

**POSTERS - LIFE**

**MICRO & NANO FLUIDICS, DEVICES FOR BIOLOGY, CHEMISTRY, MEDICINE**

**P-LIFE-01 - Low Temperature Poly-Si for beyond display applications**

O.J.A. Buijk, M. Trainor

MiPlaza, Philips Research, EINDHOVEN, The Netherlands

**P-LIFE-02 - Focusing of biological cells utilizing negative dielectrophoretic force generated by insulating structures**

C-P. Jen, C-T. Huang

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**P-LIFE-03 - Sensitivity enhancement of SPR biosensor by improving surface quality of glass slides**

X. Chen, M. Pan, K. Jiang

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**P-LIFE-04 - Monolithically integrated  $\mu$ -capillary electrophoresis with organic light-sources and tunable a-Si:H multi-spectral photodiodes for fluorescence detection**

C. Merfort, K. Watty, L. Schöler, K. Seibel, M. Böhm

Institute for Microsystem Technologies, SIEGEN, Germany

**P-LIFE-05 - Feasibility study on cellular network analysis with patterned cell culture microdevice**

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**P-LIFE-06 - Continuous flow immuno-magnetic cell sorter featuring high sorting purity and recovery**

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**P-LIFE-07 - Microfluidics-based cell array for monolayer E.coli culture**

C. Luo

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**P-LIFE-08 - Development of an integrated polymer microfluidic device for flow analysis**

Z.P. Wang<sup>1</sup>, J. Zhao<sup>1</sup>, G. Cristobal<sup>2</sup>, M. Guirardel<sup>3</sup>, H. Du<sup>4</sup>, B.Y. Chua<sup>4</sup>

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**P-LIFE-09 - A reconfigurable superparamagnetic bead filter for microfluidic detection of bio-material**

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**P-LIFE-10 - Flow-orthogonal bead oscillation by an array of anisotropic flux-guides for on-chip biological separation**

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**P-LIFE-11 - PDMS microfluidic systems for medical diagnostics**

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**P-LIFE-12 - Layered modular polymeric laser structured  $\mu$ -valve**

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**P-LIFE-13 - Injection molded microfluidic device for electroporation of biological cells**

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**P-LIFE-14 - Replication of cancer cells using soft lithography bioimprint technique**

F. Samsuri  
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**P-LIFE-15 - FET-based Biosensor for Portable Clinical Analyzer Platform**

T-Y. Kim, J-H. Yang, C.W. Park, C.S. Ah, A. Kim, C-G. Ahn, G.Y. Sung  
Electronics and Telecommunications Research Institute (ETRI), DAEJEON, South-Korea

**P-LIFE-16 - A Study of Microchannel Properties Fabricated by Different Polymer Manufacturing Processes**

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**P-LIFE-17 - Label-free detection of DNA hybridization using pentacene thin film transistor**

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**P-LIFE-18 - DNA gel electrophoresis on microchip integrated amperometric detector**

G-S. Joo<sup>1</sup>, I. Kamrul<sup>2</sup>, S. Jha<sup>2</sup>, H.H. Lee<sup>2</sup>, Y-S. Kim<sup>2</sup>  
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**P-LIFE-19 - Swarming motility of bacteria in microstructures**

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**P-LIFE-20 - Fabrication of Fluoroplastic Chips for Droplet Microfluidics**

S. Begolo, G. Colas, L. Malaquin, J-L. Viovy  
Institut Curie, PARIS, France

**P-LIFE-21 - A SU-8 Micro-Particle Filter for Biomedical Applications**

N-N. Noeth, S. Keller, S. Fetz, O. Geschke, A. Boisen  
DTU Nanotech, KONGENS LYNGBY, Denmark

**P-LIFE-22 - Transparent, flexible and superhydrophobic material based on three-dimensional mushroom-shaped PDMS microstructures**

L. Sainiemi, V. Jokinen, S. Aura, S. Franssila  
Helsinki University of Technology, ESPOO, Finland

**P-LIFE-23 - Fabrication of Dielectrophoretic Devices Using Poly-dimethylsiloxane Microstructures by Proton Beam Writing**

Y. Shiine<sup>1</sup>, H. Nishikawa<sup>1</sup>, Y. Furuta<sup>1</sup>, K. Kanamitsu<sup>1</sup>, T. Satoh<sup>2</sup>, Y. Ishii<sup>2</sup>, T. Kamiya<sup>2</sup>, R. Nakao<sup>3</sup>, S. Uchida<sup>3</sup>  
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**P-LIFE-24 - Fabrication of hydrophilic/hydrophobic hybrid microporous structure and its application to microfluidic device**

W. Yang<sup>1</sup>, Y.G. Nam<sup>1</sup>, K. Han<sup>1</sup>, K.J. Cha<sup>2</sup>, T.H. Kwon<sup>2</sup>, D.S. Kim<sup>1</sup>  
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**P-LIFE-25 - Fabrication of SOI-based nano-biosensors**

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**P-LIFE-26 - Undiluted electronic detection of biomarkers by Si field-effect transistor**

C.S. Ah, C.S. Ah, A. Kim, W-J. Kim, C.W. Park, C-G. Ahn, J-H. Yang, T. Kim, G.Y. Sung  
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**P-LIFE-27 - Integrated chip for liquid chromatography separation and atmospheric pressure ionization for mass spectrometry**

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**P-LIFE-28 - Hot embossing of micro- and nanostructures for the integration of organic semiconductor lasers and deep UV induced waveguides towards a lab-on-chip system**

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**P-LIFE-29 - The Role of Surface Hydrophobization and Droplet Dynamics in Electrowetting Devices**

B. Cahill, A. Giannitsis, U. Pliquet, H. Rothe, D. Frense, M. Min, D. Beckmann

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**P-LIFE-30 - Polymer chips with thin absorber layer for thermophoretic manipulation of single genomic-length DNA molecules by light-induced local heating**

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**P-LIFE-31 - High resolution and hybrid patterning for single cell attachment**

Y. Chen<sup>1</sup>, J. Hu<sup>1</sup>, J. Shi<sup>1</sup>, F. Zhang<sup>1</sup>, X. Li<sup>1</sup>, L. Wang<sup>1</sup>, L. Lei<sup>1</sup>, L. Liu<sup>2</sup>

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**P-LIFE-32 - Fabrication of BioFET Linear Array for Protein Interaction Detection**

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**P-LIFE-33 - Fabrication of nanofluidic system based on hybrid mask-mould lithography and thermal bonding**

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**P-LIFE-34 - Biomolecular Layer Thickness Evaluation using White Light Reflectance Spectroscopy**

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**P-LIFE-35 - Axonal guidance using free-standing gallium phosphide nanowires.**

C. Prinz, W. Hällström, D. Suyatin, L. Samuelson, L. Montelius, M. Kanje

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**P-LIFE-36 - Stable superhydrophobic surfaces induced by dual-scale topography on SU-8**

M-E. Vlachopoulou<sup>1</sup>, J.M. Velasco<sup>2</sup>, A. Tserepi<sup>3</sup>, E. Gogolides<sup>3</sup>

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**P-LIFE-37 - Fabrication of microfluidic platform for infrared microspectroscopy analysis of dynamic biochemical processes in living samples**

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**P-LIFE-38 - Protein patterning on plasma-modified PDMS and PMMA surfaces for bioanalytical applications**

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**P-LIFE-39 - Surface characterisation of urinary catheters**

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**P-LIFE-40 - Investigation of pipette roughness effects on seal formation in patch clamping**

M. Malboubi, K. Jiang, Y. Gu

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**P-LIFE-41 - Electrochemiluminescence as microfluidic optical power source**

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**P-LIFE-42 - Flow Rate Based Control of Wavelength Emission in a Multicolour Microfluidic Dye Laser**

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**P-LIFE-43 - A combined UV curing embossing and photolithography for optic fluidics with phase gratings for environmental monitoring application**

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**P-LIFE-45 - Trapping of Hyaluronic Acid Molecules on Sharp Nano-Electrodes of Various Metals**

T. Mineta, H. Takeuchi, E. Makino

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**P-LIFE-46 - High performance Blood Glucose Biosensor for Clinical Diagnosis**

S.R. Seung Ro

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**P-LIFE-47 - UV written Liquid Core Waveguides in 1, 2-Polybutadiene (1,2-PB) nanoporous polymers**

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**P-LIFE-49 - Plasma etched nano-pillar arrays on polymer surfaces using colloidal lithography: Dual scale robust super hydrophobic and super hydrophilic wetting behaviour**

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**P-LIFE-50 - Pressure drop on water flow in PMMA microfluidics with controllable wetting characteristics**

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**P-LIFE-51 - Simultaneous measurement of liquid flow velocity and pressure drop in microchannels**

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**P-LIFE-52 - Modeling and Realization of Inter-digitated Transducer (IDT)-based biosensors for the detection of a Cardiovascular Disease Risk Marker**

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**P-LIFE-53 - Diffusion-based concentration control in micro-cavities during long time period by programmed syringe pumps**

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**P-LIFE-54 - 3D self-similar chain SERS device fabrication and their use in single molecule detection**

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**P-LIFE-55 - Single molecule detection using super hydrophobic surfaces and advanced photonic devices**

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**P-LIFE-56 - Versatile method for the fabrication of symmetry-broken core-shell metallic nanostructure films**

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**P-LIFE-57 - Micro Contact Printing of PLL-g-Dextran layers: protein adsorption on these chemically engineered surfaces**

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**P-LIFE-58 - Parallel and high sensitive photonic crystal cavity assisted readout for DNA-chips**

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**P-LIFE-59 - Patterning of a Discrete Chemical Gradient on a Surface via UV Nanoimprint Lithography with Rigid Polymer Molds**

S. Gilles, M. Meier, M. Prömpers, S. Völker, S. Meffert, C. Kügeler, A. Offenhäusser, D. Mayer  
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**P-LIFE-60 - Human prostate-specific antigen and carcinoembryonic antigen immunosensing on gold nanoparticles**

C. Huang, S. Wang, K. Jans, G. Reekmans, T. Stakenbord, L. Lagae  
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**P-LIFE-61 - Bacterial adhesion to toroidal nano-structures from poly(styrene)-block-poly(tert-butyl acrylate) diblock copolymer thin films**

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**P-LIFE-62 - PECVD grown CNTs from ferritin catalyst for neural stimulation microelectrodes**

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**P-LIFE-63 - High-resolution patterning of polymer-encapsulated optical oxygen sensors**

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**P-LIFE-64 - Probing the dynamic behaviour of filamentous fungi in microfluidic structures**

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**P-LIFE-65 - Microfabricated magnetic bead polydimethylsiloxane microarrays**

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**P-LIFE-66 - Lab-on-a-chip microsphere based suspension array based on pinched flow fractionation**

A.L. Vig<sup>1</sup>, L. Poulsen<sup>1</sup>, E. Jensen<sup>1</sup>, H. Birgens<sup>2</sup>, M. Dufva<sup>1</sup>, A. Kristensen<sup>1</sup>

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**P-LIFE-67 - Fabrication of Bioresorbable Polymer Scaffolds by Micromolding in Capillaries for Bone Tissue Engineering**

V.P. Jokinen, S. Aura, M. Malin, R. Hakala, M. Leinikka, J. Seppälä, S. Franssila  
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**P-LIFE-68 - Microfluidic devices uncoupling nucleation and crystal growth in protein crystallization**

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**P-LIFE-69 - Influence of the Electrode Radius on the Impedance Spectra of Cell-covered Disc Electrode**

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**P-LIFE-71 - Cells cultured on nanomodified polystyrene surfaces**

F. Johansson, A. Boman, B. Ott, L. Montelius, M. Kanje  
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**P-LIFE-72 - In-vivo assessment of nanowire biocompatibility in the rat brain.**

C. Prinz, C. Eriksson Linsmeier, L. Petersson, P. Caroff, K. Vogel, J. Schouenborg, N. Danielsen, L. Samuelson, L. Montelius  
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**P-LIFE-73 - Columnar shaped microresonators for mass detection and gas analysis**

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**P-LIFE-74 - Polymeric Micro Technologies for MEMS and Biochip Applications**

R. Ofek Almog, Y. Sverdllov, N. Fishelson, Y. Shacham-Diamand  
Tel Aviv University, TEL AVIV, Israel

**P-LIFE-75 - Multi-electrode Arrays Chip Addressed by VCSEL Array System for Neural Recording**

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**P-LIFE-76 - Real time electron transfer from live bacteria using nanostructured carbon and carbon nanotube electrodes**

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**P-LIFE-77 - Effects of substrate nanopatterning on osteosarcoma cells behaviour**

G.J. Bakeine<sup>1</sup>, L. Benedetti<sup>1</sup>, C. Zennaro<sup>2</sup>, G Greni<sup>3</sup>, A. Pozzato<sup>3</sup>, M. Prasciolu<sup>3</sup>, M. Tormen<sup>3</sup>, M.G. Cusella<sup>1</sup>

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**P-LIFE-78 - Micro-Calorimetric Sensor for Vapour Phase Explosive Detection with Optimized Heat Profile**

J. Olsen<sup>1</sup>, A Greve<sup>1</sup>, N Privorotskaya<sup>2</sup>, L Senesac<sup>3</sup>, T Thundat<sup>3</sup>, W King<sup>2</sup>, A. Boisen<sup>1</sup>

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**P-LIFE-79 - Silicon substrate with hydrophilic differences affects cell proliferation and adhesion**

C-H. Lin<sup>1</sup>, W-F. Fong<sup>1</sup>, W-H. Chang<sup>2</sup>, J. Shieh<sup>3</sup>, F-H. Ko<sup>4</sup>

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**P-LIFE-80 - Self aligned cantilever positioning for on-substrate measurements using commercial DVD optical pickup head**

F.G. Bosco<sup>1</sup>, E.-T. Hwu<sup>2</sup>, S Keller<sup>1</sup>, A. Boisen<sup>1</sup>

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**NANOIMPRINT LITHOGRAPHY**

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**P-LITH-02 - Direct polymer transfer lithography for fine patterning**

T. Shibata

Toyohashi University of Technology, TOYOHASHI, Japan

**P-LITH-03 - Fabrication of Large area mold by Electron Beam Stepper**

M. Okada<sup>1</sup>, T. Kishiro<sup>2</sup>, K. Yanagihara<sup>2</sup>, M. Ataka<sup>2</sup>, N. Anazawa<sup>2</sup>, S. Matsui<sup>1</sup>

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<sup>2</sup>Holon Co., TOKYO, Japan

**P-LITH-04 - Micro- and Nano- Patterning of Functional Polymer Layers by ESNIL Imprint Lithography**

K.R. Carter, I.W. Moran

University of Massachusetts - Amherst, AMHERST, United States of America

**P-LITH-05 - Guide structure with pole arrays imprinted on Nylon fiber**

H. Mekarū, O. Koizumi, A. Ueno, M. Takahashi

National Institute of Advanced Industrial Science and Technology (AIST), TSUKUBA, Japan

**P-LITH-06 - Full Wafer Microlens Replication by UV-Imprint Lithography**

H. Schmitt<sup>1</sup>, M. Rommel<sup>1</sup>, A.J. Bauer<sup>1</sup>, L. Frey<sup>1</sup>, A. Bich<sup>2</sup>, M. Eisner<sup>2</sup>, R. Voelkel<sup>2</sup>, M. Hornung<sup>3</sup>

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<sup>3</sup>SUSS MicroTec Lithography GmbH, GARCHING, Germany

**P-LITH-07 - Fabrication of Conductive Nanoscale Electrode for Functional Devices Using Nanoimprint Lithography with Printable Metallic Nano-ink**

Y.J. Kim, G.H. Kim, J.J. Lee

Korea Institute of Machinery and Materials, DAEJEON, South-Korea

**P-LITH-08 - Protein patterning on the micro and nanoscale by thermal nanoimprint lithography on a new functionalized copolymer**

S. Merino<sup>1</sup>, A. Retolaza<sup>1</sup>, V. Trabadelo<sup>1</sup>, A. Cruz<sup>2</sup>, P. Heredia<sup>2</sup>, J.A. Alduncin<sup>3</sup>, D. Mecerreyes<sup>3</sup>, I. Fernández-Cuesta<sup>4</sup>, X. Borrísé<sup>4</sup>, F. Pérez Murano<sup>4</sup>

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<sup>3</sup>Cidetec. Centro de Tecnologías Electroquímicas, SAN SEBASTIÁN, Spain

<sup>4</sup>Centro Nacional de Microelectrónica, CNM-IMB, BARCELONA, Spain

**P-LITH-09 - Fabrication of two-dimensional nanoscaled patterns on ceramic thin films by soft ultraviolet nanoimprint lithography**

F.K. Lee<sup>1</sup>, K.L. Jim<sup>1</sup>, J.Z. Xin<sup>1</sup>, C.W. Leung<sup>1</sup>, H.L.W. Chan Wong<sup>1</sup>, Y. Chen<sup>2</sup>

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**P-LITH-10 - Pattern transfer to TiO<sub>2</sub> layer by direct thermal nanoimprint**

Y. Hirai<sup>1</sup>, N. Hoto<sup>1</sup>, M. Watanabe<sup>2</sup>, H. Kawata<sup>1</sup>

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<sup>2</sup>Rohm, KYOTO, Japan

**P-LITH-11 - Molecular dynamics study on stress distribution of mold and glass in nanoimprint process**

K. Tada, M. Yasuda, H. Kawata, Y. Hirai

Osaka Prefecture University, OSAKA, Japan

**P-LITH-12 - Experimental investigation of the influences of topography on the throughput of Step and Flash Imprint Lithography**

S. Wuister<sup>1</sup>, R. Koole<sup>1</sup>, J. Lammers<sup>1</sup>, F. Dijkman<sup>1</sup>, Y. Kruijt-Stegeman<sup>1</sup>, V. Banine<sup>2</sup>

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<sup>2</sup>ASML, VELDHOVEN, The Netherlands

**P-LITH-13 - Gold nanoparticles by soft UV nanoimprint lithography applied to biochemical plasmonic sensing.**

G. Barbillon, S. Held, F. Hamouda, P. Gogol, B. Bartenlian  
Institut d'Electronique Fondamentale, ORSAY CEDEX, France

**P-LITH-14 - Two tone metal pattern transfer technique using same mold surface**

N. Unno, S. Ide, T. Jun  
Tokyo university of Science, NODA, Japan

**P-LITH-15 - Fabrication of nano dot arrays with 20nm or less size and effect of Post Exposure Bake**

T. Manabe<sup>1</sup>, J. Tniguchi<sup>1</sup>, K. Ishikawa<sup>2</sup>  
<sup>1</sup>Tokyo University of Science, NODA, Japan  
<sup>2</sup>Kiyoshi Ishikawa, KANAGAWA, Japan

**P-LITH-16 - Cross-sectional Observation of Nanoimprint resins filled in SiO<sub>2</sub>/Si Mold Pattern by Scanning Electron Microscopy**

M. Okada<sup>1</sup>, M. Shibata<sup>2</sup>, K. Kanda<sup>1</sup>, Y. Haruyama<sup>1</sup>, Y. Hirai<sup>2</sup>, S. Matsui<sup>1</sup>  
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<sup>2</sup>Physics and Electronics Engineering, Osaka Prefecture University, OSAKA, Japan

**P-LITH-17 - Fabricating metallic wire grating inside a polymer substrate by insertion nanoimprint**

C. M. Chen, C.K. Sung  
NTHU(National Tsing Hua university), HSINCHU, Taiwan

**P-LITH-18 - High resolution mold pattern inversion by using combined thermal and soft UV nanoimprint lithography techniques**

J. Chen<sup>1</sup>, J. Shi<sup>2</sup>, A. Cattoni<sup>1</sup>, D. Decanini<sup>1</sup>, Y. Chen<sup>2</sup>, A-M. Haghiri-Gosnet<sup>1</sup>  
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**P-LITH-19 - 3D features on plastic substrate by combined thermal and UV-imprinting**

T. Haatainen, T. Mäkelä, J. Ahopelto  
VTT, ESPOO, Finland

**P-LITH-20 - 3D Materials Made of Gold Using Nanoimprint Lithography**

I. Bergmair<sup>1</sup>, M. Muehlberger<sup>1</sup>, K. Hingerl<sup>2</sup>, R. Schoeftner<sup>1</sup>  
<sup>1</sup>Profactor GmbH, STEYR-GLEINK, Austria  
<sup>2</sup>Christian Doppler Laboratory for Surface Optics, Johannes Kepler University Linz, LINZ, Austria

**P-LITH-21 - Formation of Cu electrical circuit by simplified damascene process based on UV-assisted thermal imprinting**

S.W. Youn, A. Ueno, H. Takagi, M. Takahashi, R. Maeda  
National Institute of AIST, TSUKUBA, Japan

**P-LITH-22 - Diffusion of Thioles during Microcontact Printing with Rigid Stamps**

M. Mühlberger<sup>1</sup>, I. Bergmair<sup>1</sup>, E. Lausecker<sup>2</sup>, W. Schwinger<sup>1</sup>, T. Fromherz<sup>2</sup>, R. Schöftner<sup>1</sup>  
<sup>1</sup>Profactor GmbH, STEYR, Austria  
<sup>2</sup>Institute of Semiconductor Physics, University Linz, LINZ, Austria

**P-LITH-23 - Full metal scanning probe microscopy tip fabrication by nanoimprint lithography and focused ion beam processing**

J. Jambreck, H. Schmitt, B. Amon, M. Rommel, A. Bauer, L. Frey  
Fraunhofer IISB Erlangen, ERLANGEN, Germany

**P-LITH-24 - Pattern definition through guided self-assembly in thermal nanoimprint**

A. Mayer, N. Bogdanski, S. Möllenbeck, H-C. Scheer  
University Wuppertal, WUPPERTAL, Germany

**P-LITH-25 - Fabrication of three-dimensional roll mold using electron beam direct writing to rotating cylindrical substrate**

M. Aratani, J. Taniguchi  
Tokyo University of Science, CHIBA, Japan

**P-LITH-26 - Room temperature embossing on ferroelectric thin film for multi-bit storage application**

R. Liu  
Fudan University, SHANGHAI, China

**P-LITH-27 - Soft lithographic methods for serial interconnection of thin film solar cells**

N. Campos, D. Gómez, A. Martínez, A. Luis J., A. Menéndez, S. Pascal, M. Amador  
Fundación Itma, LLANERA, Spain

**P-LITH-28 - Metallic planar chiral metamaterials with complementary rosette pattern fabricated by nanoimprint lithography for effective polarization control**

X. Qu  
Fudan University, SHANGHAI, China

**P-LITH-29 - Sub-25nm-wide silicon nanowire gas sensor fabricated by a combination of trilayer nanoimprint and wet etching**

C. Gao  
Fudan University, SHANGHAI, China

**P-LITH-30 - Advantages of using UV-Transparent Polymer Mold for Nanoimprint Lithography of Nanophotonic Devices**

H-S. Lee, S. An, E-H. Lee  
OPERA and Inha University, INCHEON, South-Korea

**P-LITH-31 - Observation of filling behavior on UV nanoimprint lithography using release coating**

J. Taniguchi<sup>1</sup>, K. Osari<sup>1</sup>, K-I. Machinaga<sup>1</sup>, N. Sakai<sup>2</sup>, T. Ohsaki<sup>2</sup>  
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<sup>2</sup>Toyo Gosei CO., LTD., CHIBA, Japan

**P-LITH-32 - Soft UV-NIL at 20 nm scale using flexible bilayer stamp casted on HSQ master mold**

A. Cattoni, E. Cambri, D. Decanini, G. Faini, A-M. Haghiri-Gosnet  
Laboratoire de Photonique et de Nanostructures - CNRS, MARCOUSSIS, France

**P-LITH-33 - Fabrication of fine three-dimensional metal pattern on plastic substrate**

S. Ishikawa, N. Unno, S. Ide, J Taniguchi  
Tokyo University of Science, NODA, Japan

**P-LITH-34 - Pit-patterned Si templates fabricated by UV nanoimprint lithography for the site-controlled growth of SiGe quantum dots**

E. Lausecker<sup>1</sup>, M. Brehm<sup>1</sup>, M. Grydlik<sup>1</sup>, I. Bergmair<sup>2</sup>, M. Mühlberger<sup>2</sup>, T. Fromherz<sup>1</sup>, G. Bauer<sup>1</sup>, H. Schmidt<sup>3</sup>, E-B. Kley<sup>3</sup>  
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<sup>2</sup>Profactor GmbH, STEYR, Austria  
<sup>3</sup>Friedrich-Schiller-University, JENA, Germany

**P-LITH-35 - Effects of Mold shape in Direct Imprinting Process Molecular Dynamics Simulation**

C.H. Yao<sup>1</sup>, C.H. Cheng<sup>2</sup>, C.W. Hsich<sup>3</sup>, C.L. Wu<sup>1</sup>  
<sup>1</sup>National Tsing-Hua University, HSINCHU, Taiwan  
<sup>2</sup>NTHU, HSINCHU, Taiwan  
<sup>3</sup>ITRI, HSINCHU, Taiwan

**P-LITH-36 - Fabrication and characterization of high extinction ratio transmission polarizers**

R. Liu  
Fudan University, SHANGHAI, China

**P-LITH-37 - Micro fluid contact printing ( $\mu$ FCP) of sol-gel derived CNT growing catalysts**

R. Schoeftner<sup>1</sup>, B. Ditter<sup>1</sup>, R. Haubner<sup>2</sup>, I. Bergmair<sup>1</sup>  
<sup>1</sup>PROFACTOR GmbH, STEYR-GLEINK, Austria  
<sup>2</sup>Technical University Vienna, VIENNA, Austria

**P-LITH-38 - Application of Shape Memory Polymers in micro-and nanostructure replication processes**

R. Schoeftner<sup>1</sup>, C. Reitböck<sup>1</sup>, T. Fromherz<sup>2</sup>, I. Bergmair<sup>1</sup>  
<sup>1</sup>PROFACTOR GmbH, STEYR-GLEINK, Austria  
<sup>2</sup>University Linz, LINZ, Austria

**P-LITH-39 - Fabrication of the 3D stamp with the micro and nano-scale patterns using combined NIL and optical lithography process**

S. Park<sup>1</sup>, G. Kim<sup>2</sup>, K. Choi<sup>2</sup>, J. Lee<sup>2</sup>  
<sup>1</sup>University of Science and Technology, DAEJEON, South-Korea  
<sup>2</sup>Korea Institute of Machinery and Materials, DAEJEON, South-Korea

**P-LITH-40 - Novel fabrication of double microlens arrays using two step soft lithography**

H.H. Kim

Inha university/School of information engineering, INCHEON, South-Korea

**P-LITH-41 - High density nano scale pattern transfer technique of UV nanoimprint lithography and measurement of release force**

J. Taniguchi<sup>1</sup>, Y. Kamiya<sup>1</sup>, T. Osaki<sup>2</sup>, N. Sakai<sup>2</sup>

<sup>1</sup>Tokyo university of science, NODA, Japan

<sup>2</sup>Toyo Gosei CO., LTD., CHIBA, Japan

**P-LITH-42 - Poly(ethylene terephthalate) (PET) nanostructures fabricated by nanoimprint and its applications**

X. Wang<sup>1</sup>, J. Jin<sup>1</sup>, X. Li<sup>2</sup>, Fu<sup>2</sup>, Z. Cui<sup>3</sup>

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<sup>2</sup>University of Science and Technology of China, HEFEI CITY, China

<sup>3</sup>Rutherford Appleton Laboratory, CHILTON, DIDCOT, OXON, United Kingdom

**P-LITH-44 - Enhancement of Light Extraction in GaN based Light Emitting Diodes using TiO<sub>2</sub> Nano-structures**

K.M. Yoon, H. Lee

Korea Univ., SEOUL, South-Korea

**P-LITH-45 - Study of the behaviour of monomers in thermal Nanolmprint Lithography**

C. Gourgon<sup>1</sup>, N. Chaix<sup>2</sup>, S. Landis<sup>2</sup>, C. Perret<sup>1</sup>, A. Beduer<sup>1</sup>, I. Gereige<sup>1</sup>

<sup>1</sup>LTM-CNRS, GRENOBLE CEDEX 9, France

<sup>2</sup>CEA/LET/DOPT, GRENOBLE CEDEX 9, France

**P-LITH-46 - Novel method of fabricate micro optical element on quartz substrate with UV-embossing and reactive ion etch**

P. Jin

Harbin Institute of Technology, HARBIN, China

## **MASKLESS LITHOGRAPHY**

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**P-LITH-47 - Improving image quality of MOE in DMD-based maskless lithography**

X. Guo<sup>1</sup>, Y. Liu<sup>2</sup>, J. Du<sup>3</sup>

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<sup>2</sup>Univeristy of electronic science and technology of China, CHENGDU, China

<sup>3</sup>Sichuan univeristy, CHENGDU, China

**P-LITH-48 - Block copolymer nanolithography on patterned substrates**

O. Soppera, I. Dika, A. Dirani

CNRS, MULHOUSE, France

**P-LITH-49 - Approach of Enhancing Exposure Depth for Evanescent Wave Interference Lithography**

X. Niu<sup>1</sup>, Y. Qi<sup>2</sup>, J. Wang<sup>1</sup>, Z. Zhang<sup>1</sup>, J. Du<sup>1</sup>, Y. Guo<sup>1</sup>, R. Shi<sup>1</sup>, M. Gong<sup>1</sup>

<sup>1</sup>Sichuan University, CHENGDU, China

<sup>2</sup>Jilin Institute of chemical Technology, JILIN, China

**P-LITH-50 - Repairing for Metal Photomask Pattern by Using Fountain-Pen Nanolithography**

M. Onoue, H. Ushijima

National Institute of Advanced Industrial Science and Technology (AIST), TSUKUBA, Japan

**P-LITH-51 - 100 nm period grating writing by high index phase mask immersion lithography**

Y. Bourgin<sup>1</sup>, Y. Jourlin<sup>1</sup>, O. Parriaux<sup>1</sup>, S. Tonchev<sup>1</sup>, A. Talneau<sup>2</sup>, C. Veillas<sup>1</sup>

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<sup>2</sup>Laboratoire de Photonique et de Nanostructures, MARCOUSSIS, France

**P-LITH-52 - Delta lithography method to increase CD uniformity and throughput of SLM-based maskless lithography**

M. Seo, H. Kim

Tongmyong University, BUSAN, South-Korea

**P-LITH-53 - Fabrication of grating structures by AFM nano-lithography**

C.H. Choi, S-G. Lee, S-G. Park, E-H. Lee, B-H. O

INHA University, INCHEON, South-Korea

**P-LITH-54 - Lithography on GaMnAs layer by AFM local anodic oxidation in the AC mode**

J. Voves

CTU in Prague, PRAGUE 6, Czech Republic

**P-LITH-55 - A study of virtual lithography process for polymer directed self-assembly**

S.-K. Kim, H.-K. Oh, Y.-D. Jung, A. Ilsin

Hanyang University, SEOUL, South-Korea

**P-LITH-56 - Three-dimensional surfaces fabricated using fs laser nonlinear lithography**

H. Nishiyama<sup>1</sup>, M. Mizoshiri<sup>1</sup>, J. Nishii<sup>2</sup>, Y. Hirata<sup>1</sup>

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<sup>2</sup>National Institute of Advanced Industrial Science and Technology, IKEDA, Japan

**P-LITH-57 - Fabrication of rigid microstructures on a metal roller using stepped rotating lithography**

J.-T. Wu, H.-C. Lai, T.-C. Huang, S.-Y. Yang

National Taiwan University, TAIPEI, Taiwan

**P-LITH-119 - EUV Interference Lithography with a gas discharge source**

S. Danylyuk<sup>1,4</sup>, L. Juschkin<sup>1,4</sup>, S. Brose<sup>1,4</sup>, K. Bergmann<sup>2</sup>, P. Loosen<sup>1,2,4</sup>, D. Grützmacher<sup>3,4</sup>

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<sup>4</sup>JARA-Fundamentals of Future Information Technology, Germany

## **ELECTRON AND ION BEAM LITHOGRAPHY**

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**P-LITH-58 - Electron beam lithography on cylindrical roller**

S.C. Tseng, Y.F. Hsieh, P.J. Lee, W.L. Lai

Industrial Technology Research Institute, HSINCHU, Taiwan

**P-LITH-59 - Extraction of the point-spread function in electron-beam lithography using a cross geometry**

D. Schefzyk, D. Biesinger, D. Wharam

Institut für Angewandte Physik, TÜBINGEN, Germany

**P-LITH-60 - Low energy Xe<sup>+</sup> ion beam machining of ULE substrates for EUVL projection optics -Evaluation of High-spatial frequency roughness-**

H. Endo, T. Inaba, S. Pahlavy, I. Miyamoto

Tokyo University of Science, NODA, Japan

**P-LITH-61 - High resolution patterning - preparation for the 22nm node capability of VSB systems**

P. Hahmann, M. Boettcher, M.W. Klein, I. A. Stolberg, U. Weidenmueller

Vistec Electron Beam GmbH, JENA, Germany

**P-LITH-62 - Electrostatic rotator for multi beam electron columns**

C. Zonneville<sup>1</sup>, P. Kruit<sup>1</sup>, M. Wieland<sup>2</sup>, S. Steenbrink<sup>2</sup>

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**P-LITH-63 - Electron Beam Direct Writing technology for LSI prototyping business**

Y. Machida<sup>1</sup>, T. Maruyama<sup>1</sup>, Y. Kojima<sup>1</sup>, S. Sugatani<sup>1</sup>, H. Tsuchikawa<sup>1</sup>, K. Ogino<sup>2</sup>, H. Hoshino<sup>2</sup>

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<sup>2</sup>Fujitsu Microelectronics Limited, AKIRUNO, TOKYO, Japan

**P-LITH-64 - Fourier filtering process in e-beam lithography using high resolution transmission electron microscopy**

H.-M. Kim, M.-H. Lee, S.-Y. Cho, K.-B. Kim

Seoul National University, SEOUL, South-Korea

**P-LITH-65 - The 3-D nanostructure growth evaluations by the real-time current monitoring on focused-ion-beam chemical vapor deposition**

R. Kometani, S. Warisawa, S. Ishihara

The University of Tokyo, TOKYO, Japan

**P-LITH-66 - Precise localization of 30-50 nm nanostructures for optoelectronic applications**

L. Le Gratiet, N. Gogneau, E. Cambil, G. Beaudoin, I. Sagnes

CNRS, MARCOUSSIS, France

**P-LITH-67 - Study on ripple or nano pattern formation by single , double and multiple charge state of Ar ion beam**

S. Pahlavy, K. Yanagimoto, I. Miyamoto  
Tokyo University of Science, NODA, Japan

**P-LITH-68 - Growth Rate Control of Nano-pillars Fabricated by Ion-Beam-Induced Deposition**

P. Chen  
Technology University of Delft, DELFT, The Netherlands

**P-LITH-69 - Observation on surface morphologies of dwell time controlled nanoscale dots in focused ion beam removal processing**

D-Y. Jang<sup>1</sup>, C-S. Kim<sup>2</sup>, S-H. Ahn<sup>2</sup>  
<sup>1</sup>Seoul National University of Technology, SEOUL, South-Korea  
<sup>2</sup>Seoul National University, SEOUL, South-Korea

**P-LITH-70 - Conducting FIB milled nanowires**

A. Lei, O. Sardan, T. Booth, D. H. Petersen, P. Bøggild  
DTU Nanotech, KGS. LYNGBY, Denmark

**P-LITH-71 - Growth of defective morphologies in focused ion beam induced deposition**

S-H. Ahn<sup>1</sup>, C-S. Kim<sup>2</sup>, D-Y. Jang<sup>3</sup>  
<sup>1</sup>School of Mechanical and Aerospace Engineering and Institute of Advanced Machine, SEOUL, South-Korea  
<sup>2</sup>Seoul National University, SEOUL, South-Korea  
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**P-LITH-72 - Nanolocalization of single photon emitter by direct lithography of hydrogen silsesquioxane (HSQ)-based resist**

A. Quattieri<sup>1</sup>, L. Martiradonna<sup>2</sup>, T. Stomeo<sup>1</sup>, A. Bramati<sup>3</sup>, J-P. Hermier<sup>3</sup>, M. De Vittorio<sup>1</sup>  
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<sup>3</sup>Laboratoire KASTLER BROSSEL - Université Paris 6, Ecole Normale Supérieure, 75252 PARIS CEDEX 05, France

**P-LITH-73 - Influence of process parameters on HSQ chemistry in an industrial like environment**

D. Rio<sup>1</sup>, L. Siegert<sup>1</sup>, B. Icard<sup>1</sup>, S. Derrough<sup>1</sup>, C. Sourd<sup>1</sup>, R. Tiron<sup>1</sup>, J. Simon<sup>1</sup>, C. Constancias<sup>1</sup>, H. Meynen<sup>2</sup>, L. Pain<sup>1</sup>  
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**P-LITH-74 - Free-standing silicon-nitride zoneplates for neutral helium microscopy**

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**P-LITH-75 - Lithography scaling issues associated with III-V MOSFETs**

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**P-LITH-76 - Direct e-beam writing of high aspect ratio structures in PMMA: a tool for diffractive x-ray optics fabrication**

S. Gorelick, J. Vila-Comamala, V. Guzenko, M. Bednarzik, C. David  
Paul Scherrer Institute, VILLIGEN-PSI, Switzerland

**P-LITH-77 - Alignment for overlay and stitching in focused ion beam patterning**

O. Wilhelmi, P. Faber, R. Geurts, G. Daniel  
FEI, EINDHOVEN, The Netherlands

**P-LITH-78 - Three dimensional PEC for nano-optics**

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GeniSys GmbH, TAUFKIRCHEN, Germany

**P-LITH-79 - Enhanced Performance of Single Nanowire Gas Sensors Using Microhotplates**

R. Jiménez-Díaz<sup>1</sup>, J.D. Prades<sup>2</sup>, F. Hernandez-Ramirez<sup>2</sup>, J. Santander<sup>3</sup>, C. Calaza<sup>3</sup>, F. Luis<sup>3</sup>, J.R. Morante<sup>2</sup>, C. Cané<sup>3</sup>, A. Romano-Rodríguez<sup>1</sup>  
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<sup>3</sup>Instituto de Microelectrónica de Barcelona, BELLATERRA, Spain

**P-LITH-80 - Focused ion beams in three beam lithography based device fabrication**

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**P-LITH-81 - Influence of the dose distribution on resist development properties.**

M. Knyazev

IMT RAS, CHERNOGOLOVKA, Russian Federation

**P-LITH-82 - Fabrication of high aspect ratio sub-100 nm patterns in fused silica by electron beam writing (EBL) and reactive ion beam etching (RIBE)**

J. Zajadacz, R. Fechner, K. Zimmer

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**P-LITH-83 - Graphene electrodes for n-type organic field effect transistors**

H.H. Henriksen, P. Bøggild

DTU Nanotech, KGS. LYNGBY, Denmark

**P-LITH-84 - The substrate topography effect in electron beam lithography by Monte Carlo simulation**

C-H. Lin, C-Y. Hu

National Cheng Kung University, TAINAN, Taiwan

**P-LITH-85 - A fast evaluation method for high-resolution ebeam resist process optimization**

H. Sailer, A. Barcz, J. Butschke, M. Irmscher, S. Martens

IMS Chips, STUTTGART, Germany

**P-LITH-86 - Experimental evaluation of point spread functions in EBL used for proximity effect correction**

B. Nilsson

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## **OPTICAL LITHOGRAPHY**

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**P-LITH-87 - Align-and-shine photolithography**

A. Petrušis, J.H. Rector, K. Smith, S. De Man, D. Iannuzzi

Vrije Universiteit Amsterdam, AMSTERDAM, The Netherlands

**P-LITH-88 - Projection lithography to print thick resist patterns with triangular and semi-circular cross sections**

T. Horiuchi, T. Kashiwagi

Tokyo Denki University, TOKYO, Japan

**P-LITH-89 - Investigation on the critical velocity for liquid loss in immersion lithography**

J. Zou

Zhejiang university, HANGZHOU, China

**P-LITH-90 - High resolution Fresnel zone plate fabrication by achromatic spatial frequency multiplication with extreme ultraviolet light**

S.S. Sarkar, M. Saidani, H.H. Solak, C. David, J.F. Van der Veen

Paul Scherrer Institute, VILLIGEN AG, Switzerland

**P-LITH-91 - Modelling fluid velocity response for wafer scanning in immersion lithography**

Z. Jun

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**P-LITH-92 - Resonant Surface Roughness Interactions in Planar Superlens Imaging**

M. Schøler, R.J. Blaikie

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**P-LITH-93 - Contact and Proximity Lithography using 193nm Excimer Laser in Mask Aligner**

S. Partel<sup>1</sup>, S. Zoppel<sup>1</sup>, P. Hudek<sup>1</sup>, A. Bich<sup>2</sup>, U. Vogler<sup>2</sup>, R. Voelkel<sup>2</sup>, M. Hornung<sup>3</sup>

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**P-LITH-94 - Optical microstructures fabricated on top of optical fibers by means of two-photon photopolymerization**

G. Das, C. Liberale, G. Cojoc, P. Candeloro, F. De Angelis, E. Di Fabrizio  
Università Magna Graecia di Catanzaro, CATANZARO, Italy

**P-LITH-95 - Results obtained with high efficiency gratings for EUV application**

Ph. Michallon, C. Constantias, B. Dal Zotto  
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**P-LITH-96 - Hybrid algorithm for reducing mask complexity in inverse lithography technique**

Y.-S. Kim<sup>1</sup>, J.U. Lee<sup>2</sup>, B.-H. O<sup>3</sup>, S.-G. Park<sup>3</sup>, E.-H. Lee<sup>3</sup>, S.G. Lee<sup>3</sup>  
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**P-LITH-97 - Multi-Step Imaging inside deep trenches using spray-coating and projection lithography**

P. Tenberge  
Asml, VELDHOVEN, The Netherlands

**P-LITH-98 - Optimized illumination pupils for proximity printing**

K. Motzek<sup>1</sup>, A. Bich<sup>2</sup>, A. Erdmann<sup>1</sup>, M. Hornung<sup>3</sup>, M. Hennemeyer<sup>3</sup>, B. Meliorisz<sup>4</sup>, U. Hofmann<sup>4</sup>, N. Ünal<sup>4</sup>, R. Völkel<sup>2</sup>,  
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**P-LITH-99 - Line width roughness mitigation in chemically amplified resist by post-litho processes**

A. Vaglio Pret, R. Gronheid  
IMEC, HEVERLEE (LEUVEN), Belgium

**P-LITH-120 - Compact and intense EUV and soft x-ray light sources for nano patterning and nanoscale imaging**

K. Bergmann<sup>1</sup>, L. Juschkin<sup>2</sup>, M. Benk<sup>1</sup>, S. Danylyuk<sup>2</sup>, M. Banyay<sup>2</sup>, W. Neff<sup>1</sup>  
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## LITHOGRAPHY MATERIALS

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**P-LITH-101 - Thermal characterization of materials for double patterning**

S. Derrough<sup>1</sup>, A. Pikon<sup>2</sup>, C. Sourd<sup>1</sup>, I. Guerin<sup>1</sup>, J. Simon<sup>1</sup>, S. Gaugiran<sup>1</sup>  
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<sup>2</sup>Dow Electronic Materials, GRENOBLE, France

**P-LITH-102 - Integrated tool for the spreading, thermal treatment and in-situ process monitoring of thick photoresist films**

M. Chatzichristidi<sup>1</sup>, D. Goustouridis<sup>2</sup>, I. Raptis<sup>2</sup>, E. Valamontes<sup>3</sup>  
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<sup>3</sup>Department of Electronics, TEI of Athens, AEGALEO, Greece

**P-LITH-103 - Resist glass transition: a key parameter for future lithography requirements**

R. Tiron<sup>1</sup>, S. Derrough<sup>1</sup>, D. Perret<sup>2</sup>, C. Sourd<sup>1</sup>, P. Paniez<sup>3</sup>  
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**P-LITH-104 - Direct patterning of VO<sub>2</sub> on a nanoscale using an electron beam**

M.S.M. Saifullah<sup>1</sup>, K.S. Kim<sup>2</sup>, M. Shahid<sup>2</sup>, E.S.P. Leong<sup>1</sup>, K.R.V. Subramanian<sup>3</sup>, J.-I Sohn<sup>4</sup>, D. Anderson<sup>5</sup>, G.A.C. Jones<sup>5</sup>, M.E. Welland<sup>4</sup>, D.-J. Kang<sup>2</sup>

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**P-LITH-105 - Penetration-Depth Analysis of Surface-Plasmon Polaritons Exciting by Different Metals for Nanolithography**

W. Jingquan<sup>1</sup>, N. Xiaoyun<sup>1</sup>, Q. Yuming<sup>2</sup>, Z. Zhiyou<sup>1</sup>, D. Jinglei<sup>1</sup>, G. Yongkang<sup>1</sup>, S. Ruiying<sup>1</sup>, G. Min<sup>1</sup>

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<sup>2</sup>Jilin Institute of chemical Technology, JINLIN, China

**P-LITH-106 - Acid diffusion effects between resists in freezing processes used for contact hole patterning**

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**P-LITH-107 - Resist-based silver nanocomposites synthesized by lithographic methods**

J. Marques-Hueso, R. Abargues, E. Pedrueza, J. Canet-Ferrer, J.L. Valdes, J. Martinez-Pastor  
University of Valencia, PATERNA, Spain

**P-LITH-108 - Electron beam lithography using plasmopolymerized hexane as resist**

R.H. Pedersen<sup>1</sup>, M. Hamzah<sup>1</sup>, S. Thoms<sup>1</sup>, P. Roach<sup>2</sup>, M. Alexander<sup>2</sup>, N. Gadegaard<sup>1</sup>

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**P-LITH-109 - Microlenses arrays on large area UV transparent hybrid sol-gel materials for optical tools**

S. Dal Zilio

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**P-LITH-111 - Computer simulation of resists profiles at electron beam nanolithography**

K. Vutova<sup>1</sup>, E. Koleva<sup>1</sup>, G. Mladenov<sup>1</sup>, I. Kostic<sup>2</sup>, A. Bencurova<sup>2</sup>, A. Ritomsky<sup>2</sup>, V. Spivac<sup>3</sup>, T. Tanaka<sup>4</sup>

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<sup>3</sup>National University of Ukraine KPI, KIEV, Ukraine

<sup>4</sup>Hiroshima Institute of Technology, HIROSHIMA, Japan

**P-LITH-112 - Nanopatterned UV curable hydrogels for biomedical applications**

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<sup>2</sup>Inasmet-Tecnalia, DONOSTIA-SAN SEBASTIÁN, Spain

**P-LITH-113 - Optical index determination of resist films by ellipsometry: Oscillators and regularization technique**

J.-H. Tortai<sup>1</sup>, A. Akbalik<sup>1</sup>, S. Soulan<sup>2</sup>, P. Schiavone<sup>2</sup>

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**P-LITH-117 - A Dry-on, Dry-off, Long Wavelength Photoresist for NanoPlasmonic Field Metrology and Lithography**

P. Carmichael<sup>1</sup>, J. Strahan<sup>2</sup>, C.G. Willson<sup>2</sup>, J. Liddle<sup>1</sup>

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**POSTERS - MEMS**

**INTEGRATED MEMS**

**P-MEMS-01 - Dipole Antenna and Distributed MEMS Phase Shifter fully Integrated in a Single Wafer Process for Beam Steering Applications**

M. Fernandez-Bolaños Badia<sup>1</sup>, A. Vasylychenko<sup>2</sup>, P. Dainesi<sup>1</sup>, S. Brebels<sup>2</sup>, W. De Raedt<sup>2</sup>, A.M. Ionescu<sup>1</sup>

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<sup>2</sup>IMEC vzw, Microwave and RF System Group, LEUVEN, Belgium

**P-MEMS-02 - SiGe based Grating Light Valves: A leap towards monolithic integration of MOEMS**

S. Rudra

University of Ghent, GENT, Belgium

**P-MEMS-03 - A CMOS micromachined resonant sensor with thermal actuation and piezoresistive sensing**

C.-Y. Tsai<sup>1</sup>, J.-J. Wang<sup>1</sup>, T.-L. Chen<sup>1</sup>, C-F. Lin<sup>2</sup>, H-H. Liao<sup>2</sup>, Y-Z. Juang<sup>2</sup>

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**P-MEMS-04 - A fully integrated CMOS-MEMS UHF Ring Resonator**

J. Giner, A. Uranga, G. Murillo, E. Marigo, G. Abadal, F. Torres, N. Barniol

Universidad Autonoma de Barcelona, BARCELONA, Spain

**P-MEMS-05 - Silicon microcantilevers with MOSFET detection**

J. Bausells<sup>1</sup>, G. Tosolini<sup>1</sup>, G. Villanueva<sup>2</sup>, F. Pérez-Murano<sup>1</sup>

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**P-MEMS-06 - Third-Mode 48 MHz Free-Free Beam Resonator used as a RF balun**

N. Barniol, J.L. Lopez, J. Giner, G. Murillo, F. Torres, E. Marigó, A. Uranga, G. Abadal

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**MATERIALS AND TECHNOLOGY**

**P-MEMS-07 - Batch fabrication of cantilever array apertured probes for scanning near-field optical microscopy**

Y. Zhang, K. Docherty, J. Weaver

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**P-MEMS-09 - The creep behavior of microfabricated silicon diaphragm at 900°C**

J. Ren<sup>1</sup>, M. Ward<sup>1</sup>, P. Kinnell<sup>2</sup>, R. Craddock<sup>2</sup>

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**P-MEMS-10 - Laser-assisted Structuring of Metal-Polymer Bilayers for Microarrays**

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**P-MEMS-11 - Dynamic thermal mechanical characterization of Epoclad negative photoresist for micro mechanical structures**

K. Wouters, R. Puers

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**P-MEMS-12 - Development of a low temperature amorphous Si/Ti for MEMS/NEMS**

L. Jiang<sup>1</sup>, G. Lewis<sup>1</sup>, S.M. Spearing<sup>1</sup>, M. Monclus<sup>2</sup>, N.M. Jennett<sup>2</sup>

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<sup>2</sup>National Physical Laboratory, MIDDLESEX TW11 0LW, United Kingdom

### **P-MEMS-13 - Non-thermal Microplasma-jet Device for Bio-medical Application**

K. Kim<sup>1</sup>, G. Kim<sup>1</sup>, Y.C. Hong<sup>2</sup>, S.S. Yang<sup>1</sup>

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### **P-MEMS-14 - Effect analysis of magnetic annealing below Curie-temperature on the magnetic properties of electro deposited nickel-iron**

A. Jordan<sup>1</sup>, M.R. Kirchhoff<sup>2</sup>, S. Büttgenbach<sup>2</sup>

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### **P-MEMS-15 - Novel double layer resist process scheme for metal lift-off with application in inductive heating of microstructures**

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### **P-MEMS-16 - Novel SU-8 based Vacuum Wafer-Level Packaging for MEMS devices**

G. Murillo<sup>1</sup>, Z. Davis<sup>2</sup>, S. Keller<sup>2</sup>, G. Abadal<sup>1</sup>, J. Agustí<sup>1</sup>, A. Cagliani<sup>2</sup>, N. Noeth<sup>2</sup>, A. Boisen<sup>2</sup>, N. Barniol<sup>1</sup>

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### **P-MEMS-17 - Membrane-less in-plane bulk-micromachined thermopiles for energy harvesting**

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### **P-MEMS-18 - Multimode PDMS waveguides fabricated using a hot-embossing technique**

J. Missinne, G. Van Steenberge, J. Vanfleteren, P. Van Daele

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## **SENSORS AND ACTUATORS**

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### **P-MEMS-19 - Fully integrated three axis Hall magnetic sensors based on micromachined structures**

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### **P-MEMS-20 - AlGaIn/GaN HEMT based micro-hotplate for high temperature gas sensors**

T. Lalinsky<sup>1</sup>, G. Vanko<sup>1</sup>, J. Jakovenko<sup>2</sup>, V. Kutis<sup>3</sup>, M. Ivanova<sup>4</sup>, S. Hascik<sup>1</sup>, J. Murin<sup>3</sup>, M. Husak<sup>2</sup>, I. Kostic<sup>5</sup>

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<sup>5</sup>Institute Of Informatics, Slovak Academy of Sciences, BRATISLAVA, Slovakia

### **P-MEMS-21 - Mechanical properties characterization of silicalite-only cantilever based sensors for explosives early detection**

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### **P-MEMS-22 - Surface micro-machined RMS and DC voltage sensor with a copper actuator using an intermediate sacrificial photoresist layer**

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### **P-MEMS-24 - Flash Evaporated SMA Thick Films for Medical Micro Actuators**

E. Makino<sup>1</sup>, T. Mineta<sup>1</sup>, K. Kasai<sup>1</sup>, T. Arisaka<sup>1</sup>, T. Kawashima<sup>2</sup>, T. Shibata<sup>3</sup>

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**P-MEMS-25 - Design and fabrication of the MEMS logic gate through a novel metal contact process**

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**P-MEMS-26 - Determination of Local Electrostatic Forces for EUVL Mask Chucks**

G. Kalkowski<sup>1</sup>, T. Peschel<sup>1</sup>, S. Risse<sup>1</sup>, S. Müller<sup>1</sup>, R. Engelstad<sup>2</sup>, J. Zeuske<sup>2</sup>, P. Vukkadala<sup>2</sup>

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**P-MEMS-27 - Fluctuations of the mass and resonant frequency of vibrating MEMS/NEMS structures due to multilayer adsorption**

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**P-MEMS-28 - Novel micromirror design with variable pull-in voltage**

R. Beernaert<sup>1</sup>, T. Podprocky<sup>1</sup>, A. Witvrouw<sup>2</sup>, L. Haspeslagh<sup>2</sup>, A. Avci<sup>1</sup>, J. De Smet<sup>1</sup>, H. De Smet<sup>1</sup>

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## NEMS

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**P-MEMS-29 - High-sensitive strain sensor using tunnelling effect in SU-8/CNTs nanocomposite**

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**P-MEMS-31 - Carbon Nanotube Vertical Membranes for Electrostatically Actuated Micro-Electro-Mechanical Devices**

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**P-MEMS-32 - Fabrication of nanomechanical devices by ion beam patterning and etching**

F. Perez-Murano<sup>1</sup>, J. Llobet<sup>1</sup>, G. Rius<sup>1</sup>, M. Gerbolés<sup>1</sup>, X. Borrisé<sup>1</sup>, N. Mestres<sup>2</sup>

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**P-MEMS-33 - Micromachining of Newly Designed AFM Probe Integrated with Hollow Microneedle for Cellular Function Analysis**

N. Kato<sup>1</sup>, T. Kawashima<sup>1</sup>, T. Shibata<sup>1</sup>, T. Mineta<sup>2</sup>, E Makino<sup>2</sup>

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**P-MEMS-38 - Dynamic characterization method of GaAs membrane resonator by direct excitation using scanning probe microscopy**

K. Tamaru<sup>1</sup>, K. Nonaka<sup>1</sup>, M. Nagase<sup>2</sup>, H. Yamaguchi<sup>2</sup>, R. Kometani<sup>1</sup>, S. Warisawa<sup>1</sup>, S. Ishihara<sup>1</sup>

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## FLUIDICS

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**P-MEMS-34 - NOA 63 as a UV-curable material for fabrication of microfluidic channels with native hydrophilicity.**

E. Dupont, R. Luisier, M. Gijs

EPFL, LAUSANNE, Switzerland

**P-MEMS-35 - Enhanced acoustic wave focusing in microfluidic channels with integrated Bragg reflectors**

Y. Chen<sup>1</sup>, Q. Zeng<sup>1</sup>, X. Zhao<sup>2</sup>

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<sup>2</sup>Wuhan University, WUHAN, China

**P-MEMS-36 - A variable flow rate micro-valve using a thick film piezoelectric bimorph spiral actuator**

S. Owens<sup>1</sup>, J. Barth<sup>2</sup>, S. Wilson<sup>1</sup>, R. Jourdain<sup>1</sup>, T. Grund<sup>3</sup>, M. Kohl<sup>3</sup>

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**P-MEMS-37 - Integration of pressure sensors into microfluidic devices: The use of metal particle containing PDMS as sensing elements**

Y. Chen<sup>1</sup>, H. Li<sup>2</sup>, C. Luo<sup>2</sup>, H. Ji<sup>2</sup>, Q. Ouyang<sup>2</sup>

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**NANOFABRICATION**

**P-NANO-01 - Strategy to Transfer Diblock Copolymer Patterns on Silicon Substrate Using Plasma Etching**

C. Agraffeil

LTM-CNRS, GRENOBLE, France

**P-NANO-02 - Nanoscale surface engineering of PDMS by embedding vertical SiO<sub>2</sub> nanosheets**

L. Jalabert<sup>1</sup>, M. Kumemura<sup>1</sup>, C. Bottier<sup>1</sup>, H. Fujita<sup>2</sup>

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**P-NANO-03 - Guided phase separation in polymer blend thin films induced by ion beam fabricated pre-patterns**

Y. Karade<sup>1</sup>, F. Madani-Grasset<sup>2</sup>, R. Berger<sup>3</sup>, V. Csiba<sup>4</sup>, A. Dietzel<sup>2</sup>

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<sup>3</sup>Max Planck Institute for Polymer Research, MAINZ, Germany

<sup>4</sup>Biont Inc., BRATISLAVA, Slovakia

**P-NANO-04 - Fabrication of nano Si ink and two-dimensionally assembled Si nanocrystals**

S. Oda, T. Ishikawa, H. Nikaido, K. Usami, K. Uchida

Tokyo Institute of Technology, TOKYO, Japan

**P-NANO-05 - Embedding of single-wall carbon nanotubes into nanopores of porous alumina by electrophoresis**

Y. Kurashima

University of Yamanashi, KOFU, Japan

**P-NANO-06 - Durable Superhydrophobic and Antireflective Surfaces by Trimethylsilanized Silica Nanoparticles-Based Sol-Gel Processing**

M. Manca

National Nanotechnology Labs of IIT, LECCE, Italy

**P-NANO-07 - Variation of nanopore diameter along the porous anodic alumina (PAA) channels by multi-step anodization**

K.H. Lee<sup>1</sup>, F. Romanato<sup>2</sup>, X.Y. Lim<sup>1</sup>, K.W. Wai<sup>1</sup>, C.C. Wong<sup>1</sup>

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<sup>2</sup>Padua University, PADOVA, Italy

**P-NANO-08 - Fabrication of superconducting and ferromagnetic nanogap electrodes using a combination of the conventional lithographic and molecular ruler techniques**

R. Negishi

RIKEN, WAKO, Japan

**P-NANO-09 - Simulation of structural modification of carbon nanotubes with electron beam**

M. Yasuda, R. Mimura, H. Kawata, Y. Hirai

Osaka Prefecture University, OSAKA, Japan

**P-NANO-10 - In-situ purification of cobalt nanostructures grown by focused-electron-beam-induced deposition at low current**

R. Córdoba<sup>1</sup>, J. Sesé<sup>1</sup>, J.M. De Teresa<sup>2</sup>, M.R. Ibarra<sup>1</sup>

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**P-NANO-11 - Preparation of Ru thin film layer on Ta/Si as a diffusion barrier by atomic layer deposition**

B.H. Choi, J.H. Lee, Y.B. Kim, H-N. Lee, H.K. Lee

Korea Institute of Industrial Technology, GWANGJU, South-Korea

**P-NANO-12 - Topography boundary-mediated patterning of metal nanoparticles**

N. Lu, D. Qi, B. Yang, H. Xu, L. Chi  
Jilin University, CHANGCHUN, China

**P-NANO-13 - Temperature-dependent optical properties of self-assembled InGaAs quantum dot molecules**

S. Kanjanachuchai, N. Thudsalingkarnsakul, N. Siripitakchai, P. Changmoang, S. Thainoi, S. Panyakeow  
Chulalongkorn University, BANGKOK, Thailand

**P-NANO-14 - Novel fabrication of various size ZnO nanorods using by hydrothermal method**

S.J. Kim<sup>1</sup>, H-H. Kim<sup>1</sup>, J-B. Kwon<sup>1</sup>, J-G. Lee<sup>2</sup>, B-H. O<sup>1</sup>, S.G. Lee<sup>1</sup>, E-H. Lee<sup>1</sup>, S-G. Park<sup>1</sup>  
<sup>1</sup>Inha Univ., INCHEON, South-Korea  
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**P-NANO-15 - High optical quality site-controlled quantum dots**

T. Pfau, A. Gushterov, J.P. Reithmaier  
Institute of Nanostructure Technologies and Analytics, KASSEL, Germany

**P-NANO-16 - Vertical integration of embedded core-shell AlGaAs/GaAs nanowire**

D. Lucot, L. Vila, J-C. Harmand, G. Patriarche, C. David, D. Maily, G. Faini  
Laboratoire de Photonique et Nanostructures/CNRS, MARCOUSSIS, France

**P-NANO-17 - Transferring electrospun nanofibers to glass for cell alignment and cellular process**

Y. Chen, E. Secret, L. Wang, J. Shi  
Ecole Normale Supérieure, PARIS, France

**P-NANO-18 - Influence of crystallization temperature on InP ring-shaped quantum-dot molecules grown by droplet epitaxy**

W. Jevasuwan, P. Boonpeng, S. Panyakeow, S. Ratanathamphan  
Chulalongkorn University, BANGKOK, Thailand

**P-NANO-19 - Field Enhancement and Resonances in Metal Nanostructures for Antenna Based Near-Field Probes**

M. Salomo, D. Bayer, B. Schaaf, M. Aeschlimann, E. Oesterschulze  
Technische Universität Kaiserslautern, KAISERSLAUTERN, Germany

**P-NANO-20 - Additive Driven Self-Assembly in Polymer Templates for High Volume Manufacturing of Ordered Hybrid Materials**

J. Watkins, V. Daga, E. Anderson, C. Chandler, Y. Lin  
University of Massachusetts, AMHERST, MA, United States of America

**P-NANO-21 - Simulation of nanostructuring of surfaces under ion bombardment**

V. Nicolau, I. Fulga  
University of Liverpool, LIVERPOOL, United Kingdom

**P-NANO-22 - Plasma-Directed Organized Nanodot Formation on Polymeric Surfaces**

D. Kontziampasis<sup>1</sup>, E. Gogolides<sup>1</sup>, V. Constantoudis<sup>1</sup>, N. Vourdas<sup>1</sup>, M. Cooke<sup>2</sup>, A. Goodyear<sup>2</sup>  
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<sup>2</sup>Oxford Instruments Plasma Technology, BRISTOL, United Kingdom

**P-NANO-23 - A novel 3D nanolens for sub-wavelength focusing by self-aligned nanolithography**

Y. Chen<sup>1</sup>, B.-R. Lu<sup>1</sup>, Y. Chen<sup>1</sup>, S-W. Wang<sup>2</sup>, E. Huq<sup>1</sup>, E. Rogers<sup>3</sup>, T.S. Kao<sup>3</sup>, X-P. Qu<sup>4</sup>, R. Liu<sup>4</sup>, N.I. Zheludev<sup>3</sup>  
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<sup>4</sup>State key lab of Asic and system, Dept of Microelectronics, Fudan University, SHANGHAI, China

**P-NANO-24 - Fabrication and use of high resistance nanogaps for application in molecular electronics**

T. Blom, H. Jafri, K. Welch, M. Stromme, K. Leifer  
Uppsala University, UPPSALA, Sweden

**P-NANO-25 - Integrated Cantilever Probes for SECM/AFM Characterization of surfaces**

M. Salomo<sup>1</sup>, S.E. Pust<sup>2</sup>, G. Wittstock<sup>2</sup>, E. Oesterschulze<sup>1</sup>  
<sup>1</sup>Technische Universität Kaiserslautern, KAISERSLAUTERN, Germany  
<sup>2</sup>Carl von Ossietzky Universität, OLDENBURG, Germany

**P-NANO-27 - Fabrication of piezoelectric microcantilevers with lead zirconate titanate thin films**

L. Che, E. Halvorsen, X. Chen  
Vestfold University College, TONSBERG, Norway

**P-NANO-28 - Synthesis and 1.54  $\mu\text{m}$  Photoluminescence of  $\text{Er}_2\text{Si}_2\text{O}_7$  Thin Films on Si Substrates**

X. Zhao  
Tokyo University of Science, TOKYO, Japan

**P-NANO-29 - Reduction of the Pitch of the Nano-Hole Array by Self-Organizing Anodic Oxidation After Nano-Imprinting**

S. Shingubara<sup>1</sup>, M. Maruo<sup>1</sup>, m Nakao<sup>2</sup>, T. Yamashita<sup>1</sup>, T. Shimizu<sup>3</sup>  
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<sup>2</sup>NICT, KOBE, Japan  
<sup>3</sup>Seicho Corporation, TOKYO, Japan

**P-NANO-30 - Fabrication of Planar Ultra-Fine Copper Lines by EUV Interference lithography and Selective Chemical Vapor Deposition**

D. Davazoglou<sup>1</sup>, G. Papadimitropoulos<sup>2</sup>, V. Auzelyte<sup>3</sup>, H. Solak<sup>3</sup>  
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<sup>3</sup>Paul Scherrer Institut, Laboratory for Micro- and Nanotechnology, VILLIGEN, Switzerland

**P-NANO-31 - HSQ e-beam lithography for ultrasmall single electron transistors on SOI**

M. Ruoff, W. Daves, D. Kotekar-Patil, M. Fleischer, D.A. Wharam, D.P. Kern  
University of Tübingen, TÜBINGEN, Germany

**P-NANO-32 - Self-organization of CVD Cu nanoparticles on organic semiconductor layers for charge storage applications**

P. Dimitrakis<sup>1</sup>, G. Papadimitropoulos<sup>1</sup>, L.C. Palilis<sup>1</sup>, M. Vasilopoulou<sup>1</sup>, A. Speliotis<sup>2</sup>, P. Argitis<sup>1</sup>, P. Normand<sup>1</sup>, Davazoglou<sup>1</sup>  
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## NANOPATTERNING

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**P-NANO-33 - Development of a tungsten plasma etch for IR nanobolometer fabrication**

S. Gilmartin<sup>1</sup>, K. Arshak<sup>1</sup>, D. Bain<sup>2</sup>, B. Lane<sup>2</sup>, B. McCarthy<sup>3</sup>, D. Collins<sup>4</sup>, A. Arshak<sup>1</sup>  
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<sup>2</sup>Analog Devices, LIMERICK, Ireland  
<sup>3</sup>Tyndall National Institute, CORK, Ireland  
<sup>4</sup>Boston Scientific, CORK, Ireland

**P-NANO-34 - Fabrication of Nanoscale Silicon Fresnel Lense Structures Using EBL and ICP Etch**

S. Gilmartin<sup>1</sup>, K. Arshak<sup>1</sup>, B. McCarthy<sup>2</sup>, B. Lane<sup>3</sup>, D. Bain<sup>3</sup>, D. Collins<sup>4</sup>, A. Arshak<sup>1</sup>  
<sup>1</sup>University of Limerick, LIMERICK, Ireland  
<sup>2</sup>Tyndall National Institute, CORK, Ireland  
<sup>3</sup>Analog Devices, LIMERICK, Ireland  
<sup>4</sup>Boston Scientific, CORK, Ireland

**P-NANO-35 - Metal films with imprinted nanostructures by template stripping**

R.L. Eriksen, A. Pors, J. Dreier, A.C. Simonsen, O. Albrektsen  
University of Southern Denmark, ODENSE M, Denmark

**P-NANO-36 - The fabrication of high aspect ratio structures on quartz substrates**

K. Mohamed, M.M. Alkaisi  
University of Canterbury, CHRISTCHURCH, New Zealand

**P-NANO-37 - Three-dimensional pattern transfer for quartz substrates**

K. Mohamed, M.M. Alkaisi  
University of Canterbury, CHRISTCHURCH, New Zealand

**P-NANO-38 - Dry etching device quality high- $\gamma$  GaxGdyOz gate oxide in  $\text{SiCl}_4$  chemistry for low resistance ohmic contact realisation in fabricating III-V MOSFETs**

X. Li, H. Zhou, G.D. Hill, P. Longo, M. Holland, G. Thayne  
University of Glasgow, GLASGOW, United Kingdom

**P-NANO-39 - Fabrication of 3D combined nanoimprint and photolithography template for optical microfluidics by multiple-step etching process**

S-W. Wang, Y. Chen, B-R. Lu, D. Jenkins, L. Williamson-Hodge, E. Huq, W. Lu  
Rutherford Appleton Laboratory, DIDCOT, United Kingdom

**P-NANO-40 - Incident angle dependent damage of PMMA during Ar<sup>+</sup>-ion beam etching**

S. Wolff<sup>1</sup>, B. Lagel<sup>1</sup>, S. Trellenkamp<sup>2</sup>  
<sup>1</sup>TU Kaiserslautern, KAISERSLAUTERN, Germany  
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**P-NANO-41 - Surface modification of polymers using a compact laser plasma EUV source**

H. Fiedorowicz, A. Bartnik, R. Jarocki, J. Kostecki, M. Szczurek  
Military University of Technology, WARSAW, Poland

**P-NANO-42 - Dot pattern transfer with high density and high aspect ratio over 1 tera bit/inch<sup>2</sup>**

H-M. Kim<sup>1</sup>, K. Lim<sup>2</sup>, M-H. Lee<sup>1</sup>, S-Y. Cho<sup>1</sup>, K-B. Kim<sup>1</sup>  
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## NANOMETROLOGY

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**P-NANO-43 - Influence of steps generated by polishing pin chuck on wafer flatness**

A. Une, K. Yoshitomi, M. Mochida, N. Ogasawara  
National Defense Academy, YOKOSUKA, Japan

**P-NANO-44 - TEM Specimen preparation by Au<sup>+</sup>, Ga<sup>+</sup>, Si<sup>+</sup> and Si<sup>++</sup> focused ion beams for off-axis electron holography**

G. BenAssayag<sup>1</sup>, P. Salles<sup>1</sup>, D. Cooper<sup>2</sup>, F. Bertin<sup>2</sup>  
<sup>1</sup>CEMES/CNRS, TOULOUSE CEDEX 4, France  
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**P-NANO-45 - Measurement of boundary thermal resistance between Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub> and TiN film for phase change memory**

M. Kuwahara<sup>1</sup>, K. Ishikawa<sup>2</sup>, J. Tominaga<sup>1</sup>  
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<sup>2</sup>PicoTherm, TSUKUBA, Japan

**P-NANO-46 - Scanning tunneling microscopy and spectroscopy on single wall carbon nanotube rings**

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<sup>1</sup>RIKEN, SAITAMA, Japan  
<sup>2</sup>Tokyo University of Science, TOKYO, Japan

**P-NANO-47 - New approach to estimate nanowear test results through nanoindentation test**

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**P-NANO-48 - Novel SThM nanoprobe for thermal properties investigation of micro- and nanoelectronic devices**

P. Janus<sup>1</sup>, P. Grabiec<sup>1</sup>, D. Szmigiel<sup>1</sup>, M. Hecker<sup>2</sup>, M. Weisheit<sup>2</sup>, Y. Ritz<sup>2</sup>, E. Zschech<sup>2</sup>, T. Gotszalk<sup>3</sup>, G. Wielgoszewski<sup>3</sup>  
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**P-NANO-49 - Determining the conductivity of ZnO nanowires with the low energy electron point source microscope**

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<sup>4</sup>A. Waag, BRAUNSCHWEIG, Germany  
<sup>5</sup>A. Golzhuser, BIELEFELD, Germany

**P-NANO-50 - Investigation of Surface Loss Probabilities of H, N Radicals in Afterglow Discharge employing Vacuum Ultra-Violet Absorption Spectroscopy**

Ch.S. Moon<sup>1</sup>, K. Takeda<sup>1</sup>, S. Takashima<sup>2</sup>, M Sekine<sup>1</sup>, Y. Setsuhara<sup>3</sup>, M. Shiratani<sup>4</sup>, M. Hori<sup>1</sup>

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**P-NANO-51 - Simulation of Shot Noise effect on CD and LER of Electron Beam Lithography in 32nm Designs**

G. Patsis, N. Tsirikas, D. Drygiannakis, E. Gogolides, I. Raptis

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**P-NANO-52 - Evaluation Methods on Micro and Nano scale Surface Metrology**

K. Hu

Huazhong University of Science & Technology, WUHAN, China

**P-NANO-53 - Nanoscale porosity characterization using X-ray nanotomography**

H. Ostadi<sup>1</sup>, P. Rama<sup>2</sup>, Y. Liu<sup>2</sup>, R. Chen<sup>2</sup>, X. Zhang<sup>3</sup>, K. Jinag<sup>1</sup>

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**P-NANO-54 - Investigation of individual weight of parameters on combined standard uncertainty of nanoscale measurements according to ISO standards**

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## NANODEVICES

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**P-NANO-55 - In- and Sb-Doped Tin Oxide Nanocrystalline Films for Selective Gas Sensing**

A. Zima<sup>1</sup>, A. Köck<sup>1</sup>, T. Maier<sup>1</sup>, C. Edtmaier<sup>2</sup>, C. Gspan<sup>3</sup>, G. Kothleitner<sup>3</sup>

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**P-NANO-57 - Gold chiral grating with simultaneously enhanced transmission and optical activity**

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**P-NANO-58 - Extended Optical Properties beyond Band-Edge of GaAs by InAs Quantum dots and Quantum Dot Molecules**

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**P-NANO-59 - 3D adiabatic compression of plasmon polariton for nanomapping at 10 nm resolution**

F. De Angelis, G. Das, P. Candeloro, C. Liberale, F. Mecarini, A. Pujia, E. Di Fabrizio

Università Magna Graecia di Catanzaro, CATANZARO, Italy

**P-NANO-60 - Self-aligned single-electron memory fabrication based on Si/SiGe/Si heterostructures**

X. Tang<sup>1</sup>, F. Ravoux<sup>2</sup>, E. Dubois<sup>2</sup>, E. Kasper<sup>3</sup>, K. Alim<sup>3</sup>, R. Nicolas<sup>1</sup>, J-P. Raskin<sup>1</sup>

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<sup>3</sup>University Stuttgart, STUTTGART, Germany

**P-NANO-61 - Enhanced Electroluminescence of GaN-based Light-Emitting Diodes with Metal Nanoparticles**

J-H. Sung, B-S. Kim, J-S. Yang, S-G. Lee, S-G. Park, E-H. Lee, B-H. O

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**P-NANO-62 - Super-hydrophilic PET film with pillarlike nano-structure by UV-imprinting process**

K. Kurihara

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**P-NANO-63 - Magnetic dot clusters for application in magneto-electronics**

M. Francardi<sup>1</sup>, M. Sepioni<sup>2</sup>, A. Gerardino<sup>1</sup>, F. Sansone<sup>1</sup>, G. Gubbiotti<sup>2</sup>, G. Carlotti<sup>2</sup>

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**P-NANO-64 - Double-fin FETs based on standard CMOS approach.**

M. Zaborowski

Institute of Electron Technology, WARSAW, Poland

**P-NANO-65 - Deeply etched grating in a Ta<sub>2</sub>O<sub>5</sub> guiding layer for narrow spectral filtering**

A. Talneau<sup>1</sup>, F. Lemarchand<sup>2</sup>, A-L. Fehrembach<sup>2</sup>, J. Girard<sup>2</sup>, A. Sentenac<sup>2</sup>

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**P-NANO-66 - The nanofabrication and transport properties of ferromagnetic metal nanocontacts**

C. Gu

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**P-NANO-67 - Implementation of Surface Plasmon Resonance Planar Waveguide Sensor System**

S-H. Hong<sup>1</sup>, C-K. Kong<sup>2</sup>, B-S. Kim<sup>2</sup>, M-W. Lee<sup>2</sup>, S-G. Lee<sup>2</sup>, S-G. Park<sup>2</sup>, E-H. Lee<sup>2</sup>, B-H. O<sup>2</sup>

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**P-NANO-68 - Field emission properties of discretely synthesized tungsten oxide nanowires**

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**P-NANO-69 - Surface Textured Structure of Polymer and Fullerene Active Layer Fabricated by Soft Lithography for High Performance Organic Solar Cells**

W.-H. Baek, T.-S. Yoon, H.H. Lee, Y.-S. Kim

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**P-NANO-70 - Observation of unipolar resistance switching in silver doped methyl-silsesquioxane**

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**P-NANO-71 - Single electron transistors fabricated by transfer-printed single walled carbon nanotubes**

H. Tabata, M. Shimizu, K. Ishibashi

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**P-NANO-72 - NQDs-SWNTs optical sensor based on charge transfer mechanism**

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**P-NANO-73 - Optimal Design and Fabrication of Large Area ITO/Organic Photonic Crystals in Polymer Light Emitting Diodes using a Focused Ion Beam**

P.C-P. Chao, C-H. Tsai, L-D. Liao, W-H. Hsu

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**P-NANO-74 - Fabrication and enhancement of sensor for measuring NaCl concentrations using surface plasmon resonance**

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**P-NANO-75 - Width-Dependent Electron Mobility of Silicon Nanowire**

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**P-NANO-76 - Pattern transfer optimization for the fabrication of arrays of silicon nanowires.**

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**P-NANO-77 - Tuneable localized modes inside alignment-free random microresonators**

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**P-NANO-78 - Carbon Nanotube Quantum Dot made by Molecular Lithography Technique**

M. Shimizu, R. Negishi, H. Akimoto, K. Ishibashi

RIKEN, WAKO, Japan

**P-NANO-79 - Patterned ZnO nanorods network transistor fabricated by low-temperature hydrothermal process**

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**P-NANO-80 - Post-Fabrication Precision Tuning of Photonic Crystal Microstructures**

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**P-NANO-81 - A New Simple Method of Fabricating Micro/Nano-scale Polymer Optical Waveguides on a Copper Plate**

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**P-NANO-82 - Study of Organic Nano-Composite Thin Films for Electronic Memory Applications**

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**P-NANO-83 - Process developments for improved soft x-ray zone plates**

J.R. Reinspach, M.L. Lindblom, O. Von Hofsten, M.B. Bertilson, H. Hertz, A.H. Holmberg

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**P-NANO-84 - Optical field enhancement by using resonant waveguide elements**

B. Päivänranta, P. Karvinen, O. Hyvärinen, T. Nuutinen, P. Vahimaa

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**P-NANO-85 - Surface plasmon enhanced transmission through metallic planar crystals with various aperture arrangements**

R. Liu

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**P-NANO-86 - An experimental investigation of the surface potential in ferroelectric P(VDF-TrFE) FETs**

A. Rusu, G.A. Salvatore, A.M. Ionescu

EPFL, LAUSANNE, Switzerland

**P-NANO-87 - Fabrication of membranes for extraordinary optical transmission**

G. Zacco<sup>1</sup>, T. Ongarello<sup>1</sup>, G. Ruffato<sup>1</sup>, H.K. Husen<sup>2</sup>, M. Prasciolu<sup>3</sup>, M. Natali<sup>1</sup>, F. Romanato<sup>1</sup>

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**P-NANO-88 - Tunable nano devices fabricated by controlled deposition of gold nanoparticles via focused ion beam**

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**P-NANO-89 - Polarizing and spectrally selective photonic device based upon dielectric nano rods**

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**P-NANO-92 - Optical activity in C-shaped metallic array**

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**P-NANO-93 - Zero-Dimensional Gold Nanospheres on One-Dimensional Silicon Nanostructures for Broadband Reading and Ultra-High Contrast Optical Storage Application**

H-L. Chen<sup>1</sup>, S.C. Tseng<sup>1</sup>, H.W. Liu<sup>1</sup>, G.S. Lai<sup>2</sup>, Y.P. Chen<sup>1</sup>, L.A. Wang<sup>1</sup>, C.C. Yu<sup>2</sup>

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**P-NANO-94 - Packaging of flexible optical interconnections**

E. Bosman, B. Van Hoe, J. Missinne, G. Van Steenberge, P. Van Daele  
CMST Microsystems, GENT, Belgium

**NANOMANUFACTURING**

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**P-NANO-95 - Fabrication of 316-L stainless steel micro components using encapsulating soft mould and isopressing technique**

M. Imbaby, K. Jiang, I. Chang  
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**P-NANO-96 - Stainless steel-TiO<sub>2</sub> composite micro gear fabricated by soft moulding and dispersion techniques**

M. Imbaby, K. Jiang  
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**P-NANO-97 - Laser Direct Patterning of Conductive Wire on Polyimide Substrate Using Photothermal Effect of Silver Nanoparticles**

Y-T. Cheng, R-H. Uang, K-C. Chiou, T-M. Lee  
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**P-NANO-98 - Iterative roller imprint of multilayered nanostructures**

S. Sugimoto, K. Nagato, T. Hamaguchi, M. Nakao  
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**P-NANO-99 - Three-dimensional surface sculpting of freestanding metal-composite nanomembranes**

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**P-NANO-100 - Influence of FIB patterning strategies on the shape of 3D structures: Comparison of experiment and simulation**

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**P-NANO-101 - Functionally graded microceramic components**

H. Hassanin, K. Jiang  
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**P-NANO-102 - Fabrication of a Disposable Micro-PCR Chip using MEMS Technology**

D.S. Eun<sup>1</sup>, S-R. Lee<sup>1</sup>, J-K. Shin<sup>2</sup>, J-H. Lee<sup>2</sup>, M. Ishida<sup>1</sup>, K. Sawada<sup>1</sup>

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**P-NANO-104 - PDMS microfluidic chips prepared by a novel casting and pre-polymerization method**

W. Schrott, M. Svoboda, Z. Slouka, M. Pribyl, D. Šnita  
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**P-NANO-105 - Selective microfabrication of silver electrodes inside a microchannel by multiphase laminar flow with density difference**

S.H. Paek, Y.K. Choi, D.S. Kim  
Chung-Ang University, SEOUL, South-Korea

**P-NANO-106 - Nitridation of Si(100) to give sub-2nm-thick layer by hot-wire method using forming gases**

H. Inao  
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**P-NANO-108 - 2D angular distributions of ion sputtered germanium atoms under grazing ion incidence**

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**P-NANO-109 - Optimized process for the fabrication of zirconia micro parts**

H. Hassanin, K. Jiang  
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**P-NANO-110 - Selective metallization of metal electrodes on plastic substrates**

M. Peter<sup>1</sup>, F. Furthner<sup>1</sup>, H. Rendering<sup>1</sup>, P. Moonen<sup>2</sup>, A. Hovestad<sup>1</sup>, J. Huskens<sup>2</sup>, E.R. Meinders<sup>1</sup>

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**P-NANO-111 - Fabrication of Micro-lenses for Optical Interconnection using Micro Ink-jetting Technique**

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**P-NANO-112 - Effects of Al buffer layer on growth of vertically aligned carbon nanotubes forests for in-situ yarning**

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**P-NANO-114 - Precisely assembled Multi Deflection Arrays - key components for Multi Shaped Beam lithography**

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**P-NANO-115 - Roll-to-roll UV nanoimprinting using flexible polymer stamp**

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**P-NANO-116 - 3D metallo-dielectric structures combining electrochemical and electroplating techniques**

R. Alcubilla, D. Hernández, D. Lange, T. Trifonov, M. Garín, M. García, A. Rodríguez

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**P-NANO-117 - Towards high efficient zone plates for x-ray microscopy**

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**P-NANO-118 - Rapid injection molding of high aspect ratio nanostructures**

S. Hattori, K. Nagato, T. Hamaguchi, M Nakao

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**P-NANO-119 - Flexible and Transparent Tactile Sensor based on a Photosensitive Polymer**

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**P-NANO-120 - Fabrication of plastic microchips with gold microelectrodes using techniques of sacrificed substrate and thermally activated solvent bonding**

M. Svoboda, W. Schrott, P. Cervenka, Z. Slouka, M. Pribyl, S. Dalimil

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**P-NANO-121 - Deeply etched surface-defined InP gratings for low-cost DFB laser processing based on newly developed ICP-RIE process**

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**P-NANO-123 - Ultrafine PMMA/PVDF Core-Shell Fibers for Nanophotonic Applications**

S-L. Quan, I-J. Chin, H-S. Lee, E-H. Lee

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**P-NANO-124 - Zone plate based soft x-ray microscopy with improved spatial resolution by using high orders of diffraction**

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**P-NANO-125 - Plastic microfluidic systems made by imprinting against an epoxide stamp**

M. Svoboda, W. Schrott, Z. Slouka, M. Pribyl, S. Dalimil

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**P-NANO-126 - Replicated sol-gel stamps with metal backbone used for roll-to-roll manufacturing**

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**P-NANO-127 - Micro-zipper for component assembly**

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**P-NANO-128 - Optimization of reactive ion etching processes using desirability**

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**P-NANO-129 - Shape-controlled microlens arrays fabricated by diffuser lithography**

M-K. Wei<sup>1</sup>, J-M. Kang<sup>1</sup>, H-Y. Lin<sup>2</sup>, J-H. Lee<sup>3</sup>, H-Y. Lin<sup>3</sup>, T-C. Wu<sup>2</sup>

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**P-NANO-130 - A New Method of Optical Interconnection for Multi-stacked Planar Optical Circuit Boards using 45° Reflection Coupling**

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**P-NANO-131 - Nanostructures for All-Polymer Microfluidic Systems**

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**P-NANO-132 - Study of transfer stamping technique for fabricating microstructure**

J-T. Wu, J-W. Chen, J-T. Wu, S-Y. Yang

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**P-NANO-133 - Fabrication and Measurement of Large-Area Subwavelength Structures with Extreme-Broadband and Wide-Angle Antireflection Effect**

H.C. Chiu, Y-P. Chen, G-Y. Chen, C-H. Chiang, C-T. Tseng, C-H. Lee, L. Wang

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**P-NANO-134 - Study on PDMS Diffraction Grating Fabricated by Femtosecond-Pulsed Laser Micromachining**

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**P-NANO-135 - Efficiency Enhancement Organic Photovoltaic Cells Fabricated by Nanoimprint Process**

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**P-NANO-136 - Formation of periodically arrayed Si nano-hole filled with Cu using supercritical CO<sub>2</sub>**

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**P-NANO-137 - Residual stress and resistivity of sputtered metal layers**

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