

MNC 2021, October 26-29, 2021, Online and On-demand

October 26, 2021		
On-demand Session: Keynote Session and Poster Session		
Keynote Session Speakers		
Keynote-11 HIGH-NA EUV LITHOGRAPHY: CURRENT STATUS AND OUTLOOK FOR THE FUTURE (Keynote) Harry Levinson, HJL Lithography, USA	Keynote-12 DEVELOPMENT OF MASSIVE PARALLEL ELECTRON BEAM WRITE (MPEBW) SYSTEM : AIMING AT DIGITAL FABRICATION OF INTEGRATED CIRCUIT (Keynote) Masayoshi Esashi 1, Hiroshi Miyaguchi 1, Akira Kojima 1, Naokatsu Ikegami 1, Nobuyoshi Koshida 2 and Hideyuki Ohya 3, 1 Tohoku Univ., 2 Tokyo Univ. of Agriculture and Technol. and 3 Crestec, Japan	Keynote-13 Evolution of patterning materials towards the Moore's Law 2.0 Era (Keynote) Dario L. Goldfarb, IBM Watson Res. Center, USA
Keynote-21 Low-dimensional carbon nanostructures: From graphene to carbon atomic chains (Keynote) Kazu Suenaga 1, Ryosuke Senga 2, Jinhua Hong 2, Junhao Lin 2, Pranjal Gogoi 2, Luiz Tizei 2 and Yung-Chang Lin 2, 1 Osaka Univ. and 2 AIST, Japan	Keynote-23 Development of probe microscope techniques for nanofabrication and manipulation (Keynote) Futoshi Iwata, Shizuoka Univ., Japan	Keynote-24 Materials drive Si photonics (Keynote) Mitsuru Takenaka, Kasidit Toprasertpong and Shinichi Takagi, Univ. of Tokyo, Japan
Keynote-26 Applications of femtosecond laser amplifier to microprocesses for biological cells (Keynote) Yoichiro Hosokawa, NAIST, Japan	Keynote-3 Roll-to-roll fabrication of lab-on-chip devices (Keynote) Jussi Hiltunen, VTT Technical Research Centre of Finland	Keynote-4 Biodevice Technology: From Fundamentals to Applications (Keynote) Takanori Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan
Keynote-5 MEMS Piezo-resistive Strain Gages with Expanding Applications (Keynote) Isao Shimoyama, Toyama Prefectural Univ., Japan	Keynote-6 POWDER ALD: A MATERIALS SUPPLIER PERSPECTIVES (Keynote) Christian Dussarrat, Air Liquide Labs., Japan	
Poster Session (1-1: Advanced Lithography and Patterning)		
P11-1 CLIP-ON OPTICAL COMPONENTS BY ADDITIVE MANUFACTURING FOR ENHANCED IMAGING CAPABILITIES Parvathi Nair S.1, Jonathan Trisno 1, and Joel K.W. Yang 1,2, 1 SUTD and 2 IMRE, Singapore	P11-2 STRIVING FOR ATOMIC PRECISION IN DOPANT ARRAY QUANTUM DEVICES James H.G. Owen, Ehud Fuchs, Robin Santini and John N. Randall, Zyvex Labs, USA	P11-3 Anisotropic pyrochemical dry etching of fluorinated ethylene propylene initiated by irradiation of synchrotron radiation K. Fujitani, S. Amano, A. Yamaguchi, Y. Haruyama, and Y. Utsumi, Univ. of Hyogo, Japan
Poster Session (1-3: Patterning Materials)		
P13-1 Fabrication of ZnO/Si Surface Patterning by defect control via Galvanic-Submerged Photo-Synthesis of Crystallites Jumpei Tsukamura 1, Yuki Takahashi 1, Zhang Lihua 1, Melbert Jeem 1, Kazumasa Okamoto 2, and Seiichi Watanabe 1, 1 Hokkaido Univ. and 2 Osaka Univ., Japan	P13-2 Analysis of mitigating factors for line edge roughness generated during electron beam lithography using machine learning Yuqing Jin 1, Takahiro Kozawa 1, and Takao Tamura 2, 1 Osaka Univ. and 2 NuFlare Technol., Japan	P13-3 Fabrication of 3D hetero nanostructure via galvanic submerged photo-synthesis of crystallites Yuki Takahashi, Melbert Jeem, Lihua Zhang, and Seiichi Watanabe, Hokkaido Univ., Japan
P13-4 Utilizing a photosensitive dry film resist in proton beam writing Hironori Seki 1, Keiya Kawamura 1, Hidetaka Hayashi 2, Yasuyuki Ishii 3, Nitipon Puttaraksa 4 and Hiroyuki Nishikawa 1, 1 Shibaura Inst. of Technol., 2 Ecodesign Promotion Networ, 3 Takasaki Advanced Radiation Res. Inst., Japan and 4 King Mongkut's Univ. of Technol., Thailand	P13-5 Application of ethyltrimethylammonium hydroxide (ETMAH) developer for contact hole patterning in EUVL Julius Joseph Santillan and Toshiro Itani, Osaka Univ., Japan	
Poster Session (2-1: Nanocarbons & 2D Materials)		
P21-1 Far-infrared emission from graphene on SiC by current injection Taichi Kataoka, Fumiya Fukunaga, Naruse Murakami, Yoshiki Sugiyama, Yasuhide Ohno and Masao Nagase, Tokushima Univ., Japan	P21-2 Electrically Driven Broadband Emitter with A Macroscopically Aligned Carbon Nanotube Film on Silicon Chips Shinichiro Matano 1, Hidenori Takahashi 1, Natsumi Komatsu 2, Yui Shimura 1, Kenta Nakagawa 1,3, Junichiro Kono 2, and Hideyuki Maki 1, 1 Keio Univ., Japan, 2 Rice Univ., USA and 3 KISTEC., Japan	P21-3 Electrical detection of influenza virus based on DNA-aptamer-modified graphene Kanna Takematsu, Takashi Ikuta, Kaori Tsukakoshi, Kazunori Ikebukuro and Kenzo Maehashi, Tokyo Univ. of Agriculture and Technol., Japan
P21-4 Fabrication and evaluation of Polymer actuator using polyaniline Taiga Mitsuda, Kei Miyakawa, Shohei Sakurai, and Masahito Kushida, Chiba Univ., Japan	P21-5 Vertically aligned carbon nanotubes grown from Langmuir-Blodgett films with nano alloy particles Shohei Sakurai, Mayu Iida, Kousei Okunuki, and Masahito Kushida, Chiba Univ., Japan	P21-6 Study Of N Doped Carbon Nanofibers Synthesized On Nichrome Foil For Urea Oxidation Reaction Bhagyahrsi Todankar 1, Yazid Yaakob 1,2, Golap Kalita 1, and Masaki Tanemura 1, 1 Nagoya Inst. of Technol., Japan and 2 Univ. Putra Malaysia, Malaysia
P21-7 Characterization of Epitaxial CVD Graphene on Ir(111)/ α -Al ₂ O ₃ (0001) by Photoelectron Momentum Microscopy Eri Hashimoto 1, Keigo Tamura 1, Hayato Yamaguchi 1, Fumihiko Matsui 2, and Shinji Koh 1, 1 Aoyama Gakuin Univ. and 2 Inst. for Molecular Sci., Japan	P21-8 Integrated FPC Laser-Induced Graphene Strain Sensor with Pneumatic Finger by Fused Additive Method 3D Printed Method Chao-Shin Hsu 1, Yi-Chun Chuang 1, Yu-Hsin Yen 1, Cheng-Chun Huang 2, Ching-Yuan Su 2, Ching-Liang Dai 1, and Yao-Chuan Tsai 1, 1 Natl. Chung Hsing Univ. and 2 Natl. Central Univ., Taiwan	P21-9 CNT-Si heterojunction solar cells with aligned carbon nanotube films Motonori Nakamura 1, Keisuke Sugimoto 1, Junichiro Kono 2, and Koji Takamura 1, 1 Natl. Inst. of Technol., Asahikawa College, Japan and 2 Rice Univ., USA
P21-10 Deep ultraviolet light detection by AlGaIn/Gr hetero junction photodiode array Yoshinori Nakagawa 1, Shigeki Okauchi 1, Masahiko Sano 1, Takashi Mukai 1, Yasuhide Ohno 2, and Masao Nagase 2, 1 Nichia and 2 Tokushima Univ., Japan	P21-11 Metal Linkers and Edge Structures on Coordination Nanosheets Stimulate Hydrogen Evolution Reaction Atsuki Sato 1, Akichika Kumatani 1,2, Choon Meng Tan 3, Ying-Chiao Wang 2, Naoya Fukui 3, Hiroaki Maeda 3, Hitoshi Shiku 1, Kazuhito Tsukagoshi 1,2, Hiroshi Nishihara 2, 1 Tohoku Univ., 2 NIMS, 3 Tokyo Univ. of Sci., Japan	P21-12 Growth of ultra-high-density carbon nanotube forest for thermal and electrical transport materials Kento Tabata, Yuga Kono, Takayuki Nakano and Yoku Inoue, Shizuoka Univ., Japan

MNC 2021, October 26-29, 2021, Online and On-demand

<p>P21-13 Pd-Ni-decorated CNTs based hydrogen gas sensor Maeum Han 1, Jae Keon Kim 1,2, J. Lee 1,2, H.K. An 2, S.H. Kong 1 and Daewoong Jung 2, 1 Kyungpook Natl. Univ. and 2 KITECH, Korea</p>	<p>P21-14 Highly stretchable CNT yarn strain sensor for health monitoring Maeum Han 1, Jun Yeop Lee 1,2, Dong Geon Jung 2, Seong Ho Kong 1 and Daewoong Jung 2, 1 Kyungpook Natl. Univ., 2 KITECH, Korea</p>	<p>P21-15 Temperature, magnetic field, and gate-voltage dependence on the electrical conductivity of single-walled carbon nanotube thin films Hiroki Date 1, Takenori Fujii 1, Taiki Inoue 2, Esko I. Kauppinen 3, Shigeo Maruyama 1 and Shohei Chiashi 1, 1 Univ. of Tokyo, 2 Osaka Univ., Japan and 3 Aalto Univ., Finland</p>
<p>P21-16 Study the influence of radical materials on the progress of unzipping carbon nanotube Rikuto Oyabu, Yuki Usami and Hirofumi Tanaka, Kyushu inst. of Technol., Japan</p>		
Poster Session (2-2: Nanodevices)		
<p>P22-1 Selective-Area Growth of Ge Nanowires on SiO₂-Masked Si (111) Substrates by Vapor-Liquid-Solid Method D. Goto 1, M. Makino 1, R. Horiguchi 1, W. Jevasuwan 2, N. Fukata 2, and S. Hara 1, 1 Hokkaido Univ. and 2 NIMS, Japan</p>	<p>P22-2 Modeling of Quantum Electron Transmission Process in Two-dimensional Nanowire System using Recurrent Neural Network Keita Kawahara 1, Yuto Ogra 1, Yoshitaka Itoh 1, Tota Suko 2, and Masakazu Muraguchi 1, 1 Hokkaido Univ. of Sci. and 2 Waseda Univ., Japan</p>	<p>P22-3 Self-Catalyzed Molecular Beam Epitaxial Growth of GaAs nanowires on 2-inch Si (001) wafer Naoto Danjo, Kenta Sakaguchi, Fumitaro Ishikawa, Ehime Univ., Japan</p>
<p>P22-4 Radiation Plumes on Gallium Nitride Nanocircuits Under Simulated Space Radiation K. Xie and V. M. Ayres, Michigan State Univ., USA</p>	<p>P22-5 Observation and theoretical calculation of spin transport in Ni78Fe22/molecules/Ni78Fe22 nanojunction devices Kyohei Hayashi 1, Yuma Sasaki 2, Kaeko Senshu 1, Takahiro Misawa 2, Junji Nishii 2, and Hideo Kaiju 1, 1 Keio Univ. and 2 Hokkaido Univ., Japan</p>	<p>P22-6 Electrical Characteristics of Single-Electron Transistors Made by Dielectrophoresis of Gold Nanoparticles with Different Diameters Tetsuya Urae 1, Tomoki Yagai 1, Kazuma Sekine 1, Masataka Moriya 1, Hiroshi Shimada 1, Ayumi Hirano-Iwata 2, Fumihiko Hirose 3, and Yoshinao Mizugaki 1, 1 Univ. of Electro-Communications, 2 Tohoku Univ., and 3 Yamagata Univ., Japan</p>
<p>P22-7 Negative Capacitance Field-Effect Transistor with Hetero-MetalGate to Suppress the Reverse Drain-Induced Barrier Lowering Jae Yeon Park, Shinhee Kim, Seungwon Go and Sangwan Kim, Ajou Univ., Korea</p>	<p>P22-8 Temperature Dependence of Power Generation Capacity of Cavity-free Planar Si Micro Thermoelectric Device T. Hoshina 1, K. Abe 1, M. Tomita 1, T. Matsuki 1,2, S.Y.Y. Chung 1, H. Ikeda 3, and T. Watanabe 1, 1 Waseda Univ., 2 AIST and 3 Shizuoka Univ., Japan</p>	<p>P22-9 Consideration of Multiple 3D Bottleneck Barrier Heights on V_{th} Fluctuated by Ion Implantation to Source and Drain Extensions of SOI Tri-Gate FinFETs Toshiyuki Tsutsumi, Meiji Univ., Japan</p>
<p>P22-10 Design of comb-shaped single-electron slime mold circuit and its applications to solving travelling salesman problem Takuya Matsuoka and Takahide Oya, Yokohama Natl. Univ., Japan</p>	<p>P22-11 Improvement of noble metal-free ReRAM characteristics by insertion of thin SiO_x layer at the ZrO_x/electrode interfaces Keito Toyama, Ryusuke Akiyama, Kento Yuki and Shinya Aikawa, Kogakuin Univ., Japan</p>	<p>P22-12 Effect of Resistance of Wiring on Power Generation Performance in Planar Micro Thermoelectric Generation Module A. Kurosaki 1, M. Tomita 1, K. Oda 1, K. Abe 1, T. Matsuki 1,2, S.Y.Y. Chung 1, T. Watanabe 1, 1 Waseda Univ. and 2 AIST, Japan</p>
Poster Session (2-3: Nanofabrication)		
<p>P23-1 Study on Silicidation Reaction of Fe-NDs with SiH₄ Hiroshi Furuhashi, Katsunori Makihara, Akio Ohta, Noriyuki Taoka, and Seiichi Miyazaki, Nagoya Univ., Japan</p>	<p>P23-2 Voice Data Augmentation for Classification Using Silver Selenide Nanowire Device Connecting to Neural Network Hardware Takumi Kotooka, Yuichiro Tanaka, Hakaru Tamkoh, Yuki Usami, and Hirofumi Tanaka, Kyushu Inst. of Technol., Japan</p>	<p>P23-3 Synaptic emulation by Ag-Ag₂S nanoparticles-based atomic switch Oradee Srikimkaew 1,2, Saman Azhari 1, Yuki Usami 1 and Hirofumi Tanaka 1,2, 1 Kyushu Inst. of Technol., Japan and 2 Suranaree Univ. of Technol., Thailand</p>
<p>P23-4 N-O Co-Doped Sb₂Te₃ Chalcogenide for High Performance Artificial Synaptic Device You Yin, Koji Niiyama and Takao Fujiwara, Gunma Univ., Japan</p>	<p>P23-5 Fabrication of TiO₂/Au core-shell array for visible light responsive photocatalysts Isami Nakamura, Kaito Oshio and Kouichi Takase, Nihon Univ., Japan</p>	<p>Withdrawn P23-6 Magnetic properties of TiO₂ nanoparticles pulverized by a ball mill Taiga Yamanouchi, and Kouichi Takase, Nihon Univ., Japan</p>
<p>P23-7 Femtosecond laser direct writing of layered pure hydroxyapatite based on nanoparticle assembly Hiroaki Nishiyama, Shogo Nara and Feng Zhonggang, Yamagata Univ., Japan</p>	<p>P23-8 Fabrication of metal oxide 2D inverse opal film using ordered polystyrene spheres template Yusuke Kiyomi, Takeshi Ito, Shoso Shingubara and Tomohiro Shimizu, Kansai Univ., Japan</p>	<p>P23-9 Supervised optimization of Boolean logic functions by in-materio reservoir computing using single-walled carbon nanotube/porphyrin polyoxometalate random network Deep Banerjee, Saman Azhari, Yuki Usami and Hirofumi Tanaka, Kyushu Inst. of Technol., Japan</p>
<p>P23-10 Development of Pd Nanospheres (Core)/TiO₂(Shell) Nanospheres Showing Surface Plasmon Resonance in a Near-Infrared Region for Photothermal Therapy Yutaro Hayakawa, Kosuke Sugawa, and Joe Otsuki, Nihon Univ., Japan</p>	<p>P23-11 The critical role of single-walled carbon nanotubes in nonlinear spatiotemporal dynamics of carbon nanotubes-polyoxometalate network for reservoir computing Saman Azhari, Deep Banerjee, Shuho Murazoe, Takumi Kotooka, Yuki Usami and Hirofumi Tanaka, Kyushu Inst. of Technol., Japan</p>	<p>P23-12 Direct Electro Spray Patterning Deposition for Flexible Organic Devices Ayaka Kanno, Takahisa Moriwaki, Hiroshi Yamauchi and Takashi Tadokoro, Tokyo Denki Univ., Japan</p>
<p>P23-13 Nonlinearity and memory function of in-materio reservoirs using Polyoxometalate /Single-Walled Carbon Nanotube Complex Random Network Shuho Murazoe, Takumi Kotooka, Yuki Usami and Hirofumi Tanaka, Kyushu Inst. of Technol., Japan</p>	<p>P23-14 Promotion of perpendicular growth of silicon nanowires by MACE-formed surface nanoholes Akio Uesugi, Syusuke Nishiyori, Koji Sugano, and Yoshitada Isono, Kobe Univ., Japan</p>	<p>P23-15 Refractive Index Susceptibility of Mie Resonance-Based Extinction Band of PbS nanocrystals Masato Furuya, Kosuke Sugawa and Joe Otsuki, Nihon Univ., Japan</p>

MNC 2021, October 26-29, 2021, Online and On-demand

Poster Session (2-4: Inorganic Nanomaterials)		
P24-1 Resistive switching and neuromorphic function of $Pt/Ti_{0.96}Co_{0.04}O_{2-\delta}/Pt$ thin films by controlling interface state T. Takada 1, Y. Yamaguchi 1, T. Tsuchiya 2 and T. Higuchi 1, 1 Tokyo Univ. of Sci. and 2 NIMS, Japan	P24-2 Charge transfer and conduction type conversion in n-type SnO_2 thin films by nitrogen annealing Kotaro Watanabe, Takuma Kawaguchi, Tomohiro Yamaguchi, Takeyoshi Onuma, Tohru Honda and Shinya Aikawa, Kogakuin Univ., Japan	P24-3 Understanding opto-electrical emission and absorption behavior in corrosion by-product of zinc M. Jeem 1, M. Fujioka 1, M. Ono 1,2, S. Watanabe 1 and J. Nishii 1, 1 Hokkaido Univ. and 2 AGC, Japan
P24-4 The Fabrication of Mesoporous Single Crystal Ellipsoid TiO_2 Nanoparticle with Enhanced Visible Light Photodegradation Efficiency Zhehan Yu, Shilei Zhu, Lihua Zhang and Seiichi Watanabe, Hokkaido Univ., Japan	P24-5 SWCNT freestanding films decorated with Sb_2Te_3 nanoparticles and electrodeposited Sb_2Te_3 layers for thermoelectric applications R. Eguchi and M. Takashiri, Tokai Univ., Japan	P24-6 Structural manipulation for solid electrolyte Na_2OBr to improve ionic conductivity Hiroaki Asakawa, Wei Shi, Mariko Murayama and Xinwei Zhao, Tokyo Univ. of Sci., Japan
P24-7 Metal decoration on bismuth telluride nanoplates using electroless plating H. Yamazaki and M. Takashiri, Tokai Univ., Japan		
Poster Session (2-5: Organic Nanomaterials)		
P25-1 Blue emissive perovskite quantum dots with superior optical properties Naoaki Oshita 1, Keisuke Kikuchi 1, Satoshi Asakura 1,2, Takayuki Chiba 1 and Akito Masuhara 1, 1 Yamagata Univ. and 2 Ise Chem., Japan	P25-2 Photoinduced phase transition of compatible polymer blends of side-chain liquid crystalline polymers containing azobenzene mesogens Takumi Kokubo 1, Tatsunaga Nakajima 1, Naoki Hida 2, Takahiro Seki 2 and Shusaku Nagano 1, 1 Rikkyo Univ. and 2 Nagoya Univ., Japan	P25-3 Effect of spacer length on induced SmE phase in side-chain liquid crystalline copolymers by random copolymerization Yuma Shibuya 1, Naoki Hida 2, Takahiro Seki 2 and Shusaku Nagano 1, 1 Rikkyo Univ. and 2 Nagoya Univ., Japan
P25-4 Synthesis and stabilization of high-performance perovskite quantum dots with novel cross-linkable ligands Taisei Kimura 1, Ryohei Yamakado 1, Satoshi Asakura 1,2, Takayuki Chiba 1 and Akito Masuhara 1, 1 Yamagata Univ., and 2 Ise Chem., Japan	P25-5 Anisotropic SRG formation systems in monoaxially oriented liquid crystalline polymer films Reona Kanazu 1, Mitsuo Hara 1, Syusaku Nagano 2 and Takahiro Seki 1, 1 Nagoya Univ. and 2 Rikkyo Univ., Japan	P25-6 Induced highly ordered smectic phases in side-chain liquid crystal polysiloxanes with binary mesogen mixtures by copolymerization and blending. Naoki Hida 1, Tatsunaga Nakajima 2 and Takumi Kokubo 2, Mitsuo Hara 1, Shusaku Nagano 2 and Takahiro Seki 1, 1 Nagoya Univ. and 2 Rikkyo Univ., Japan
P25-7 Proton conductive side-chain liquid crystalline polymer system and photoalignment Kazuya Hirata 1, Wang Fangfang 2, Yuki Nagao 2, Takahiro Seki 3 and Shusaku Nagano 1, 1 Rikkyo Univ., 2 JAIST and 3 Nagoya Univ., Japan	P25-8 Induced smectic E phase in binary polymer blends of in side-chain liquid crystal polymers. Tatsunaga Nakajima 1, Naoki Hida 2, Takahiro Seki 2 and Shusaku Nagano 1, 1 Rikkyo Univ. and 2 Nagoya Univ., Japan	P25-9 OH- Conductivity and Water Uptake of Anion Exchange Ionomer Fangfang Wang, Dongjin Wang and Yuki Nagao, JAIST, Japan
P25-10 Lyotropic liquid crystal property and organized structure in sulfonated polyimide thin films with oligoxyethylene side chains Yuze Yao 1, Miaomiao Liu 1, Hayato Watanabe 2, Mitsuo Hara 2, Shusaku Nagano 3 and Yuki Nagao 1, 1 JAIST, 2 Nagoya Univ. and 3 Rikkyo Univ., Japan		
Poster Session (2-6: NanoTool)		
P26-1 Speed switching of gliding microtubule motility by an electron beam Hiroki Miyazako 1, Kai Uemura 1, Ryuzo Kawamura 2 and Takayuki Hoshino 1,3, 1 Univ. of Tokyo and 2 Saitama Univ. and 3 Hiroaki Univ., Japan	P26-2 Atomic resolution liquid cell scanning transmission electron microscopy M. Takeguchi, X. Li and K. Mitsuishi, NIMS, Japan	P26-3 Evaluation of Thermal Transport Properties of Single Crystal Silicon with Different Crystal Orientation by Nanoindentation Method O. Norimasa, M. Hase, M. Hayamizu, H. Murotani and M. Takashiri, Tokai Univ., Japan
P26-4 Withdrawn	P26-5 Fabrication of an optomechanical resonator with a spiral bull's eye antenna for the measurement of light wavelength Reo Kometani, Penekwong Khemnat and Shin'ichi	
Poster Session (3: Nanoimprint, Hybrid-NIL, Biomimetics, and Functional Surfaces)		
P3-1 Smart design system for thermal nanoimprint process using machine learning Ryuhei Yamamura, Kai Kameyama, Hideki Tanabe, Sou Tsukamoto, Hiroaki Kawata, Masaaki Yasuda and Yoshihiko Hirai, Osaka Pref. Univ., Japan	P3-2 Optimization of resist drop layout in nanoimprint lithography process Yasutada Nakagawa 1, Takuya Kono 2 and Kazuhiro Takahata 2, 1 Toshiba and 2 KIOXIA, Jaapan	P3-3 Lifetime Prediction of Release coating for UV-NIL using Line-patterned Silicon Mold Atsuhiko Furuta and Jun Taiguchi, Tokyo Univ. of Sci., Japan
P3-4 Study on Filling Process of Molecular Weight Dispersive Resin for fine Cavity Keisuke Nakajima, Masaaki Yasuda, Yuya Miyashita, Ryuhei Yamamura and Yoshihiko Hirai, Osaka Pref. Univ., Japan	P3-5 The Magnetic Molecularly Imprinted Polymers based on Screen-Printed Electrode for Albumin Protein Determination Piyawan Leepheng, Dalawan Limthin, Korakot Onlaor, Benchapol Tunhoo, Darinee Phromyothin and Thutiyaporn Thiwawong, King Mongkut's Inst. of Technol. Ladkrabang, Thailand	P3-6 Fabrication of the glass microstructures by a low energy consumption Yoshiyuki Doi, Yuji Hirai and Masatsugu Shimomura, Chitose Institute of Science and Technol., Japan
P3-7 Enhanced Sensitivity and Selectivity of Salbutamol Detection based on Reduced Graphene Oxide combined with Molecularly Imprinted Polymers (RGO/MIP) Dalawan Limthin 1, Piyawan Leepheng 1, Korakot Onlaor 1, Benchapol Tunhoo 1, and Annop Klamchuen 2, Thutiyaporn Thiwawong 1 and Darinee Phromyothin 1, 1 King Mongkut's Institute of Technol. and 2 National Science and Technology Development Agency, Thailand	P3-8 The adhesion of marine benthic diatoms on the surfaces with hexagonal packed micro dimple arrays Taiki kishigami 1, Takayuki Murosaki 2, Yasuyuki Nogata 3, Masatsugu Shimomura 1 and Yuji Hirai 1, 1 Chitose Institute of Sci. and Technol., 2 Asahikawa Medical Univ. and 3 Central Research Institute of Electric Power, Japan	

MNC 2021, October 26-29, 2021, Online and On-demand

Poster Session (4: BioMEMS, Lab on a Chip, and Nanobiotechnology)		
<p>P4-1 Proposal of chlorophyll concentration and a/b ratio measurement method using a filter-free multiple-wavelength detection sensor Nobuhiro Watanabe, Yong-Joon Choi, Kazuhiro Takahashi, Seitaro Toda, Kotaro Takayama, Toshihiko Noda, and Kazuaki Sawada, Toyohashi Univ. of Technol., Japan</p>	<p>P4-2 Intracellular cargo delivery through electrochemical metal-organic hybrid nanogate Bowen Zhang 1, Dinuo Zheng 1, Kazuhiro Oyama 1, Tsutomu Mikawa 2, Takeo Miyake 1,3, 1 Waseda Univ., 2 RIKEN and 3 JST-PRESTO, Japan</p>	<p>P4-3 Cell Separation and Concentration Microfluidic Chip for Allergy Diagnosis Shunsuke Shinuchi 1, Koichiro Kobayashi 2, Yuhki Yanase 3 and Kenji Sakamoto 1, 1 Kyushu Inst. of Technol., 2 Natl. Inst. of Technol. Oshima College and 3 Hiroshima Univ., Japan</p>
<p>P4-4 On-chip long-term perfusable microvascular network culture Masataka Nakamura, Kotaro Nishikata, Yusuke Ninomiya and Nobuyuki Futai, Shibaura Inst. of Technol., Japan</p>	<p>P4-5 Improved Read-Out of an Automated Neuronal Cell Assay using Micro Patterned Micro Titer Plates fabricated by UV-NIL M. Lohse 1, M.W. Thesen 1, A. Haase 2, M. Smolka 2, N. Briz Iceta 3, A. Ayerdi Izquierdo 3, I. Ramos 4, C. Salado 4 and A. Schleunitz 1, 1 micro resist technology GmbH, 2 Joanneum Research Materials, Austria, 3 TECNALIA and</p>	<p>P4-6 Quantitative Evaluation of a Single Exosome on a Plasmonic Chip with Fluorescence Microscope under the Transmitted-Light K. Fukutomi, E. Fujimoto and K. Tawa, Kwansai Gakuin Univ., Japan</p>
<p>P4-7 Optimization of the spinning condition for simultaneously determination of raw milk components using lab-on-a-disc P. Chamnan 1, M. Yingkajorn 1, P. Saengdee 2, W. Sripumkhai 2, P. Pattamang 2, N. Ranron 2, W. Jeamsaksiri 2, N. Atthi 2, K. Vongkamjan 1,3, 1 Prince of Songkla Univ., Thailand, 2 NECTEC and 3 Kasetsart Univ., Thailand</p>		
Poster Session (5: Microsystem Technology and MEMS)		
<p>P5-1 Characteristics of Ni-Nb-Zr thin film amorphous alloy diaphragms annealed below crystallization temperature F. Haga 1, T. Yamazaki 1, C. Oka 1, S. Hata 1, Y. Hoshino 2 and J. Sakurai 1, 1 Nagoya Univ. and 2 MIRISE Technologies, Japan</p>	<p>P5-2 Carbon nanomaterials integrated with silicone substrate for stretchable strain sensor applications Zheng-Yan Lei 1, Hsin-Jou Wang 1, Cheng-Chun Huang 2, Ching-Yuan Su 2, Ching-Liang Dai 1 and Yao-Chuan Tsai 1, 1 Natl. Chung Hsing Univ. and 2 Natl. Central Univ., Taiwan</p>	<p>P5-3 Fabrication and characterization of coupled silicon phononic resonators with piezoelectric transducers M. Kurosu, D. Hatanaka, H. Okamoto and H. Yamaguchi, NTT, Japan</p>
<p>P5-4 Broadband stop filters using H-shaped metamaterial at the THz region Ying Huang, Taiyu Okatani and Yoshiaki Kanamori, Tohoku Univ., Japan</p>	<p>P5-5 Observation of materials under the load by in-situ tensile test Fuyu Shimada, Masashi Nakatani, Mie Kawabata, Kei Ameyama, Taeko Ando and Ritsumeikan Univ., Japan</p>	<p>P5-6 Smoothing of silicon micropore X-ray optics by thermal annealing Aoto Fukushima 1, Yuichiro Ezoe 1, Kumi Ishikawa 1, Daiki Ishi 1, Sae Sakuda 1, Tomoki Uchino 1, Ayata Inagaki 1, Yoko Ueda 1, Hiromi Morishita 1, Luna Sekiguchi 1, Takatoshi Murakawa 1, Yukine Tsuji 1, Masaki Numazawa 2, Kazuhisa Mitsuda 3 and Yoshiaki Kanamori 4, 1 Tokyo Metropolitan Univ., 2 RIKEN, 3 Natl. Astronomical Observatory of Japan and 4 Tohoku Univ., Japan</p>
<p>P5-7 Non-invasive heart rate measurement system using Laser doppler flowmetry with body motion artifact noise reduction algorithm for Husbandry training Takumi Hiejima 1, Hirofumi Nogami 1, Aya Saito 2, Kazuyuki Ban 3, Ryo Takigawa 1 and Jumpei Arata 1, 1 Kyushu Univ., 2 Omuta City Zoo and 3 Toyohashi Zoo and Botanical Park, Japan</p>	<p>P5-8 Effect of B-doped Al/Ni multilayer film on cracking NiAl layer after reactive bonding Kenta Kodama and Takahiro Namazu, Kyoto Univ. of Advanced Sci., Japan</p>	<p>P5-9 Electron Beam Induced Silicon Quantum Dots for Strength Control of Silicon Oxide Film Shingo Kammachi and Takahiro Namazu, Kyoto Univ. of Advanced Sci., Japan</p>
<p>P5-10 Pressure-Controlled Ultrasound Probe for Reliable Imaging in Breast Cancer Diagnosis Yukina Matsumoto, Ayu Katsumura and Norihisa Miki, Keio Univ., Japan</p>	<p>P5-11 POLYCRYSTALLINE-SILICON BASED DOUBLE-GATE ION-SENSITIVE FIELDEFFECT TRANSISTORS USING APTES/SiO₂ STACKED SENSING MEMBRANE Jun-Rong Chen 1, Henry J.H. Chen 1, Shin-Lun Tseng 1 and Sun-Zen Chen 2, 1 Natl. Chi Nan Univ. and 2 Natl. Tsing Hua Univ., Taiwan</p>	<p>P5-12 Consideration of the mechanism of single-layered Cu₂O nanospheres bonded on metal substrates in irradiating near-infrared femtosecond laser pulses Shohei Murayama 1, Kien Vu Trung Nguyen 1, Masateru Anzai 1, Hideyuki Magara 2, Takahiro Nakamura 2 and Mizue Mizoshiri 1, 1 Nagaoka Univ. of Technol. and 2 Tohoku Univ., Japan</p>
<p>P5-13 Improved MEMS-based hydrogen sensor Maeum Han 1, Young Sam Kim 1,2, Yijun. Yang 2, H.K. An 2, S.H. Kong 1 and Daewoong Jung 2, 1 Kyungpook Natl. Univ. and 2 KITECH., Korea</p>	<p>P5-14 Evaluation of thermal effusivity of intermetallic compounds by modulated thermoreflectance method Fumiya Nakamura, Taishi Murakami and Shugo Miyake, Kobe City College of Technol., Japan</p>	<p>P5-15 Acceleration measurement in dental implants Hirofumi Nogami, Takumi Hiejima, Ryo Takigawa and Yasuyuki Matsushita, Kyushu Univ., Japan</p>
<p>P5-16 DEVELOPMENT OF MICROFLUIDIC-BASED TASTE SENSOR WITH LIPID POLYMER MEMBRANE Yuma Kurihara 1, Ryo Takigawa 2, Fumihiko Sassa 2 and Yusuke Tahara 1, 1 Shinshu Univ. and 2 Kyushu Univ., Japan</p>	<p>P5-17 Surface activated bonding of Au thin microbumps using ultra-violet treatment Toshiki Maeakawa 1, Kaname Watanabe 1, Hirofumi Nogami 1, Yuichiro Kurokawa 1, Yusuke Tahara 2 and Ryo Takigawa 1, 1 Kyushu Univ. and 2 Shinshu Univ., Japan</p>	<p>P5-18 Continuous Size Classification Device for Marine Microplastics by Pinched Flow Fractionation Kentaro Shimomoto and Sumito Nagasawa, Shibaura Inst. of Technol., Japan</p>

MNC 2021, October 26-29, 2021, Online and On-demand

October 27, 2021		
Room A	Room B	Room C
27A-1: Opening and Plenary Session 10:00-12:10, October 27, 2021 Chairs: Seiji Nagahara (Tokyo Electron) Koji Asakawa (KIOXIA) Kazuaki Furukawa (Meisei Univ.) Daiyu Kondo (Fujitsu)		
27A-1-0 10:00 Opening Remark Takahiro Kozawa, Osaka Univ., Japan		
27A-1-1 10:10 NANOPORES AND NANOGAPS FOR SENSING SINGLE BIOMOLECULES (Plenary) Masateru Taniguchi, Osaka Univ., Japan		
27A-1-2 10:50 Patterning at the atomic scale, can EUV get us there? (Plenary) Patrick Naulleau, Lawrence Berkeley National Laboratory		
27A-1-3 11:30 Computational Lithography: Accelerating the Future (Plenary) Vivek Singh, NVIDIA, USA		
Lunch Time		
27A-2: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography I 13:30-15:15, October 27, 2021 Chairs: Shinji Okazaki (Alitecs) Tomoki Nagai (JSR)	27B-2: Nanofabrication I 13:30-14:40, October 27, 2021 Chairs: Kouichi Takase (Nihon Univ.) Tomohiro Shimizu (Kansai Univ.)	27C-2: CNT & TMDC I 13:30-14:50, October 27, 2021 Chairs: Atsushi Ando (AIST) Ryota Negishi (Toyo Univ.)
27A-2-1 13:30 EUVL Stochastics Symposium (Invited) Takahiro Kozawa, Osaka Univ., Japan	27B-2-1 13:30 Development of Digital Type CMOS-MEMS Cointegrated Pressure Sensor Using Cost-Effective Minimal Fab Tools (Invited) Yongxun Liu 1, I. Akita 1, T. Matsukawa 1, H. Tanaka 1, K. Koga 2, K. Nemoto 1, S. Khumpuang 1,2, M. Nagao 1, Y. Morita 1 and S. Hara 1, 2, 1 AIST and 2 MINIMAL, Japan	27C-2-1 13:30 Time-domain thermoreflectance study on the correlation between heat and charge carrier flows via vertical electrolyte-gating device Kan Ueji 1, Nobuhiro Muto 1, Yuya Matsuoka 1, Yota Ichinose 1, Yohei Yomogida 1, Takashi Yagi 2, Jana Zaumseil 3, Kazuhiro Yanagi 1, 1 Tokyo Metropolitan Univ., 2 AIST, Japan and 3 Univ. Heidelberg, Germany
27A-2-2 13:45 Development status of EUV Chemically Amplified Resist (Invited) Kazuishi Tanno, Yuki Fukumura, Tatsuya Fujii, Kenta Suzuki, Yasuhiro Yoshii, Tasuku Matsumiya, Takuya Ikeda, Yoshitaka Komuro and Shinichi Hidesaka, Tokyo Ohka Kogyo, Japan	27B-2-2 14:00 Transmission color sheet using 2D plasmonic metasurface embedded in elastomer nanosheet Tay Shan Wei 1, Toshinori Fujie 2, Kazuaki Sawada 1 and Kazuhiro Takahashi 1, 1 Toyohashi Univ. of Technol. and 2 Tokyo Tech., Japan	27C-2-2 13:50 Hall effect in random networks of single-wall carbon nanotubes Yohei Yomogida 1, Kanako Horiuchi 1, Ryotaro Okada 1, Hideki Kawai 1, Yota Ichinose 1, Hiroyuki Nishidome 1, Kan Ueji 1, Natsumi Komatsu 2, Weilu Gao 3, Junichiro Kono 2 and Kazuhiro Yanag 1, 1 Tokyo Metropolitan Univ., Japan, 2 Rice Univ. and 3 Univ. of Utah, USA
27A-2-3 14:15 The status of stochastic issues - Photon stochastic and Chemical stochastic - (Invited) Toru Fujimori, FUJIFILM Corporation, Japan	27B-2-3 14:20 Thinning of silicon nitride films for in situ environmental cell by gas cluster ion beam Masaya Takeuchi, Reki Fujiwara, and Noriaki Toyoda, Univ. of Hyogo, Japan	27C-2-3 14:10 Air-stable, efficient n-type doping of MoS2 by salt rown ether treatment Hiroto Ogura 1, Masahiko Kaneda 1, Yusuke Nakanishi 1, Yoshiyuki Nonoguchi 2, Jiang Pu 3, Mari Ohfuchi 4, Toshifumi Irisawa 5, Hong En Lim 1, Takahiko Endo 1, Kazuhiro Yanagi 1, Taishi Takenobu 3 and Yasumitsu Miyata 1, 1 Tokyo Metropolitan Univ., 2 Kyoto Inst. of Technol., 3 Nagoya Univ., 4 Fujitsu and 5 AIST, Japan
27A-2-4 14:45 The study of chain scission type photoresist for EUV lithography (Invited) H. Matsumoto 1, M. Hoshino 1, A. Shirotori 1,2, D. De Simone 2 and G. Vandenberghe 2, 1 ZEON, Japan and 2 IMEC, Belgium		27C-2-4 14:30 Improved method for determining layer number of two-dimensional materials using optical microscopy Miki Miyazaki, Akinobu Kanda and Hikari Tomori, Univ. of Tsukuba, Japan

MNC 2021, October 26-29, 2021, Online and On-demand

<p>27A-3: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography II 15:45-17:15, October 27, 2021 Chairs: Shinji Okazaki (Alitecs) Tomoki Nagai (JSR)</p>	<p>27B-3: Nanofabrication II 15:10-16:10, October 27 Chairs: Ryu Hasunuma (Univ. of Tsukuba) Takeru Okada (Tohoku Univ.)</p>	<p>27C-3: Symp. B. Forefront of low-dimensional nanomaterials for future applications 15:30-18:00, October 27, 2021 Chairs: Daiyu Kondo (Fujitsu) Atsushi Ando (AIST)</p>
<p>27A-3-1 15:45 STUDY ON BEAM-INDUCED TRANSIENT REACTION PROCESS OF CARBOXYL ACIDS USED AS LIGANDS OF METAL OXIDE NANOCLUSTER RESISTS (Invited) Yusa Muroya 1, Kengo Ikeuchi 1, Tomoe Otsuka 1, Takuya Ikeda 2, Yoshitaka Komuro 2, Daisuke Kawana 2 and Takahiro Kozawa 1, 1 Osaka Univ. and 2 Tokyo Ohka Kogyo, Japan</p>	<p>27B-3-1 15:10 In-materio voice classification based on self-doped polyaniline by binarized convolutional neural network Yuki Usami 1,2, Yuichiro Tanaka 1, Hakaru Tamukoh 1, Takuya Matsumoto 2, Wilfred G. van der Wiel 3 and Hirofumi Tanaka 1,2, 1 Kyushu Inst. of Technol., 2 Osaka Univ., Japan and 3 Univ. of Twente, The Netherlands</p>	<p>27C-3-1 15:30 Impurity control of hexagonal Boron Nitride Crystals obtained by flux growth process (Invited) Takashi Taniguchi, NIMS, Japan</p>
<p>27A-3-3 16:15 Fundamental Study of the Origin of the Stochastics in EUV Resist (Invited) Takeo Watanabe, Testuo Harada, and Shinji Yamawaka, Univ. of Hyogo, Japan</p>	<p>27B-3-2 15:30 Reservoir Computing Hardware-based Ag/Ag₂S Core-shell Nanoparticles for Supervised Learning Dang Thien Tan 1,2, Banerjee Deep 1, Yuki Usami 1 and Hirofumi Tanaka 1,2, 1 Kyushu Inst. of Technol., Japan and 2 Ho Chi Minh Univ. of Technol., Vietnam</p>	<p>27C-3-2 16:00 Room temperature in-plane ferroelectricity in SnS (Invited) Kosuke Nagashio, Univ. of Tokyo, Japan</p>
<p>27A-3-4 16:45 The Lithography Roadmap and the Impact of Stochastics (Invited) Mark Neisser, Tan Kah Kee Innovation Laboratory, China</p>	<p>27B-3-3 15:50 Demonstration of deep learning with molecular-gap atomic switches using a sulfurized Ag active electrode Yuta Iwakiri and Tsuyoshi Hasegawa, Waseda Univ., Japan</p>	<p>27C-3-3 16:30 C₆₀-Nanowire Two-State Resistance Switching (Invited) Kazuhito Tsukagoshi 1,2, Hiroshi Suga 1,2 and Yukiya Umetsu 1,2, 1 NIMS and 2 Chiba Inst. of Technol., Japan</p>
		<p>27C-3-4 17:00 CARBON NANOTUBE TECHNOLOGIES FOR FLEXIBLE ELECTRONICS (Invited) Yutaka Ohno, Nagoya Univ., Japan</p>
		<p>27C-3-5 17:30 On the Fundamental Mechanisms that underpin Process Technology for Atomically Thin 2D Films (Invited) Stephan Hofmann, Univ. of Cambridge, UK</p>
<p>27A-4: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography III 18:30-20:00, October 27, 2021 Chairs: Seiji Nagahara (Tokyo Electron) Tomoki Nagai (JSR)</p>	<p>27B-4: Nanofabrication III 16:10-17:10, October 27 Chairs: Tsuyoshi Hatano (Nihon Univ.) Wataru Mizubayashi (AIST)</p>	
<p>27A-4-1 18:30 High-NA EUV Imaging and stochastics: From system introduction towards low-k1 extension (Invited) Eelco van Setten, Jan van Schoot, Ruben Maas, Claire van Lare, Friso Wittebrood, Gijsbert Rispens, Gerardo Bottiglieri, John McNamara, Jo Finders, ASML Netherlands, The Netherlands</p>	<p>27B-4-1 16:10 Characterization of Electronic Charged States of High Density Self-aligned Si-based Quantum Dots Evaluated with AFM/Kelvin Probe Technique Yuki Imai, Katsunori Makihara, Akio Ohta, Noriyuki Taoka, and Seiichi Miyazaki, Nagoya Univ., Japan</p>	
<p>27A-4-2 19:00 Materials for Extreme Ultraviolet Lithography: State of the Art and Challenges towards High-NA (Invited) Danilo De Simone, Imec, Belgium</p>	<p>27B-4-2 16:30 Ordered Nanodot Array Fabrication for quantum Dot Solar Cell You Yin, Keisuke Yanagisawa, Takashi Akahane and Rento Mayuzumi, Gunma Univ., Japan</p>	
<p>27A-4-3 19:30 Stochastic challenges for the ultimate resolution in photolithography (Invited) Yasin Ekinici, Paul Scherrer Inst., Switzerland</p>	<p>27B-4-3 16:50 Improved thermal treatment of polydimethylsiloxane (PDMS) for double casting of microstructures Shichen Li, Son Van Nguyen, and Bong-Kee Lee, Chonnam Natl Univ., Korea</p>	

MNC 2021, October 26-29, 2021, Online and On-demand

October 28, 2021		
Room A	Room B	Room C
28A-1: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography IV 9:00-10:30, October 28, 2021 Chairs: Takahiro Kozawa (Osaka Univ.) Seiji Nagahara (Tokyo Electron)	28B-1: TMDC II 9:00-10:10, October 28 Chairs: Haruka Omachi (Nagoya Univ.) Taishi Takenobu (Nagoya Univ.)	
28A-1-1 9:00 Traversing from 0.33 NA to 0.55 NA EUV lithography: a EUV resist perspective <i>(Invited)</i> Anna Lio, Intel, USA	28B-1-1 9:00 Evolutions of the Dirac Fermions in Monatomic Layers <i>(Invited)</i> Iwao Matsuda, Univ. of Tokyo, Japan	
28A-1-2 9:30 EUVL Adoption to 7nm Versal Production <i>(Invited)</i> Toshiyuki Hisamura, Xilinx, USA	28B-1-2 9:30 Improved synthesis of WS ₂ nanotubes with relatively small diameters by tuning sulfurization timing and reaction temperature Md. Ashiqur Rahman 1,2, Yohei Yomogida 1, Mai Nagano 1, Ryoga Tanaka 1, Yasumitsu Miyata 1, and Kazuhiro Yanagi 1, Tokyo Metropolitan Univ., Japan and 2 Comilla Univ., Bangladesh	
28A-1-3 10:00 Fast quantification of EUV stochastic defect probabilities using Gaussian Random Field models <i>(Invited)</i> Azat Latypov 1, Chih-I Wei 2, Peter De Bisschop 3, Gurdaman Khaira 1 and Germain Fenger 1, 1Siemens Digital Industries Software, USA, 2 Siemens Digital Industries Software and 3 IMEC, Belgium	28B-1-3 9:50 Influence of Intercalation on the Thermal Conductance on Artificially Stacked MoS ₂ Wenyu Yuan 1, Kan Ueji 1, Takashi Yagi 2, Takahiko Endo 1, Hong En Lim 1, Yasumitsu Miyata 1, Yohei Yomogida 1, Kazuhiro Yanagi 1, 1 Tokyo Metropolitan Univ. and 2 AIST, Japan	
28A-2: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography V 11:00-12:30, October 28, 2021 Chairs: Takahiro Kozawa (Osaka Univ.) Seiji Nagahara (Tokyo Electron)	28B-2: Graphene, Nanocarbon 10:30-11:30, October 28, 2021 Chairs: Susumu Okada (Univ. of Tsukuba) Masaki Tanemura (Nagoya Inst. of Technol.)	28C-2: BioMEMS, Lab on a Chip, and Nanobiotechnology I 11:00-12:00, October 28, 2021 Shinya Kumagai (Meijo Univ.)
28A-2-1 11:00 Applying Stochastic Simulation to Study Defect Formation in EUV Photoresists <i>(Invited)</i> Lawrence S. Melvin III 1, Ulrich Welling 2, Yudhishtir Kandel 1, Zachary A. Levinson 1, Hironobu Taoka 3, Hans-Jurgen Stock 2, Wolfgang Demmerle 2, 1 Synopsys, USA, 2 Synopsys, Germany and 3 Nihon Synopsys, Japan	28B-2-1 10:30 Oxygen Resistance Enhancement of Graphene-Oxide-Semiconductor Planar-Type Electron Sources Using Hexagonal Boron Nitride Naoyuki Matsumoto 1,2, Yoshinori Takao 1, Masayoshi Nagao 2 and Katsuhisa Murakami 2, 1 Yokohama Natl. Univ. and 2 AIST, Japan	28C-2-1 11:00 Detection system of bacteria, Legionella by photogate type optical sensor Yuto Honda 1, Yong-Joon Choi 1, Kensuke Murakami 1, Kazuhiro Takahashi 1, Toshihiko Noda 1, Kazuaki Sawada 1, Hiromu Ishii 1, Katsuyuki Machida 2, Hiroyuki Ito 2, Satoshi Miyahara 3, Yasuhiko Nikaido 3 and Mitsumasa Saito 3, 1 Toyohashi Univ. of Technol., 2 Tokyo Tech and 3 Medical Univ. of Occupational and Environmental Health, Japan
28A-2-2 11:30 DEFECT REDUCTION IN EUV LITHOGRAPHY MATERIALS USING HIGH PERFORMANCE FILTRATION <i>(Invited)</i> R. Beera 1, L.D' Urzo 2, T. Umeda 3, T. Mizuno 3, A. Singh 1, R. Shick 1, P. Foubert 4 and W. Drent 4, 1 Pall, USA, 2 Pall, Belgium, 3 Nihon Pall, Japan and 4 imec,	28B-2-2 11:50 Flexible piezoresistive stretchable strain sensor based on laser-induced graphene Yu-Hsin Yen 1, Chao-Shin Hsu 1, Cheng-Chun Huang 2, Ching-Yuan Su 2 and Yao-Chuan Tsai 1, 1 Natl. Chung Hsing Univ. and 2 Natl. Central Univ., Taiwan	28C-2-2 11:20 Highly sensitive passive glucose sensor based on parity-time (PT) symmetric resonators T. Takamatsu 1, Y. Shijie 1, T. Xiao 1, L. Hu 1, Y. Cui 1, Q. Zhang 1 and T. Miyake 1,2, 1 Waseda Univ. and 2 JST-PRESTO, Japan
28A-2-3 12:00 Addressing the Defectivity Challenges of EUV Lithography <i>(Invited)</i> David Medeiros, Entegris, USA	28B-2-3 11:10 Carbon Onion Stored Mechanical Energy Response to Space Radiation K. Xie 1, V.M. Ayres 1, H.C. Shaw 2 and A. Hirata 3, 1 Michigan State Univ., 2 NASA Goddard Space, USA and 3 Tokyo Tech., Japan	28C-2-3 11:40 Wireless electrochromic soft contact lenses controlled by a dual-band wireless power transfer system Lunjie Hu, Taiki Takamatsu, Lu Chen, Te Xiao and Takeo Miyake, Waseda Univ., Japan
Lunch Time		
28A-3: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography VI 13:30-15:00, October 28, 2021 Chairs: Takahiro Kozawa (Osaka Univ.) Shinji Okazaki (Alitecs)	28B-3: Nanowires/Quantum Dots 13:30-15:00, October 28, 2021 Chair: Shinjiro Hara (Hokkaido Univ.)	28C-3: BioMEMS, Lab on a Chip, and Nanobiotechnology II 13:30-15:00, October 28, 2021 Chair: Atsushi Miura (Hokkaido Univ.)
28A-3-1 13:30 Update of >300W High Power LPP-EUV Source Challenge IV for Semiconductor HVM <i>(Invited)</i> Hakaru Mizoguchi, Hiroaki Tomuro, Yuichi Nishimura, Hirokazu Hosoda, Tamotsu Abe, Hiroshi Tanaka, Yukio Watanabe, Yutaka Shiraishi, Tatsuya Yanagida, Georg Soumagne, Fumio Iwamoto, Shinji Nagai, Yoshifumi Ueno, Takashi Suganuma, Gouta Niimi, Takayuki Yabu, Tsuyoshi Yamada, Hiroaki Nakarai and Takashi Saitou, Gigaphoton, Japan	28B-3-1 13:30 Metal Oxide Nanostructures and Nanodevices for Artificial Odor/Smell Integrated Systems <i>(Invited)</i> Takeshi Yanagida, Univ. of Tokyo, Japan	28C-3-1 13:30 Electrochemical control of enzyme cascade reactions with a protonic biotransducer Yukun Chen 1, Mingyin Cui 1, Bingfu Liu 1, Noriyo Mitome 2 and Takeo Miyake 1,3, 1 Waseda Univ., 2 Tokoha Univ. and 3 JST-PRESTO, Japan

MNC 2021, October 26-29, 2021, Online and On-demand

28A-3-2 14:00 EUV resist material and process optimization for reducing stochastic effects in EUV lithography <i>(Invited)</i> Seiji Nagahara, Tokyo Electron, Japan	28B-3-2 14:00 Formation and optical characteristics of GaN:Eu/GaN core-shell nanowires grown by organometallic vapor phase epitaxy T. Otabara, J. Tatebayashi, S. Hasegawa, S. Ichikawa, M. Ashida and Y. Fujiwara, Osaka Univ., Japan	28C-3-2 13:50 Bottom-up fabrication of bicontinuously structured and diffusion-functionalized microneedles as a platform for sustained drug delivery applications Takuya Miyazaki 1,2, Kevin Barthelmes 1,2, Kiyoshi Ikehara 1, Yuji Miyahara 2 and Akira Matsumoto 1,2, 1 KISTEC and 2 Tokyo Medical and Dental Univ., Japan
28A-3-3 14:30 A study of the effect of EUV masks on the EUVL stochastic effects <i>(Invited)</i> Yasutaka Morikawa, DNP, Japan	28B-3-3 14:20 AlGaOx Nanowires Phosphor Obtained by Wet Oxidation of AlGaAs Providing a White Light Under UV-LED Illumination Takeru Tanigawa, Rikuo Tsutsumi and Fumitaro Ishikawa, Ehime Univ., Japan	28C-3-3 14:10 Development of shape prediction model for nanoparticles in liquid based on deep learning analysis of Brownian motion Hiroaki Fukuda 1, Hiroki Kuramochi 1, Hiroaki Takehara 1,2, and Takanori Ichiki 1,2, 1 Univ. of Tokyo and 2 iCONM, Japan
	28B-3-4 14:40 Near-infrared dual-wavelength surface-emitting light source using a vertical cavity resonating with discrete emission wavelengths of InAs quantum dots J. Oshima 1, N. Ozaki 1, H. Oda 2, E. Watanabe 3, H. Ohsato 3, N. Ikeda 3, Y. Sugimoto 3 and R. Hogg 4, 1 Wakayama Univ., 2 CIST, 3 NIMS, Japan and 4 Univ. Glasgow, UK	28C-3-4 14:30 In-Mold Flexible Hybrid Electronics (FHE) Based on Advanced Wafer-Level Packaging with Chiplets <i>(Invited)</i> Takafumi Fukushima, Tohoku Univ., Japan
28A-4-1: Symp. A. EUVL Stochastics Symposium: Overcoming the Challenge of Stochastics for High Resolution EUV Lithography VII 15:15-16:45, October 28, 2021 Seiji Nagahara (Tokyo Electron) Shinji Okazaki (Alitecs)	28B-4: Nanoelectronics 15:30-17:00, October 28 Chair: Yuuichiro Mitani (Tokyo City Univ.)	28C-4: Symp. C. Biological Phenomena and Functions within Micro- and Nanospace 16:00-18:00, October 28 Chairs: Kazuaki Furukawa (Meisei Univ.) Akihito Hiyama (Tohoku Univ.)
28-A4 15:15-16:45 Panel Discussion Seiji Nagahara, Tokyo Electron (TEL), Japan, Anna Lio, Intel, USA, Eelco van Setten, ASML, Netherlands Danilo De Simone, imec, Belgium Patrick Naulleau, Lawrence Berkeley National Lab., USA Takeo Watanabe, Univ. of Hyogo, Japan Harry Levinson, HJL Lithography, USA	28B-4-1 15:30 Ultra-sharp three-terminal switch using nano-scale phase transition material <i>(Invited)</i> Takeaki Yajima, Kyushu Univ., Japan	28C-4-1 16:00 MICROFLUIDIC DEVICES FOR CLINICAL APPLICATIONS <i>(Invited)</i> Manabu Tokeshi 1,2, 1 Hokkaido Univ. and 2 Nagoya Univ., Japan
	28B-4-2 16:00 Dual switching operation of vertical gate-all-around transistor using InGaAs/GaSb core-shell nanowires on Si Hironori Gamo, Junichi Motohisa and Katsuhiko Tomioka, Hokkaido Univ., Japan	28C-4-2 16:30 Biomolecular Needling Systems for Medicals <i>(Invited)</i> Beomjoon Kim, Univ. of Tokyo, Japan
	28B-4-3 16:20 Experimental Investigation of Interface Defect Properties in PTO ₂ /ZnO Schottky Diodes by Deep Level Transient Spectroscopy Mikiya Matsumura, Takahisa Tanaka and Ken Uchida, Univ. of Tokyo, Japan	28C-4-3 17:00 Additive fabrication for low-cost, large-area bioelectronics <i>(Invited)</i> Philipp Rinklin, Leroy Grob, Sabine Zips and Bernhard Wolfrum, Technical Univ. of Munich, Germany
	28B-4-4 16:40 Electronic state analysis of rectangular cross-sectional GeSn nanowires with various geometries and Sn composition M. Sato 1, H. Tanaka 1,2, and T. Kimoto 1, 1 Kyoto Univ. and 2 Osaka Univ., Japan	28C-4-4 17:30 RECENT PROGRESS IN METASURFACE BIOSENSORS <i>(Invited)</i> Masanobu Iwanaga, NIMS, Japan
28A-5: Symp. D. Enhancing technology for next generation lithography I 17:15-19:15, October 28, 2021 Chairs: Seiji Nagahara (Tokyo Electron) Kouji Asakawa (KIOXIA)	28B-5: Atomic Layer Processing (ALP) I 18:30-20:10, October 28, 2021 Chairs: Hiroshi Arimoto (AIST) Norifusa Sato (NIMS)	
28A-5-1 17:15 UV nanoimprint lithography with laser-drilled screen printing, fluorescence alignment, and hybridized resist materials <i>(Invited)</i> Masaru Nakagawa, Tohoku Univ., Japan	28B-5-1 18:30 Atomic Layer Processing: A toolbox for fabricating novel functional hybrid materials <i>(Invited)</i> Mato Knez, CIC nano, GUNE BRTA, Spain	
28A-5-2 17:45 CHEMICALLY TAILORED BLOCK COPOLYMERS FOR PATTERNABLE NANOSTRUCTURED MATERIALS <i>(Invited)</i> Teruaki Hayakawa, Tokyo Tech., Japan	28B-5-2 19:00 Process Overview of Area Selective Atomic Layer Deposition for Advanced Bottom-up Nanofabrication <i>(Invited)</i> Woohee Kim, Hanyang Univ., Korea	

MNC 2021, October 26-29, 2021, Online and On-demand

<p>28A-5-3 18:15 Development of non-expanding Polymers after Vapor Phase Infiltration and Evaluation of their Etch-resistance (Invited) Norikatsu Sasao, Shinobu Sugimura and Koji Asakawa, KIOXIA, Japan</p>	<p>28B-5-3 19:30 PMA Evaluation of TiN ALD in InGaAs Nanosheet MOSFETs T. Go, M. Kitamura, T. Gotow and Y. Miyamoto, Tokyo Tech., Japan</p>	
<p>28A-5-4 18:45 Al₂O₃ nanostructures fabricated by Sequential Infiltration Synthesis in Cylinder Forming PS-<i>b</i>-PMMA Block Copolymer Thin Films (Invited) Michele Perego 1, Alessia Motta 1, Marco Bigatti 1, Gabriele Seguini 1, Federica E. Caligiore 1, Alessia Motta 1, Grazia Tallarida 1, Elena Cianci 1, Soonmin Yim 2, Paul Nealey 2, Francesc. Perez Murano 3, Guido Rademaker 4, Ahmed Gharbi 4, Raluca Tiron 4, 1 IMM-CNR Agrate Unit, Italy, 2 Univ. of Chicago, USA, 3 IMB-CNM, CSIC, Spain and 4 CEA-LETI MINATEC, France</p>	<p>28B-5-4 19:50 Growth mechanism of the atomic layer deposition of GaN thin films using pentamethylcyclopentadienyl gallium and combinations of NH₃/H₂ plasma and N₂ plasma M. Mizui, N. Takahashi, S. Higashi and F. Mizutani, Kojundo Chemical Lab., Japan</p>	
	20:10-20:20 Break	
	<p>28B-5: Atomic Layer Processing (ALP) II 20:20-22:10, October 28, 2021 Chairs: Fumikazu Mizutani (Kojundo Chemical Lab.) Shigeo Yasuhara (Japan Advanced Chemicals)</p>	
	<p>28B-5-5 20:20 Vapor-phase infiltration for microelectronics applications (Invited) Chang-Yong Nam, Brookhaven National Laboratory, USA</p> <hr/> <p>28B-5-6 20:50 Surface reaction via cyclic HI and O₂ plasma for Ge digital etching H. Ishii 1,2, W. H. Chang 2, H. Ishii 2, M. Ke 1 and T. Maeda 1,2, 1 Tokyo Univ. of Sci. and 2 AIST, Japan</p> <hr/> <p>28B-5-7 21:10 High Temperature Atomic Layer Deposition of Hafnium Oxide using Homoleptic Hafnium Aminoalkoxide Precursor Akihiro Nishida 1,2, Tomoharu Yoshino 2, Yoshiki Ooe 2 and Yasutaka Matsuo 1, 1 Hokkaido Univ., 2 ADEKA.</p> <hr/> <p>28B-5-8 21:30 Multistep inorganic synthesis with atomic layer deposition to fabricate 3-dimensional THz phononic structure Norifusa Satoh, NIMS, Japan</p> <hr/> <p>28B-5-9 21:50 Ferroelectric HfZrO₂ downscaling limit on Silicon using O₃, and H₂O as oxidation agents Heber Hernandez-Arriaga 1, Jaidah Mohan 1, Yong Chan Jung 1, Jin-Hyun Kim 1, Chang-Han Rho 2, Rino Choi 2 and Jiyoung Kim 1, 1 Univ. of Texas, USA and 2 Inha Univ., Korea</p>	

MNC 2021, October 26-29, 2021, Online and On-demand

October 29, 2021		
Room A	Room B	Room C
29A-1: Symp. D. Enhancing technology for next generation lithography II 9:30-10:30, October 29, 2021 Chairs: Masaru Nakagawa (Tohoku Univ.) Norikatsu Sasao (Kioxia)		29C-1: Microsystem Technology and MEMS Session I 9:00-10:20, October 29, 2021 Chair: Sumito Nagasawa (Shibaura Inst. of Technol.)
29A-1-2 9:30 Leveraging Selective Deposition to Enable Next Generation EUV Lithography and Novel Patterning Integration <i>(Invited)</i> Katie Iutker-Lee, TEL Technology Center, America, USA		29C-1-1 9:00 Raman Spectroscopic Analysis for Nondestructive Estimation of Bundled Carbon Nanotube Defects Leading to Failure Tomohito Kino and Takahiro Namazu, Kyoto Univ. of Advanced Sci., Japan
29A-1-3 10:00 Post-Polymerization Modification of PS- <i>b</i> -PMMA: A Strategy for Fine-Tuning the Microphase-Separated Nanostructures <i>(Invited)</i> Takuya Isono 1, Ken Miyagi 2, Takahiro Dazai 2, Kazufumi Sato 2, Redouane Borsali 3, Takuya Yamamoto 1, Kenji Tajima 1 and Toshifumi Satoh 1, 1 Hokkaido Univ., 2 Tokyo Ohka Kogyo, Japan and 3 Univ. Grenoble Alps, France.		29C-1-2 9:20 Comparison in Sintered Silver Die Attach Failure between Thermal Shocked Test and Four-point Bending Test Keisuke Wakamoto 1,2, Yuga Kumakiri 2, Takukazu Otsuka 1, Ken Nakahara 1 and Takahiro Namazu 2, 1 ROHM and 2 Kyoto Univ. of Advanced Sci., Japan
		29C-1-3 9:40 Evaluation of microscale thermal characteristics of cold-rolled aluminum alloy by thermoreflectance method Souto Yamashita and Shugo Miyake, Kobe City College of Technol., Japan
		29C-1-4 10:00 Study on the thermal behavior of Carbon-Fiber-Reinforced-Plastic (CFRP) sheet using a periodic heating method Sho Nagata 1, Tsuyoshi Nishi 1, Hiromichi Ohta 1, Takahiro Igarashi 2 and Shugo Miyake 3, 1 Ibaraki Univ., 2 Japan Atomic Energy Agency and 3 Kobe City College of Technol., Japan
29A-2: Patterning Materials 11:00-12:30, October 29, 2021 Chairs: Kazumasa Okamoto (Osaka Univ.) Kazuyo Morita (Oji Holdings)	29B-2: NanoTool 10:10-12:20, October 29, 2021 Chairs: Koji Sugano (Kobe Univ.) Takayuki Hoshino (Hiroasaki Univ.)	29C-2: Microsystem Technology and MEMS Session II 11:00-12:00, October 29, 2021 Chair: Ryo Takigawa (Kyushu Univ.)
29A-2-1 11:00 Light-driven fabrication of helical nanostructures and their optical applications <i>(Invited)</i> Dong Ki Yoon, KAIST, Korea	29B-2-1 / Keynote-26 10:10 Applications of femtosecond laser amplifier to microprocesses for biological cells <i>(Invited)</i> Yoichiro Hosokawa, NAIST, Japan	29C-2-1 11:00 Drift and Noise Characteristics of Sensor Module With A Single Axis Gold Proof Mass MEMS Accelerometer for Micro Muscle Sound Measurement Akira Onishi, Kohei Shibata, Akihiro Uchiyama, Katsuyuki Machida, Taiki Ogata, Noboru Ishihara, Hirotaka Uchitomi, Tso-Fu Mark Chang, Masato Sone, Yoshihiro Miyake, Kazuya Masu and Hiroyuki Ito, Tokyo Tech., Japan
29A-2-2 11:30 Effects of Resist-CrN Interaction on Resist Patterns of Chemically Amplified Resists Used for Electron Beam Lithography Akihiro Konda 1, Kazumasa Okamoto 1, Takahiro Kozawa 1, and Takao Tamura 2, 1 Osaka Univ. and 2 NuFlare Technol., Japan	29B-2-2 10:50 Fabrication and observation of nanopore in two-dimensional materials using Helium ion microscope <i>(Invited)</i> Kentaro Kawai 1, Shogo Sugita, Kohei Noda, Takumi Hayashi 1, Kenta Arima 1, Kazuya Yamamura 1, and Osamu Tabata 2, 1 Osaka Univ. and 2 Kyoto Univ. of Advanced Science, Japan	29C-2-2 11:20 Micro-Hexapod Robot Having an Origami-like SU-8 Coated Rigid Frame Kenjiro Sugimoto and Sumito Nagasawa, Shibaura Inst. of Technol., Japan
29A-2-3 11:50 Decarboxylation and polymerization processes of metal resist ligands T. Otsuka 1, Y. Muroya 1, T. Kozawa 1, T. Ikeda 2, Y. Komuro 2, and D. Kawana 2, 1 Osaka Univ. and 2 Tokyo Ohka Kogyo, Japan	29B-2-3 11:20 Design of Scanning Path for Dynamic Virtual Cathode Tool Ken Sasaki, Kenji Nomura and Takayuki Hoshino, Hiroasaki Univ., Japan	29C-2-3 11:40 Sensor and Actuator Double Functional Component for Micro Robot Leg Joints T. Hara and S. Nagasawa, Shibaura Inst. of Technol., Japan
29A-2-4 12:10 The effects of tetramethyl ammonium hydroxide concentration on the dissolution of poly(4-hydroxystyrene) Naoki Tanaka 1, Kyoko Matsuoka 1, Takahiro Kozawa 1, Takuya Ikeda 2, Yoshitaka Komuro 2, and Daisuke Kawana 2, 1 Osaka Univ. and 2 Tokyo Ohka Kogyo, Japan	29B-2-4 11:40 Characterization of nanogap with gold nanoparticle dimer controlled by four-point bending for electrical and optical single molecule measurement Yuanzhi Chang, Takayuki Sumitomo, Akio Uesugi, Koji Sugano and Yoshitada Isono, Kobe Univ., Japan	
	29B-2-5 12:00 Highly sensitive vibration measurement method of nanomechanical resonator using convolutional neural network Kohei Tsumune, Shin'ichi Warisawa and Reo Kometani, Univ. of Tokyo, Japan	
Lunch Time		

MNC 2021, October 26-29, 2021, Online and On-demand

29A-3: Advanced Photolithography 13:30-15:00 October 29, 2021 Chairs: Sachiko Kobayashi (KIOXIA) Tetsuo Harada (Univ. of Hyogo)	29B-3: Nanomaterials 13:30-15:20, October 29, 2021 Chairs: Jun Kano (Okayama Univ.) Takao Shimizu (NIMS)	29C-3: Microsystem Technology and MEMS Session III 13:30-14:50, October 29, 2021 Chair: Yoshihiro Hasegawa (Hiroshima City Univ.)
29A-3-1 13:30 Challenge of attenuated phase shift mask for EUV lithography (<i>Invited</i>) Ikuya Fukasawa, Yohei Ikebe, Takeshi Aizawa, Tsutomu Shoki, and Takahiro Onoue, HOYA, Japan	29B-3-1 13:30 NANO-STRUCTURE CONTROLS AND DEVICE APPLICATIONS OF SPIN-SPRAYED CuO AND Cu ₂ O FILMS (<i>Invited</i>) Nobuhiro Matsushita, Ryosuke Nitta and Yuta Kubota, Tokyo Tech., Japan	29C-3-1 13:30 SOI-MEMS device for fabrication and physical properties measurement of single-crystal silicon nanogap with (111) cleavage plane surfaces Masaki Shimofuri, Yoshikazu Hirai, Amit Banerjee and Toshiyuki Tsuchiya, Kyoto Univ., Japan
29A-3-2 14:00 EUV stochastic resist modeling in high NA R. Tsuzuki and K. Oyama, Tokyo Electron, Japan	29B-3-2 14:00 Crystalline Phase Transition in Two-dimensional Ruthenate Nanosheets Induced by Cobalt-doping Leanddas Nurdwijayanto and Takaaki Taniguchi, NIMS, Japan	29C-3-2 13:50 Sequential Automatic Assembling Method for Microstructure Using Shape Memory Polymer Units K. Kojima and S. Nagasawa, Shibaura Inst. of Technol., Japan
29A-3-3 14:20 The measurement of the refractive index n and k value of the EUV resist by EUV reflectivity measurement method Yosuke Ohta 1, Atsushi Sekiguchi 1, Tetsuo Harada 2 and Takeo Watanabe 2, 1 Litho Tech Japan and 2 Univ. of Hyogo, Japan	29B-3-3 14:20 Role of Ca in CaF ₂ incorporated In ₂ O ₃ transparent conductive films Kaito Oe, Shun Mori, Kotaro Watanabe, Hiroki Nagai, Tomohiro Yamaguchi, Takeyoshi Onuma, Tohru Honda and Shinya Aikawa, Kogakuin Univ., Japan	29C-3-3 14:10 Miniaturized pneumatic finger integrated with FPCB strain sensor Yi-Chun Chuang 1, Tun-Yi Cheng 1, Yu-Ching Lin 2, Takahito Ono 2 and Yao-Chuan Tsai 1, 1 Natl. Chung Hsing Univ., Taiwan and 2 Tohoku Univ., Japan
29A-3-4 14:40 INVESTIGATION OF PROJECTION EXPOSURE SYSTEM USING A PAIR OF PARABOLIC MIRRORS Toshiyuki Horiuchi and Hiroshi Kobayashi, Tokyo Denki Univ., Japan	29B-3-4 14:40 Design of high fluorescence Sm ³⁺ doped anatase type TiO ₂ thin film by machine learning using experimental XRD patterns Yuri Tamamoto, Mariko Murayama and Xiwei Zhao, Toyo Univ., Japan	29C-3-4 14:30 MAGNETIC DRIVEN TENTACLES FOR BIO-MIMIC MOTION Toshiaki Murakami and Fujio Tsumori, Kyushu Univ., Japan
	29B-3-5 15:00 Conductivity Improvement of Anti-perovskite Solid Electrolyte Na ₃ OX for Sodium Batteries Wei Shi 1, Masataka Ohta 1, Mariko Murayama 1,2 and Xinwei Zhao 1, 1 Tokyo Univ. of Sci. and 2 Toyo Univ., Japan	
29A-4: Electron and Ion Beam Technologies 15:30-17:00, October 29, 2021 Chairs: Makoto Sakakibara (Hitachi) Hiroshi Yamashita (Nuflare Technol.) Junichi Yanagisawa (Univ. of Shiga Pref.)	29B-4: Nano Devices 15:40-17:30, October 29, 2021 Chairs: Takashi Tsuchiya (NIMS) Kazuto Hatakeyama (AIST)	29C-4: Organic Nanomaterials 15:30-17:20, October 29, 2021 Chairs: Akito Masuhara (Yamagata Univ.) Shusaku Nagano (Rikkyo Univ.)
29A-4-1 15:30 Deep learning model for 3D profiling of high-aspect-ratio features using high-voltage CD-SEM (<i>Invited</i>) Wei Sun 1, Yasunori Goto 2, Takuma Yamamoto 2 and Keiichiro Hitomi 1, 1 Hitachi and 2 Hitachi High-Tech, Japan	29B-4-1 15:40 in situ observation of electrochemical lithiation/delithiation of Si thin film electrodes by X-ray photoelectron spectroscopy (<i>Invited</i>) Takuya Masuda, NIMS and Hokkaido Univ., Japan	29C-4-1 15:30 Highly proton-conductive polymer thin films with organized structure and molecularly oriented structure (<i>Invited</i>) Yuki Nagao, JAIST, Japan
29A-4-2 16:00 Development of electron beam lithography technique for fabrication of highly integrated silicon quantum bits Kimihiko Kato, Yongxun Liu, Shigenori Murakami, Yukinori Morita and Takahiro Mori, AIST, Japan	29B-4-2 16:10 Anomalous Surface Ion conduction of Ce _{1-x} Sm _x O _{2-δ} Thin Film with Mixed Valence State Go Notake 1, Daiki Nishioka 1, Ukyo Kobayashi 1, Hideaki Murasawa 1, Daisuke Shiga 2, Koji Horiba 3, Hiroshi Kumigashira 2 and Tohru Higuchi 1, 1 Tokyo Univ. of Sci., 2 Tohoku Univ. and 3 KEK, Japan	29C-4-2 16:00 Weakly Acidic Filler-filled Type Polymer Electrolyte Membrane for PEFC Tomohiro Nohara 1, Yukina Suzuki 1, Keisuke Tabata 1, Takaaki Saito 1, Toshihiko Arita 2, Akito Masuhara 1, 1 Yamagata Univ. and 2 Tohoku Univ., Japan
29A-4-3 16:20 Characterization of Ar beam from the new fast atom beam source R. Morisaki 1, T. Yamazaki 1, C. Oka 1, J. Sakurai 1, T. Akao 2, T. Takahashi 2, H. Tsuji 2, N. Ohno 1, and S. Hata 1, 1 Nagoya Univ., 2 NGK INSULATORS, Japan	29B-4-3 16:30 Fabrication of nanostructured Pt counter electrodes for electrochemical sensors Ivan Turkevych, AIST, Japan	29C-4-3 16:20 Establishing precise control conditions of the emission wavelength on perovskite quantum dots by crystal lattice distortion Ryota Sato, Rikuo Suzuki, Yusaku Morikawa, Satoshi Asakura, Takayuki Chiba and Akito Masuhara, Yamagata Univ., Japan
29A-4-4 16:40 Universal Liquid Metal Alloy Ion Sources (LMAIS) for FIB nanofabrication T. Richter 1, P. Mazarov 1, F. Meyer 1, W. Pilz 1, L. Bischoff 2, and N. Klingner 2, 1 Raith and 2 Helmholtz-Zentrum Dresden-Rossendorf, Germany	29B-4-4 16:50 Metal-assisted chemical etching of silicon nanowires for nanocomposite field effect transistors Chun-Teng Chen, Jung-Chun Tseng, Hao-Jen Cheng and Gen-Wen Hsieh, Natl. Yang Ming Chiao Tung Univ., Taiwan	29C-4-4 16:40 Multi polymer layer-coated silica nanoparticles for polymer electrolyte membrane prepared by RAFT polymerization with particles Keisuke Tabata 1, Haruki Nakazaki 1, Tomohiro Nohara 1, Toshihiko Arita 2 and Akito Masuhara 1, 1 Yamagata Univ. and 2 Tohoku Univ., Japan
	29B-4-5 17:10 Demonstration of flexible transparent conductive film using B-doped In ₂ O ₃ Shun Mori, Yukiya Ichinoseki, Kotaro Watanabe, Kaito Murano, Kaito Oe, Hiroki Nagai, Tomohiro Yamaguchi, Takeyoshi Onuma, Tohru Honda and Shinya Aikawa Kogakuin Univ., Japan	29C-4-5 17:00 Ultrapure-blue Light-emitting Electrochemical Cell Using ν -DABNA Yuki Tanaka 1, Jiang Pu 1, Takuji Hatakeyama 2 and Taishi Takenobu 1, 1 Nagoya Univ. and 2 Kwansei Gakuin Univ., Japan

<p>29A-5: Nanoimprint, Hybrid-NIL, Biomimetics, and Functional Surfaces 17:30-20:00, October 29, 2021 Chairs: Akihiro Miyauchi (Tokyo Medical and Dental) Jun Taniguchi (Tokyo Univ. of Sci.) Kazuma Kurihara (AIST) Junpei Sakurai (Nagoya Univ.)</p>		
<p>29A-5-1 17:30 Novel desien of optical diffuser inspired by the Morpho butterfly (<i>Invited</i>) Akira Saito 1,2, Kazuma Yamashita 1, Takuma Hattori 1,2, and Yuji Kuwahara 1,2, 1 Osaka Univ. and 2 RIKEN SPring-8 Center, Japan</p>		
<p>29A-5-2 18:00 A new adhesive mechanism learning from the nanofilaments and mucus of a clingfish sucker Kazuma Tsujioka 1, Yasutaka Matsuo 2, Yuji Hirai 1 and Masatsugu Shimomura 1, 1 Chitose Inst. of Sci. and 2 Hokkaido Univ., Japan</p>		
<p>29A-5-3 18:20 Development of a Morpho butterfly-inspired optical diffuser with high controllability Kazuma Yamashita 1, Takuma Hattori 1,2, Yuji Kuwahara 1,2 and Akira Saito 1,2, 1 Osaka Univ. and 2 RIKEN SPring-8, Japan</p>		
<p>29A-5-4 18:40 Nanoimprint Lithography Methods for Achieving sub-3nm Overlay Shintaro Aichi 1, Kenji Yamamoto 1, Hideyuki Wada 1, Yoshio Suzuki 1, Kazuhiro Sato 1, Satoshi Iino 1, Satoru Jimbo 1, Osamu Morimoto 1, Mitsuru Hiura 1, Nilabh Roy 2, Anshuman Cherala 2 and Jin Choi 2, 1 Canon, Japan and 2 Canon Nanotechnologies, USA</p>		
<p>29A-5-5 19:00 Fabrication of self-standing thin films with small through-holes by imprint and photolithography hybrid process H. Tanabe, H. Kawata, M. Yasuda, Y. Hirai and H. Kikuta, Osaka Pref. Univ., Japan</p>		
<p>29A-5-6 19:20 SUB-MICRON IMPRINT PATTERNING OF COMPOUND SHEET WITH CERAMIC NANO POWDER Ryoma Taira and Fujio Tsumori, Kyushu Univ., Japan</p>		
<p>29A-5-7 19:40 Robust PDMS Pattern and Hexagonal Guard Ring Microstructure with Hydrophobic Properties for Marine Antifouling Applications Nithi Atthi 1, Witsaroot Sripumkhai 1, Pattaraluck Pattamang 1, Rattanawan Meananeatra 1, Oraphan Thongsook 1, Norabadee Ranron 1, Krynarnas Pankong 1, Wutthinan Jeamsaksiri 1, Yoichiro Kitani 2, Shouzo Ogiso 2 and Nobuo Suzuki 2, 1 NECTEC, Thailand and 2 Kanazawa Univ., Japan</p>		