Industrial Technology Ctr., Japan</p>	<p>7P-7-94 The High Speed Roll to Roll Thermal Nanoimprint for Unique Organic/Inorganic Hybrid Material Coated Plastic Film K. Kumazawa, H. Shibata and H. Suzuki, Nippon Soda, Japan</p>
<p>7P-7-95 Investigation of Fluorinated Molecular and Polymer Additives Suitable for a Viscous Acrylate Monomer in UV Nanoimprinting S. Ito 1 and M. Nakagawa 1,2, 1 Tohoku Univ. and 2 JST-CREST, Japan</p>	<p>7P-7-96 Study of the Resistance of Antisticking Layer on Repeated UV Nanoimprint (2) S. Iyoshi 1,5, M. Okada 1,5,6, K. Kobayashi 3,5, S. Kaneko 3,5, T. Katase 2, K. Tone 2, Y. Haruyama 1,5, M. Nakagawa 3,5, H. Hiroshima 4,5 and S. Matsui 1,5, 1 Univ. of Hyogo, 2 Meisyo Kiko, 3, Tohoku Univ., 4 AIST and 5 JST-CREST, Japan</p>	<p>7P-7-97 Development of Improved SOFC Electrolyte Sheet by Micro Imprinting Process for Layered Material Y. Tanaka, F. Tsumori, Y. Xu, T. Osada and H. Miura, Kyushu Univ., Japan</p>	<p>7P-7-98 Comparison of Cavity Filling Behaviors in Ultraviolet Nanoimprint Lithography using Condensing Gases with Different Saturated Vapor Pressure S.-W. Youn 1,2, K. Suzuki 1,2, Q. Wang 1,2 and H. Hiroshima 1,2, 1 AIST and 2 JST-CREST, Japan</p>
<p>7P-7-99 HSQ Replica Mold with Release Property fabricated by Room Temperature Nanoimprinting N. Sugano, M. Okada, Y. Haruyama and S. Matsui, Univ. of Hyogo, Japan</p>	<p>7P-7-100 XPS Analyses of Ultrathin UV Nanoimprint Resin added with Fluorine Additive T. Oyama 1,3, M. Okada 1,3, S. Iyoshi 1,3, Y. Haruyama 1,3, H. Miyake 2, T. Mizuta 2 and S. Matsui 1,3, 1 Univ. of Hyogo, 2 Daicel and 3 JST-CREST, Japan</p>	<p>7P-7-101 Fabrication of Double-sided Self-supporting Antireflection-structured Film by UV-NIL N.B. Abu, T. Yusof and J. Taniguchi, Tokyo Univ. of Sci., Japan</p>	

BioMEMS, Lab on a Chip

Chairpersons: K. Furukawa (NTT) and T. Ichiki (Univ. of Tokyo)

<p>7P-7-102 Highly Sensitive Analysis of Water-insoluble Nanoparticles and soluble Proteins in Liquid by Resonant Surface Acoustic Wave Modulation Measurement K. Ogawa 1,3, T. Abe 1, Y. Seino 1, T. Torigoe 2, Y. Tada 3, K. Uesugi 3, H. Fukuda 3, K. Sawada 3 and T. Iwasa 3, 1 Fine Crystal, 2 Sapporo Medical Univ. and 3 Murooran Inst. of Technol., Japan</p>	<p>7P-7-103 Development of a Microfluidic Device Forming Oxygen Gradient for Cellular Experiments A. Sato, H. Uchida, A. Miyayama and K. Tsukada, Keio Univ., Japan</p>	<p>7P-7-104 Creating Uniform Amino-terminated Layer on Glass Surface using Water as Solvent H. Kuramochi 1,2, S. Ueno 1,2, T. Fukuda 2, S.R. Kumal 2, A. Ono 2 and T. Ichiki 1,2, 1 JST-CREST and 2 Univ. of Tokyo, Japan</p>	<p>7P-7-105 Design and Simulation of a Single Optical Fiber Scanner with High-Order Vibration Modal for Realizing Large Scanning Angle B. Sun 1, Y. Peng 1, Z. Yang 2, Y. Zhang 2, T. Itoh 2, R. Maeda 2 and R. Sawada 1, 1 Kyushu Univ. and AIST, Japan</p>
<p>7P-7-106 Fabrication of a Ring Structure at a Hole Aperture for Lipid Suspension T. Goto 1, Y. Harada 1, D. Cox 2,3 and K. Sumitomo 1, 1 NTT, Japan and 2 Natl. Physical Lab. and 3 Univ. of Surrey, UK</p>	<p>7P-7-107 Centrifugal Microfluidic Chip for Blood Separation M. Ishizawa 1, T. Kunisada 1, K. Kuroda 1, C. Kataoka 2, A. Yamaguchi 1 and Y. Utsumi 1, 1 Univ. of Hyogo and 2 Carbuncle BioSciencetech, Japan</p>	<p>7P-7-108 Development of Potable Urine Analyzer on Android for Pregnant-care Service W.I. Jang 1, E.J. Jeong 1, S.J. Yun 2, K.P. Nam 2, C.K. Kim 2, S.M. Kim 2 and C. Ihm 3, 1 Electronics and Telecommunications Res. Inst., 2 SmartCare and 3 Eulji Univ. Hospital, Korea</p>	<p>7P-7-109 Heterogeneously Integrated Laser Induced Fluorescence Detection Devices – Integration of an Excitation Source – K. Sumitomo, S. Ito, R. Takigawa, N. Tsujimura, H. Kato, T. Kobayashi, R. Maeda and T. Karnei, AIST, Japan</p>
<p>7P-7-110 Sensitive Detection of α-fetoprotein (AFP) with the Enhanced Fluorescence on the Plasmonic Chip F. Kondo 1,2, H. Hirayama 3, Y. Aoki 3 and K. Tawa 1,2, 1 AIST, 2 Kwansai Gakuin Univ. and 3 Konica Minolta, Japan</p>	<p>7P-7-111 Rapid Compartmentalization of Microwell Arrays using a Microfluidic Device T. Fukuda 1, S. Sato 1, S. Ueno 1,2, M. Biyani 1,2 and T. Ichiki 1,2, 1 Univ. of Tokyo and 2 JST-CREST, Japan</p>	<p>7P-7-112 Effects of the Height of Pillar Arrays fabricated by Proton Beam Writing on the Trapping Capability of Bacteria by 3-D Dielectrophoresis G. Ayugase 1, H. Nishikawa 1, T. Sato 2, Y. Ishii 2, T. Kamiya 2, H. Tokita 3 and S. Uchida 3, 1 Shibaura Inst. of Technol., 2 JAEA and 3 Tokyo Metropolitan Univ., Japan</p>	<p>7P-7-113 A Lap-on-chip for Total Phosphorus Analysis D.G. Jung 1, J.C. Choi 1, Y.C. Choi 1, S.H. Han 1, M.M. Hossain 1, W.I. Jang 2 and S.H. Kong 1, 1 Kyungpook Natl. Univ. and 2 Electronics and Telecommunications Res. Inst., Korea</p>
<p>7P-7-114 On-chip Ionization Source for Protein Coupled with Time of Flight Mass Spectrometry K. Sugiyama, H. Harako, Y. Ukita and Y. Takamura, JAIST, Japan</p>			

Room A (Royton Hall A, 3F)

18:30-20:30
Banquet

Friday, November 8

Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
8A-8:Symposium B: Directed Nanostructure Science I Chairpersons: Y. Hirai (Osaka Pref. Univ.) M. Nakagawa (Tohoku Univ.)	8B-8:Advanced Microdevices I Chairpersons: N. Miki (Keio Univ.) M. Sohgawa (Niigata Univ.)	8C-8:BioMEMS: Microfluidics Chairpersons: K. Tawa (AIST) M. Tokeshi (Hokkaido Univ.)	8D-8:Inorganic Nanomaterials II Chairpersons: T. Higuchi (Tokyo Univ. of Sci.) K. Terabe (NIMS)
8A-8-1 9:00 Directed Self-assembly of Block Copolymers (Invited) M. Takenaka, Kyoto Univ., Japan	8B-8-1 9:00 Integrated Silicon MEMS Technology and Novel Functional Sensor Devices (Invited) H. Takao, Kagawa Univ., Japan	8C-8-1 9:00 The Implementation of a Thermal Bubble Actuated Microfluidic Chip with Microvalve, Micropump and Micromixer C. Huang, W. Li and C. Tsou, Feng Chia Univ., Taiwan	8D-8-1 9:00 Surface Passivation of Germanium Nanowires using Al ₂ O ₃ and HfO ₂ deposited via Atomic Layer Deposition (ALD) Technique M. Simanullang, K. Usami, T. Kodera, Y. Kawano and S. Oda, Tokyo Inst. of Technol., Japan
8A-8-2 9:30 Single-nanodot Arrays and Single-nanohalf-pitch Lines Formed using PS-PDMS Self-assembly and Electron Beam Drawing(Invited) S. Hosaka, M. Huda, H. Zhang, T. Komori, Y. Yin, Gunma Univ., Japan	8B-8-2 9:30 Surfaces Virtually created by a MEMS Tactile Display Y. Kosemura 1, H. Ishikawa 1, J. Watanabe 1 and N. Miki 1,2, 1 Keio Univ. and 2 JST-PRESTO, Japan	8C-8-2 9:20 Anticoagulant Nano Porous Polyethersulfone Membrane Coated with Fluorinated Diamond-like Carbon for Dialysis Membrane I. Sanada 1, H. Ito 1, G.S. Prihandana 1, M. Noborisaka 1, Y. Kanno 2 and N. Miki 1, 1 Keio Univ. and 2 Tokyo Medical Univ., Japan	8D-8-2 9:20 Effect of Silver Metal on the Antibacterial Properties of the Titanium Dioxide Nanocomposite K. Ubonchonlakat 1, L. Sikong 1 and Y. Poo-arporn 2, 1 Prince of Songkla Univ. and 2 Synchrotron Light Res. Inst., Thailand
8A-8-3 10:00 Moiré Analysis of Block Copolymer Self-Assembly (Invited) S. Sakurai, H. Ohnogi, T. Harada, S. Sasaki and T. Isshiki, Kyoto Inst. of Technol., Japan	8B-8-3 9:50 Trajectory Control of Autorotating MEMS Falling Object H. Yamane and S. Nagasawa, Shibaura Inst. of Technol., Japan	8C-8-3 9:40 Ultimate Integration of a PDMS-based Lab-on-a-chip with Nanotransistor Biosensors R. Sivakumarasamy 1, K. Nishiguchi 2, A. Fujiwara 2, D. Vuillaume 1 and N. Clément 1, 1 CNRS, France and 2 NTT, Japan	8D-8-3 9:40 Sensitization Effect of Al-codoping on Nd-related Photoluminescence in TiO ₂ Matrix Y. Aizawa 1, T. Ohtsuki 1, S. Harako 1, S. Komuro 2, N. Hirao 3 and X. Zhao 1, 1 Tokyo Univ. of Sci., 2 Toyo Univ. and 3 JAEA, Japan
	8B-8-4 10:10 Micro-sized Exothermic Reactive Particles Fabricated by Sputtering to Mesh Substrates T. Matsuda 1, S. Inoue 1 and T. Namazu 1,2, Univ. of Hyogo and 2 JST-PRESTO, Japan	8C-8-4 10:00 Evaluation of Zeta Potential of Exosomes after Treated with Neuraminidase using Microcapillary Electrophoresis Chips N. Hanamura, T. Akagi, K. Kato, M. Kobayashi and T. Ichiki, Univ. of Tokyo, Japan	8D-8-4 10:00 The Effect of TiO ₂ Particle/nanotube Composition Powder for Dye-sensitized Solar Cells C.H. Lee, C.W. Bark and H.W. Choi, Gachon Univ., Korea
8A-8: Author's Interview 11:45-11:55	8B-8: Author's Interview 11:45-11:55	8C-8: Author's Interview 10:20-10:30	8D-8: Author's Interview 11:55-12:05
Lobby (in front of Royton Hall, 3F)			
Coffee Break			
Room A (Royton Hall A, 3F)	Room B (Royton Hall B, 3F)	Room C (Emerald Room A, 3F)	Room D (Emerald Room B, 3F)
8A-9:Symposium B: Directed Nanostructure Science II Chairpersons: Y. Hirai (Osaka Pref. Univ.) M. Nakagawa (Tohoku Univ.)	8B-9:Process and Characterization Chairpersons: T. Namazu (Univ. of Hyogo) T. Ando (Ritsumeikan Univ.)	8C-9:Nanocarbon Property I Chairpersons: S. Okada (Univ. of Tsukuba) S. Akita (Osaka Pref. Univ.)	8D-9:Inorganic Nanomaterials III Chairpersons: X.W. Zhao (Tokyo Univ. of Sci.) T. Higuchi (Tokyo Univ. of Sci.)
8A-9-1 10:45 Orientation and Position Control of DSA Lithography for Bit-patterned Media (Invited) R. Yamamoto, M. Kanamaru, K. Sugawara, N. Sasao, Y. Ootera, T. Okino, N. Kihara, Y. Kamata and A. Kikitsu, Toshiba, Japan	8B-9-1 10:45 Influence of FIB-induced Surface Damage on Mechanical Properties of Silicon Nanowires T. Fujii 1, K. Sudoh 2, S. Sakakihara 2, M. Naito 3,4, S. Inoue 1 and T. Namazu 1,5, 1 Univ. of Hyogo, 2 Osaka Univ., 3 Konan Univ., 4 JST-CREST and 5 JST-PRESTO, Japan	8C-9-1 10:45 Synthesis and Applications of Novel Low-dimensional Nanomaterials (Invited) H. Zhang, Nanyang Technological Univ.,Singapore	8D-9-1 10:35 Crystallization Behavior of Phosphorus-doped Silicon-rich Silicon Nitride Films grown by Electron Cyclotron Resonance Chemical Vapor Deposition Y.-C. Wang, P.-J. Wu, I.-C. Chen 1, C.-C. Lee, J.-Y. Chang and T. Li, Natl. Central Univ., Taiwan
8A-9-2 11:15 A Master-mold Fabrication by EB Lithography followed by Nanoimprinting and Self-aligned Double-patterning (Invited) T. Watanabe, K. Suzuki, H. Iyama, T. Kagatsume, S. Kishimoto, T. Sato and H. Kobayashi, HOYA, Japan	8B-9-2 11:05 Room Temperature Direct bonding of Electroplated Multi-wall Au Patterns Smoothed by Thermal Imprint Process Y. Kurashima, A. Maeda and H. Takagi, AIST, Japan	8P-9-2 11:15 Interacting Spins in Honeycomb Ribbons with Zigzag Edges S. Dutta and K. Wakabayashi, NIMS, Japan	8D-9-2 10:55 DLTS Characterization of In(Ga)As-quantum Dots Fabricated using Bi as a Surfactant H. Okamoto 1, S. Suzuki 1, H. Narita 1, T. Tawara 2, K. Tateno 2 and H. Gotoh 2, 1 Hiroasaki Univ. and 2 NTT, Japan

8A-9: Author's Interview 11:45-11:55	8B-9-3 11:25 Room-temperature Hermetic Sealing using Ultrasonic Bonding with Au Compliant Rim R. Takigawa, K. Iwanabe, T. Shuto, T. Takao and T. Asano, Kyushu Univ., Japan	8C-9-3 11:35 Wave-Packet Dynamics Simulation on Electronic Transport in Carbon Nanotubes with Topological Line Defects Y. Takada and T. Yamamoto, Tokyo Univ. of Sci., Japan	8D-9-3 Withdrawn 11:15 Si1-xGex Core shell Alloy Nanowires with Defected Shell for Low Thermal Conductivity J. Lee 1,2, E.K. Lee 1, K. Heo 1,3, L. Yin 4, C. Yu 4, B.L. Choi 1, D. Whang 1,2 and S. Hwang 1, 1 Samsung Advanced Inst. Technol., 2 Sungkyunkwan Univ., 3 Korea Univ., Korea and 4 Texas A&M Univ., USA
	8B-9: Author's Interview 11:45-11:55	8C-9: Author's Interview 11:55-12:05	8D-9-4 11:35 First-principles Simulation on Orientation Dependence of Piezoresistivity in 3C-SiC Nanostructures K. Nakamura, Kyoto Univ., Japan and Egypt-Japan Univ. of Sci. and Technol., Egypt 8D-9: Author's Interview 11:55-12:05
<i>LUNCH</i>			
8A-10:Symposium B: Directed Nanostructure Science III Chairpersons: Y. Hirai (Osaka Pref. Univ.) M. Nakagawa (Tohoku Univ.)	8B-10:Advanced Microdevices II Chairpersons: E. Iwase (Waseda Univ.) T. Sakata (NTT)	8C-10:Nanocarbon Property II Chairpersons: K. Wakabayashi (NIMS) M. Nagase (Univ. of Tokushima)	8D-10:Inorganic Nanomaterials IV Chairpersons: X.W. Zhao (Tokyo Univ. of Sci.)
8A-10-1 13:00 Fabrication and characterization of Metallic Nanostructures with Single Nanometer-sized Gap (Invited) K. Ueno, Hokkaido Univ. and JST-PRESTO, Japan	8B-10-1 13:10 2 - 6 GHz Monolithic Multi-frequency-variable Band Elimination Filter utilizing Fluid Microelectromechanical System Variable Capacitors Y. Yamada, T. Yamanaka, T. Furutsuka and K. Suzuki, Ritsumeikan Univ., Japan	8C-10-1 13:10 Water Adsorption on the Surface of a Single-walled Carbon Nanotube S. Chiashi 1,2, K. Kono 1, D. Matsumoto 1, J. Shitaba 1, S. Sato 1, T. Yamamoto 1 and Y. Homma 1, 1 Tokyo Univ. of Sci. and 2 Univ. of Tokyo, Japan	8D-10-1 13:10 Electrical Conductivity of Sc-doped TiO ₂ Thin Film prepared by RF Magnetron Sputtering T. Inoue 1, T. Okumura 1, E. Sakai 2, H. Kumigashira 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 KEK, Japan
8A-10-2 13:30 Electroless Plated Nanogap Electrodes and their Device Applications (Invited) Y. Majima, Tokyo Inst. of Technol., JST-CREST, Japan and Suncheon Natl. Univ., Korea	8B-10-2 13:30 Metallic Glass Based Piezoelectric Resonant Micro-mirror with Large Scanning Angle for Endoscopic Optical Coherence Tomography Y.-C. Tsai 1, T. Naono 2, Y.-C. Lin 1, J.-W. Lee 1, M. Esashi 1, T. Fujii 2 and T. Gessner 1,3,4, 1 Tohoku Univ., and 2 Fujifilm, Japan, 3 Fraunhofer ENAS and 4 Chemnitz Univ. of Technol., Germany	8C-10-2 13:30 Enhanced Photocurrent in Single-walled Carbon Nanotubes by Exciton Interactions S. Konabe and S. Okada, Univ. of Tsukuba, Japan	8D-10-2 13:30 Thermal Conductivity of nm-scale Membranes by Raman Thermometry E. Chávez-Ángel 1,2, S.S. Reparaz 1, J. Gomis-Bresco 1, M.R. Wagner 1, J. Cuffe 3, A. Shchepetov 4, M. Prunnila 4, J. Ahopelto 4, F. Alzina 1 and C.M. Sotomayor Torres 1,5, 1 ICN2 and 2 UAB, Spain, 3 MIT, USA, 4 VTT Technical. Res. Ctr. of Finland, Finland and 5 ICREA, Spain
8A-10-3 14:00 Improvement of Electrical Transport in Directed-assembled Polymeric Nanowires (Invited) Y. Wakayama, NIMS, Japan	8B-10-3 13:50 Embedded Optical Shearing Force Measurement Device T. Iwasaki, T. Takeshita, K. Harisaki and R. Sawada, Kyushu Univ., Japan	8C-10-3 13:50 In Situ TEM Observation of Field Emission Properties from Bi-layers Graphene M. Zamri 1,2, Y. Yaakob 1, G. Kalita 1 and M. Tanemura 1, 1 Nagoya Inst. of Technol., Japan and 2 Univ. Teknologi Malaysia, Malaysia	8D-10-3 13:50 using Astronomical Liquid Mirrors to Prepare Ultra-high-sensitive Surface-enhanced Raman Scattering Substrates Y.-C. Lee 1, T.-Y. Lu 1, Y.-T. Yen 1, C.-C. Yu 1, Y.-C. Tsai 2, Y.-C. Tseng 1, H.-L. Chen 1, 1 Natl. Taiwan Univ. and 2 Academia Sinica, Taiwan
8A-10: Author's Interview 14:30-14:40	8B-10-4 14:10 Fabrication of a Membrane Probe Card using Transparent Film for 3D-IC Testing N. Watanabe 1, M. Suzuki 1, K. Kawano 2, M. Eto 2 and M. Aoyagi 1, 1 AIST and 2 STK Technol., Japan	8C-10-4 14:10 High Rate Capability Supercapacitor Electrodes based on Holey Graphene Nanosheets Y.Y. Peng 1, P.C. Wang 1, J.N. Shi 1, N.W. Pu 2, C.H. Wu 1, W.M. Liu 1 and M.D. Ger 1, 1 Natl. Defense Univ. and 2 Yuan Ze Univ., Taiwan	8D-10-4 14:10 Synthesis of Novel Nanostructure B ₆ O and SPS Densification of B ₆ O-B ₄ C Composite S.S. Xie 1, I. Solodkyi 2,3, H. Borodianska 4, P. Badica 5, O. Vasylyk 1,2 and A.I.Y. Tok 1, 1 Nanyang Technological Univ., Singapore, 2 NIMS, Japan, 3 Natl. Technical Univ. of Ukraine and 4 NASU, Ukraine and 5 Natl. Inst. of Meterial Physics, Romania
	8B-10: Author's Interview 14:30-14:40	8C-10: Author's Interview 14:30-14:40	8D-10: Author's Interview 14:30-14:40
Lobby (in front of Royton Hall, 3F)			
Coffee Break			

8P-11: Poster Session I (14:40-16:40)**Advanced Photolithography**

Chairpersons: H. Kawai (Nikon) and T. Sato (Toshiba)

8P-11-1 Robust Scaling Capability Through Sa-Multiple-Patterning Process H. Yaegashi, K. Oyama, S. Yamauchi, A. Hara, S. Natori and M. Yamato, Tokyo Electron, Japan	8P-11-2 Process Enhancement with SRAF Printing Model J. Park, Y.K. Kim, S.I. Lee, Y.C. Kim and J. Choi, Samsung Electronics, Korea	8P-11-3 Quadruple ArF- i Computational Lithography and 3D-TCAD for 1Xnm Node Fin-SRAM Design for Manufacturing K. Kadota 1, K. Fukuda 2, S. O'uchi 2 and M. Masahara 2, 1 TEI Solutions and 2 AIST, Japan	8P-11-4 Injection-locked ArF Excimer Laser for Multi-patterning Lithography M. Igarashi, A. Kurosu, T. Kumazaki, H. Tsushima, K. Kakizaki, T. Matsunaga and H. Mizoguchi, GIGAPHOTON, Japan
8P-11-5 Shock Waves and Magnetic Rayleigh Taylor Instabilities in Z-pinch Gas Discharge Produced Plasma Extreme Ultraviolet Sources B. Huang, T. Tomizuka, M. Watanabe and E. Hotta, Tokyo Inst. of Technol, Japan	8P-11-6 Update of HVM High Power EUV Source Development H. Mizoguchi, H. Nakarai, T. Abe, T. Ohta, K.M. Nowak, Y. Kawasuji, H. Tanaka, Y. Watanabe, T. Hori, T. Kodama, Y. Shiraiishi, T. Yanagida, T. Yamada, T. Yamazaki, S. Okazaki and T. Saitou, Gigaphoton, Japan	8P-11-7 Internal-external Photolithography Method for Hollow Cylindrical Substrate D. Kubota and S. Nagasawa, Shibaura Inst. of Technol., Japan	8P-11-8 Irradiance Distribution in Proximity Lithography of Annulus Aperture Array J.-C. Tsai, G.-S. Sie and J.-W. Fan, Natl. Chung-Hsing Univ., Taiwan
8P-11-119L Removal of Micro Bubble Trapped on Resist Micro Pattern by Dipping into Low Surface Tension Developer K. Takahashi 1, A. Takano 2 and A. Kawai 2, 1 Nissan Chemical Industries and 2 Nagaoka Univ. of Technol., Japan			

Electron and Ion Beam Technologies

Chairpersons: J. Yanagisawa (Univ. of Shiga Pref.) and J. Yamamoto (Hitachi)

8P-11-9 2Tbit/in ² Dot Array Fabrication using 150kV-EB Mastering System T. Ito, Y. Kojima, S. Nagai, S. Kodama and K. Yokota, Elionix, Japan	8P-11-10 Exposure Control Circuit Response Optimization Method for Improving Throughput of Electron Beam Lithography Considering Patterning Fidelity S.-C. Huang, S.-Y. Chen, Y.-T. Shen, H.-P. Lee and K.-Y. Tsai, Natl. Taiwan Univ., Taiwan	8P-11-11 Modeling Secondary Electron Emission from Line Edge Patterns in Scanning Ion Microscopes K. Ohya and T. Yamanaka, Univ. of Tokushima, Japan	8P-11-12 Study on Formation Mechanism of Line Width Roughness (LWR) in Electron Beam Resists T. Yamazaki, H. Yamamoto and T. Kozawa, Osaka Univ., Japan
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Chairpersons: H. Fukidome (Tohoku Univ.) and K. Maehashi (Osaka Univ.)

8P-11-15 Microwave Synthesis of Graphene/Fe ₃ O ₄ Composites for improving the Capacity of Lithium-ion Batteries C.H. Wu 1, Y.Y. Peng 1, G.N. Shi 1, Y.C. Chen 1, N.W. Pu 2, Y.M. Liu 1 and M.D. Ger 1, 1 Natl. Defense Univ., 2 Yuan Ze Univ., Taiwan	8P-11-16 Synthesis of Large Area and High Quality Graphene on Copper Foil using Waste Plastic as Carbon Source S. Sharma, G. Kalita, R. Papon and M. Tanemura, Nagoya Inst. of Technol., Japan	8P-11-17 Non-thermal and Reversible Oxidation of Graphene through UV/O ₃ Treatment Y. Mulyana 1, M. Horita 1,3, Y. Ishikawa 1,3, Y. Uraoka 1,3, K. Miyake 1 and S. Koh 2, 1 Nara Inst. of Sci. and Technol., 2 Aoyama Gakuin Univ. and 3 JST-CREST, Japan	8P-11-18 Observation of Graphene using Magnetic Force Microscopy K. Maruishi, F. Wakaya, S. Abo and M. Takai, Osaka Univ., Japan
8P-11-19 Graphene Point Contact as a Single-level System H.-Y. Deng and K. Wakabayashi, NIMS, Japan	8P-11-20 Effects of UV Light on Electrochemical Wet Etching of Silicon Carbide for Suspended Graphene Fabrication R.S. O 1,2, M. Takamura 1, K. Furukawa 1, M. Nagase 2 and H. Hibino 1, 1 NTT and 2 Univ. of Tokushima, Japan	8P-11-21 Structures and Electronic States of the Radicals adsorbed on Graphene H. Tachikawa, Hokkaido Univ., Japan	8P-11-22 Dependence of Electronic Properties on Stacking in Double-layer Graphene Heterostructures M. Ni 1,2 and K. Wakabayashi 1, 1 NIMS, Japan and 2 Hefei Univ. of Technol., China
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Chairpersons: K. Nishiguchi (NTT) and T. Maemoto (Osaka Inst. of Technol.)

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Chairpersons: S. Shingubara (Kansai Univ.) and Y. Liu (AIST)

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Chairpersons: K. Furukawa (NTT) and A. Matsumoto (Tokyo Medical and Dental Univ.)			
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Chairpersons: N. Miki (Keio Univ.) and T. Namazu (Univ. of Hyogo)			
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