

## EIPBN 2017 - Technical program v 2.1

### Tuesday May 30th 2017

Short Courses		
8:30	Welcome and introduction	Aaron Stein, Erika Penzo
9:00	Focused Electron and Ion Beam Induced Synthesis	Philip D. Rack
10:00	Atomic Layer Processes	Adam Schwartzberg
11:15	Nanobiology: Challenges and Opportunities for Nanoengineers	Shalom J. Wind
13:30	Block Copolymer Directed Self-Assembly to Enhance Nanofabrication	Gregory Doerk
14:30	Nanoimprint Lithography	Wei Wu
15:00	Exhibition	

### Wednesday May 31st 2017

Plenary session		
8:00 AM	266 2D Materials Nanosculpting in the Transmission Electron Microscope and Bioelectronics Applications	Marija Drndic
8:30AM	248 Nanotechnology for a Genomic Revolution	Gerald Kreindl
9:15AM	254 X-rays, Electrons and Lithography: Fundamental Processes in Molecular Radiation Chemistry	D. Frank Ogltree
10:00AM		
10:45 AM	<b>Poster Session</b>	
<b>Electron Beam Lithography I</b>		
1:45PM	invited 227 Patterning Materials at the One Nanometer Length Scale with an Electron Beam	vitor manfrinato, Aaron Stein, Lihua Zhang, Chang-Yong Nam, Kevin Yager, Eric Stach and Charles Black
	115 The Nanolithography Toolbox: Design Solutions for Nanoscale Devices	Krishna Balram, Daron Westly, Marcelo Davanco, Karen Grutter, Qing Li, Thomas Michels, Christopher Ray, Liya Yu, Richard Kasica, Christopher Wallin, Roberto DeAlba, Ian Gilbert, Brian Bryce, Gregory Simelgor, Juraj Topolancik, Nicolae Lobontiu, Yuxiang Liu, Pavel Neuzil, Vojtech Svatos, Kristen Dill, Neal Bertrand, Meredith Metzler, Gerald Lopez, David Czaplewski, Leonidas Ocola, Kartik Srinivasan, Samuel Stavis, Vladimir Aksyuk, Alexander Liddle, Slava Krivov and Rob Ilic
2:15PM	149 Patterning of Non-Planar Diamond Anvils for High Pressure Materials Characterization via Electron Beam Lithography	Daniel Schulman, Chad Eichfeld, Michael Labella III, Saptarshi Das, Lan Zhang, Rainer Schmid, Bas Ketelaars and Christiaan Zonneville
2:35PM	90 Local nanopatterning using PS-b-PMMA block copolymer self-assembly/electron beam combined lithography	Reo Kometani, Kei Nishikawa and Etsuo Maeda
2:55PM	156 Metal Patterning and Grain Boundary Engineering by Template Assisted Dewetting	Jonathan Trisno, Zhaogang Dong, Jin Fa Ho and Joel Yang
3:15PM		
<b>Beam Induced Process I</b>		
1:45PM	invited 42 Three-Dimensional Focused Electron Beam Induced Deposition: Design, Simulation and Experiments	Jason Fowlkes, Brett Lewis, Eva Mutunga, Philip Rack, Michael Stanford, Harald Plank and Robert Winkler
2:15PM	91 Annealing-Based Electrical Tuning of Cobalt-Carbon Deposits Grown by Focused-Electron-Beam-Induced Deposition	Marcos Vinicius Puydinger dos Santos, Murilo Ferreira Velo, Renan Daniel Domingos, Yucheng Zhang, Xavier Maeder, Carlos Guerra Nuñez, James P. Best, Fanny Béron, Kleber R. Pirola, Stanislav Moshkalev, José Alexandre Diniz and Ivo Utke
	113 FEBID Based Direct-Write Nano-Printing of 2D and 3D Plasmonic Gold Structures	Robert Winkler, Paul Falthans, Franz Schmidt, Ulrich Haselmann, Ulrich Radeschnig, Harald Plank, Jason Fowlkes, Brett Lewis, Philip Rack, Mark Thomson, Florian Bürkle, M. Wiecha, F. Walla, Roland Sachser, Michael Huth and Hartmut Roskos
2:35PM	9 Direct-writing of nanomagnets for logic circuitry	Heinz Wanzenboeck, Manuel Reichenpfader and Emmerich Bertagnolli
2:55PM	162 3D-nanoprinting using Electron Beam Induced Deposition	Niels Noordzij
3:15PM		
<b>Nanofabrication for biology applications</b>		
1:45PM	invited 259 Nanoscale roughened thin film electrodes for neural probe and bio-sensing applications	Anna Ivanovskaya
2:15PM	120 Fabrication of Cellulose Nano-Structures via Focused Electron Beam Induced Conversion	Thomas Ganner, Jürgen Sattelkow, Harald Plank, Bernhard Rumpf, Manuel Eibinger, David Reishofer and Stefan Spirk
2:35PM	195 Transition Metal Dichalcogenides as Cell Culture Platforms	Anthony Palumbo, Filippos Tourlomousis, Robert Chang and Eui-Hyeok Yang
2:55PM	108 Recirculating Microfluidic Device for Efficient Filtration and Enrichment of Circulating Tumor Cells	Zhenning Yu, Youwei Jiang, Rifei Chen, Xinglong Huang, Weiyuan Chen, Yifan Zeng, Chengqi Xu and Xing Cheng
3:15PM	56 Iron-doped apatite nanoparticle adjuvants for enhanced phage therapy delivered through electrospun fibers	Jessica Andriolo, John Murphy, M. Hailer, Marisa Pedulla and Jack Skinner
<b>3D processes</b>		
4:05PM	invited 265 Atom by Atom Sculpting of Materials using Scanning Transmission Electron Microscopy	Stephen Jesse
4:35PM	74 Novel 3-Dimensional Photo Lithography using Built-in Lens Mask	Yoshihiko Hirai, Toshiki Tanaka, Daiki Sugihara, Masaru Sasago, Hisao Kikuta and Hiroaki Kawata
4:55PM	16 Photonics On a Fiber For Wavefront Manipulation	Alexander Koshelev, Giuseppe Calafiore, Carlos Pina-Hernandez, Frances I. Allen, Scott Dhuey, Simone Sassolini, Edward Wang, Paul Lum, Stefano Cabrini and Keiko Munechika
5:15PM	71 Continuous Patterning of Three-Dimensional Periodic Nanostructures using Roll-to-Roll System	I-TE Chen, Xu Zhang, Joong-Hee Min and Chih-Hao Chang
5:35PM	124 Direct-Write Fabrication of Electric and Thermal High-Resolution Nano-Probes on Self-Sensing AFM Cantilever	Jürgen Sattelkow, Johannes Froech, Harald Plank, Robert Winkler, Ulrich Radeschnig, Christian Schwalb, Marcel Winhold, Alexander Deutschinger, Tobias Strunz, Ernest Fantner, Vladimir Stavrov and Georg Fantner
<b>Imaging and Characterization I</b>		
4:05PM	invited 194 Diffractive Electron Mirror in SEM	Navid Abedzadeh, Chung-Soo Kim, Marco Turchetti, Richard Hobbs, Karl Berggren, Maurice Krielaart and Pieter Kruit
4:35PM	157 High sensitive visualization of localized electric field using low energy electron beam deflection	Samuel Jeong, Gary Edwards and Jun-ichi Fujita
4:55PM	13 Low-Voltage Coherent Electron Imaging Based on a Single-Atom Electron Source	Chun-yueh Lin, Wei-tse Chang, Wei-hao Hsu and Ing-shouh Hwang
5:15PM	206 High contrast scanning electron microscopy for high resolution cross sections using conductive polymer-metal coating	Daniel Staaks, Scott Dhuey, Zhaoning Yu, Simone Sassolini, M. Virginia P. Altoe, Ivo Rangelow and Deirdre Olynick
5:35PM	172 Fast resist-activation dosimetry for extreme ultra-violet lithography	Jinseok Heo, Man Xu and Diederik Maas
<b>Nanophotonics I</b>		
4:05PM	invited 234 Switchable and Stackable Color Filters for a Full-color Reflective Display	He Liu, Hao Yang, Yuanrui Li, Haneol Lim, Jongseung Yoon and Wei Wu
4:35PM	207 Direct laser writing of color transmission holograms	Kevin Lim and Joel Yang
4:55PM	67 Flexible large-area plasmonic gold nanocheckerboard fabricated by cost-effective solution process for highly sensitive refractive index sensing in visible range	Jingxuan Cai, Chuwei Liang and Wen-Di Li
5:15PM	75 Three Layer Plasmonic Biosensor with High Sensitivity	Shuyan Zhu, Hualin Li, Mengsu Yang and Stella Pang
5:35PM	95 Enhancing the conversion efficiency of spin-to-orbit angular momentum by nanoscale metasurface reconstruction	Bingrui Lu, Jianan Deng, Sichao Zhang and Yifan Chen

Thursday June 1st 2017

		<b>Imaging and Characterization II</b>	
8:00AM	invited	3 Multi-pass transmission electron microscopy	Thomas Juffmann
8:30AM		144 Transmission Helium Ion Microscopy	Karen L. Kavanagh, Christoph Herrmann and John Notte
		142 Reduction of Metrology Error for Line-Edge Roughness Measurement from Low-Dose SEM Images	Yao Luo and Serap Savari
8:50AM		147 Monte Carlo Simulation Models for SEM Imaging: Fast versus Accurate	Kerim Arat and Cornelis (Kees) Hagen
9:10AM		132 Three-dimension tracing on the electron beam in micro-focus and nano-focus X-ray sources	Wenping Li
9:30AM			
		<b>Resists and Materials</b>	
8:00AM	invited	245 Metal oxide cluster compound photoresists for EUV lithography	Christopher Ober, Hong Xu, Vasiliki Kosma, Jeremy Odent, Kazuki Kasahara and Emmanuel Giannelis
8:30AM		225 Incorporation of EELS Data for Monte Carlo Simulation of Secondary Electrons in EUV and Electron-Beam Lithography	Amrit Narasimhan, Liam Wisehart, Sylvie Rangan, Robert Bartynski, Leonidas Ocola, Greg Denbeaux and Robert Brainard
8:50AM		128 50 nm lines patterned into silicon using water developable chitosan bioresist and electron beam lithography	Mathieu Caillaud, Pierre Crémillieu, Céline Chevalier, Emmanuelle Laurenceau, Thierry Delair, Jean-Louis Leclercq and Yann Chevrolat
9:10AM		33 Micro and nanopatterning of Metal Oxo-Cluster photoresists	Olivier Soppera, Chun-Cheng Yeh, Shang-Yu Yu, Po-Yi Chang, Dominique Berling and Hsiao-wei Zan
9:30AM		268 Novel Crosslinked Molecular Resists Based on Acid-Catalyzed Depolymerization	Brandon Sharp and Clifford Henderson
		<b>Nanoelectronics I</b>	
8:00AM	invited	11 Intriguing Prospects of 2D Atomic Sheets for Innovative Nanoelectronics	Li Tao, Saungeun Park, Weinan Zhu, Hasibul Alam and Deji Akinwande
8:30AM		158 Atomically Precise Devices: Enabling Fundamentally New Devices at the Ultimate Atomic Limit	Richard Silver, Xigao Wang, Pradeep Nambodiri, Michael Stewart, Jr., Roy Murray, Kai Li and Jonathan Wyrick
8:50AM		53 Facile and High-Throughput Fabrication of Carbon Nanotube Carpet-PDMS Structures toward Flexible Supercapacitors	Runzhi Zhang, Junjun Ding and Eui Hyeok Yang
9:10AM		171 Fabrication of self-rectifying 3D all-silicon memristor crossbar arrays by stacking fluid supported single-crystalline membranes	Can Li and Qiangfei Xia
9:30AM		77 Fabrication of Multi-Bit Memory Devices Based on Layered Semiconductors via Interlayer Deformation	Mikai Chen, Yifan Wang, Jay Guo and Xiaogan Liang
		<b>Tip-based and Scanning Probe Lithography</b>	
10:20AM	invited	37 Active scanning probes: versatile toolkit for fast imaging and emerging nanofabrication	Ivo Rangelow
10:50AM		235 Batch fabrication of AFM probes with direct positioning capability	Shuo Zheng and Bo Cui
11:10AM		255 High resolution thermal scanning probe lithography for the fabrication of sub-20 nm nanodevices	Yu Kyoung Ryu
11:30AM		165 Tip based nanometrology and nanolithography using high aspect ratio GaN nanowires	Mahmoud Behzadirad, Ashwin Rishinaramangalam, Josh Ballard, James Owen, Daniel Feezell, Steven R.J Brueck and Tito Busani
11:50AM	invited	114 Digital Atomic-Scale Tip Based Nano Fabrication	John Randall, Joshua Ballard, James Owen, Ehud Fuchs and Joseph Lake
		<b>Nanoimprint Lithography I</b>	
10:20AM	invited	249 Roll-to-Roll Nanofabrication Processes for Flexible Electronics and Biomedical Applications	S. V. Sreenivasan
10:50AM		169 UV-Curable Nanoimprint Resist with Liquid Volume-Expanding Monomers	Haodi Min, Nan Zheng, Zengju Fan and Xing Cheng
11:10AM		73 Flexible Transparent Conductive Film with Embedded Nanoscale Metal Mesh Fabricated through Electrospinning and Template-based Electrodeposition	Cuiping Zhang, Arshad Khan, Jingxuan Cai and Wendi Li
11:30AM		93 The impact of preparation conditions on the properties of replica stamps	Marc Papenheim, Wolfgang Eidemüller, Christian Steinberg, Andre Mayer and Hella-Christin Scheer
11:50AM	invited	267 Present and Future of Nanoimprint in Large-area Nanomanufacturing	Stephen chou
		<b>bio-medical applications</b>	
10:20AM	invited	155 Nasopharyngeal Carcinoma Cell Migration in Three-Dimensional Platform	Ziyu Liu, Weiquan Zhang and Stella Pang
10:50AM		179 Loading single neurons on a microsieve electrode array by passive pumping	Jean-Philippe Frimat, Bart Schurink and Regina Luttge
11:10AM		45 Digital Biosensing of Influenza Virus with Single Serpentine Si Nanowire Field Effect Transistor	Pengyuan Zang, Yuchen Liang, HONGLEI WANG, Jun Tao, Xuan Zeng, Dian Zhou and Walter Hu
11:30AM		246 AlGaN/GaN BioFET Sensors for Detection of Microcystin-LR and Other Toxins	Paul Bertani, Seungjun Lee, Hao Yang and Jiyoung Lee
11:50AM	invited	264 Cross-linked, bioimprinted casein microdevices as biodegradable cell-culture substrates	Azadeh Hashemi
12:20PM		<b>WIN</b>	
		<b>Poster Session and Start-up Contest</b>	
		<b>Focused Ion beam Lithography II</b>	
3:00PM	invited	251 Imaging, Modification, and Analysis of Nanostructures with the Helium Ion Microscope	Armin Götzhäuser
3:30PM		226 Large area scanning-helium-ion-beam lithography	Ranveig Flataga, Martin M Greve, Bodil Holst and Karl K Berggren
3:50PM		263 Building with Ions in Liquid and Gas on the Helium Ion Microscope	Olga Ovchinnikova
4:10PM		64 Helium-Ion-Beam Etched Encapsulated Graphene Nanoribbons	Gaurav Nanda, Gregor Hlawacek, Srijit Goswami and Paul Alkemade
4:30PM		218 Fabricating Nanostructures On Bulk Silicon Substrates Using Helium Ion Microscope	Huan Hu, Scott Dietrich, Chris Breslin, Lynne Gignac, Josh Smith and Cory Dean
4:50PM		62 Superconducting Quantum Interference Device Micro Arrays for Biomagnetic Imaging	Shane Cybart, Ethan Cho, Kevin Pratt, Doug Paulson and Yoshio Okada
		<b>Nanoimprint Lithography II</b>	
3:00PM	invited	97 Fabrication of high aspect ratio metal gratings for X-ray phase contrast interferometry	Lucia Romano, Joan Vila-Comamala, Helmut Schift, Marco Stampanoni and Konstantins Jefimovs
3:30PM		79 Flexible Transparent Electrode with Embedded Metal Mesh Fabricated via Template-based Electrodeposition for Full-Plastic Bifacial Dye-sensitized Solar Cells	Arshad Khan, Yu-Ting Huang, Shien-Ping Feng and Wen-Di Li
3:50PM		109 Low reflection Fresnel lenses via double imprint combined with vacuum-UV surface hardening	Christian Steinberg, Nour Al-Hussainawi, Marc Papenheim, Andre Mayer, Hella-Christin Scheer, Maria Matschuk and Henrik Pranov
4:10PM		58 Nanoimprinted Perovskite Metasurface for Enhanced Photoluminescence	HONGLEI WANG, Deyin Zhao, Jiyoung Moon, Ross Haroldson, Balasubramaniam Balachandran, Shihchia Liu, Gu Qing, Weidong Zhou, Sergei Makarov, Anvar Zakhidov and Walter Hu
4:30PM		220 Nanoimprinting of 3-dimensional, undercut structures - an unsolvable challenge or a method of industrial relevance?	Heinz Wanzenboeck, Michael Muehlberger, Stefan Ruttloff, Adrian Prinz, Patrick Schuller, Philipp Taus, Markus Schinnerl and Emmerich Bertagnolli
4:50PM	invited	253 Low-cost fabrication of large area periodic nanopatterns with tunable feature sizes using soft UV-Nanoimprint at ambient atmosphere	Shuhao Si
		<b>Nanoelectronics II</b>	
3:00PM	invited	187 3D CMOS Memristor Circuit for Analog/Neuromorphic Computing	Peng Lin, Can Li, Hao Jiang, Shuang Pi and Qiangfei Xia
3:30PM		133 Lateral Field Emission Transistors For Extreme Temperature Operation	William Jones and Axel Scherer
3:50PM		80 Fabrication of Pre-Bended Layered Semiconductor Biosensors on Flexible Substrates	Byunghoon Ryu, Erika Yang and Xiaogan Liang

4:10PM	10	Electrochemically Exfoliated Large-area Phosphorene Enables Promising Flexible Nanoelectronics	Li Tao, Weinan Zhu and Deji Akinwande
4:30PM	168	Fabrication of 2 x 2 nm <sup>2</sup> Cross-Point Memristor Array of 3.82 Tbit/inch <sup>2</sup> Packing Density	SHUANG PI, Can Li and Qiangfei Xia
4:50PM	125	Thermal nanoimprint to improve the material properties of MAPbI <sub>3</sub>	Si Wang, Andre Mayer, Christian Steinberg, Marc Papenheim, Hella-Christin Scheer, Ting Hu, Neda Pourdavoud, Kai Brinkmann and Thomas Riedl
6:00PM	<b>Banquet</b>		

**Friday June 2nd 2**

<b>Focused Ion Beam Lithography I</b>				
8:00AM	invited	63	Fabrication of Single Atom Devices by Direct Write Nanofabrication	Edward Bielejec
8:30AM		198	Atom sieve for nanometer resolution neutral helium microscopy	Ranveig Flatbø, Martin M Greve, Karl K Berggren and Bodil Holst
8:50AM		22	ElectroHydroDynamic emitters developments for improving Focused Ion Beam machines	Jacques Gierak, Lothar Bischoff, Paul Mazarov, Lars Bruchhaus, Mireille Blanchard-Desce, Michel Vautier and Paulo Lozano
9:10AM		230	Direct-write Method for Machining Fluidic Structures with Helium Ions	Kate Klein, Lindsey Barner and Andras E. Vladar
9:30AM		140	Ion Beam Milling and Secondary Electron Emissions: A Monte Carlo Simulation Study	Kyle Mahady, Philip Rack, Shida Tan, Yuval Greenzweig, Richard Livengood and Amir Ravah
<b>Advanced Pattern Transfer</b>				
8:00AM	invited	32	An optimized, grid-based binary holography mask for high resolution lithography with light or matter waves	Torstein Nesse, Bodil Holst and Ingve Simonsen
8:30AM		204	Low-thermal-budget surface preparation for STM Lithography	James Owen, Joshua Ballard, Robin Santini, John Randall, James Von Ehr, Stewart Sando and Samir Anz
8:50AM		34	Time Multiplexed Deep Reactive Ion Etching of Germanium and Silicon-A Comparison of Mechanisms and Application to X-ray Optics	Vincent Genova, David Agyeman-Budu and Arthur Woll
9:10AM		102	Facile Fabrication of Concentric Gradient Nanostructures Using Interference Lithography and UV-cured Stamp Transfer	Siyi Min, Shijie Li, Zhouyang Zhu, Chuwei Liang, Xing Cheng and Wendi Li
9:30AM		50	Soft Thermal Nanoimprint Lithography	Viraj Bhingardive and Mark Schwartzman
<b>N-MEMS</b>				
8:00AM	invited	244	Using MEMS Devices to Build a "Fab on a Chip"	David J Bishop
8:30AM		59	Chromia – A Novel and Versatile Material for Nanofabrication	Bojan Ilic, Christopher Ray, Kerry Seibein and James Liddle
8:50AM		15	Field-Driven Splitting of Pure Water based on Deep-sub-Debye-length Nanogap Cells	Yifei Wang, S.R. Narayanan and Wei Wu
9:10AM		127	Electrostatically Driven Microbeams for Low Frequency Applications	Asaad Al-mashaal and Rebecca Cheung
9:30AM		117	Nonlinear Interactions of Coupled MEMS Cantilevers	Christopher Wallin, Roberto DeAlba, Daron Westly, Scott Grutzik, Alan Zehnder, Richard Rand, Vladimir Aksyuk, Slava Krylov and Rob Ilic
<b>Beam Induced processes II</b>				
10:10AM	invited	223	Focused Electron Beam Induced Deposition of Nanostructures: Insights from Surface Science	Howard Fairbrother, Julie Spencer, Ilyas Unlu, Lisa McElwee-White, Yung-Chien Wu, Kelsea Johnson, Will Carden, Ragesh Kumar, Oddur Ingolfsson and Sven Barth
10:40AM		8	Direct-write deposition of pure gold nanostructures - new possibilities and new challenges	Heinz Wanzenboeck, Mostafa Moonir Shawrav, Emmerich Bertagnolli and Silvan Schmid
11:00AM		116	Mechanical Properties of 3D Nanostructures Fabricated via Focused Electron Beam Induced Deposition	Johannes Froech, Jürgen Sattelkow, Harald Plank, Robert Winkler, Christian Schwalb, Marcel Winhold and Ernest Fanter
11:20AM		46	Nanoscale patterning and blistering phenomenon of gold films on silicon dioxide layer using focused helium ion beam	Etsuo Maeda, Tomohiko Iijima, Shinji Migita, Shinichi Ogawa and Reo Kometani
11:40AM		23	Reducing curtaining effects in FIB/SEM applications by a goniometer stage and an image processing method	Thomas Loeber
<b>Directed Assembly</b>				
10:10AM	invited	256	Directed Self-Assembly in Lithography: Challenges and Opportunities	Alfredo Alexander-Katz
10:40AM		48	Directed Assembly of Nanodumbbells via Nano-Lithographic Docking	Avichai Marcovici, Guillaume Le Saux, Pazit Rukenstein, Taleb Mokari and Mark Schwartzman
11:00AM		60	Self-Assembled DNA-Protein Nanostructures with Molecular Precision	Daniel Schiffels, James Liddle and Veronika Szalai
11:20AM		222	Combining Block Copolymer Lithography with Self-Aligned Double Patterning to Achieve 10 nm Full-Pitch Line/Space Patterns	Chun Zhou, Moshe Dolejsi, Jiaying Ren, Shisheng Xiong and Paul Nealey
11:40AM		201	Ising model based simulation of block copolymer self-assembly in two-dimensional post lattice	Hyung Wan Do and Karl Berggren
<b>Micro and Nano fluidics</b>				
10:10AM	invited	209	Microwell Plate Integrated Microfluidics for Cell-Cell Interaction Screening	Peter Shankles, Karissa Cross, B. Shafer Belisle, Snehal Joshi, Jennifer Morrell-Falvey and Scott Retterer
10:40AM		161	Topographical Effect on Natural Killer Cell Locomotion in Confined Microenvironment	Yuanhao Xu and Stella Pang
11:00AM		103	Fabrication and Replication of Nanofluidic Devices for the Analytical Separation of Biological Nanoparticles	Kuo-Tang Liao and Samuel Stavis
11:20AM		88	THz sensor in microfluidic devices for on line determination and control of ethanol concentration	Salomao Moraes da Silva Junior, Johan Stiens, Jacobus Willibrordus Swart, Stanislaw Moshkalev, Yuchen Zhong, Vladimir Matvejev and Cathleen de Tandt
11:40AM		72	Real-time Cell Migration Force Monitored by Micropost Sensor Arrays on Top and Bottom Surfaces in Confined Channels	Jianan Hui and Stella Pang
12:00PM	<b>Mentor lunch</b>			
<b>Charged Particle Optics</b>				
1:30PM	invited	40	COLD-FIB – The new FIB source from laser cooled atoms	Shida Tan, Intel
2:00PM		25	Graphene-Based Cathode Cold-Field Electron Emission Sources	Morgan Reveillard, Matthieu Viteau, Arnaud Houel, Anne Delobbe and Daniel Comparat
2:20PM		136	Focused Ion Beam System Employing a Low Temperature Ion Source	Xiyuan Shao, Avinash Srinivasan, Wei Kean Ang and Anjam Khurshed
2:40PM		131	Simple add-on to change a single-beam SEM into a multi-beam SEM	Adam Steele, Brenton Knuffman, Andrew Schwarzkopf and Jabez McClelland
3:00PM		160	Efficient computation of electromagnetic fields for round lenses in charged particle optics	Marijke Scoutzji, Niels Noordzij, M.J. Kamerbeek, C.Th.H. Heerkens, Cornelis (Kees) Hagen, Pieter Kruit and R.F.C. van Tol
<b>Atomic Layer Processes</b>				
1:30PM	invited	250	Atomic and molecular layer processing: Prospects and strategies for selective area atomic layer deposition	Timothy Groves
2:00PM		241	Selective Fluorocarbon-based Atomic Layer Etching in a conventional parallel-plate, capacitively coupled plasma	James Engstrom
2:20PM		61	Fabrication and Characterization of Transparent, Flexible Metallic Nano-Accordions	Stefano Dallorto, Andy Goodyear, Mike Cooke, Scott Dhuey, Adam Schwartzberg, Simone Sassolini, Craig Ward, Deirdre Olynick, Ivo Rangelow and Stefano Cabrini
2:40PM		52	Sensors made from infiltrated ZnO nanostructures	Joong-Hee Min, Abhijeet Bagal, Paul Lemaire, J. Zachary Mundy, Christopher Oldham, Gregory Parsons and Chih-Hao Chang
3:00PM		87	Thinning and doping of two-dimensional WSe <sub>2</sub> by vapour XeF <sub>2</sub>	Leonidas Ocola, Yale Wang and Junhong Chen
<b>Nanophotonics II</b>				
1:30PM	invited	260	Strong Light-Matter Interactions for Skin-like Flexible Full-Color Displays	Rui Zhang, Vasileios Koutsos and Rebecca Cheung
2:00PM		57	Bio-inspired Nanostructures for Enhanced Light Management	Debashis Chanda
				HONGLEI WANG, Yuchen Liang, Samantha Cheng, Benjamin Li, Andrew Li, George Du and Walter Hu

2:20PM		121 Printed Flat Optical Component: Metasurface for Cylindrical Vector Beam Generation	Cheng Zhang, Qiaochu Li, Lei Jin, Xi Chen and Jay Guo
2:40PM		216 Exciton diffusion in cesium lead halide perovskite nanocrystals organized in ordered nanoscale assemblies	Erika Penzo, Anna Louidou, Edward Barnard, Nicholas Borys, Raffaella Buonsanti, Adam Schwartzberg, Alexander Weber-Barqioni and Stefano Cabrini
3:00PM		239 The Design and Analysis of Switchable and Stackable Reflective Color Filters	Hao Yang, He Liu and Wei wu
		<b>Electron beam lithography II</b>	
3:40PM	invited	261 Advances in Multi-Beam Mask Writing	Elmar Platzgummer
4:10PM		164 The Impact of Isofocal Dose-Based Proximity Effect Correction on Effective Process Blur Tolerance	Gerald Lopez, Mohsen Azadi, Meredith Metzler, Nikola Belic and Ulrich Hofmann
4:30PM		148 Novel registration error metrology for multiple electron beam lithography	Guido Rademaker, Salim Boutami and Jonathan Pradelles
4:50PM		92 24-bit/16 million structural true colors through extraordinary optical transmission of subwavelength Ag holes	Bingrui Lu, Jianan Deng, Li-Jin Gong and Yifang Chen
5:10PM	invited	177 A Liquid Cell for In Situ TEM: Design and Fabrication Challenges, and Solutions	Christopher Ray, Bojan Ilic, Renu Sharma, Glenn Holland, Vladimir Aksyuk, Samuel Stavis and James Liddle
		<b>Optical and Extreme UV (EUV)</b>	
3:40PM	invited	262 Towards the ultimate resolution in photolithography	Yasin Ekinci
4:10PM		202 PROCESS OPTIMIZATION AND IMPROVEMENT OF CONTACT HOLE CDU AND PATTERN PLACEMENT USING GRAPHO-EPITAXY DSA WITH EUV PATTERNED TEMPLATES	Carolien Boeckx, Jan Doise, Boon Teik Chan, Stefan De Gendt and Paulina Rincon Delgadillo
4:30PM		81 Point Diffraction Interferometer for Inspection of High-Magnification Objective for Extreme Ultraviolet Microscopy	Mitsunori Toyoda, Ryo Sunayama and Mihiro Yanagihara
4:50PM		173 EUV Tip-to-Tip Variation Mitigation for Beyond 7nm BEOL Layers and Design Rule Analysis	Yulu Chen, Lei Sun, Zhengqing John Qi, Shuo Zhao, Francis Goodwin, Itty Matthew and Vince Plachecki
5:10PM	invited	189 Subtracting SEM errors during the measurement of stochastic-induced feature roughness	Chris Mack
		<b>Quantum</b>	
3:40PM	invited	258 Coherent quantum phase slip in superconducting nanowire	Jaw-Shen Tsai
4:10PM		182 Process Simulation of Si Dot Fabrication for SETs by Ion Beam Mixing and Phase Separation in Nanopillars	Thomas Pruefer, Karl-Heinz Heinig, Wolfhard Moeller, Gregor Hlawacek, Xu Xiaomo, Johannes von Borany, Stefan Facsko, Rene Huebner, Daniel Wolf and Lothar Bischoff
4:30PM		141 Spatially controlled fabrication of individual silicon nano clusters using ion beam mixing and thermal treatment	Gregor Hlawacek, Xiaomo Xu, Thomas Pruefer, Daniel Wolf, Rene Huebner, Lothar Bischoff, Wolfhard Moeller, Stefan Facsko, Johannes von Borany and Karl-Heinz Heinig
4:50PM		191 Bridging the Gap for High-Coherence Superconducting Qubits	Jonilyn Yoder, David Kim, Peter Baldo, Rabindra Das, Alexandra Day, George Fitch, Eric Holihan, David Hover, Justin Mallek, Alex Melville, Danna Rosenberg, Gabriel Samach, Steven Weber, Donna-Ruth Yost and William Oliver
5:10PM	invited	143 Focused Helium Beam Fabricated Superconducting Devices	Ethan Cho and Shane Cybart

**Thursday** 1:50PM

**Start-up Contest**

166 Site Specific Manipulation Techniques for FIB	Lucille Giannuzzi
233 High Temperature Superconducting Electronics for Biomedical Imaging and Advanced Communications	Ethan Cho
257 Skin like Plasmonic Full Color Displays	Nagendra Nagarajayya and Debashis Chanda
271 Photonics on a Fiber	Keiko Munechika, Sergey Babin, Carlos Pina and Alexander Koshelev
272 Innovative Probes for Reliable Underwater Nanoscience	Dominik Ziegler

**Wednesday, Thursday**

**Invited Posters**

192 Aberration-Corrected Quantum Electron Microscopy	Marco Turchetti, Chung-Soo Kim, Richard Hobbs, Navid Abedzadeh, Karl Berggren and Pieter Kruit
219 Patterning of electrically tunable, light-emitting photonic structures made of erbium doped zinc oxide	Erika Penzo, Yu Wang, Scott Dhuey, Silvia Romano, Simone Sassolini, Vito Mocella, Luca Dai Negro and Stefano Cabrini
122 Relevance of stamp material for vertical phase separation of block copolymers in nanoimprint	Andre Mayer, Johannes Rond, Johannes Staabs, Daniel Blenskens, Christian Steinberg, Marc Papenheim, Hella-Christin Scheer, Joachim Zajadacz and Klaus Zimmer
232 Focused Helium Ion Beam Irradiated Josephson Junctions and Arrays	Yuchao Zhou, Ethan Cho and Shane Cybart
139 High-aspect-ratio Magnetic Tunable Nanopillar Array	Zhiren Luo, Xu Zhang, Austen Poteet and Chih-Hao Chang
185 Physically Unclonable Anti-Counterfeit Labels Using Nanoscale Diffusive Memristor Crossbar Arrays	Rui Zhang, Hao Jiang, Peng Lin, Zhongrui Wang, J. Joshua Yang, Daihua Zhang and Qiangfei Xia
30 Improved versatility of DSA topographic patterns through the use of UV-exposed grafted layers.	Guillaume Claveau, Maxime Argoud, Patrick Quéméré, Raluca Tiron, Marta Regulez-Fernandez, Patricia Pimenta-Barros and Laura Evangelio Araujo
247 Microtubules: A Potential Biological Model for Topological Phonon Edge Mode Phenomena	Arooj Aslam, John Palmieri, David Apigo, Alokik Kanwal, Reginald Farrow, Emil Prodan and Camelia Prodan
238 A Simple and Inexpensive Permanent Magnet Electron Lens	Roger Fabian Pease, Matthew Bull, Laurel Ann Kroo and Manu Prakash
269 Block Copolymer Directed Self-Assembly Using Chemoepitaxial Guiding Underlayers with Topography	Benjamin Nation, Peter Ludovice and Clifford Henderson

**Wednesday, Thursday**

**Contributing Posters**

20 Fabrication of hard x-ray zone plates with high aspect ratio using metal-assisted chemical etching	Kenan Li, Michael Wojcik, Ralu Divan, Leonidas Ocola, Bing Shi, Daniel Rosenmann and Chris Jacobsen
150 Ruthenium Patterning via Reactive Ion Etching for EUV optics	Sharon Oh, Weilun Chao, Farhad Salmassi and Patrick Naulleau
240 Investigation of Quantum Tunneling Effects in Gap Plasmon using Collapsible Nanofingers	Boxiang Song, Yuhua Yao, Yifei Wang, He Liu, Yuanrui Li, Stefano Cabrini, Adam Schwartzberg and Wei wu
215 Electrically switchable structural color using electrowetting on superhydrophobic surface	Deming Meng, Yifei Wang, Yuanrui Li, Hao Yang, He Liu and Wei Wu
167 In Situ Purification and Characterization of Direct-Write Nanostructures Fabricated using Electron Beam Induced Deposition	Brett Lewis, Jason Fowlkes, Xiahua Sang, Pushpa Raj Pudasaini, Brittnee Mound, Michael Stanford, Raymond Uncoc, George Pharr, Philip Rack, Robert Winkler and Harald Plank
106 Metallic Nanowire Transparent Conductive Electrode Fabricated by Template-guided Assembly	Chuwei Liang, Dongyuan Li, Cuiping Zhang, Jingxuan Cai and Wen-Di Li
70 Reproducible surface forces between VUV-exposed silica surfaces in a moisture-sensitive oleophilic diacrylate monomer liquid	Shunya Ito, Motohiro Kasuya, Kazue Kurihara and Masaru Nakagawa
175 Oxidation sharpening of silicon tips in 'air' environment	Ripon Dey, Jiashi Shen and Bo Cui
49 Nanofluidics and Plasmonics for In-Line DNA Optical Mapping	Parisa Bayat, Franziska Esmek, Thomas Guenther, Thomas Klings, Adam Grundhoff, Stefano Cabrini, Robert H. Blick and Irene Fernandez-Cuesta
229 Improvement of Silicon Waveguide Transmission by Advanced E-Beam Data Fracturing Strategies	N. Shane Patrick, Richard Bojko, Stefan Stammberger, Enxiao Luan and Lukas Chrostowski
242 High density, multifunctional neural probes for massively parallel read out and control	Vittorio Lanzio, Simone Sassolini, Melanie West, Scott Dhuey, Alexander Koshelev, Peter Denes, Hillel Adesnik, Gregory Telian and Stefano Cabrini
243 Etching very large features by metal-assisted chemical etching	Ferhat Aydinoglu and Bo Cui
180 Conformal Coating of Gold on Nanostructured Surface using Thermal Evaporation	Joong-Hee Min, Dennis T. Lee, Tianlei Sun, Gregory Parsons and Chih-Hao Chang
214 Thermal nanoimprinting of mid-IR antireflective moth-eye nanostructures on chalcogenide glass windows	Mikkel Loiz, Mogens Havsteen Jakobsen, Rafael Taboryski, Christian Rosenberg Petersen and Ole Bang
14 Xeon Gas Field Ion Source Emitted from a Single-Atom Tip	Wei-chiao Lai, Chun-yueh Lin, Wei-tse Chang, Po-chang Li and Ing-shouh Hwang
69 Fabrication of Polyimide Screen Masks with Through Holes by Laser Drilling for Print and Imprint Method	Takahiro Nakamura, Kento Seki, Shinya Sato, Mari Kumagai, Masaru Nakagawa and Kazuro Nagase
205 Fabrication of Suspended Nano-crystalline Diamond Foils for Stripping Electrons from a High Power Hydride Beam	Leslie Wilson, Robert Shaw, Dale Hensley, Chris Luck, Scott Retterer, Michael Plum, Kevin Lester and Dayr Briggs

170	Metal-oxide Nanocrystals/Carbon Nanotubes Heterostructure Sensors for Selective Sensing of Hydrocarbons (VOCs + CH <sub>4</sub> )	michela sainato, Alvaro Sahagun, Ralu Divan, Liliana Stan, Md Tanim Humayun and Igor Paprotny
76	Sub 100 nm Pattern Transfer from Self-Assembled Silica Nanoparticles Grafted with Polymer Brush on Patterned Substrate	Tomoaki Sawabe, Naoko Kihara, Shinobu Sugimura and Kohji Ohno
28	In-liquid alignment detection by fluorescence moiré fringes for print and imprint method	Eri Kikuchi, Yota Ishito, Shinya Matsubara, Takahiro Nakamura, Masayuki Abe and Masaru Nakaqawa
184	Stretchable and conductive substrate with undulating surface by imprint lithography for Flexible Electronics	Rifei Chen, Bo Yu, Chunhui Wu, Youwei Jiang and Xing Cheng
39	Emission stability and end-form changes in high brightness HfC electron sources	William Mackie
186	FOLED with enhanced external efficiency using a corrugated Ag anode	Yu Luo
181	Magnetic and electric transport characterization of a single nickel nanowire isolated by dielectrophoresis	Marcos Vinicius Puydinger dos Santos, Murilo Ferreira Velo, Renan Daniel Domingos, Fanny Béron, Kleber Roberto Pirola, Stanislav Moshkalev and Jose Alexandre Diniz
101	Electron-beam Exposure Dependent and Adjustable Sidewall Slopes of PMMA and ZEP520A in Comparison	Corinna Kaspar, Joerg Butschke, Mathias Irmischer, Stephan Martens, Joachim Burghartz, Vitaliy Guzenko, Robert Kirchner and Helmut Schift
196	Novel UV-NIL for opaque mold and substrate by use of UV triggered command cure resin	Jiei Tutui, Hiroaki Kawata, Masaaki Yasuda and Yoshihiko Hirai
18	Nanofabrication of 4 nm Si nanowires by high resolution e-beam lithography for high sensitive gas sensors	Bo Feng, Jianan Deng and Yifang Chen
84	Repair of discontinuous interference fringes in electron hologram by using the relaxation method	Katsuyoshi Miura, Yoshihiro Midoh, Yasukazu Murakami and Koji Nakamae
130	Datapath Architecture for Aperture Array Based Multibeam Mask Writer Systems	Narendra Chaudhary and Serap Savari
111	Amphiphobic mushroom-like structures fabricated by direct nanoimprint lithography	Ariadna Fernández Estévez, Achille Francone, Markus Guttman, Clivia M. Sotomayor Torres and Nikolaos Kehagias
159	Quantifying Dopant Movement in Si:P Atomic Device Encapsulation	Xiqiao Wang, Joseph Hagmann, Pradeep Namboodiri, Jonathan Wyrick, Kai Li, Roy Murray, Michael Stewart, Jr., Curt Richter and Richard Silver
26	Analytical and Numerical Calculation of Multipole Fields of a Wire Lens for an Aberration Corrector	tomonori nakano and Yu Yamazawa
12	Structural Breakdown of Suspended Strained Silicon NanoWires by Exposure during Scanning Electron Microscopy Analysis	Lucas Spejo, Jose Arrieta, Angélica de Barros, Renato Minamisawa, Alfredo Vaz, Ioshiaki Doi, Leandro Manera and José Diniz
98	Secondary Electron Emission during 3D Nanoscale Focused Electron Beam Induced Deposition	Jason Fowlkes, Brett Lewis, Eva Mutunga, Philip Rack, Harald Plank and Robert Winkler
119	Investigation of Proximity and Development Process Effects for Large Area Dense Nano-Pattern Applications	Oktay Göktaş, Dilek Çakıroğlu, Cenk Yanık, Nezh Ünäl and Nebile Işık Göktaş
2	A Single Fiber Surface Enhanced Raman Scattering (SERS) Probe	Martin Feldman
212	Zinc oxide nanowires for drug delivery systems	Atif Syed, Dimitrios Lamprou, Monika Warzecha, Vasileios Koutsos, Philipp Seib and Enrico Mastropalo
151	Stable Field Emitters Using Inverse Opal Structures	Lauren Montemayor, Esha Murty, Harish Manohara, Runyu Zhang, Xiuting Zhu and Paul Braun
55	FOLED with enhanced external efficiency using corrugated Ag anode	Yu Luo and Li Wang
21	A novel approach for the fabrication of Kinofom lens for x-ray focusing by grayscale e-beam lithography	Chen Xu, Sichao Zhang, Jinhai Shao, Yifang Chen, Tiqiao Xiao and Biao Deng
176	Impact of Multilayer Imperfections on EUV OPC and Patterning	Larry Melvin, Yudhishtir Kandel, Artak Isoyan, Sajan Marokkey, Weimin Gao and Qiliang Yan
65	Bio-Inspired Multi-Scale Structure for Fluid Drag Reduction Enabled by Variable Voxel Stereolithography	Yuanrui Li, Huachao Mao, Pan Hu, Yuen-Shan Leung, Haneol Lim, Mitual Luhar, Jongseung Yoon, Yong Chen and Wei Wu
104	Investigation of TiO <sub>2</sub> /graphene Nanocomposite for Cancer Photothermal Therapy	Kongwat Arkanimas, Alongkorn Pimpin, Tanapat Palaga and Werayut Srituravanich
38	CD Limits of Scatterometry	ruichao zhu, Juan Faria and Steve Brueck
100	Evaluation and comparison of ZEP520A and mrPosEBR resists by electron beam and extreme ultraviolet lithography	Roberto Fallica, Dimitrios Kazazis, Robert Kirchner, Iacopo Mochi, Helmut Schift, Anja Voigt and Yasin Ekinci
36	Performance of a high-resolution negative tone resist	Carmen Popescu, John Roth, Richard Edward Palmer and Alex Robinson
51	A modularized miniature electron beam column array for parallel lithography	Tao Luo and Anjam Khursheed
110	Design of hierarchical surfaces for tuning wetting characteristics	Ariadna Fernández Estévez, Achille Francone, Clivia M. Sotomayor Torres, Nikolaos Kehagias, Lasse H. Thamdorp, Alicia Johansson, Brian Bilenberg, Theodor Nielsen and Markus Guttman
123	Rapid nanopore fabrication over wafer size using helium ion beam and automation for biomolecule detection	Deying Xia, Chuong Chuong Huynh, Shawn McVey, Aaron Kobler, Lewis Stern, Zhishan Yuan and Xinsheng Ling
19	Evaluation of RE-800 as a negative tone chemically amplified resist for electron beam lithography	Jianan Deng, Jinhai Shao, Bo Feng, Yousong Sun, Yifang Chen and Wu Lu
137	FIB Nanofabrication with Sketch & Peel Method: Employing non-Ga Ion Species for Plasmonic Arrays	Huigao Duan, Yiqin Chen, Kaixi Bi, Sven Bauerdick, Achim Nadzeyka and Michael Kahl
35	Large area nanofabrication of dense sub-50 nm structures using ALD-enabled nanoimprint lithography	Aju Jugessur and Andrew Textor
68	Ring cathode electron beam projection lithography	Wei Kean Ang, Anjam Khursheed, Colin Peeris, Vivian Ng and Kailun Zhong
107	Design of Interfacial Antireflection Nanostructures in Multilayers	Yi-An Chen, Sharan Naidu, Zhiren Luo and Chih-Hao Chang
178	Grafted PMMA mono-layer brush as negative tone e-beam resist	Hirotaaka Yamada, Ferhat Aydinoglu, Ripon Dey and Bo Cui
145	Simulation of Asymmetric Energy Deposition Profiles in E-Beam Lithography on Curved Substrates	A. Christian Zonneville, Bas Ketelaars, Kerim Arat, Carel Heerkens, Cornelis (Kees) Hagen, Ulrich Hofmann and Nikola Belic
208	Geobacter sulfurreducens Attachment and Biofilm Growth on Electrode Materials	Michelle Halsted, Nannan Jiang, Frank Loeffler, Dale Hensley, Jared Wilmoth and Scott Retterer
224	Coaxial Hybrid Perovskite Fibers: Synthesis and Encapsulation in Situ via electrospinning	John Murphy, Jessica Gregory and Jack Skinner
118	High-efficiency, Large-area and Color-stable Flexible Organic Light-emitting Diodes using an Ultra-thin Metal Electrode	Cheng Zhang, Qingyu Huang, Qingyu Cui, Chengang Ji, Zhong Zhang, Suling Zhao and Jay Guo
129	From dose statistics to line edge roughness	Cornelis (Kees) Hagen, Thomas Verduin, S.R. Lokhorst, M.D. Hermans, Pieter Kruit and pieter Brandt
44	An Approach to 3-D Modeling of Electron-beam Lithographic Process from SEM Images for Minimization of CD Error and LER	Dehua Li, Soo-Young Lee, Jin Choi, Seom-Beom Kim, In-Kyun Shin and Chan-Uk Jeon
210	ICP-RIE Etching of Sputtered Deposited SiO <sub>2</sub> Thin Films for Fabrication of Oxide-Cladding AlN Photonic Crystals	Emerson Melo, Marcelo Carreño, Marco Alayo and Alfredo Vaz
154	Fabrication of high resolution electron beam with one carbon nanotube cold cathode	Ha Rim Lee, Jung Su Kang, Tae Gu Kim and Kyu Chang Park
6	Fabrication pH micro-biosensor for implantable medical devices	Youssef Helwa, Mohammad Okasha, Amr Abdelgawad and Bo Cui
83	A Spirothopyran based photoresist for large area sub-diffraction nanopatterning	Harikrishnan Vijayamohanam, Edward Palermo and Chaitanya Ullal
153	Fabrication of glass sealed x-ray tube with high resolution carbon nanotube cold cathode	Ji Hwan Hong, Jung Su Kang, Tae Gu Kim, Jae Yoon Park and Kyu Chang Park
94	Stochastic simulation of UV-curing process in nanoimprint lithography: Pattern size and shape effects in sub-50 nm	Masanori Koyama, Masamitsu Shirai, Hiroaki Kawata, Yoshihiko Hirai and Masaaki Yasuda
86	A Study of Pattern Density on Magnetic Coupling for Bit Patterned Media	Kailun Zhong and Vivian Ng
47	Optimization of Fresnel zone plate layout for high diffraction efficiency by e-beam lithography	shanshan xie, Jianpeng Liu, Sichao Zhang and Yifang Chen
213	Chromium oxide as a hard mask material better than metallic chromium	Faycal Saffih, Ferhat Aydinoglu and Bo Cui
199	Chemical Co-Patterning Strategies Using Azlactone-Functionalized Polymers	Mohammadali Masigol, Brad Lokitz, Scott Retterer and Ryan Hansen
211	Graphene Oxide Thickness Effects in Graphene-based Supercapacitors	Sofia Fanourakis and Lihong (Heidi) Jiao
135	Cesium ion beam interaction with common microelectronic materials and VLSI devices	Yuval Greenzweig, Yariv Drezner, Richard Livengood and Amir Raveh
99	Heat Conduction and Polymer Flow in Microstructured Mold for Laser-Assisted Imprinting	Keisuke Nagato, Yuki Yajima and Masayuki Nakao
221	Direct testing of primary photo-electron energy generated by extreme ultraviolet (EUV) at 13.5 nm	Yudhishtir Kandel, Jonathan Chandonait, Steven Grzeskowiak, Lawrence Melvin, Qiliang Yan, David Wei and Greg Denbeaux
228	4D Chemical Nanolithography	Carlos Carbonell and Adam B Braunschweig
174	The Mass-filtered Ion Gauge (MFIG), a vacuum-contamination sensor for yield enhancement	Diederik Maas, Pim Muijwijk, Michel van Putten, Frank de Graaf, Olaf Kievit, Patrique Boerboom and Norbert Koster
236	Analytic Minimization of Line Edge Roughness for Large-Scale Uniform Patterns in Electron-beam Lithography	Rui Guo, Soo-Young Lee, Jin Choi, Seom-Beom Kim, In-Kyun Shin and Chan-Uk Jeon

89	Fabrication and Evaluation of an Active Electromagnetic Mixer for Lab-on-a-Chip Applications	Salomao Moraes da Silva Junior, Luiz Eduardo Bento Ribeiro, Jacobus Willibrordus Swart, Stanislav Moshkalev and Alexander Flacker
231	Fabrication of nano-gap using high and low energy electron-beam lithography	Azizah Azibi, Saydur Rahman, Jiashi Shen and Bo Cui
200	High aspect ratio polystyrene structure fabrication using electron beam lithography	Azizah Azibi, Jiashi Shen, Ripon Dey and Bo Cui
31	Performance of a high-resolution negative tone resist	Carmen Popescu, John Roth, Richard Edward Palmer and Alex Robinson
7	Neurite growth into artificial microchannels	Heinz Wanzenboeck, Patrick Schuller, Agnes Kocis, Emmerich Bertagnoli, Isabella Schmieid and Petra Schoize
43	Smart Nanostructured Films for Sensitive Chemical Detection and Analysis	Syed Ahmed, Nabila Nujhat, Li Jiang, Boniface Tiimob, Vijaya Rangari and Naga Korivi
203	Biofilm Structure of Geobacter sulfurreducens by Helium Ion Microscopy	Michelle Halsted, Alex Belianinov, Matthew Burch, Songkil Kim and Scott Retterer
217	Fabrication of Josephson Junction without shadow evaporation	Xian Wu and David Pappas
78	Fabrication of Arrays of Electrically-Isolated Nanoscale Organic Thin-Film Transistors	Da Li, Mikai Chen, Byunghoon Ryu, Biwu Ma and Xiaogan Liang
152	Design, Fabrication, and Initial Characterization of a Multi-Qubit Chip for Quantum Simulation	Vinay Ramasesh, Kevin O'brien, John Mark Kreikebaum, James Colless and Irfan Siddiqi
29	Fabricating Nano-scale Gratings with Multiple Imprinting	dehu cui
27	Fabrication of copper nanowire using NIL for electroreduction of carbon dioxide	dehu cui
146	High Q-factor micro-ring resonator fabrication by charge dissipation in electron beam lithography	Kyung-hun Han, Yurjo Lee and Minghao Qi
163	Effects of Stochastic Exposure on Critical Dimension in Electron-beam Lithography	Hyesung Ji, Jingjing Li, Soo-Young Lee, Jin Choi, Seom-Beom Kim, In-Kyun Shin and Chan-Uk Jeon
188	Polycarbonate as a dual-tone resist for electron-beam lithography	Nan Zheng and Xing Cheng
190	Surface Modification of Graphene-Metal Oxides by Microwave Irradiation for Applications in Supercapacitors	Alfredo Rodrigues Vaz, Rajesh Kumar, Stanislav Moshkalev and Rajesh Singh
105	A Novel Fabrication of Isolated Titanium Dioxide Nanotubes	Kongwat Arkanimas, Alongkorn Pimpin, Bunlaporn Thumrongthanyaluk, Tanapat Palaga and Weravut Srituravanich
85	Ion Beam Etching : a solution for microsystem device processing	ANTHONY DE LUCA, JEAN GUERRERO and SEBASTIEN BARNOLA
82	Biomimetic micromolding: Micro- and Nano-structuring of Polydimethylsiloxane (PDMS) using Bio- and Nature Inspired Templates	Steven Gaillard, Syed Ahmed, Li Jiang, Manik Biswas, Vijaya Rangari and Naga Korivi
138	PECVD Synthesis of a Carbon-Based Nanotechnology Catalyst entitled Carbon Nano Spikes (CNS)	Dale Hensley, Yang Song and Adam Rondinone
24	An experimental study of light absorbance of gold metal nanoparticles in the size range 45 to 200 nm	Martin M. Greve, Ranveig Flatabø and Bodil Holst
270	Synthesis and Characterization of Low $\chi$ Block Copolymers for Large Periodicity Patterning using Directed Self Assembly and Legacy Exposure Tools	C.L. Breaux, Haibo Li, Mark Neisser and Clifford Henderson