



Monday, 21 September

09:30 **Workshop : MNE-Tutorial-1**
TUTORIAL 1 - Metasurfaces
 Venue - Brünig - ORAL
 Organised by: Juergen Brugger

MNE-Tutorial-1 Optical metasurfaces and metalenses for imaging, sensing, and display
 » [Junsuk Rho](#)¹ (1. POSTECH)

09:30 **Workshop : MNE-Tutorial-3**
TUTORIAL 3 - Sustainability
 Venue - Grimsel - ORAL

MNE-Tutorial-3-1 Sustainable process strategies based on the environmental footprint of semiconductor manufacturing
 » [Isabelle Servin](#)¹ (1. CEA-Leti)

MNE-Tutorial-3-2 From Silica Sand to Semiconductors: Understanding and Assessing Environmental Impacts in Cleanroom Manufacturing
 » [Yannick Rivoira](#)¹ (1. CEA-Leti)

MNE-Tutorial-3-3 Implementing resilience with ICTs
 » [Sébastien Toussaint](#)¹ (1. UCLouvain)

MNE-Tutorial-3-4 Life Cycle Analysis of electronic assemblies and discrete components to reduce environmental impact as well as waste
 » [Jeff Kettle](#)¹ (1. University of Glasgow)

MNE-Tutorial-3-5 EPFL-CMi cleanroom carbon footprint, including hotspot identification, opportunities for improvement, and the transformations already underway
 » [Cyrille Hibert](#)¹ (1. EPFL)

13:15 **Workshop : MNE-Tutorial-2**
TUTORIAL 2 - Bioiontronics
 Venue - Brünig - ORAL
 Organised by: Juergen Brugger

MNE-Tutorial-2 Bioiontronics for biointerfaces and future medicine
 » [Yujia Zhang](#)¹ (1. EPFL)

Tuesday, 22 September

08:30 **General : MNE-OPENING**
MNE Opening CEREMONY
 Venue - Auditorium - ORAL - PLENARY
 Organised by: Yasin Ekinici, Nako Nakatsuka, Helmut Schiff, and Michel Calame

MNE Opening Ceremony by Conference Chairs
 » Yasin Ekinici and Nako Nakatsuka (Paul Scherrer Institut and EPFL)

08:45 **Keynote : S01A_T1**
MNE Keynotes 1 - Lithography (plenary session)
 Venue - Auditorium - ORAL - PLENARY
 Organised by: Yasin Ekinici, Helmut Schiff, and Dimitrios Kazazis

S01A_T1-1-PLENARY High resolution lithography using EUV - status and prospects
 » [Jos Benschop](#)¹ (1. ASML and University of Twente)

S01A_T1-2-PLENARY Nanoimprint lithography for high volume fabrication - status and prospects
 » [J. Alexander Liddle](#)¹ (1. Canon Nanotechnologies, Inc.)



Continued from Tuesday, 22 September

10:45

Oral : S02A-T1

Nanoimprint Lithography

Venue - Auditorium - ORAL - PLENARY

Organised by: Michael Muehlberger and Dimitrios Kazazis

S02A-T1-1-INVITED Three decades of innovation in photoresists and photo polymers enabling advanced micro and nanomanufacturing

» [Arne Schleunitz](#)¹, [Gabi Grützner](#)¹ (1. micro resist technology GmbH)

S02A-T1-2 Scalable Roll-to-Plate Nanoimprint Lithography of 4 cm-Scale Visible Metalenses Using TiO₂ Nanoparticle-Embedded Resin

» [Dohyun Kang](#)¹, Junsuk Rho² (1. Pohang University of Science and Technology (POSTECH), 2. POSTECH)

S02A-T1-3 Poisson Effect-Assisted Replication Lithography for Scalable Fabrication of Complex 3D Microstructures

» [Minsu Kim](#)¹, Hanjun Park², Seungtaek Kim¹, Moon Kyu Kwak³ (1. Korea Institute of Industrial Technology, Cheonan, 31056, 2. Department of Mechanical Engineering, Kyungpook National University, Daegu, 41566, 3. Kyungpook National University)

S02A-T1-4 Precise pattern control in dry etching process for 15-nm half pitch reverse-tone nanoimprint lithography

» [Akiko Hirata](#)¹, Kenta Suzuki², Masanaga Fukasawa², Yoshihiro Hayashi², Masaki Ishida³, Tomomi Funayoshi³, Ryosuke Hamamoto³, Masayuki Kagawa³, Kiyohito Yamamoto³ (1. National Institute of Advanced Industrial Science and Technology, 2. National Institute of Advanced Industrial Science and Technology (AIST), 3. Canon Inc.)

10:45

Oral : S02B-T2

Cleanroom and Photonic Devices

Venue - Theatersaal - ORAL

Organised by: Yasin Ekinci and Luis Guillermo Villanueva

S02B-T2-1-INVITED EuroNanoLab: present and future of the European distributed research infrastructure on micro- and nano-fabrication

» [Vittorio Morandi](#)¹ (1. ISMN-CNR, Institute for nanostructured materials (ISMN))

S02B-T2-2 Compact Photonic Crystal Waveguide Structures for Sputtered GeSn-on-SOI Integrated Photodetectors

» [Beiqi Ding](#)¹, Simone Iadanza², Reyhaneh Ramezani³, Rutuja Rajendra Mandavkar², Kirsten Moselund¹, Anna Fontcuberta i Morral³ (1. EPFL, Paul Scherrer Institut, 2. Paul Scherrer Institut, 3. EPFL)

S02B-T2-3 A miniature scanning fiber Fabry-Perot cavity device with high finesse made in a monolithic glass substrate

» [Antoine Duret](#)¹, Jakob Reichel², Romain Long², Yves Bellouard¹ (1. EPFL, Galatea Lab, 2. ENS-PSL, Kastler Brossel Laboratory)

S02B-T2-4 Interface-Mediated Deformation Mechanisms in Amorphous Ta₂O₅/SiO₂ Nanolaminates for UV Optical Coatings

» [Xavier Maeder](#)¹ (1. Empa Thun)

10:45

Oral : S02C-T3

Biodevice Manufacturing

Venue - Brünig - ORAL

Organised by: Katharina Maniura

S02C-T3-1 Design and fabrication of a biodegradable multi-chamber implantable micropump

» [Elena Aprea](#)¹, Francesco Stallone¹, Sourav Patranabish¹, Javad Bathaei¹, Ata Jedari Golparvar¹, Clementine Boutry¹ (1. Delft University of Technology)

S02C-T3-2 Development of Lab-on-a-Chip Platform for studying Antimicrobial Susceptibility Testing

» [Iyeshta Prabhu](#)¹, Bharath Bannur¹, Sajan D. George¹ (1. Manipal Academy of Higher Education)



Continued from Tuesday, 22 September

S02C-T3-3 Hybrid fabrication of All Polymer, Deterministic Lateral Displacement (DLD) Devices for High-Throughput Blood Sorting using CNC micro milling aligned to Hot Embossed microstructures

» [Keith Morton](#)¹, Lucas Poncelet¹, Gaetan Veilleux¹, Karine Turcotte¹, Luke Lukic¹, Teodor Veres¹ (1. National Research Council Canada)

S02C-T3-4 A Monolithic 4096-Microwell CMOS Array with In-Well Microelectrodes for Microfluidics-Free Droplet Digital Assays via Discontinuous Dewetting

» [Yuguo Sheng](#)¹, Adam Wang¹, Fuze Jiang¹, Marco Saif¹, Jing Wang¹, Chih-Jen Shih¹, Hua Wang¹ (1. ETH Zürich, Zürich, Switzerland)

S02C-T3-5 Grass on glass substrate for optoelectrode fabrication: an application in dopamine detection from midbrain organoids

» [Samuel Maraschin](#)¹, Surangrat Thongkorn², Rafael Romero Pérez³, Marta Pereira³, Arto Heiskanen², Henri Jansen⁴, Jenny Emnéus², Stephan Sylvest Keller² (1. National Centre for Nano Fabrication and Characterization, DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, 2800, Denmark, 2. Technical University of Denmark, 3. Universidade Autónoma de Madrid, 4. DTU Nanolab, Technical University of Denmark)

10:45

Oral : S02D-T6

ENL 1 Thin Film (invited session)

Venue - Grimsel - ORAL

Organised by: Jean-Louis Leclercq

S02D-T6-1-INVITED Thin film processes

» [Susana Cardoso de Freitas](#)¹ (1. INESC-MN and Instituto Superior Tecnico, Universidade de Lisboa)

S02D-T6-2-INVITED ALD supercycle processing for wide band gap materials (IGZO, AZO, AlGaN)

» [Julia Jagosz](#)¹ (1. Sentech Instruments)

12:15

General : MNE ELSEVIER

Elsevier MNE Special Edition Lunch (by invitation only)

Venue - Brünig - ORAL

Organised by: Helmut Schiff

Elsevier Special Edition Lunch

» Abby Li (Elsevier)

13:15

Oral : S03A-T1

EUV and Next Generation Lithography

Venue - Auditorium - ORAL - PLENARY

Organised by: Dimitrios Kazazis

S03A-T1-1-INVITED Advances in directed self-assembly for semiconductor device fabrication

» [Francesc Perez-Murano](#)¹ (1. Institute of Microelectronics of Barcelona (IMB-CNM), CSIC, Spain)

S03A-T1-2 Correlation of EUV and Low-Energy Electron Beam Lithography for Accelerated Dry Resist Development

» Thi Thu Huong Chu¹, Dan Le¹, Nikhil Tiwale², MinJong Lee¹, Jiwon Kim³, ChangYong Nam², Jinho Ahn³, [Jiyoung Kim](#)¹ (1. University of Texas at Dallas, 2. Brookhaven National Laboratory, 3. Hanyang Univeristy)

S03A-T1-3 Study on Sensitivity Enhancement of Inorganic-organic Hybrid Resist Materials upon Exposure to Ultrafast Coherent High Harmonic Generation (HHG) EUV

» [Hiroki Yamamoto](#)¹ (1. National Institutes for Quantum Science and Technology (QST))

S03A-T1-4 Single-Digit Nanometer EUV Lithography: ALD-Enabled Diffractive Optics for Next-Generation Interference Lithography

» [Fei Han](#)¹, Yasin Ekinci², Iacopo Mochi², Dimitrios Kazazis² (1. Paul Scherrer Institute, 2. Paul Scherrer Institut)



Continued from Tuesday, 22 September

13:15

Oral : S03B-T2

Semiconductor Devices and CMOS

Venue - Theatersaal - ORAL

Organised by: Luis Guillermo Villanueva

S03B-T2-1-INVITED From Micrometer structures to thousands of Amps - How Power Semiconductors change the power grid

» [Tobias Keller](#)¹ (1. Hitachi Energy Semiconductor)

S03B-T2-2 Preparation and Characterization of MoC Thin Films for Thin-Film Resistors

» [Ying-Chieh Lee](#)¹, You-Cheng Lu², Cheng-Hung Shih² (1. Institute of Precision Electronic Components, National Sun Yat-sen University, 2. Department of Electrical Engineering, National Sun Yat-sen University)

S03B-T2-3 History of Overcoming NAND Flash Memory Interference from 2D to 3D Structure

» [Joongho Yoon](#)¹, Hyunsuk Kim¹, Eunjin Baek¹, Keejeong Rho¹, Minsung Song¹, Jongkwang Lim¹, Junggyu Kim¹, Youngho Kwon¹, Kyungyoon Noh¹ (1. Flash Yield Enhancement Team, Memory Division, Device Solutions (DS) Business, Samsung Electronics Co., Ltd., Hwaseong-si, Korea)

S03B-T2-4 A Yagi-Uda Antenna-Based Sensor for Dielectric Sensing

» Hilary Scott Nkimbeng Cho¹, [Jin Choi](#)¹ (1. Michigan Technological University)

13:15

Oral : S03C-T3

Microfluidics 1

Venue - Brünig - ORAL

Organised by: Katharina Maniura

S03C-T3-1-INVITED Nano-opto-fluidics for biosensing

» [Irene Fernandez-Cuesta](#)¹ (1. University of Hamburg)

S03C-T3-2 A droplet-based digital microfluidic platform with an integrated electrochemical sensor for glycan analysis

» [Xing Cheng](#)¹ (1. Southern University of Science and Technology)

S03C-T3-3 A Surface Fluidic Platform for Transdermal Delivery: Overcoming Loading Limitations in Lymphedema Conditions

» Hyojin Kim¹, [Hyunsik Yoon](#)¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S03C-T3-4 Wafer Scale Microfluidic Integration for Silicon Nitride Photonic Biosensors

» [Laurids von Emden](#)¹, Umesh Phadke¹, Jakob Reck¹, Klara Mihov¹, Crispin Zawadzki¹, Csongor Keuer¹, Martin Kresse¹, Tianwen Qian¹, Ben Schuler¹, Nils Fuchs¹, Philipp Winklhofer¹, Bartu Yaman¹, Marcel Amberg¹, Oussama Zahir¹, Markus Struckmann¹, Francesco Villasmunta¹, Thomas Wiglenda², Johannes Wolf², David de Felipe¹, Moritz Kleinert¹, Norbert Keil¹ (1. Fraunhofer HHI, 2. micro resist technology GmbH)

13:15

Oral : S03D-T5

ENL 2 Dry Etching (invited session)

Venue - Grimsel - ORAL

Organised by: Djaffar Belharet and Andrei Avram

S03D-T5-1-INVITED A method for comparing dry etch equipment – case study: Oxford Instruments PlasmaPro100 Cobra

» [Henk-Willem Veltkamp](#)¹, Andrei Avram², Marek Elias³, Sabina Ronchin⁴, Charles de Boer⁵, Jens Høvik⁶, Meint de Boer¹ (1. MESA+ Institute, University of Twente, 2. National Institute for R&D in Microtechnologies – IMT Bucharest, 3. CEITEC, 4. Fondazione Bruno Kessler, 5. Kavli Institute of Nanoscience, 6. Norwegian University of Science and Technology)

S03D-T5-2-INVITED Technological approaches for the plasma etching of silicon without halogens

» [Georg Umlauf](#)¹ (1. Fraunhofer ENAS)



Continued from Tuesday, 22 September

S03D-T5-3-INVITED Dry Etching of Dielectric Materials at Fondazione Bruno Kessler: Processes, Challenges, and Solutions

» [Ali Nawaz](#)¹ (1. Fondazione Bruno Kessler)

S03D-T5-4-INVITED Vapor Phase Metal Assisted Chemical Etching – Tool Platform Update and Recent Process Developments

» [David Anderson](#)¹ (1. The University of Edinburgh, memstar)

15:00

Oral : S04A-T1

Electrochemical Etching

Venue - Auditorium - ORAL - PLENARY

Organised by: Dimitrios Kazazis

S04A-T1-1-INVITED Electrochemical nanoimprinting of silicon: towards conformal patterning on curved surfaces

» [Bruno Azeredo](#)¹ (1. Arizona State University, School of Manufacturing Systems and Networks)

S04A-T1-2-INVITED Catalyst assisted chemical etching in gas phase: a sustainable platform for high-aspect-ratio silicon-based micro- and nano-fabrication

» [Lucia Romano](#)¹ (1. Paul Scherrer Institut)

15:00

Oral : S04B-T2

Piezo MEMS

Venue - Theatersaal - ORAL

Organised by: Luis Guillermo Villanueva

S04B-T2-1-INVITED SAW Filters on POI Wafers Addressing New Telecommunication Standard Challenges

» [Sylvain Ballandras](#)¹ (1. SOITEC)

S04B-T2-2 Impact of Time-Dependent Dielectric Soft-Breakdown on the Noise Characteristics of AlN and ScAlN-based Piezoelectric MEMS

» [Sina Zarepakzad](#)¹, Shareena Muringakodan¹, Matthias Schlögl¹, Ulrich Schmid¹, Michael Schneider¹ (1. TU Wien)

S04B-T2-3 Dynamic deformations of a two-dimension piezo-actuated photonic cantilever

» [Laurent Mollard](#)¹ (1. Univ. Grenoble Alpes)

15:00

Oral : S04C-T3

Biosensing

Venue - Brünig - ORAL

Organised by: Katharina Maniura

S04C-T3-1 Modular organic electrochemical transistor architecture for continuous epithelial barrier monitoring in standardized organ-on-chip platforms

» [Jia-Jun Yeh](#)¹, Charles-Théophile Coen¹, Tom Walraven², Niels Burghoorn¹, Hans Bouwmeester², Massimo Mastrangeli³, Yoeri van de Burgt¹, Jaap Den Toonder¹ (1. Eindhoven University of Technology, 2. Wageningen University & Research, 3. Delft University of Technology)

S04C-T3-2 Bioelectronic Sensing for Early Diagnosis of Cutaneous Infections

» [David Valero Calvo](#)¹, Liu Yang¹, Onur Parlak¹ (1. a. Department of Medicine, Solna, Division of Dermatology and Venereology, Karolinska Institutet, Stockholm, 171 77, Sweden. b. Centre for Molecular Medicine, Karolinska University Hospital, Stockholm, 171 64, Sweden)

S04C-T3-3 Plasmonic nanocavities and nanoantennas for PFAS detection by surface-enhanced infrared absorption spectroscopy

» [Santos Merino](#)¹, Alberto Villar¹, Jorge Ramiro¹, Catalina Mansilla¹, Aritz Juarros¹, Roberto Álvarez-Boto², Mario Zapata-Herrera², Javier Aizpurua², Javier Sesé³, Rubén Valero⁴, Miguel Ángel Fernández⁵ (1. Tekniker, 2. Donostia International Physics Center, 3. Instituto de Nanociencia y Materiales de Aragón, 4. Laboratorio de Microscopías Avanzadas. Universidad de Zaragoza, 5. Universidad de Oviedo)



Continued from Tuesday, 22 September

S04C-T3-4 Sustainable flexible SF-based microneedle sensors with natural indicators for real-time wound pH monitoring

» [Naseer Ahmad](#)¹, Raquel Pereirab², Pablo Rodríguez¹, Sanna Sillankorva³, Gonzalo Guirado⁴, Silvia Mena⁴, Xavier Munoz-Berbel¹ (1. Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, 08193, Barcelona, Spain., 2. Life and Health Sciences Research Institute, University of Minho, Braga, 4710-057, Portugal, 3. International Iberian Nanotechnology Laboratory, Braga, 4715-330, Portugal, 4. Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, 08193, Barcelona, Spain.)

15:00

Oral : S04D-T6

ENL 3 Lithography (invited session)

Venue - Grimsel - ORAL

Organised by: Laurent Mazenq

S04D-T6-1-INVITED Bridging Top-Down and Bottom-Up: E-Beam Lithography and Precision Characterization on Nanostructures

» [Sylvain Pelloquin](#)¹ (1. LAAS-CNRS)

S04D-T6-2-INVITED Reframing FIB: From Characterization Tool to Nanofabrication Platform

» [Alessandro Cian](#)¹ (1. Fondazione Bruno Kessler)

S04D-T6-3-INVITED Developments in NIL and Laboratory Networking: The RENIL Network Example

» [Jean-Baptiste Doucet](#)¹ (1. LAAS-CNRS)

S04D-T6-4-INVITED From Layout to Structure and Back: EBL Strategies and Layout-Based Metrology for Photonics

» Daniel Ritter¹, [Sven Bauerdick](#)¹ (1. GenISys GmbH)

16:00

Poster : S05A-T1-P

POSTER 1 - ODD - T1

Venue - Auditorium Foyer OG - T1

Organised by: Dimitrios Kazazis

S05A-T1-P-1 Additive Manufacturing of MicroLED Color Conversion Modules via Ultra-Precise Dispensing

» [Nina Szczotka](#)¹, Slawomir Drozdek², Emmanuel FUCHS³, Mohammad Kiaee⁴ (1. XTPL and Wrocław University of Science and Technology, 2. XTPL, 3. Aledia, 4. QustomDot)

S05A-T1-P-2 Low-cost Fabrication of Biocompatible, Stretchable Electronics using Micro and Nanoporous Elastomers

» [Li Jiang](#)¹, Ja'Mya Howard¹, Destinie James¹, Naga Korivi² (1. Tuskegee University, 2. Oregon Institute of Technology)

S05A-T1-P-3 Laser direct writing of biomimetic textures on Ti64/PEEK (CF30) surfaces for their bonding strength

» [Shih-Feng Tseng](#)¹, Chen-Yu Tsai¹, Tien-Li Chang², Wen-Tse Hsiao³, Chil-Chyuan Kuo⁴ (1. Department of Mechanical Engineering, National Taipei University of Technology, 2. Department of Mechatronic Engineering, National Taiwan Normal University, 3. National Center for Instrumentation Research, National Institutes of Applied Research, 4. Department of Mechanical Engineering, Ming Chi University of Technology)

S05A-T1-P-4 Fluorescence imaging of UV-cured patterns to understand advancement of UV-curable droplets between SiO₂ imprint-mold and Si substrate surfaces

» [Masaru Nakagawa](#)¹ (1. Tohoku University)

S05A-T1-P-5 Femtosecond-pulsed laser microtexturing of metals via suppression of nanoscale holes by reducing surface heterogeneity

» [HIROMU ISHIMURA](#)¹, Ren Goto¹, Masaki Yamaguchi¹ (1. Shinshu University)

S05A-T1-P-6 Fabrication of AZO Optical Solar Reflectors via E-Beam Lithography

» [Thomas Howe](#)¹, Yeda Wang¹, Kai Sun¹, Otto Muskens¹, Xiaohao Cai¹, Ruomeng Huang¹, Kees de Groot¹ (1. University of Southampton)

S05A-T1-P-7 Post-ion bombardment strategy for transferred self-organized nanoripples: toward prolonged stable pattern evolution

» [Ying Liu](#)¹ (1. University of Science and Technology of China)



Continued from Tuesday, 22 September

S05A-T1-P-8 Research and development of Double-layer Subwavelength Metal-Dielectric-Metal Moire Grating for Polarization Filtering

» [Kangping Liu](#)¹, Jinyu Guo¹, Hao Quan¹, Qiucheng Chen¹, Qingxin Wu¹, Xunjia Zhao¹, Fei Wu¹, Sheng Tao¹, Yifang Chen¹ (1. Fudan University)

S05A-T1-P-9 Structuring UV-polymerizable ionogels

» [Natalia Turek](#)¹, Adrian Zajac², Małgorzata Nyga³, Katarzyna Komorowska¹ (1. Łukasiewicz Research Network, Institute of Microelectronics and Photonics, Warsaw,, 2. Poznań Science and Technology Park, Poznań, 3. Military University of Technology, Warsaw)

S05A-T1-P-10 Fabrication of Large-Area Thick Gold Chessboards by Au Electroplating on Patterned

» [Fei Wu](#)¹, Hao Quan¹, Xunjia Zhao¹, Qiucheng Chen¹, Qingxin Wu¹, Jinyu Guo¹, Kangping Liu¹, Sheng Tao¹, Yifang Chen¹ (1. Fudan University)

S05A-T1-P-11 Cryogenic Deep Silicon Etch with Exceptional Smooth Sidewall Characteristics

» [Magdalena Ulmeanu](#)¹, Kate Stokes¹, Zhong Ren¹ (1. Oxford Instruments Plasma Technology, Severn Beach, Bristol, BS35 4GG, UK)

S05A-T1-P-12 Integration of High-Density Low Soldering Temperature Electroplated Copper Pillars with Indium Caps Using CMOS-Compatible Post-Process

» [Reto Besserer](#)¹, Marco Cucinelli¹, Martin Stahel¹, Tina Strüning¹, Dietmar Bertsch¹, Samuel Huber¹ (1. OST – Ostschweizer Fachhochschule)

S05A-T1-P-13 Environmentally Sustainable Electrochemical Mechanical Polishing (ECMP) of single-crystal SiC for atomically smooth and uniform surfaces

» [Masashi Minoha](#)¹, Junji Murata¹ (1. Ritsumeikan University)

S05A-T1-P-14 Implementation of a robust alignment mark detection method via dual-branch network in electron beam lithography

» Su zhengtao¹, Heming Wu¹, [Zhuming Liu](#)¹ (1. Institute of Semiconductors, Guangdong Academy of Sciences)

S05A-T1-P-15 A single-tool workflow for rapid design and high-throughput patterning of Fresnel zone plates using Laser Beam Lithography

» Anna Casimiro¹, Niek Kremers¹, [Sander Schellingerhout](#)², Adriana Umbria¹, Kahraman Keskinbora² (1. Raith GmbH, 2. Raith)

S05A-T1-P-16 High Resolution Multi-Material Additive Manufacturing: Combining Slot-Die Coating and Stereolithography Printing

» Misha Ruijgrok¹, [Stavros Skrepetos](#)¹, Marcel Tichem¹, Paola Fanzio¹ (1. TU Delft)

S05A-T1-P-17 Replication of dumbbell nano hole arrays by EBL and two-step dry etching

» [Sheng Tao](#)¹, Yifang Chen¹ (1. Fudan University)

S05A-T1-P-18 Physics-Strongly-Coupled Transformer for S-Parameter Modeling of TSV Interconnects Under Process-Induced Variations

» [chong chen](#)¹, Bo Wen², Yihui Cheng¹, Haoyu Le³, Pan Zhang², Wei Wang² (1. School of Software & Microelectronics, Peking University, 2. School of Integrated Circuits, Peking University, 3. School of Integrated Circuits, Anhui University)

S05A-T1-P-19 Fabrication of slanted structure by oblique incidence electron beam lithography

» [Kensuke Niwa](#)¹, Jun Taniguchi¹ (1. Tokyo University of Science)

S05A-T1-P-20 Residual Layer-Free Nanopatterning Using Black Resist as a Light-Shielding Layer

» [Yutaro Moriyama](#)¹, Jun Taniguchi¹ (1. Tokyo University of Science)



Continued from Tuesday, 22 September

S05A-T1-P-21 Thermal Nanoimprint Lithography of Epoxy-Based Interlayer Dielectrics for Fine-Pitch Cu/Polymer Hybrid Bonding

» [Junsik Choi](#)¹, Hyunsik Yoon² (1. Seoul National University of Science and Technology, 2. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S05A-T1-P-22 One Step Grayscale Hierarchical Microstructure Production by Mask Projection Laser Ablation

» [Umut Taylan](#)¹, Benjamin Minnig¹, Nicolas Zaugg¹, Patrik Hoffmann¹ (1. Empa)

S05A-T1-P-23 Characterization of Chitosan for Identification of Its Contributions in Hybrid Chitosan-Ag SERS Sensors

» [Vitas Lendraitis](#)¹, Nora Slekiene², Zineb Chiki³, Ingrida Bruzaite⁴, Kestutis Nemciauskas⁵, Valentinas Snitka⁶ (1. Lithuanian Sports University, 2. Vilnius University, 3. Sidi Mohamed Ben Abdellah University, 4. Vilnius Gediminas Technical University, 5. JSC Industru group, 6. Kaunas University of Technology)

S05A-T1-P-24 Chasing Quantum Landscapes: The EBL Route Towards Sub-20 nm Superlattices

» [Patrícia Curado](#)¹, Henri Jansen¹, Bjarke Sørensen Jessen² (1. DTU Nanolab, Technical University of Denmark, 2. DTU Physics, Technical University of Denmark)

S05A-T1-P-25 Mechanically robust and self-cleanable encapsulated metalenses via spin-on-glass packaging

» [Dohyun Kang](#)¹, Junsuk Rho² (1. Pohang University of Science and Technology (POSTECH), 2. POSTECH)

S05A-T1-P-26 Geometry-Guided Folding for Hydrogel Pore Dynamics

» [Ah Yun Kim](#)¹, Hyunsik Yoon¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S05A-T1-P-27 Atomic-Precision Patterning of Silicon Quantum Devices

» [Pradeep Namboodiri](#)¹, Jonathan Wyrick¹, Fan Fei¹, Vijith Pulikodan¹, Mark-yves Gaunin², Brian Courts², FNU Utsav¹, Richard Silver¹ (1. National Institute of Standards and Technology, 2. University of Maryland)

S05A-T1-P-28 Substrate-Dependent Pyroelectric Response and Noise Modeling in AlN and Sc0.33Al0.67N for Piezoelectric Applications

» [Giulia Gaetano](#)¹, Sina Zarepakzad¹, Ulrich Schmid¹, Michael Schneider¹ (1. TU Wien)

S05A-T1-P-29 Integrated porous barriers with tailored permeability in monolithic glass microfluidics via selective laser-induced etching

» [Duarte Menezes](#)¹, Dmitrii Perevoznik¹, Folke Dencker¹, Marc Wurz¹ (1. Leibniz University Hannover, Institute of Micro Production Technology)

S05A-T1-P-30 Process development for i-line/e-beam intra-level mix-and-match lithography for binary and grayscale 3D patterning

» [Ritesh Ambar](#)¹, Markus Gottwald², Sebastian Schermer², Nikola Kohlschreiber², Christian Helke², Danny Reuter² (1. Technical University of Chemnitz, 2. Fraunhofer ENAS)

S05A-T1-P-31 Itaconate-based polymers as resists for nano-scale structuring via electron beam lithography

» [Markus Gottwald](#)¹, Nikola Kohlschreiber¹, Ritesh Ambar², Vy Dinh³, Tobias Kirschbaum³, Christian Helke¹, Roland Klein³, Danny Reuter¹ (1. Fraunhofer ENAS, 2. Technical University of Chemnitz, 3. Fraunhofer LBF)

S05A-T1-P-32 Platinum-Catalyzed Gas-Phase Metal-Assisted Chemical Etching for Vertical Silicon Nanowires

» [Vahide Hosseini](#)¹, Bryan Benz², Georg Umlauf¹, Christoph Robert Meinecke¹, Lucia Romano² (1. Fraunhofer ENAS, 2. Paul Scherrer Institut)



Continued from Tuesday, 22 September

S05A-T1-P-33 A Computational Study on Demolding Defects Elimination by Substrate Floating in Nanoimprint Lithography

» [Yoshihiko Hirai](#)¹ (1. omu)

S05A-T1-P-34 Digital Patterning of Slippery Liquid-Infused Porous Surfaces for Localized Particle Aggregation

» [Dongju Kim](#)¹, Seong Min Yoon¹, Chae Hyeok Yoon¹, Young Tae Cho¹ (1. Changwon National University)

S05A-T1-P-35 Local Conductivity Modulation of Graphene via Solid-State Electrochemical Treatment

» [Yuya Kariwa](#)¹, Masaru Takizawa¹, Junji Murata¹ (1. Ritsumeikan University)

S05A-T1-P-36 Investigation of Low-Temperature ALD SiO₂ as a Viable Alternative to Thermal Oxidation for SiC Gate Dielectrics

» Shi-Cheng Huang¹, [Zi-Hao Wang](#)², Chiao-Yang Cheng¹, [Yen-Kun Su](#)² (1. National Cheng Kung University, 2. National Cheng-Kung University)

S05A-T1-P-37 Low-Temperature Transfer-Free Graphite Synthesis and Plasma-Sequence-Engineered ALD SiN_x Capping for Next-Generation EUV Pellicles

» Hye-Young Kim¹, [Sung Kyu Jang](#)¹, Jihun Kim¹, Jong-Hyun Choi¹, Ji-Beom Yoo², [Hyun-Mi Kim](#)¹, Seul-Gi Kim¹, [Hyeongkeun Kim](#)¹ (1. Korea Electronics Technology Institute, 2. Sungkyunkwan University)

S05A-T1-P-38 Advanced Spatial Phase Control of MoS₂ Using Focused Li⁺ Ion Beams and Ultrashort Laser Pulses

» [Marvin Krüner](#)¹, Achim Nadzeyka², Malte Becher³, Zhongquan Liao⁴, Detlef Rogalla⁵, André Clausner⁴, Andreas Ostendorf³, Michael Kahl², Claudia Bock¹ (1. Microsystems Technology, Ruhr University Bochum, Bochum, 44801, Germany, 2. RAITH GmbH, Dortmund, 44263, Germany, 3. Applied Laser Technologies, Ruhr University Bochum, Bochum, 44801, Germany, 4. Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden, 01109, Germany, 5. RUBION, Ruhr University Bochum, Bochum, 44801, Germany)

S05A-T1-P-39 Impact of Lithography Resolution and Edge Roughness on Lithium Niobate based Acoustic Resonators

» [Nan Xu](#)¹, Luis Guillermo Villanueva² (1. EPFL, 2. EPFL NEMS)

S05A-T1-P-40 A Lift-Off-Based Approach to Gas-Phase Metal-Assisted Chemical Etching for High-Aspect-Ratio Nanostructures

» [Vahide Hosseini](#)¹, Georg Umlauf¹, Micha Haase¹, David Anderson² (1. Fraunhofer ENAS, 2. The University of Edinburgh)

S05A-T1-P-41 Gold-Free Metallized Bravais class like Hexagons based micro- UV optical cavity

» [Arwa Saud Abbas](#)¹ (1. KACST)

S05A-T1-P-42 Engineered catalyst structure for fabrication of high aspect ratio X-ray gratings using MacEtch

» [Amit Korde](#)¹, Ji-Hye Kang², Oliver Wipf¹, Nensi Toncich¹, Henning Galinski¹, Marco Stampanoni¹, Lucia Romano² (1. ETH Zürich, Zürich, Switzerland, 2. Paul Scherrer Institut)

S05A-T1-P-43 High-Quality, Robust, and Scalable Dry Colloidal Self-Assembly on Arbitrary Substrates

» [Sanjay Singh Eswara Singh](#)¹, Jatin Jawahir Pandit², Guillaume Le saux², Alon Naumchik³, Angel Porgador³, Mark Schwartzman¹ (1. Department of Materials Engineering, Ben-Gurion University of the Negev, P.O. Box 653, Beer-Sheva 84105, Israel, 2. Department of Materials Engineering, Ben-Gurion University of the Negev, P.O. Box 653, Beer-Sheva 84105, Israel, 3. The Shraga Segal Department of Microbiology, Immunology, and Genetics Faculty of Health Sciences, Ben-Gurion University of the Negev, P.O. Box 653, Beer-Sheva 84105, Israel)

S05A-T1-P-44 Si Microfabricated gas handling device comprising multilayer stacked channels and vertical connection ports.

» [Jesper Navne](#)¹, Henri Jansen¹, Mira Baraket², Maksym Plakhotnyuk², Rafael Taboryski¹ (1. DTU Nanolab, Technical University of Denmark, 2. ATLANT3D)

S05A-T1-P-45 Angular-resolved light scattering of polymer nanofiber membranes

» [Silvia Schintke](#)¹, Nils Hellfeier¹, Dean Adam Crowe¹, Stefan del Rossi¹ (1. HEIG-VD / HES-SO University of Applied Sciences and Arts Western Switzerland)



Continued from Tuesday, 22 September

S05A-T1-P-46 Ellipsometry study of parylene C, N, F, AF films – uniaxially and anisotropic ANISOTROPIC model properties

» Sebastian Killge¹, Dennis Kaegbein², Dirk Ullmann², Franz Selbmann², Christian Helke², Danny Reuter² (1. Fraunhofer ENAS, 2. Fraunhofer Institute for Electronic Nanosystems ENAS)

S05A-T1-P-47 Deterministic Thinning by AFM Nanoindentation for Localized Dielectric Breakdown in Thick Silicon Nitride Membranes

» Sanket Jugade¹, Anumol Dominic¹, Akshay Naik¹, Manoj Varma¹ (1. Indian Institute of Science Bangalore)

S05A-T1-P-48 Release of sub-100 nm thin nanoporous silicon nitride membranes via frontside vapor phase HF etch

» Nikola Kohlschreiber¹, Markus Gottwald¹, Georg Umlauf¹, Vahide Hosseini¹, Christian Helke¹, Micha Haase¹, Danny Reuter¹ (1. Fraunhofer ENAS)

S05A-T1-P-49 Optimization of Ormocer® Layer Thickness for Nanoimprint-Based Liquid Cell Fabrication

» CAGLA SELALMAZ¹, Nathalie P. Pranzner¹, Jeremy P. Teuber², Marie-Charlot Dalchow¹, Arwen R. Pearson¹, Irene Fernandez-Cuesta¹ (1. University of Hamburg, 2. Max Planck Institute for the Structure and Dynamics of Matter)

S05A-T1-P-50 Utilizing Double-layer Resist Mask for Ion-Beam Etching: Towards Multilayered Capacitors for Miniaturized Power Supply Modules

» Ömer Altan¹, Shuangyue Yang¹, Ahmed Ammar², Tiberiu-Gabriel Zsurzsan², Henri Jansen¹, Flemming Jensen¹, Hoà Lê Than³ (1. DTU Nanolab, Technical University of Denmark, 2. DTU Electro, Technical University of Denmark, 3. Lotus Microsystems)

S05A-T1-P-51 Future generation of green photoresists for high resolution electron beam and EUV lithography

» Jean-David Isasa¹, Dimitrios Kazazis¹, Yasin Ekinci¹, Yann Chevolot², Jean-Louis Leclercq³, Kylian Virieux⁴, Stephane Trombotto⁵, Theodoros Manouras⁶, Panagiotis Argitis⁷, Pierre Cremillieu⁸ (1. Paul Scherrer Institut, 2. CNRS, Ecole Centrale de Lyon, INSA Lyon, Université Claude Bernard Lyon 1, CPE Lyon, INL, UMR5270, Ecully, 69134, 3. CNRS, 4. Université Lyon 1, INSA Lyon, Université Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, 5. Université Lyon 1, INSA Lyon, Université Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, France, 6. Department of Materials Science and Engineering, University of Crete, 7. NCSR Demokritos, 8. CNRS, Ecole Centrale de Lyon, INSA Lyon, Université Claude Bernard Lyon 1, CPE Lyon, INL-UMR5270, 69134 Ecully, France.)

S05A-T1-P-52 Selective carbon removal by O2 plasma ashing in monolayer doping of silicon

» Pol Torres Vila¹, Mounir Driss Mensi², Giovanni Boero¹, Juergen Brugger¹, Arnaud Bertsch¹ (1. Microsystems Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), 2. X-Ray Diffraction and Surface Analytics Platform (XRD-SAP), EPFL Valais, École Polytechnique Fédérale de Lausanne (EPFL))

S05A-T1-P-53 High-resolution and high-throughput patterning with nanoimprint materials and reactive ion etching

» Sebastian Killge¹, Christoph Jurissek², Ritesh Ambar³, Mirko Lohse², Micha Haase⁴, Christian Helke⁴, Danny Reuter⁴ (1. Fraunhofer Institute for Electronic Nanosystems ENAS, 2. micro resist technology GmbH, 3. TU Chemnitz - Zentrum für Mikro-und Nanotechnologien - zfm, 4. Fraunhofer ENAS)

S05A-T1-P-54 Fabrication of a silver self-supporting film with a moth-eye structure using solvent-soluble UV-curable resin

» Taichi Ogawa¹, Jun Taniguchi¹ (1. Tokyo University of Science)

S05A-T1-P-55 Compatibility of Structured Ormocers® with Gas Phase Deposition of Al2O3

» Marie-Charlot Dalchow¹, Nathalie P. Pranzner¹, Jeremy P. Teuber², CAGLA SELALMAZ¹, Arwen R. Pearson¹, Irene Fernandez-Cuesta¹ (1. University of Hamburg, 2. Max Planck Institute for the Structure and Dynamics of Matter)



Continued from Tuesday, 22 September

S05A-T1-P-56 Stoichiometry determination of e-beam evaporated TiOx thin films by angle-resolved XPS

» [Magnus Vejby Nielsen](#)¹, Radu Malureanu² (1. DTU Physics, Technical University of Denmark, 2. DTU Nanolab, Technical University of Denmark)

S05A-T1-P-57 Investigation on high aspect ratio silicon oxide patterning using HF vapor phase etching

» [Bhavana Valaboju](#)¹, Georg Umlauf¹, Vahide Hosseini¹, Micha Haase¹, Karla Hiller¹, Danny Reuter¹ (1. Fraunhofer ENAS)

S05A-T1-P-58 Low-shrinkage poly(vinyl alcohol) soft stamps for biomimetic surface replication by UV nanoimprint lithography

» [Haohui Yang](#)¹, Srikalyan Mothukuri¹, Steffen Strehle¹ (1. Technische Universität Ilmenau)

S05A-T1-P-59 Scalable transfer of 2D-materials using deionised water

» [Nico Rademacher](#)¹, Lukas Völkel², Eros Reato², Martin Otto¹, Jan Mischke³, Emre Yengel³, Christof Mauder³, Alexander Henning³, Michael Heuken³, Max Lemme¹ (1. AMO GmbH, 2. RWTH Aachen University, 3. AIXTRON SE)

S05A-T1-P-60 Influence of fluid physical properties on the critical jetting speed and liquid filament breakup dynamics in drop-on-demand inkjet printing

» [Sanghyun Park](#)¹, Je Hoon Oh¹, Minjun Ku¹, Chaeun Lee¹ (1. Hanyang University)

S05A-T1-P-61 Sub-Ångström Surface Finishing via Chemical-Mechanical Polishing and Ion Beam Etching

» [Saba Gholizadeh](#)¹, Luis Guillermo Villanueva² (1. EPFL, ANEMS laboratory, 2. EPFL NEMS)

S05A-T1-P-62 Focused ion beam enhanced NEMS devices nanofabrication

» [Krzysztof Kwoka](#)¹, Piotr Prokaryn², Adrianna Piejko¹, Bartosz Pruchnik¹, Andrzej Sierakowski³, Tomasz Piasecki¹ (1. Wrocław University of Science and Technology, 2. Łukasiewicz Research Network, Institute of Microelectronics and Photonics, Warsaw, 3. Institute of Microelectronics and Photonics Łukasiewicz Research Network)

S05A-T1-P-63 From lossy Interband Transition to Drude Dominance: Thermally Annealed Cr-CrOx Nanopillars Enabling Lithography-Free Multispectral Camouflage With Embedded Radiative Cooling Channels

» [Reham Elshurafa](#)¹, Ekmel özbay², Amir Ghobadi³, Mertcen Salih² (1. Paul Scherrer Institute PSI, 2. Bilkent University, 3. Nanotechnology research Center (Nanotam))

S05A-T1-P-64 Ultrasound-Based platform for the electromechanical characterization of piezoelectric materials for therapeutic applications

» [Santiago Caro Zapata](#)¹, Luca Fachechi¹, Gaia de Marzo², Valentina Antonaci¹, Vincenzo Mastronardi¹, Francesco Rizzi¹, Massimo De Vittorio³ (1. Istituto italiano di tecnologia, 2. Department of Health Technology, Technical University of Denmark, 3. DTU Health Tech, Technical University of Denmark)

S05A-T1-P-65 Synthesis, Characterization, and Experimental Dosimetric Evaluation of WO3 Pluronic P123/Melanin Nanocomposites for Radiation Shielding Applications

» [Saad Aldawood](#)¹, Amal AlMutairi², Ahmed Alsaleh³, Syed Mansoor Ali², Aziz A Aziz², Hamoud Kassim² (1. Department of Physics and Astronomy, King Saud University, College of Science, Department of Physics, 11451, Riyadh, Saudi Arabia, 2. Department of Physics and Astronomy, College of Science, King Saud University, P.O. Box-2455, Riyadh, 11451, Saudi Arabia, 3. Department of Chemistry, College of Science, King Saud University, P.O. Box-2455, Riyadh, 11451, Saudi Arabia)



Continued from Tuesday, 22 September

S05A-T1-P-66 Directional Liquid Mobility and Interlocking of Anisotropic Micropillar Structures Modulated by Multiple Compressive Bending

» Hyunsik Yoon¹, Tohid Otoufat¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S05A-T1-P-67 Deterministic Color-Center Integration in Nanopatterned Silicon Carbide Pillars

» Alessandro Cian¹, Elena Nieto Hernández¹, Gioele Piccoli¹, Elia Scattolo¹, Greta Andriani², Matteo Ziino³, Jacopo Forneris³, Damiano Giubertoni¹ (1. Fondazione Bruno Kessler, 2. Università di Torino, 3. Università di Torino)

S05A-T1-P-68 Light-based Printing of Microfluidic Device for Generation of Janus Droplets for Mimicking Liver Microenvironment

» Amlan Ashish¹, Gorachand Dutta¹ (1. Indian Institute of Technology Kharagpur)

S05A-T1-P-69 LN-based PICs: Novel techniques for structuring and yield improvements with Ion Beam Etching

» Susanne Hartmann¹, Sebastian Stark¹, Toralf Dunger¹ (1. scia Systems GmbH, 09116 Chemnitz)

S05A-T1-P-70 Electron/Ion Beam in Nanofabrication and Nanocharacterisation

» Suguo HUO¹ (1. University College London UCL)

S05A-T1-P-71 Langmuir-Blodgett assembly of 100nm polystyrene monolayers as templates for gold nanotriangle arrays

» Shraddha Singhal¹, Jan G. Korvink¹, Georges Saliba¹, Martin Börner¹ (1. Karlsruhe Institute of Technology (KIT))

S05A-T1-P-72 Tailoring self-organised ripple template by reactive ion beam etching toward SERS application

» Yingjuan Duan¹, Gregor Dornberg¹, Eva Schubert², Frank Frost¹ (1. Leibniz Institute of Surface Engineering (IOM), 2. University of Nebraska-Lincoln)

16:00

Poster : S05A-T2-P

POSTER 1 - ODD - T2

Venue - Auditorium Foyer OG - T2

Organised by: Luis Guillermo Villanueva

S05A-T2-P-1 High-Pressure Thermal Actuator with Sidewall Wire-Bonding Package

» Marco Lüchinger¹, Dietmar Bertsch¹, Kerstin Kern¹, Eric Breitenstein², Klaus Dietrich², Cornelia Nef¹ (1. OST – Ostschweizer Fachhochschule, 2. matriq AG)

S05A-T2-P-2 High-Performance and Stable Ultra-Thin ZnO Thin-Film Transistors with an HfO₂/Al₂O₃ Self-Passivation Layer

» Se-Hyeong Lee¹, Minseong Kim¹, Sungjae Kim¹, Hye-Ji Yoon¹, Hyeonjeong Ji¹, Moonsuk Yi¹ (1. Pusan National University)

S05A-T2-P-3 Flexible sensing material for methane sensor developed via direct casting method on IDT

» Rakhmanova Aizhan¹ (1. Institute of batteries)

S05A-T2-P-4 Ag Nanoparticle Modified SnO₂/Zn₂SnO₄ Nanocomposites for ppb-Level Rapid Detection Ethanol Gas Sensors

» Ruoxi Liu¹, Zhenyu Yuan² (1. College of Science, Northeastern University, Shenyang 110819, PR China, 2. College of Information Science and Engineering, Northeastern University, Shenyang 110819, PR China)



Continued from Tuesday, 22 September

S05A-T2-P-5 van der Waals devices for surface-sensitive experiments

» [Nicolai Taufertshöfer](#)¹, Simon Gerber¹, Corinna Burri¹, Rok Venturini¹, Iason Giannopoulos¹, Sandy Ekahana¹, Enrico Della Valle¹, Anze Mraz², Yevhenii Vaskivskyi², Jan Lipic³, Alexey Barinov⁴, Dimitrios Kazazis¹, Yasin Ekinici¹, Dragan Mihailovic³ (1. Paul Scherrer Institut, 2. CENN Nanocenter, 3. Jozef Stefan Institute, 4. ELETTRA - Sincrotrone Trieste)

S05A-T2-P-6 Wireless ultra-thin LIG sensor for inflammation monitoring

» [Jongeon Park](#)¹, Kyung-yeun Kim¹, Haram Lee¹, Sungsoo Kwak¹, Hojeong Jeon¹ (1. KIST)

S05A-T2-P-7 Selective Dual-Mode Organic Photodetectors via Charge-Transport Optimization and Injection-Barrier Engineering

» [Yelim Kang](#)¹, Jae Won Shim¹ (1. Korea University)

S05A-T2-P-8 Starfish-Shaped Au-Fe₃O₄ Nanoparticles for Exosome Capture and SERS-Based Profiling in Liquid Biop

» [Jaejong Lee](#)¹, Yong-Su Kwon², Yunji Eom¹ (1. Korea Institute of Machinery and Materials, 2. Chonnam National University)

S05A-T2-P-9 Low Voltage Operation in InZnO Thin Film Transistors with HfO₂/Al₂O₃ Nanolaminate Gate Dielectric via Atomic Layer Deposition

» [Minseong Kim](#)¹, Se-Hyeong Lee¹, Sungjae Kim¹, Hye-Ji Yoon¹, Hyeonjeong Ji¹, Moonsuk Yi¹ (1. Pusan National University)

S05A-T2-P-10 Integration of Miniaturized MEMS Pirani and Diaphragm Sensors for Ultra-Low-Power, Reliable, and Robust Operation

» [Jian Lu](#)¹, Lan Zhang¹, Yuichi Kurashima¹, Hideki Takagi¹ (1. National Institute of Advanced Industrial Science and Technology (AIST))

S05A-T2-P-11 Microfabricated Ultra-High reflective mirror for quantum gravity experiments

» [Enrico Serra](#)¹, [Paolo Sberna](#)², Michele Bonaldi³, Antonio Borrielli³, Gianni Di Giuseppe⁴, Nicola Malossi⁴, Francesco Marin⁵, Francesco Marino⁶, Francesco Marzioni⁴, Riccardo Natali⁴, Paolo Piergentili⁴, Antonio Pontin⁶, Guido Sordo⁷, David Vitali⁴ (1. Istituto Nazionale di Fisica Nucleare - TIFPA, 2. Tera-Hertz Sensing Group, Microelectronics Dept., Delft University of Technology, Delft, 2628 CD, The Netherlands, 3. Institute of Materials for Electronics and Magnetism, Nanoscience-Trento-FBK Division, 4. Physics Division, School of Science and Technology, University of Camerino, 5. Dipartimento di Fisica e Astronomia, Università di Firenze, 6. CNR-INO, 7. SINTEF Digital, Dep. Smart sensors and microsystems)

S05A-T2-P-12 Single-Shot Fabrication of Four-Dimensional Variable Adhesive Hydrogel Structures via High-Dose Photolithography

» [Jinsik Yoon](#)¹, Wook Park¹ (1. Kyung Hee University)

S05A-T2-P-13 Dewetting and transfer of SiGe and Ge nanoresonators for flexible and strain-tunable dielectric nanophotonics

» [Sonia Fredi](#)¹, Nicoletta Granchi², Michele Gherardi³, Afonso De Cerdeira Oliveira³, Andrea Chiappini¹, Adam Arette-Hourquet⁴, Isabelle Berbezier⁴, Alexey Fedorov¹, Maria Antonietta Vincenti⁵, Daniel Chrastina³, Giovanni Isella³, Francesca Intonti², Monica Bollani¹ (1. IFN-CNR, 2. LENS and Department of Physics and Astronomy, University of Florence, 3. Politecnico di Milano, 4. IM2NP, Aix Marseille University, CNRS, 5. Università di Brescia)

S05A-T2-P-14 A Flexible RF antenna Array Sensor for Real Time Non-Contact Hydration Assessment in Human Body

» [Sadiah Abdul Samad](#)¹ (1. The University of Edinburgh)

S05A-T2-P-15 Miniaturized Ultra-High-Vacuum Cell for Laser-Cooled Atoms toward Quantum Sensing Applications

» [Yuichi Kurashima](#)¹, Sota Kagami², Thu Hac Huong Le¹, Akifumi Takamizawa¹, Ryohei Takei¹, Taisei Motomura¹, Takashi Matsumae¹, Atsuhiko Maeda¹, Hideki Takagi¹ (1. National Institute of Advanced Industrial Science and Technology (AIST), 2. NEC Corporation)



Continued from Tuesday, 22 September

S05A-T2-P-16 Ultrastable thin film coatings: grain boundary pinning by nanoparticle incorporation

» [Laszlo Petho](#)¹ (1. Empa)

S05A-T2-P-17 Resistance of Scaled Interconnects with Anisotropic Conductors

» [Ho-Yun Lee](#)¹, Jean-Philippe Soulie², Davide Tierno², Clement Merckling¹, Christoph Adelmann² (1. Katholieke Universiteit Leuven, 2. imec)

S05A-T2-P-18 Printable grayscale nano-template for full-colour organic light-emitting diode near-eye displays with 3D achromatic metalenses

» [YoungSun Jeon](#)¹ (1. POSTECH)

S05A-T2-P-19 Flow control in confinement by microscopic magnetic artificial cilia

» [Zhiwei Cui](#)¹, Jaap Den Toonder², Farbod Alijani¹ (1. TU Delft, 2. Eindhoven University of Technology)

S05A-T2-P-20 EBL Process Framework for High-Density Polymer Neuroprostheses

» [Hanna Karlsson-Fernberg](#)¹, Maria Asplund¹ (1. Chalmers University of Technology)

S05A-T2-P-21 Advanced Infrared Silicon Metalens through Production-ready Deep-UV Lithography

» [Kai Sun](#)¹, Jordan Scott¹, Xingzhao Yan¹, James Monks², Jun-Yu Ou¹, Otto Muskens¹ (1. University of Southampton, 2. Teledyne Qioptiq Ltd)

S05A-T2-P-22 Amplified and Selective NO₂ Sensing With IGZO/Graphene Heterostructures via Interfacial Charge-Transfer Modulation

» [Noah Jang](#)¹, Da Ye Kim¹, Hyunjun Kim¹, Seong Ho Kong¹ (1. Kyungpook National University)

S05A-T2-P-23 Development of Electrochemical Flow-Cell for the Electrodeposition of Atomic-level Au on PANI-coated Plates toward Electrochemical Sensor Applications

» [Keisuke Okamoto](#)¹, Tomoyuki Kurioka¹, Gen Hikosaka¹, Yung-Jung Hsu², Chi-Hua Yu³, Maria Antonietta Casulli⁴, Tso-Fu Mark Chang¹, Masato Sone¹ (1. Institute of Science Tokyo, 2. National Yang Ming Chiao Tung University, 3. National Cheng Kung University, 70101, Tainan, TAIWAN, 4. Katholieke Universiteit Leuven)

S05A-T2-P-24 Fabrication of Highly Integrated Surface-Electrode-Ion-Traps

» [Marlon Kuhn](#)¹, Jacob Stupp¹, Nora D. Stahr¹, Mohammad Masum Billah¹, Nica Schifffholz¹, Christine Marachor¹, Friederike Giebel², Eike Iseke², Nila Krishnakumar², Konstantin Thronberens², Christian Ospelkaus¹ (1. Leibniz University Hannover, Institute for Quantum Optics, 2. Physikalisch-Technische Bundesanstalt)

S05A-T2-P-25 Dielectrophoresis in Asymmetric Pyramid Micropatterns for Bioinspired Smart Windows with High Transmittance Contrast

» [Junmo Yu](#)¹, Hyunsik Yoon¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S05A-T2-P-26 Geometry-Guided Wrinkling for Stretchable Plasmonic Fabry-Pérot Optomechanics

» Pau Güell-Grau¹, Borja Sepulveda¹, [Mar Alvarez](#)¹ (1. IMB-CNM (CSIC))

S05A-T2-P-27 Crystallinity-Programmed Memristive Devices for Reconfigurable Volatile and Nonvolatile Switching

» [Da Ye Kim](#)¹, Hyunjun Kim¹, Noah Jang¹, Seong Ho Kong¹ (1. Kyungpook National University)

S05A-T2-P-28 Device-Level Integration of Synaptic Functions for Spiking Neuromorphic Network

» [Cuo Wu](#)¹, Hampus Hoffman², Richard Schroedter¹, Zipeng Mi¹, Ronald Tetzlaff¹, Thomas Mikolajick¹, Benjamin Max¹ (1. TU Dresden, 2. NaMLab)



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S05A-T2-P-29 Channeling-Implanted Shielding Regions for Improved Short-Circuit and Unclamped Inductive Switching Ruggedness in 1200 V SiC MOSFETs

» [Junki Jung](#)¹, Sumin Park¹, Seungri Yang¹, Ogyun Seok¹ (1. Pusan National University)

S05A-T2-P-30 Geometric Effects on the Mechanical Characteristics of Ti/Au Multi-layered Serpentine Springs toward MEMS Applications

» [Hisashi Takahata](#)¹, Tomoyuki Kurioka¹, Torauto Yamada¹, Chihaya Mukaide¹, Katsuyuki Machida¹, Gen Hikosaka¹, Chun-Yi Chen¹, Tso-Fu Mark Chang¹, Yoshihiro Miyake¹, Hiroyuki Ito¹, Masato Sone¹ (1. Institute of Science Tokyo)

S05A-T2-P-31 Amplified Sodium Ion Sensing Using an Ion-Selective Floating-Gate Organic Electrochemical Transistor for Wearable Sweat Analysis

» [Tommaso Bo](#)¹, Charles-Théophile Coen¹, Niels Burghoorn¹, Mohammad Khorsand¹, Yoeri van de Burgt¹, Jaap Den Toonder¹, Inês Figueiredo Pereira¹ (1. Eindhoven University of Technology)

S05A-T2-P-32 Neuromorphic Motor Control with Organic Electrochemical Transistor

» [Pei Zhang](#)¹ (1. Eindhoven University of Technology)

S05A-T2-P-33 Tunable Plasmonic Sensors via Angle- and Offset-Controlled Metal Deposition on Nanoimprinted Pillars

» [Hanhuai Yang](#)¹, Stella Pang¹ (1. City University of Hong Kong)

S05A-T2-P-34 Measurement of the Separation Dependence of Tunneling Current in a Sub-50 nm Silicon Cleavage Plane Nanogap

» [Atsuya Yamashita](#)¹, Masaki Shimofuri¹, Jun Hirotani¹, Toshiyuki Tsuchiya¹ (1. Kyoto University)

S05A-T2-P-35 Locally Buried SiO₂ for TCF Compensation of LiNbO₃ Thickness-Excited Resonators

» [Florian Hartmann](#)¹, Luis Guillermo Villanueva¹ (1. EPFL NEMS)

S05A-T2-P-36 A Kirigami Gripper Based on β -CD/OA Hydrogel with Tunable Stiffness for Dual-Mode Grasping

» [Yen-Chun Chen](#)¹, Pin-Chun Huang¹, Yao-Joe Yang¹ (1. National Taiwan University)

S05A-T2-P-37 Fabrication Process to Improve the Performance of 1064 nm DBR Lasers

» [Olaf Brox](#)¹ (1. Ferdinand-Braun-Institut gGmbH)

S05A-T2-P-38 Process Optimization for Deterministic Microsphere Assembly in Microcavity Arrays

» [Mahmoud Asfour](#)¹, [Aamenah Siddiqui](#)¹, Muhammad Umar², Murat Kaya Yapici¹ (1. Sabanci university, 2. SUNUM - Sabanci University Nanotechnology Research and Application Center)

S05A-T2-P-39 Fingertip skin-inspired micro-structured proximity-pressure-temperature tri-modal sensor with high sensitivity and wide perception range

» [Chaeun Lee](#)¹, Changwoo Cho¹, Je Hoon Oh¹, Sanghyun Park¹ (1. Hanyang Univeristy)

S05A-T2-P-40 Micro-structured chitosan films for hybrid piezo-flexoelectric sensors with enhanced output

» [Gaia de Marzo](#)¹, Sara Ciccaglione¹, Matilde Manigrasso¹, Kartikeya Sharma¹, Lasse Højlund Eklund Thamdrup¹, Evgeniy Shkondin², Francesco Rizzi³, Vincenzo Mariano Mastronardi⁴, Michele Scaraggi³, Anja Boisen¹, Massimo De Vittorio¹ (1. DTU Health Tech, Technical University of Denmark, 2. DTU Nanolab, Technical University of Denmark, 3. Istituto italiano di tecnologia, 4. Department of Engineering for Innovation, Unisalento)

S05A-T2-P-41 Adaptive reshaping of amorphous silica nanostructures by scanning electron beam stimulation

» Abbhira Singh¹, Takahiro Namazu¹, [Amit Banerjee](#)¹ (1. Kyoto University of Advanced Science)

S05A-T2-P-42 Opto-electronic device integrating single InP nanowires in nanofluidic devices for the detection of individual Nanoparticles

» [Leon Seggering](#)¹, Irene Fernandez-Cuesta² (1. University of Hamburg / DESY, 2. University of Hamburg)



Continued from Tuesday, 22 September

S05A-T2-P-43 Viscosity Measurement of Liquid Using a Coriolis Mass Flow Sensor Based on Quality Factor Analysis

» [Chang Liu](#)¹, Remco Sanders¹, Jarno Groenesteijn², Remco Wiegerink¹, Joost Lotters¹ (1. University of Twente, 2. Bronkhorst High-Tech BV)

S05A-T2-P-44 A Sub-1-Ω Via-Last Cu TSV Process for 180 nm CMOS Technology on 300 μm Thick 8-Inch Wafers

» [Martin Stahel](#)¹, Marco Cucinelli¹, Reto Besserer², Raneem Achor¹, Samuel Huber¹ (1. OST – Ostschweizer Fachhochschule, 2. OST-Ostschweizer Fachhochschule)

S05A-T2-P-45 Tape-Assisted Fabrication of Aluminum Nanohole Metasurfaces for Chip-Scale Computational Spectrometers

» Yu-Heng Hung¹, Tzu-Yu Lin², Hsiang-Yu Chung¹, Tsai-Yu Hsieh², Wen-Huei Chang³, [Chun-Hung Lin](#)¹ (1. Department of Photonics, National Cheng Kung University, 2. Program on Key Materials, Academy of Innovative Semiconductor and Sustainable Manufacturing, National Cheng Kung University, 3. Department of Applied Chemistry, National Pingtung University)

S05A-T2-P-46 Investigation of Impedance Properties of Hydrogel-Gold-Nanoparticle Composites as a Potential Transduction Concept for Biomedical Sensing

» [Ahmad Hassan](#)¹, Julia Körner¹ (1. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden (IFW))

S05A-T2-P-47 Solid-Contact Ion-Selective Electrode Fabricated via Displacement Talbot Lithography

» [Mislav Matić](#)¹, Konstantins Jefimovs², Dimitrios Kazazis³, Chris Van Hoof⁴, Francesca Leonardi⁵, Irene Taurino¹ (1. Katholieke Universiteit Leuven, 2. Paul Scherrer Institute, 3. Paul Scherrer Institut, 4. imec, 5. imec within OnePlanet Research Center)

S05A-T2-P-48 Controllable preparation and integration of high-performance perovskite micro/nano laser devices

» [Chen Cheng](#)¹, Shuhao Si² (1. Shandong Normal University, 2. School of Physics and Optoelectronics, Shandong Normal University, Jinan, 250358, People's Republic of China)

S05A-T2-P-49 Sculpting Nanochannels in 2D Materials with t-SPL

» [Kristian S. Skailand](#)¹, Georgios Apostolou¹, Edmund J. R. Kelleher², William V. William², Timothy John Booth¹ (1. DTU Physics, Technical University of Denmark, 2. DTU Electro, Department of Electrical and Photonics Engineering, Technical University of Denmark)

S05A-T2-P-50 Focused Ion Beam Induced Straining of MEMS devices - FIBIS

» [Bartosz Pruchnik](#)¹, Mateus Masteghin², Krzysztof Kwoka¹, Robert Jesionowski¹ (1. Wrocław University of Science and Technology, 2. DTU Nanolab, Technical University of Denmark)

S05A-T2-P-51 Active Cantilever with Dual Actuator

» [Bartosz Pruchnik](#)¹, Fabian Dietrich², Richard Subianto², Katerina Ivanova², Athulya K. Muraleedharan Bindu², Hans-Georg Pietscher², Javad Basseri², Muralikrishnan Brajesh Kaimal², Władysław Kopczyński¹, Wojciech Godlewski¹, Dominik Badura¹, Piotr Putek¹, Krzysztof Kwoka¹, Piotr Smagowski¹, Andrew Yacoot³, Tomasz Piasecki¹, Fangzhou Xia⁴, Ivo W. Rangelow² (1. Wrocław University of Science and Technology, 2. nano analytik GmbH, 3. National Physical Laboratory, 4. University of Texas at Austin)

S05A-T2-P-52 Sensitive metal-deposited and plasma-modified polymer SERS substrates with tunable geometrical features

» [Athina S. Kastania](#)¹, Anastasios Dimitriou¹, Sara Abbasi², Vassilios Constantoudis³, Qing Liu², Nikolaos Papanikolaou¹, Heidi Ottevaere⁴, [Evangelos Gogolides](#)¹ (1. National Centre for Scientific Research "Demokritos" (NCSR "Demokritos"), Institute of Nanoscience and Nanotechnology, Agia Paraskevi, Athens, 15341, 2. Department of Applied Physics and Photonics, Vrije Universiteit Brussel, Brussels, 1050, 3. NCSR D, 4. Vrije Universiteit Brussel)

S05A-T2-P-53 3D Stereolithography-printed micro-lattices for MOF derived architectures as high-performance self-standing pseudocapacitive electrodes

» [Premkumar Murugesan](#)¹ (1. DTU Nanolab, Technical University of Denmark)



Continued from Tuesday, 22 September

S05A-T2-P-54 Mechanistic Continuum Modeling of Suction and Equilibrium Configurations in CNT@MoS₂ Nanotube Systems

» [Mansoor Alshehri](#)¹ (1. Department of Mathematics, College of Science, King Saud University, P.O. Box 2455, Riyadh 11451, Saudi Arabia)

S05A-T2-P-55 Electron beam detection using room-temperature single-electron transistors

» [Wenkun He](#)¹, Jingbo Chen¹, Willy Lim², Anya Grushina², Mervyn Jones¹, Zahid Durrani¹ (1. Imperial College London, 2. Imina Technologies)

S05A-T2-P-56 Inkjet Printing and Nanoimprint Lithography for High Density Redistribution Layers in Advanced Packaging

» [Michael Haslinger](#)¹, Viktorija Jonaityte¹, Pavel Kulha¹, Vaclav Procahazka¹, Ashray Prabhu¹, Michael Muehlberger¹ (1. Profactor GmbH)

S05A-T2-P-57 Slot waveguides fabrication for Innovative Dielectric Laser Accelerator

» [Simone Luigi Marasso](#)¹, Giuseppe Torrisi², Gino Sorbello³, Giorgio Mauro², Alessio Verna⁴, Mario Malerba⁴, Eleonora Cara⁴, Valentina Bertana⁵ (1. CNR imem, 2. INFN, 3. Università di Catania, 4. INRIM, 5. Politecnico di Torino)

S05A-T2-P-58 A Photonic Palimpsest: Rewritable Metasurfaces on van der Waals Materials

» [Xinyu Sun](#)¹, Min Qiu¹, Ding Zhao¹ (1. Westlake University)

S05A-T2-P-59 Functionalized Solid-State Nanopores: Fabrication and Applications in Energy Conversion and Ionic Computing

» [Yunfei Teng](#)¹, Aleksandra Radenovic¹ (1. EPFL)

S05A-T2-P-60 Nanoprinted Visible Metasurfaces with Elongated Depth-of-Field for Advanced Photoacoustic Imaging

» [Dong Kyo Oh](#)¹, Inki Kim², Junsuk Rho³ (1. Pohang University of Science and Technology (POSTECH), 2. Sungkyunkwan University, 3. POSTECH)

16:00

Poster : S05A-T3-P

POSTER 1 - ODD - T3

Venue - Auditorium Foyer OG - T3

Organised by: Katharina Maniura

S05A-T3-P-1 Biomimetic nanoimprinting of functional biological surfaces for micro- and nanotechnology applications

» [Jakob Nüßlein](#)¹, Konstantin Obladen¹, Christoph Weigel¹, Steffen Strehle¹ (1. Technische Universität Ilmenau)

S05A-T3-P-2 A Monolithic SLA-Printed Ingestible Micromechanical Device for Sampling of the GI lumen via Hydrogel-Actuated Inlet Sealing

» [Anshul Nema](#)¹, Sarvesh Kumar Srivastava¹ (1. Indian Institute of Technology Delhi)

S05A-T3-P-3 Site-controllable surface functionalization of a CMOS-compatible titanium nitride microelectrode array for biosensing

» [Zhiwen Wei](#)¹, Zhenhua Li¹, Bingqing Liang¹, Zonghui Li¹, Xiaohui Tang¹, Chang Chen¹, [Sijia Xie](#)¹ (1. Institute of Medical Chips, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine)

S05A-T3-P-4 The development of bile duct stent having antifouling properties by using atmospheric pressure low-temperature plasma (2)

» [Atushi Sekiguchi](#)¹, Masashi Yamamoto² (1. Litho Tech Japan, 2. National Institute of Technology Kagawa College)

S05A-T3-P-5 Platinum silicide (PtSi) UltraMicroElectrode Array device for local and subsecond pH modulation at the microscale

» [Léa Cahuzac](#)¹, Nicolas Clément², Guilhem Larrieu¹ (1. LAAS-CNRS, 2. LIMMS-CNRS-IIS)

S05A-T3-P-6 Capillary sealed micropneumatic actuator

» [Valentin Dumont](#)¹, Gwenn Ulliac², Aude Bolopion², Antoine Barbot² (1. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, Besançon, France, 2. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, 25000 Besançon, France)



Continued from Tuesday, 22 September

S05A-T3-P-7 Pulse Energy Dependence of Ablation Depth and Crater Morphology in Ex Vivo Brain Tissue Using a 1030 nm Femtosecond Laser

» [Quanhong Feng](#)¹ (1. Shandong Normal University)

S05A-T3-P-8 Quantification of fluorescent nanoparticles using UV imprinted nanofluidic devices and a double laser spot detection setup

» [Saran Vanapalli](#)¹, Leon Seggering², Irene Fernandez-Cuesta¹ (1. University of Hamburg, 2. University of Hamburg / DESY)

S05A-T3-P-9 Micro-Nano Lithography for Solid-State Biosensing Nanopipettes

» [Ali Elmorsy](#)¹, Nako Nakatsuka² (1. EPFL, CHEMINA, 2. EPFL)

S05A-T3-P-10 Nanocrystalline metallic multilayer membranes for robust microfluidic valves with reduced footprint

» [Pieter Vlughter](#)¹, Farzaneh Bahrami², Adithyan Kannan², Youssef El Jerrari², [Denis Van Lancker](#)², Pradnya Gharpure², Lei Zhang², Tim Stakenborg² (1. imec v.z.w., Kapeldreef 75, B-3001 Leuven, Belgium, 2. imec)

S05A-T3-P-11 Liposome Formation in a Sunflower-Shaped Microfluidic Mixer for Biomedical Applications

» [Levent Trabzon](#)¹, Abdulhalim Kılıç², İrem Bahar Gül², Ali Reza Khosroshahi³, Sina Jafari-Matanagh⁴ (1. Prof. Dr., 2. Istanbul Technical University, 3. Islamic Azad University, 4. University of Tabriz)

S05A-T3-P-12 Automatic design of microfluidic devices with differentiable physics and signed distance fields

» [Adrian Sieradzki](#)¹, Andrew deMello² (1. ETH Zürich, Department of Chemistry and Applied Biosciences, 2. ETH Zurich)

S05A-T3-P-13 Green Energy for IoT: Automated Biomass Injection and Coating for Sustainable Supercapacitors

» [Eva Luisa Vogt](#)¹, Swetha Vasudevan Kanakkottu¹, Stephan Sylvest Keller² (1. DTU Nanolab, Technical University of Denmark, 2. Technical University of Denmark)

16:00

Poster : S05A-T4-P

POSTER 1 - ODD - T4

Venue - Auditorium Foyer OG - T4

Organised by: Cyrille Hibert

S05A-T4-P-1 K-Doped SrVO3 Anodes for Carbon-Tolerant Hydrocarbon-Fueled SOFCs

» [Shu-Yi Tsai](#)¹, [Kuan-Zong Fung](#)² (1. Center for Resilience and Intelligence on Sustainable Energy Research (RISER), National Cheng Kung University, Tainan 70101, Taiwan, 2. Department of Materials Science and Engineering, National Cheng Kung University, 70101, Tainan, TAIWAN)

S05A-T4-P-2 Fused silica in microfabrication: process impacts, size dependence, and environmental assessment

» [Sardar Hamza Pervez](#)¹, Vincent Walter², Thomas Jeannin², Sébastien Thibaud¹ (1. SupMicrotech, 2. Université Marie et Louis Pasteur)

S05A-T4-P-3 Hybrid Radiative Cooling and Water Harvesting Film Based on Superabsorbent Polymer-PDMS Matrix

» [Jisung Ha](#)¹, Jaein Park¹, Seongwoo Park¹, Hangyu Lim¹, Heon Lee¹ (1. Korea University)

S05A-T4-P-4 Dissolution behavior of model resist in tetramethylammonium hydroxide developer with dissolved poly(4-hydroxystyrene)

» [SEUNGJOO BAEK](#)¹, Masahiko Harumoto², Yuqing Jin³, Takahiro Kozawa³ (1. SCREEN SPE GERMANY GmbH, 2. SCREEN Semiconductor Solutions, 3. SANKEN, Univ. Osaka)

S05A-T4-P-5 Patterning of Functional Polymers to Obtain Superaerophobic Surfaces for CO2 Reduction Reactions on Gas Diffusion Electrodes

» [Michael Muehlberger](#)¹, Sonja Kopp¹, Viktorija Jonaityte¹, Heike Frommwald², Thomas Griesser², Michael Haslinger¹, Janine Lichtenberger³, Theodoros Dimopoulos³ (1. Profactor GmbH, 2. Luxinergy GmbH, 3. AIT Austrian Institute of Technology GmbH)



Continued from Tuesday, 22 September

S05A-T4-P-6 Synthesis of plasmonic and photocatalytic active 3D nanostructures by metastable atomic layer deposition

» [Mario Ziegler](#)¹, [Adrian Bohm](#)¹, [Valentin Ripka](#)¹, [Noah Rupp](#)¹, [Anke Drewitz](#)², [Marco Diegel](#)¹, [Jan Dellith](#)¹, [Martin Kühnel](#)², [Uwe Hübner](#)¹ (1. Leibniz Institute of Photonic Technology, 2. Gesellschaft zur Förderung von Medizin-, Bio- und Umwelttechnologien e.V.)

S05A-T4-P-7 A Multiplexed Microfluidic Platform for Sustainable Cleaning Formulation Discovery

» [Zain Ahmad](#)¹, [Gunjan Tyagi](#)¹, [Rebecca Fong](#)², [David Baezchavez](#)², [Joao Cabral](#)¹ (1. Imperial College London, 2. Procter & Gamble)

S05A-T4-P-8 Structure-Driven Photocatalytic Degradation Pathways of Pharmaceuticals over TiO₂/CeO₂/g-C₃N₄: A Molecular Reactivity and Life Cycle Perspective

» [Aarti Puri](#)¹, [Vimal Chandra Srivastava](#)¹ (1. Indian institute of technology, Roorkee)

16:00

Poster : S05A-T6-ENL-P

POSTER 1 - ENL Expert Groups - T6

Venue - Auditorium Foyer OG - T6

S05A-T6-ENL-P-1 EuroNanoLab Lithography Experts Group Activities

» [Laurent Mazenq](#)¹ (1. LAAS-CNRS)

S05A-T6-ENL-P-2 EuroNanoLab Thin Film Experts Group Activities

» [Pascal Dubreuil](#)¹ (1. LAAS-CNRS)

S05A-T6-ENL-P-3 EuroNanoLab Dry Etch Experts Group Activities

» [Andrei Avram](#)¹, [Djaffar Belharet](#)¹ (1. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, 25000 Besançon, France)

Wednesday, 23 September

08:30

Keynote : S06A_T0

MNE Awards - Young Investigator and MNE Fellow (plenary session)

Venue - Auditorium - ORAL - PLENARY

Organised by: Urs Staufer

S06A_T0-1-PLENARY-Elsevier Young Investigator Award MEMS & NEMS design, fabrication and applications in sensing and actuation

» [Chen Wang](#)¹ (1. KU Leuven, Micro and Nano Systems, Department of Electrical Engineering)

S06A_T0-2-PLENARY-MNE Fellow Award Challenges in electron beam lithography and inspection

» [Cornelis Hagen](#)¹ (1. Delft University of Technology, 2628CJ Delft)

10:45

Oral : S07A-T1

Nanofabrication Applications

Venue - Auditorium - ORAL - PLENARY

Organised by: Dimitrios Kazazis

S07A-T1-1 High-Fidelity Fabrication of Dense Nanohole Arrays in Ultrathin SiNx Membranes for Holographic Metastable Atom-Beam Lithography

» [Bhera Ram Tak](#)¹, [Pietro Rancati](#)², [Espen Werdal Selfors](#)³, [Daniel Fojo Álvarez](#)², [Juan Jose J. Nieto](#)², [Adrià Salvador Palau](#)², [Bodil Holst](#)³, [Richard Hobbs](#)¹ (1. Trinity College Dublin, 2. Lace Compute SL, 3. Lace Lithography AS)

S07A-T1-2 Thermal scanning probe lithography for nanoscale hard-mask patterning using single indentation techniques

» [Shulang Shen](#)¹, [Berke Erbas](#)¹, [Chenhao Wang](#)¹, [Arnaud Bertsch](#)², [Juergen Brugger](#)¹ (1. EPFL, 2. Microsystems Laboratory, École Polytechnique Fédérale de Lausanne (EPFL))



Continued from Wednesday, 23 September

S07A-T1-3 Uniformity and Reproducibility of Wafer Scale Superconducting Qubit Fabrication

» [Gregory Levieil](#)¹, Fayçal Houssaini¹, Samuel Rene de Cotret¹, Idris Aboubakari¹, Nicolas Bourlet¹, Mathieu Juan¹, Dominique Drouin¹ (1. Université de Sherbrooke)

S07A-T1-4 Bridging Precision and Scalability: Hybrid Lithography for Visible-Light LTOI Integrated Photonic Modulators

» [Nicola Brusadin](#)¹, Guilhem Alma², Marina Arqué Roquet², Christopher Axline¹, Stephan Gamper¹, Robin Giroud¹, Phoebe Tengdin¹, Daniel Brau¹, Luis Guillermo Villanueva² (1. Miraex SA, 2. EPFL NEMS)

S07A-T1-5 Process development for wafer-bonded InP random lasing networks on silicon

» [Luka Guzenko](#)¹, Ioannis Georgakilas², Göktug Ilter², Enrico Bianco¹, Eunjung Cha², Cristina Garcia Marcilla¹, Riccardo Sapienza³, Simone Iadanza², Kirsten Moselund¹ (1. EPFL, Paul Scherrer Institut, 2. Paul Scherrer Institut, 3. Imperial College London)

10:45

Oral : S07B-T2

Metalenses and Nanophotonics

Venue - Theatersaal - ORAL

Organised by: Luis Guillermo Villanueva

S07B-T2-1-INVITED Sustainable manufacturing of optical metasurfaces with engineered optical materials

» [Junsuk Rho](#)¹ (1. Pohang University of Science and Technology (POSTECH))

S07B-T2-2 Fabrication and Optical Response of High-Q Dielectric qBIC Metasurfaces

» Sonia Freddi¹, Alfonso Nardi², Agostino Difrancescantonio³, Johann Osmond⁴, Micheal Scalora⁵, Marco Finazzi², Michele Celebrano², Maria Antonietta Vincenti⁵, [Monica Bollani](#)¹ (1. IFN-CNR, 2. Politecnico di Milano, 3. EPFL, 4. ICFO, 5. Università di Brescia)

S07B-T2-3 Wafer-Scale CMOS-Compatible Ge-on-Si Metasurface Platform with FTIR-Validated Resonance Tuning

» [Wei-Han Chen](#)¹, Jon Schlipf¹, Paul Oleynik², Giovanni Capellini³, Yuji Yamamoto⁴, Gianfranco Sfuncia⁵, Giuseppe Nicotra⁵, Katarzyna E. Hnida-Gut¹, Christian Wenger¹, Inga A. Fischer², Oliver Skibitzki¹ (1. IHP - Leibniz Institute for High Performance Microelectronics, 2. Brandenburgische Technische Universität Cottbus-Senftenberg, 3. Dipartimento di Scienze, Università Roma Tre, 4. Nagoya University, 5. Consiglio Nazionale delle Ricerche - Istituto per la Microelettronica e Microsistemi)

S07B-T2-4 Development of an achromatic neutron lens

» [Mano raj Dhanalakshmi veeraj](#)¹, Di Qu¹, Hui-Yuan Chen¹, Silas Strebel¹, Peng Qi¹, Anna Fedrigo², Lucas Helfen², Alessandro Tengattini², Matteo Busi¹, Hongchang Wang³, Piero Tranchida⁴, Anders Kaestner¹, Christian David¹, Markus Strobl¹, [Joan Vila Comamala](#)¹ (1. Paul Scherrer Institut, 2. Institut Laue-Langevin, 3. Diamond light source Ltd, 4. Synova SA)

10:45

Oral : S07C-T3

Manufacturing and Biomaterials

Venue - Brünig - ORAL

Organised by: Katharina Manuira

S07C-T3-1 Fabrication of fluid-compatible multilayer hollow atomic force microscopy (AFM) cantilevers for single-cell applications

» [Merve Mintas Kucuk](#)¹, Nahid Hosseini¹, Ekin Asim Ozek¹, Georg Fantner¹ (1. EPFL, LBNI)

S07C-T3-2 Capillary Printing for Microscale Patterning of Piezoelectric Chitosan

» [Valentina Antonaci](#)¹, Gaia de Marzo², Claudia Latte Bovio¹, Massimo De Vittorio² (1. Istituto italiano di tecnologia, 2. DTU Health Tech, Technical University of Denmark)

S07C-T3-3 Multi-Material DLP Printing of Bioelectronic Platforms Based Conductive Hydrogels

» [Stavros Skrepetos](#)¹, Liwen Wang¹, Marcel Tichem¹, Achilleas Savva¹, Paola Fanzio¹ (1. TU Delft)



Continued from **Wednesday, 23 September**

S07C-T3-4-INVITED (MNC) Light-Driven Hydrogel Actuators for On-Chip Intestinal Motility

» [Riku Takahashi](#)¹, Shogo Himori¹, Misa Yamaji¹, Aya Tanaka¹ (1. Basic Research Laboratories and NTT Bio-Medical Informatics Research Center, NTT, Inc.)

10:45

Oral : S07D-T4

Sustainability in Manufacturing 1

Venue - Grimsel - ORAL

Organised by: Cyrille Hibert

S07D-T4-1-INVITED Advancing Sustainable Micron-Nano Manufacturing through Real-Time AMC Monitoring including PFAS and F-GHGs

» [Carla Frege](#)¹ (1. Tofwerk AG)

S07D-T4-2 Experimental investigations into sustainable metal-catalytic plasma etching of silicon using hydrogen

» [Lenia Böhm](#)¹, Georg Umlauf¹, Micha Haase¹, Christian Helke¹, Danny Reuter¹ (1. Fraunhofer ENAS)

S07D-T4-3 Solid Ethanol as a Renewable, Low-Toxicity, Electron-Beam Direct Write, and Biomedical Material

» [Bruno Perdigão](#)¹, Bingdong Chang¹, Gwendoline A. E. Anand¹, Lechan Tao², Kayeon Kim², Anne Zebitz Eriksen³, Malte Alexander Schönhoff¹, Guilherme Ferreira¹, Xiyuan Liu¹, Su Genelioglu¹, Neha Zahoor⁴, Johan Ulrik Lind³, Alice Bastos da Silva Fanta⁴, Thomas Willum Hansen⁴, Changsi Cai², Anpan Han¹ (1. DTU Construct, Technical University of Denmark, 2. Department of Neuroscience, Faculty of Health and Medical Sciences, University of Copenhagen, 3. DTU Health Tech, Technical University of Denmark, 4. DTU Nanolab, Technical University of Denmark)

S07D-T4-4 PEAR Structuring of Silicon Oxides: Long-Term Stability, Process Transfer, and RIE Compatibility

» [Anant Bhardwaj](#)¹, Christoph Weigel¹, Steffen Strehle¹ (1. Technische Universität Ilmenau)

S07D-T4-5 Fully Aqueous Electrospun Smart Filtration Membranes with Integrated Bacterial Sensing

» [Carla Blanes Gallego](#)¹, Pablo Rodríguez², Sebastián Gavira¹, Salvador David Aznar Cervantes³, Gonzalo Murillo¹, Xavier Munoz-Berbel⁴, Mar Alvarez⁴ (1. Institute of Microelectronics of Barcelona (IMB-CNM, CSIC), 2. Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, 08193, Barcelona, Spain., 3. Murcian Institute of Agricultural and Environmental Research and Development (IMIDA), 4. IMB-CNM (CSIC))

12:15

Workshop : MNE Lunch Seminar

LUNCH Talk Dissemination Strategy

Venue - Theatersaal - ORAL

Organised by: Helmut Schift

MNE Lunch Seminar-1 Best publishing practices for early career researchers

» [Abby Li](#)¹ (1. Elsevier, Publisher)

MNE Lunch Seminar-2 Publishing, AI and Research Integrity

» [Edwin Constable](#)¹ (1. University of Basel)

13:15

Oral : S08A-T1

Process optimization & metrology

Venue - Auditorium - ORAL - PLENARY

Organised by: Dimitrios Kazazis

S08A-T1-1 Deep Learning Prediction and Optimisation of Nanolithography Processes

» [Ismaeil Alnaab](#)¹, Ying Tran¹, Ben Mills¹, [Yasir Noori](#)¹ (1. University of Southampton)



Continued from **Wednesday, 23 September**

S08A-T1-2 Reaction Mechanisms in Copper Atomic Layer Deposition using Copper(II) Hexafluoroacetylacetonate and Diethylzinc via In Situ Time-of-Flight Mass Spectrometry

» Ivo Utke¹, Camilla Minzoni¹, Sylwia Klejna², Krzysztof Mackosz¹, Aleksandra Szkudlarek², Aleksandra Figura-Jagoda², Marcin Sikora³, Ramakrishna Ramisetty⁴, Andreas Werbrouck⁵, Patrik Hoffmann⁶ (1. Empa Thun, 2. AGH Krakow, 3. National Synchrotron Radiation Centre SOLARIS, 4. Tofwerk AG, 5. University of Ghent, 6. EPFL)

S08A-T1-3 Direct measurement of acid diffusion in chemically-amplified resist by electrochemical characterization

» Jean-David Isasa¹, Dimitrios Kazazis¹, Theodoros Manouras², Yasin Ekinci¹ (1. Paul Scherrer Institut, 2. Department of Materials Science and Engineering, University of Crete)

S08A-T1-4 Electron Beam Induced Nanoengineering in Amorphous Silica Nanomembranes

» Abbhiraaj Singh¹, Kota Sugisaka², Takashi Sumigawa², Amit Banerjee¹, Ryosuke Matsumoto³, Takahiro Namazu¹ (1. Kyoto University of Advanced Science, 2. Kyoto University, 3. The University of Osaka)

S08A-T1-5 Unravelling the Microscopic Mechanisms and Transient Dynamics of 4-ns Laser Lift-Off in InPnGaAs Heterostructures

» Yusheng Yang¹, Francois Chancerel¹, Steven Brems¹, Reynald Alcotte¹, Clement Merckling¹ (1. imec)

13:15

Oral : S08B-T2

Probes

Venue - Theatersaal - ORAL

Organised by: Luis Guillermo Villanueva

S08B-T2-1-INVITED Pico Perfect Placement: Atom Precise Manufacturing is Now Practical

» Robert Wolkow¹ (1. University of Alberta)

S08B-T2-2 Room-temperature displacement sensing of an AFM cantilever using a silicon-based single electron transistor

» Komal Kaur¹, Wenkun He¹, Andrew Yacoot², Mervyn Jones¹, Zahid Durrani¹ (1. Imperial College London, 2. National Physical Laboratory)

S08B-T2-3 Deterministic Patterning of Gate-Tunable Single-Photon Emitters in Monolayer WSe₂ on Rigid SiO₂/Si Substrates via AFM Nanoindentation

» Sanket Jugade¹, Ajit Kumar Dash¹, Manavendra Pratap Singh¹, Hardeep -¹, Tilly Guyot², Cora Crunteanu-Stanescu², Indrajeet Dhananjay Prasad³, Yunus Waheed³, Sumitra Shit³, Sébastien Roux², Santosh Kumar³, Cedric Robert², Xavier Marie², Akshay Naik¹, Akshay Singh¹ (1. Indian Institute of Science Bangalore, 2. Université de Toulouse, INSA-CNRS-UPS, LPCNO, 3. Indian Institute of Technology, Goa)

S08B-T2-4 New design of integrated self-sensing cantilevers for correlative SPM

» Wojciech Godlewski¹, Bartosz Pruchnik¹, Paweł Janus², Andrzej Sierakowski², Magdalena Kucharska², Dominik Badura¹, Władysław Kopczyński¹, Krzysztof Kwoka¹, Julia Pruchnik¹, Robert Jesionowski¹, Tomasz Piasecki¹ (1. Wrocław University of Science and Technology, 2. Institute of Microelectronics and Photonics Lukasiewicz Research Network)

13:15

Oral : S08C-T1

Industrial Highlights 1

Venue - Brünig - ORAL

Organised by: Eva De Leo and Vitaliy Guzenko

S08C-T1-1 Extending the Limits of High-Aspect-Ratio Micro- and Nanofabrication for Advanced Optical Devices

» Florian Döring¹, Thomas Beckenbach², Andreas Bacher³, Judith Hohmann³, Marina Rojano¹, Jan Erjawetz¹, Adam Kubec¹, Damien Eschimese¹ (1. XRnanotech, 2. Microworks, 3. KIT)



Continued from Wednesday, 23 September

S08C-T1-2 Scalable Integration of Carbon Nanotubes for Next-Generation CNT-FET

» [Wenhao Huang](#)¹, Frederik van Veen², Luca Ornago¹, Marko Nikolic¹, Sayedeh Emami¹, Natanael Lanz¹, Seoho Jung¹, Mickael L. Perrin³, Maria El Abbassi¹ (1. Chiral Nano AG, 2. Empa, Dübendorf, Switzerland; 3. Empa, Dübendorf, Switzerland - ETH Zürich, Zürich, Switzerland)

S08C-T1-3 Towards Mix & Match resist patterning by e-beam and UV lithography using a positive resist for a scalable process technology

» [Anja Voigt](#)¹, Anett Kolander¹, Marina Heinrich¹, Sebastian Schermer², Markus Gottwald², Gregor Büttel², Micha Haase², Christian Helke², Christine Schuster¹, Arne Schleunitz¹ (1. micro resist technology GmbH, 2. Fraunhofer ENAS)

S08C-T1-4 Novel nanodevice fabrication with thermal scanning probe lithography

» [Jana Chaaban](#)¹, Julia Stark¹, Elliott Clerc¹, Andrea Ubezio¹, Antoaneta Damyanova¹, Fabian Könnemann¹, Kartik Buddha¹, Simon Bonanni¹, Emine Çağın¹ (1. Heidelberg Instruments Nano AG)

S08C-T1-5 Xolography: Volumetric 3D Printing of Optical Elements and Living Matter Across the Micro- to Centimeter Scale

» [Arpita Roychoudhury](#)¹, Martin Herder¹, Niklas König¹, Erik Brauer¹, Yves Garmshausen¹ (1. xolo GmbH)

13:15

Oral : S08D-T4

Life Cycle Analysis

Venue - Grimsel - ORAL

Organised by: Cyrille Hibert

S08D-T4-1-INVITED Life Cycle Analysis of electronic assemblies and discrete components to reduce environmental impact as well as waste

» [Jeff Kettle](#)¹ (1. University of Glasgow)

S08D-T4-2 How to Reduce the Environmental Impacts of Micro and Nanofabrication? Quantifying Mitigation Strategies Using Absolute Environmental Sustainability Assessment

» [Katalin Lestyan-Goda](#)¹, Stig Olsen¹, Stephan Sylvest Keller¹, Kristian Mølhave¹ (1. Technical University of Denmark)

S08D-T4-3 Ammonium alginate photopatterning assisted by polyoxometalates towards a bio-sourced photoresist for 248 nm lithography

» [Charalampos Katsogridakis](#)¹, Veroniki P Vidali², Antonios Douvas³, Dipti RANI⁴, Kylian Virieux⁵, Stephane Trombotto⁶, Corinne GABLIN⁷, Didier Leonard⁷, Yann Chevolot⁸, Jean-louis leclercq⁸, Panagiotis Argitis³ (1. National Centre for Scientific Research "Demokritos" (NCSR "Demokritos"), Institute of Nanoscience and Nanotechnology, Agia Paraskevi, Athens, 15341, 2. Institute of Nanoscience & Nanotechnology, NCSR "Demokritos", 3. NCSR Demokritos, 4. inl, 5. Universite Lyon 1, INSA Lyon, Universite Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, 6. Universite Lyon 1, INSA Lyon, Universite Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, France, 7. Universite Lyon 1, CNRS, UMR 5280, Lyon, 69100, 8. CNRS, Ecole Centrale de Lyon, INSA Lyon, Université Claude Bernard Lyon 1, CPE Lyon, INL, UMR5270, Ecully, 69134)

S08D-T4-4 A Ranked Framework for Bottom-Up LCA of Etching Processes

» [Saumya Sadhu](#)¹, [Rupert Baumgartner](#)¹ (1. University of Graz)

15:00

Oral : S09A-T1

Grayscale Lithography

Venue - Auditorium - ORAL - PLENARY

Organised by: Dimitrios Kazazis

S09A-T1-1 Irregular Microlens Arrays Fabricated by DMD-Based Maskless Lithography for Laser Beam Illumination

» [Yung Lee](#)¹, Zhi Hao Chen², Chun-Ying Wu³ (1. National Cheng Kung, 2. National Cheng Kung University, 3. Southern Taiwan University of Science and Technology)



Continued from Wednesday, 23 September

S09A-T1-2 Germanium microlenses for thermal-IR applications

» [Robert Leitel](#)¹, Peter Dannberg¹, Antje Oelschläger¹, André Matthes¹, Thomas Käsebier² (1. Fraunhofer Institute for Applied Optics and Precision Engineering IOF, 2. Friedrich-Schiller-University Jena, Institute of Applied Physics)

S09A-T1-3 Towards nm-rough 3D X-ray optics via grayscale lithography and selective thermal reflow

» [Giulia Malvicini](#)¹, Narjes Abdollahi Messmer¹, Sina Saxer², Helmut Schiff¹ (1. Paul Scherrer Institut, 2. Fachhochschule Nordwestschweiz (FHNW))

S09A-T1-4 Manufacturing of 3D Glass Micro-Optics through Laser Assisted Topological Transformation

» [Martin Lentz](#)¹, Alexandre Duval¹, Yves Bellouard¹ (1. EPFL, Galatea Lab)

15:00

**Oral : S09B-T2
MEMS**

Venue - Theatersaal - ORAL

Organised by: Luis Guillermo Villanueva

S09B-T2-1 Antagonistic In-Plane/Out-of-Plane Nanoactuator for Photonic Switching

» [Akis Arabatzis](#)¹, Danni Li¹, Manfred Kohl¹ (1. KIT)

S09B-T2-2 MEMS Electron Monochromator

» [Martijn Jacobus Adriaans](#)¹, Jacob Hoogenboom¹, [Ali Mohammadi-Gheidari](#)¹ (1. Delft University of Technology)

S09B-T2-3 Layer-Structure Effects on Warpage Behaviors of Proof-Masses with Ti/Au Multi-Layered Structures toward MEMS Capacitive Accelerometers

» [Masako Okumura](#)¹, Tomoyuki Kurioka¹, Gen Hikosaka¹, Katsuyuki Machida¹, Tso-Fu Mark Chang¹, Hiroyuki Ito¹, Yoshihiro Miyake¹, Masato Sone¹ (1. Institute of Science Tokyo)

S09B-T2-4 Multi-parametric MEMS sensor for characterization of hydrogen-enriched natural gases

» [Melania Coronese](#)¹, Christof Huber², Luis Guillermo Villanueva¹ (1. EPFL NEMS, 2. TrueDyne sensors AG)

15:00

Oral : S09C-T1

Industrial Highlights 2

Venue - Brünig - ORAL

Organised by: Eva De Leo and Vitaliy Guzenko

S09C-T1-1 Pushing the Boundaries of Micro- and Nanosystem Simulations

» Sven Friedel¹, [Fabio Greco](#)¹ (1. COMSOL Multiphysics GmbH)

S09C-T1-2 FabuBlox: Process Discovery and Intelligent Fab Management in the Era of Agentic AI

» [Jan Tiepelt](#)¹ (1. Fabublox, Inc.)

S09C-T1-3 From Miniaturized Bioassays to 3D Imaging of Microfluidic Devices

» [Yuksel Temiz](#)¹ (1. Microqubic AG, Zug)

S09C-T1-4 New, versatile 3D printing technology at the nano-scale

» [Søren Isaksen](#)¹ (1. Copenhagen Microsystems Aps)

S09C-T1-5 MEMS-based IoT device for vibration energy harvesting

» [Hiroki Kuwano](#)¹, Nguyen Hoang Hung², Takaharu Yamada², Takahito Ono² (1. Sendai Smart Machines Ltd, 2. Tohoku University)

15:00

Oral : S09D-T4

Sustainability in Manufacturing 2

Venue - Grimsel - ORAL

Organised by: Cyrille Hibert

S09D-T4-1-INVITED Sustainable process strategies based on the environmental footprint of semiconductor manufacturing

» [Isabelle Servin](#)¹ (1. CEA-Leti)



Continued from Wednesday, 23 September

S09D-T4-2-INVITED From Silica Sand to Semiconductors: Understanding and Assessing Environmental Impacts in Cleanroom Manufacturing

» [Yannick Rivoira](#)¹ (1. CEA-Leti)

S09D-T4-3-INVITED Synergistically Reinforced Detachable Photonic Film for Efficient Daytime Radiative Cooling

» [Seongwoo Park](#)¹, Jaemin Park¹, Hangyu Lim¹, Jisung Ha¹, Deokhwan Lee¹, Sangho Kang¹, Heon Lee¹ (1. Korea University)

S09D-T4-4 Implementing resilience with ICTs

» [Sébastien Toussaint](#)¹ (1. UCLouvain)

16:00

Poster : S10A-T1-P

POSTER 2 - EVEN - T1

Venue - Auditorium Foyer OG - T1

Organised by: Dimitrios Kazazis

S10A-T1-P-1 Monolithic Integration of a Transient-Tolerant 1T-1M Memristor-Based Threshold Logic Gate (TLG) Unit Cell on a 0.18-µm CMOS Platform

» [Won-Chul Lee](#)¹, Hyoungho Ko², Jongwon Lee³, Solji Park⁴, A-ryeong Lee⁵, Jonghyun Song² (1. Department of Electronics Engineering, Chungnam National University, Daejeon 34134, National Nanofab Center (NNFC), Daejeon, 2. Department of Electronics Engineering, Chungnam National University, 3. Department of Semiconductor Convergence, Chungnam National University, 4. Graduate School of Analytical Science and Technology (GRAS), Chungnam National University, 5. Department of Materials Science and Engineering, Chungnam National University)

S10A-T1-P-2 Nano-texturing on silicon via orthogonal polarized femtosecond laser with burst mode

» WEN-JIA CHANG¹, [Yuanjen Chang](#)² (1. Institute of Mechatronic Engineering, National Taipei University of Technology, 2. Institute of Manufacturing Technology, National Taipei University of Technology, Taipei 10608 Taiwan)

S10A-T1-P-3 An Industrial Workflow for Scalable Micro and Nanostructures

» [Marek Krehel](#)¹, Glen de Villafranca², Christoph Baum³, Julian Neises³ (1. 3D AG, 2. Himax IGI, 3. polyscale innovations GmbH)

S10A-T1-P-4 CD-SEM measurement impact on curvilinear mask patterns: Resist shrinkage behaviour and its spatial dependence

» [Hikari Ogawa](#)¹, Hideki Matsui¹, Yoshinori Kojima¹ (1. NuFlare Technology, Inc.)

S10A-T1-P-5 Fabrication of Manhattan Josephson Junctions on 200 mm Si Wafer

» [Fayçal Houssaini](#)¹, Dominique Drouin¹, Serge Ecoffey¹, Gregory Levieil¹, Nicolas Bourlet¹, Max Hofheinz¹, Samuel Rene de Cotret¹, Sean Branagan² (1. Université de Sherbrooke, 2. Raith)

S10A-T1-P-6 Enabling Next Generation Packaging with Glass and Quartz Core Substrates

» [Lukas Hofmann](#)¹ (1. PLANOPTIK AG)

S10A-T1-P-7 Deep Learning-Based Intelligent Detection System for Zone Plate Process Errors

» [Xunjia Zhao](#)¹, Hao Quan¹, Qingxin Wu¹, Qiucheng Chen¹, Kangping Liu¹, Jinyu Guo¹, Fei Wu¹, Yifang Chen¹ (1. Fudan University)

S10A-T1-P-8 Numerical Simulation of the Limiting Period of Grating in Copolymer/PMMA Bilayer Resist

» [Fei Wu](#)¹, Jinyu Guo¹, Hao Quan¹, Xunjia Zhao¹, Qiucheng Chen¹, Qingxin Wu¹, Kangping Liu¹, Sheng Tao¹, Yifang Chen¹ (1. Fudan University)

S10A-T1-P-9 Research on a Yield-Driven Enhanced VSB Mask Fracturing Algorithm for Complex Non-Manhattan Patterns at Advanced Technology Nodes

» Wei Liao¹, Heming Wu¹, [Zhuming Liu](#)¹ (1. Institute of Semiconductors, Guangdong Academy of Sciences)

S10A-T1-P-10 Algorithmic Patterning – a new Electron Beam Lithography approach to unlock efficient Photonic Device and cm-scale Metasurface Fabrication

» [Frank Nouvertne](#)¹, Michael Kahl¹, Volker Boegli¹ (1. Raith GmbH)



Continued from Wednesday, 23 September

S10A-T1-P-11 Design and fabrication of transmission gratings for spectroscopic and lithographic applications at extreme-ultraviolet wavelengths

» Sascha Brose¹, Lars Lohmann¹, Serhiy Danylyuk², Annika Bonhoff¹, Carlo Holly¹ (1. RWTH Aachen University TOS, 2. Fraunhofer ILT)

S10A-T1-P-12 Fabrication of Adhesive Hydrophobic Surfaces Using Photosensitive Polyimide and Two-Step Etching

» Yuu Sumita¹, Jun Taniguchi¹ (1. Tokyo University of Science)

S10A-T1-P-13 Vat-Less Roll-to-Roll DLP Photopolymerization System with Tilt-Assisted Sequential Contact and Detachment for High-Viscosity Ceramic Resin 3D Printing

» Hyuntae Kim¹, Kyoohee Woo¹, Seungwoo Shin¹, Pyeong-sam Ko¹, Sin Kwon¹ (1. Korea Institute of Machinery & Materials)

S10A-T1-P-14 Thin SiARC layers for patterning ultra-thin layers: an integrated approach

» Guido Rademaker¹, Jeanne Davost¹, Jonathan Pradelles¹, Corinne Comboroure¹, Jorge Nacenta Mendivil¹, Sébastien Guilbaud¹, Mouaad-Yassine Aliouat¹, Aurélien Sarrazin¹, Mathieu Stigliani¹, Claire Fournier¹, Estelle Guyez¹, Stephane Pocas¹ (1. Univ. Grenoble-Alpes, CEA, Leti, Grenoble, 38000, France)

S10A-T1-P-15 Study of deformations control with S-NIL

» Tanneguy Blandin¹, Léopold Boudier¹, Jean-Baptiste Doucet¹, Olivier Gauthier-Lafaye¹ (1. LAAS-CNRS)

S10A-T1-P-16 Resonance-Induced Enhancement of Carbon Nano-Onion Synthesis in Acoustic Jet Diffusion Flames

» Shuhn-Shyurng Hou¹, Hsing-Chih Hsieh¹, Chung-Yi Cheng¹, Chun-Ta Chen², Hao-Lin Hsu¹ (1. Kun Shan University, 2. National Taiwan Normal University)

S10A-T1-P-17 Dimensional Refinement of Photoresist Masks via Microwave Oxygen Plasma for Uniform Spin Valve Fabrication

» Filipe Favita¹, Pedro Araujo¹, André Laranjeira², Diogo Gonçalves¹, Susana Cardoso¹ (1. INESC Microsistemas e Nanotecnologias, 2. Instituto Superior Técnico, Universidade de Lisboa)

S10A-T1-P-18 Beyond Superhydrophobicity: Oil-Repellent Microstructured Surfaces for Durable and High-Efficiency Solar Cells

» Ilhan Yoo¹, Hyunsik Yoon¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S10A-T1-P-19 Update on Inkjet-Printable Nanoimprint Materials for Etch Pattern Transfer

» Christoph Jurissek¹, Mirko Lohse¹, Sebastian Killge², Christian Helke², Micha Haase², Martin Messerschmidt¹, Arne Schleunitz¹, Gabi Grützner¹ (1. micro resist technology GmbH, 2. Fraunhofer ENAS)

S10A-T1-P-20 Resists for Mix&Match processes combining 50 kV e-beam lithography and 375 nm direct laser writing

» Silvia Diewald¹, Gernot Goll¹ (1. Karlsruhe Institute of Technology (KIT))

S10A-T1-P-21 Integrated Aluminum Nitride Nano-photonics Fabrication on Fused Silica for Surface Electrode Ion Trap Quantum Processors

» Mohammad Masum Billah¹, Nora D. Stahr¹, Jacob Stupp¹, Christopher F. Reiche², Friederike Giebel³, Marlon Kuhn¹, Philipp L. Hoffmann¹, Eike Iseke³, Konstantin Thronberens³, Nila Krishnakumar³, Christian Ospelkaus⁴ (1. Leibniz Universität Hannover, Institut für Quantenoptik; Laboratorium für Nano- und Quantenengineering, 2. Leibniz Universität Hannover, Institut für Quantenoptik; Jade Hochschule - University of Applied Sciences, 3. Leibniz Universität Hannover, Institut für Quantenoptik; Physikalisch-Technische Bundesanstalt, 4. Leibniz Universität Hannover, Institut für Quantenoptik; Laboratorium für Nano- und Quantenengineering; Physikalisch-Technische Bundesanstalt)



Continued from Wednesday, 23 September

S10A-T1-P-22 Fabrication of freestanding metallic thin-film membranes for MEMS bulge testing

» [Basma Elsaka](#)¹, Philipp Kästner², Eireen Käkel³, Benoit Merle³, Hartmut Hillmer² (1. Institute of Materials Engineering, Mechanical Behavior of Materials, University of Kassel, 34125 Kassel, Germany, 2. Institute of Nanostructure Technologies and Analytics, Technological Electronics, University of Kassel, 34132 Kassel, Germany, 3. Institute of Materials Engineering, Mechanical Behavior of Materials, University of Kassel, Mönchebergstr. 3, 34125 Kassel, Germany)

S10A-T1-P-23 Bulk acoustic standing wave in aluminum microfluidics device with parallel channels

» [Amaury de Hemptinne](#)¹ (1. Vrije Universiteit Brussel)

S10A-T1-P-24 Localized Ultra-Fine Tungsten Residue Characterization Methodology for TSV Processes

» [Sanghyeon Jeon](#)¹, Hoseung Na¹, Hanseon Lee¹, Seungbum Kim¹, Boyoung Song¹, Taehoon Park¹ (1. DRAM Yield Enhancement Team, Memory Division, Device Solutions (DS) Business, Samsung Electronics Co., Ltd., Suwon, Korea)

S10A-T1-P-25 Single-Development Dual-Layer Negative Photoresist/Sacrificial Layers for Hexagonal Bravais UV Cavity Array Patterning

» [Arwa Saud Abbas](#)¹ (1. KACST)

S10A-T1-P-26 Spatially Confined Growth of 3-PPA Doped Quasi-2D Perovskites via Nanoimprint Lithography for Ultra-Low Threshold Multi-Wavelength Lasing

» Yuexu Si¹, Quanhong Feng¹, Ruochen Wang¹, Yulin Zhao¹, Chen Cheng¹, [Shuhao Si](#)¹ (1. Shandong Normal University)

S10A-T1-P-27 Reaction Propagation and Shrinkage-Induced Deformation in Al/Ni Multilayers for Bonding Applications

» [Sarankamol Athichaikhongphat](#)¹, Hiroya Saegusa¹, Takahiro Namazu¹ (1. Kyoto University of Advanced Science)

S10A-T1-P-28 Low Temperature Cyclic Epitaxy On Patterned Substrates : Impact On Facet Formation

» [Alice Ferrandon](#)¹, Fabien Deprat¹, Matys Guyard¹, Luc Favre², Isabelle Berbezier² (1. ST Microelectronics, 2. IM2NP, Aix Marseille University, CNRS)

S10A-T1-P-29 Beyond Conventional Biasing: Tailored Waveforms for Atomic-Scale Control in Sputter Etching of MoS2 and Dielectric Layers

» [Anton Pletzer](#)¹, Jonas Giesekus², Julian Schulze², Claudia Bock¹ (1. Microsystems Technology, Ruhr University Bochum, Bochum, 44801, Germany, 2. Applied Electrodynamics and Plasma Technology, Ruhr University Bochum, Bochum, 44801, Germany)

S10A-T1-P-30 Wafer-Scale Hybrid Fabrication of Vertically aligned GaN Nanorod Arrays for Ultra-High-Resolution Nano-LED Displays

» [Hak-jong Choi](#)¹ (1. Korea Institute of Machinery & Materials)

S10A-T1-P-31 Challenges in fabrication process of 3D structures via grayscale projection lithography

» [Sebastian Schermer](#)¹, Ritesh Ambar², Stephen DeMoor³, Andrew Zanzal³, Patrick Reynolds³, Christian Helke¹, Anja Voigt⁴, Danny Reuter¹ (1. Fraunhofer ENAS, 2. Technical University of Chemnitz, 3. Benchmark Technologies, 4. micro resist technology GmbH)

S10A-T1-P-32 Extending Wavefront Phase Imaging (WFPI) to Extreme Warpage Silicon Wafers: A Pressure-Controlled Deformation Device for Optical Metrology Validation

» [Cesar Perez Dominguez](#)¹, Pablo Cueto-Corral¹, Juan Trujillo-Sevilla¹, Carmelo Militello-Militello² (1. WOOPTIX S.L., 2. UNIVERSIDAD DE LA LAGUNA)

S10A-T1-P-33 Scalable Manufacturing of Micro-Mechanical Metamaterials

» Hava Musa Bilyalova¹, Arturas Kiselis¹, Hans Goosen¹, [Marcel Tichem](#)² (1. Delft University of Technology, 2. TU Delft)



Continued from Wednesday, 23 September

S10A-T1-P-34 Sugar-Assisted Transfer Printing of Nanostructures onto Non-Planar Industrial Surfaces

» [Ajsa Cuprija](#)¹, Adam Burke¹, Axel Knutsson², Susanne Norgren³, Anders Mikkelsen¹ (1. Lund University, 2. Alfa Laval Technologies AB, 3. Sandvik Coromant)

S10A-T1-P-35 Wettability-Controlled Transitions in Colloidal Drying Patterns on Surface-Treated Hexagonal Microcavity Arrays

» [Seong Min Yoon](#)¹, Yu Ju Han¹, Myung Seo Kim², Young Tae Cho¹ (1. Changwon National University, 2. Chagnwon National University)

S10A-T1-P-36 Self-aligned fabrication of silicon photonic circuits with rib resonators and partially suspended bus waveguides

» [Bingrui Lu](#)¹, Kamma Nørrelund Pedersen¹, Jakob Andreas Finne¹, Mikkel Heuck¹, Babak Vosoughi Lahijani¹, Philip Trøst Kristensen¹, Søren Stobbe¹ (1. DTU Electro, Technical University of Denmark)

S10A-T1-P-37 Laser Diffraction Based Rotational Error Checking Method for nano scale periodic patterns

» [Seo Na Yoon](#)¹, Seong Min Yoon², Seo Rim Park¹, Young Tae Cho² (1. Department of Smart Manufacturing Engineering, Changwon National University, Changwon, 51140, 2. Changwon National University)

S10A-T1-P-38 Advancing Micro- and Nanofabrication Using Dry Film Technology

» Johannes Wolf¹, Christoph Waberski¹, Anett Kolander¹, Anja Voigt¹, Marina Heinrich¹, Jan Boelke¹, Hiroyuki Ohguri², Aoi Agematsu², Takao Asano², [Arne Schleunitz](#)¹ (1. micro resist technology GmbH, 2. Tokyo Ohka Kogyo Co., Ltd.)

S10A-T1-P-39 Emissivity Prediction Framework for Freestanding Multilayer Metallic Nanomembranes

» [Kihun Seong](#)¹, [Sung Kyu Jang](#)¹, Yongkyung Kim¹, Jonghyuk Yoon¹, Jiho Kim², Sangsul Lee², Hyun-Mi Kim¹, Hyeongkeun Kim¹, Seul-Gi Kim¹ (1. Korea Electronics Technology Institute, 2. Pohang University of Science and Technology (POSTECH))

S10A-T1-P-40 Silicon-Micromachining Process for Sub-THz Front-Ends

» [Cesare Tadolini](#)¹, Paolo Sberna², Maria Alonso-delPino¹, Nuria Llombart¹ (1. Delft University of Technology, 2. Tera-Hertz Sensing Group, Microelectronics Dept., Delft University of Technology, Delft, 2628 CD, The Netherlands)

S10A-T1-P-41 Comparative study of photodetection properties of epitaxial graphene on Ge(100) and transferred graphene on GOI substrates

» [Loïc Rayneau](#)¹, Mansour Aouassa², Adonis Takala³, Olivier Gourhant³, Ismail Madaci¹, Antoine Ronda¹, Mathieu Abel¹, Isabelle Berbezier¹ (1. IM2NP, Aix Marseille University, CNRS, 2. Department of Physics, College of Science and Arts, Jouf University, 3. STMicroelectronics)

S10A-T1-P-42 Systematic investigation of plasma etching processes for GeSn/Si nanophotonic device fabrication

» Rutuja Rajendra Mandavkar¹, [Beiqi Ding](#)², Reyhaneh Ramezani³, Anna Fontcuberta i Morral³, Simone Iadanza¹, Kirsten Moselund¹ (1. Paul Scherrer Institut, 2. EPFL, Paul Scherrer Institut, 3. EPFL)

S10A-T1-P-43 In-situ TEM Investigation of Crystallization and Martensitic Transformation in Ti-Ni-Cu Shape Memory Alloy Thin Films

» [Elaheh Akbarnejad](#)¹, Aleksander Kostka¹, Yujiao Li¹, Alfred Ludwig¹ (1. Ruhr University Bochum)

S10A-T1-P-44 Spin-coating of IR Bragg Mirror based on ZrO2 nanocomposite

» [Marouane Chag](#)¹, Joelle El Hayek¹, Jonathan Wild¹, Jean-Hervé Tortai¹, David Peyrade¹ (1. LTM-CNRS)

S10A-T1-P-45 Time evolution of contact angle on UV-Ozone treated OrmoStamp-family resists for microfluidic applications

» [Phil Grzybeck](#)¹, CAGLA SELALMAZ¹, Juvaria Zafar¹, Irene Fernandez-Cuesta¹ (1. University of Hamburg)



Continued from Wednesday, 23 September

S10A-T1-P-46 Advanced Refractive X ray Optics Based on Deep Silicon Compound Refractive Lenses and Tunable Zoom Architectures

» [Jan Erjawetz](#)¹, Josephine Gutekunst¹, Timothee Allenet¹, Adam Kubec¹, Christoph Rau², Arndt Last³, Florian Döring¹ (1. XRnanotech, 2. Diamond Light Source Ltd, 3. Karlsruhe Institute of Technology (KIT))

S10A-T1-P-47 EUV-induced Hydrogen Desorption Lithography: A Step towards Scalable Quantum Devices in Silicon

» [David Schrago](#)¹, Yasin Ekinci², Dimitrios Kazazis², Iacopo Mochi², Matthias Muntwiler¹, Steven Schofield³ (1. Paul Scherrer Institute PSI, 2. Paul Scherrer Institut, 3. University College London UCL)

S10A-T1-P-48 Fabrication of bubble-trapping hierarchical surfaces using Direct Laser Lithography

» [Aina Quintilla](#)¹, Nico Halbgebauer¹, Gernot Goll¹ (1. Karlsruhe Institute of Technology (KIT))

S10A-T1-P-49 Fabrication of Three-Dimensional Microstructures for Advanced Biomimetic Applications

» [Hyunsik Yoon](#)¹ (1. Dept. of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology (SEOULTECH))

S10A-T1-P-50 Novel fabrication method toward high line-density X-ray Blazed Gratings

» [Hui-Yuan Chen](#)¹, Christian David¹, Melvin Hänggi², Sina Saxer², Jan Erjawetz³, Florian Döring³ (1. Paul Scherrer Institut, 2. Fachhochschule Nordwestschweiz (FHNW), 3. XRnanotech)

S10A-T1-P-51 Fabrication of laminated pressure-resistant moth-eye film using low-modulus and high-modulus UV-curable resins

» [Takuto Wakasa](#)¹, Jun Taniguchi¹ (1. Tokyo University of Science)

S10A-T1-P-52 AZ5214E JP – The image reversal resist in triple use in maskless photolithography

» [Uwe Hübner](#)¹ (1. Leibniz Institute of Photonic Technology)

S10A-T1-P-53 Electron Beam-Induced Radiolysis as a Trigger for Controlled Debonding in ALD/MLD Coatings

» [Federica Sandulli](#)¹, Daniele Casari¹, Ivo Utke¹, Johann Michler¹, Barbara Putz¹ (1. Empa Thun)

S10A-T1-P-54 Surface Molecular Engineering of Carbon Nanotubes: from Functionalization to Cation Sensing

» [Yanlin Pan](#)¹, Dominika Baster², Jan Reger¹, Daniel Käch¹, Lionel Wettstein¹, Frank Krumeich¹, Alla Sologubenko¹, Mario El Kazzi², Máté Bezdek¹ (1. ETH Zurich, 2. Paul Scherrer Institute PSI)

16:00

Poster : S10A-T2-P

POSTER 2 - EVEN - T2

Venue - Auditorium Foyer OG - T2

Organised by: Luis Guillermo Villanueva

S10A-T2-P-1 Pushing the limits of photoconductivity via hot electrons in deep trap states in plasmonic architectures

» [Moonsang Lee](#)¹ (1. Inha university)

S10A-T2-P-2 Computational Evaluation of Dielectric Enhancement and Thermal Stability in Transition Metal-Doped ZnO Nanowires for Advanced Piezoelectric Applications

» [Rasool Akhtar Alias Osama](#)¹, Graham Wood¹, Hannah Levene¹, Peter Lomax¹, Rebecca Cheung¹ (1. The University of Edinburgh)

S10A-T2-P-3 Fabrication and Characterisation of Multiple Buried Lateral Bottom-Gates

» [Luisa Koke](#)¹, Thomas Grap¹, Jürgen Moers¹, Markus Kaiser¹ (1. Forschungszentrum Jülich)

S10A-T2-P-4 New Insights on Dielectric Characterization in the Nanospace using Electrostatic Force Microscopy

» [Lukas Lehnert](#)¹, Lars Helgest¹, Ronald Thoelen², Hildegard Möbius¹ (1. University of Applied Sciences Kaiserslautern, 2. Hasselt University)



Continued from Wednesday, 23 September

S10A-T2-P-5 Tantalum-Encapsulated Niobium Superconducting Resonators: High Internal Quality Factor and Improved Temporal Stability via Surface Passivation

» [Anas Alkhazaleh](#)¹, Juan Villegas¹, Florent Ravau¹, Alexey Zharinov¹ (1. Technology Innovation Institute (TII))

S10A-T2-P-6 Advanced ACF Bonding Technique Using Silicon-Based Interposers for Multichannel Neural Interface-CMOS Integration

» [HyungDal Park](#)¹, [Seonho Seok](#)², Jinseok Kim¹ (1. Korea Institute of Science and Technology, 2. University-Paris-Saclay)

S10A-T2-P-7 Towards Bimetallic Nanowire Arrays with Controlled Compositions Using Block Copolymer Films: The Interplay Between Metal Precursors

» [Ofer Burg](#)¹, Carmel Cohen¹, Roy Shenhar¹ (1. Institute of Chemistry and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem)

S10A-T2-P-8 Gate-Modulated NO₂ Sensing in Atomic-Layer-Deposited ZnO Thin-Film Transistors under Near-Threshold Operation

» [Sungjae Kim](#)¹, Se-Hyeong Lee¹, Minseong Kim¹, Hyeonjeong Ji¹, Hye-Ji Yoon¹, Moonsuk Yi¹ (1. Pusan National University)

S10A-T2-P-9 On-chip co-integration of a multi-folded Si spring residual stress measurement device with a MEMS mirror structure via a unified SOI process

» [Yuki Ashikari](#)¹, Shun Takase¹, Ryoya Yamama¹, Chiemi Oka¹, Seiichi HATA¹ (1. Graduate Department of Micro-Nano Mechanical Science and Engineering, Nagoya University)

S10A-T2-P-10 Unique humidity sensor using carbon nanotube composite paper

» [Riku Kobayashi](#)¹, Yuma Morita², Koya Arai², Takahide Oya¹ (1. Graduate School of Engineering Science, Yokohama National University, 2. Mitsubishi Materials)

S10A-T2-P-11 Surface Chemical Stability of PtCoO₂ Thin Films for Nanoscale Interconnects

» [Kerry Hazeldine](#)¹, Jean-Philippe Soulie¹, Liam Dwyer², Alex Walton², Christoph Adelman¹, Silvia Armini¹ (1. imec, 2. University of Manchester)

S10A-T2-P-12 Metal-Phthalocyanine Functionalization of WS₂ Nanosheet Films for Enhanced NO₂ Chemiresistive Sensing at Room Temperature

» [Ran Li](#)¹ (1. Ecole polytechnique)

S10A-T2-P-13 Collective VLSI-compatible fabrication of optomechanical AFM probes on 200mm Si wafer

» [Munique KAZAR MENDES](#)¹, Guillaume Jourdan², Pierre Moritz³, Florian Vellutini⁴, Laurent Mollard¹ (1. Univ. Grenoble Alpes, 2. Univ. Grenoble-Alpes, CEA, Leti, Grenoble, 38000, France, 3. CEA-Leti, 4. Univ. Grenoble Alpes, CEA, Leti)

S10A-T2-P-14 Continuous intraocular pressure monitoring in glaucoma drainage devices

» [Qinlan Li](#)¹, Jaap Den Toonder¹, Inês Figueiredo Pereira¹ (1. Eindhoven University of Technology)

S10A-T2-P-15 Differentiable library-based inverse design of achromatic metalens for full-color near-eye displays

» [YoungSun Jeon](#)¹ (1. POSTECH)

S10A-T2-P-16 Design Aspects of a Scalable Large-Aperture Transmissive MEMS Spatial Light Amplitude Modulator with Annular Electrode Architecture

» [Philipp Kästner](#)¹, Basma Elsaka², Steffen Liebermann¹, Mustaqim Siddi Que Iskandar¹, Hartmut Hillmer¹ (1. Institute of Nanostructure Technologies and Analytics, Technological Electronics, University of Kassel, 34132 Kassel, Germany, 2. Institute of Materials Engineering, Mechanical Behavior of Materials, University of Kassel, 34125 Kassel, Germany)



Continued from Wednesday, 23 September

S10A-T2-P-17 High-Sensitivity Fiber Bragg Grating Platform for Perfluorooctanoic Acid Sensing

» [Theodoros Manouras](#)¹, Vasilios Sarakatsianos², Maria Vamvakaki¹, Vasileia Melissinaki², Gabriella Motta³, Guido Perrone⁴, Stavros Pissadakis² (1. Department of Materials Science and Engineering, University of Crete, 2. Institute of Electronic Structure and Laser, FORTH, 3. Alite Srl, 4. Department of Electronics and Telecommunications (DET), Politecnico di Torino)

S10A-T2-P-18 Contactless twist-angle tuning in graphene/hBN heterostructures by electron-beam charge injection

» Nicola Curreli¹, [Tero Kulmala](#)², Riya Sebait², Nicolo Petrini³, Matteo Bruno Lodi¹, Roman Furrer², Alessandro Fanti¹, Michel Calame², Ilka Kriegel³ (1. Università degli Studi di Cagliari, 2. Empa, 3. Politecnico di Torino)

S10A-T2-P-19 Accelerating innovation through lab-to-fab fabrication of optomechanical devices

» [Pierre Moritz](#)¹, Marc Gély¹, Jean-Luc Thomassin¹, Guillaume Jourdan¹, Marc Sansa¹ (1. Univ. Grenoble-Alpes, CEA, Leti, Grenoble, 38000, France)

S10A-T2-P-20 Temperature Dependence of Threshold Voltage Change in Metal Oxide Semiconductor Structures with High-Potential Electret

» [Yoshitaka Ikeda](#)¹, Hiroaki Honma¹, Hiroshi Toshiyoshi², Koji Sugano¹, Yoshitada Isono¹ (1. Kobe University, 2. The University of Toyko)

S10A-T2-P-21 Dependence of surface potential of potassium-ion electret on concentration of potassium aqueous solution during thermal oxidation process

» [Tomoya Ikeda](#)¹, Hiroaki Honma¹, Hiroshi Toshiyoshi², Koji Sugano¹, Yoshitada Isono¹ (1. Kobe University, 2. The University of Toyko)

S10A-T2-P-22 Continuous Amplitude and Phase Modulated X-Ray Zone Plates Fabricated by Planar Electron Beam Lithography

» [Hao Quan](#)¹, Fei Wu¹, Xunjia Zhao¹, Qiucheng Chen¹, Jinyu Guo¹, Qingxin Wu¹, Kangping Liu¹, Yifang Chen¹ (1. Fudan University)

S10A-T2-P-23 Electrothermal and electromechanical analysis of nanostructured sensors

» [Abel Palomas Jiménez](#)¹, Michelle Cedeño¹, Ana Coloma¹, Manuel Domínguez-Pumar¹, Sandra Bermejo¹ (1. Universitat Politècnica de Catalunya - BarcelonaTech)

S10A-T2-P-24 Ambipolar Transport in Al-Si Nanowire Schottky Barrier Field Effect Transistors

» Sayantan Ghosh¹, Banafsheh Aghvami¹, Alessandro Puddu¹, Artur Erbe¹, [Ahmad Echresh](#)¹ (1. Helmholtz-Zentrum Dresden-Rossendorf)

S10A-T2-P-25 Bi-layer sub-wavelength Al/SiO₂/Al grating polarizers for broadband near-ultraviolet to visible polarimetric detection

» [Jinyu Guo](#)¹, Kangping Liu¹, Sheng Tao¹, Hao Quan¹, Xunjia Zhao¹, Fei Wu¹, Yifang Chen¹ (1. Fudan University)

S10A-T2-P-26 Fabrication of Au/Poly(3,4-ethylenedioxythiophene) via Electrochemical Hybridization toward Non-Enzymatic Glucose Sensing

» [Tomoyuki Kurioka](#)¹, Joji Higuchi¹, Tso-Fu Mark Chang¹, Masato Sone¹ (1. Institute of Science Tokyo)

S10A-T2-P-27 Effect of Annealing on the Micro-Mechanical Properties of Gold Micro-cantilevers with Ti/Au Multi-layered Structures

» [Nobutaka Toake](#)¹, Tomoyuki Kurioka¹, Gen Hikosaka¹, Katsuyuki Machida¹, Chun-Yi Chen¹, Tso-Fu Mark Chang¹, Hiroyuki Ito¹, Yoshihiro Miyake¹, Masato Sone¹ (1. Institute of Science Tokyo)

S10A-T2-P-28 A Silicon Planar Hard X-ray Lens for the Debye Beamline

» [Silas Strebel](#)¹, Joan Vila Comamala¹, Adam Hugh Clark¹, Maarten Nachtegaal¹, Christian David¹ (1. Paul Scherrer Institut)

S10A-T2-P-29 Crystallographic Orientation-Controlled Dion-Jacobson Perovskite Artificial Synapses for Synaptic Plasticity Modulation in Neuromorphic Computing

» [Sang Heon Lee](#)¹, Jae Won Shim¹ (1. School of Electrical Engineering, Korea University)



Continued from Wednesday, 23 September

S10A-T2-P-30 Top-Electrode-Controlled PCM and ECM Switching in VO₂-Based MIM Memristors

» Hyunjun Kim¹, Noah Jang¹, Da Ye Kim¹, Seong Ho Kong¹ (1. Kyungpook National University)

S10A-T2-P-31 FEM-Based Shape Optimization of Electrothermal Actuator for Silicon Cleavage Planes Nanogap MEMS

» Kanta Fujiwara¹, Masaki Shimofuri¹, Jun Hirotsu¹, Toshiyuki Tsuchiya¹ (1. Kyoto University)

S10A-T2-P-32 Effect of Ag Top Electrode Area on Operating Voltage and Switching Uniformity of HfO₂/Al₂O₃/HfO₂ Tri-Layer RRAM

» Shyh-Jer Huang¹, Yun Chen¹, Zi-Hao Wang², Yen-Kun Su² (1. National Formosa University, 2. National Cheng-Kung University)

S10A-T2-P-33 Microcapillary Printing of Silver Nanoparticle Ink for Photoacoustic Ultrasound Generation

» Celeste Ovotrup¹, Giacomo Pasquali¹, Alessandra Corrado², Ferruccio Pisanello², Massimo De Vittorio¹ (1. DTU Health Tech, Technical University of Denmark, 2. Istituto italiano di tecnologia)

S10A-T2-P-34 Surface acoustic wave resonator for lunar dust mitigation in space applications

» Federico Peretti¹, Silvan Stettler¹, Luis Guillermo Villanueva² (1. École Polytechnique Fédérale de Lausanne, 2. EPFL NEMS)

S10A-T2-P-35 Fabrication, Characterization and Applications of Electrode-Integrated Functional Coverslips for Micro- and Nanofluidic Lab-on-a-Chip Devices

» Herbert Atrian-Garcia¹, Leon Seggering¹, Louise von Lacroix¹, Rukan Nasri¹, Irene Fernandez-Cuesta¹ (1. University of Hamburg)

S10A-T2-P-36 Multi-Modal Virtual Metrology for PEALD-Si₃N₄: Augmenting Equipment FDC Sensing with In-Situ ToF-MS Chemistry

» Jihun Kim¹, Sung Kyu Jang¹, Hyun-Mi Kim¹, Jihye Seo¹, Jaeboong Choi², Hyeonkeun Kim¹, Jong-Hyun Choi¹ (1. Korea Electronics Technology Institute, 2. Sungkyunkwan University)

S10A-T2-P-37 Investigation of a Femtosecond Laser-Fabricated Graphene-Heated Microfluidic Device for DNA Amplification

» Tien-Li Chang¹, Chun-Ta Chen¹, Shih-Feng Tseng², Wen-Tse Hsiao³, Mei-Yung Chen¹ (1. Department of Mechatronic Engineering, National Taiwan Normal University, 2. Department of Mechanical Engineering, National Taipei University of Technology, 3. National Center for Instrumentation Research, National Institutes of Applied Research)

S10A-T2-P-38 Liquid cells for electron microscopy based on thin Al₂O₃ membranes supported by pillars for enhanced stability

» Nathalie P. Pranzner¹, Jeremy P. Teuber², Judith Estengre Pérez¹, Marie-Charlot Dalchow³, Arwen R. Pearson⁴, Irene Fernandez-Cuesta⁴ (1. University of Hamburg, 2. Max Planck Institute for the Structure and Dynamics of Matter, 3. University of Hamburg / DESY, 4. University of Hamburg, Cluster of Excellence "CU: Advanced Imaging of Matter")

S10A-T2-P-39 Bio-Based Polymer Waveguides with Integrated Bragg Gratings for Photonic Sensing

» Florian Egger¹, Michael Haslinger¹, Viktorija Jonaityte¹, Antreas Theodosiou², Michael Muehlberger¹ (1. Profactor GmbH, 2. Lumoscribe)

S10A-T2-P-40 Contour Perturbation Stabilise Liquid Micro-Rotational Joint

» Antoine Barbot¹, Francisco Ortiz¹ (1. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, 25000 Besançon, France)

S10A-T2-P-41 A High-Yield Fabrication Process of Piezoelectrically Transduced Suspended Microchannel Resonators

» Yara Abdelaal¹, Shulang Shen², Luis Guillermo Villanueva³ (1. Advanced NEMS Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), Route Cantonale, 1015 Lausanne, 2. EPFL, 3. EPFL NEMS)

S10A-T2-P-42 Dual Fluorescence Enhancement by rectangular lattice photonic crystals applied to Zinc-protoporphyrin II emission

» Minahil Khan¹ (1. University of York)



Continued from Wednesday, 23 September

S10A-T2-P-43 Tuning Surface Properties of Carbonised Cotton Knits via Sustainable Pre-Carbonisation Treatments

» Khalid Ibrahim A Abu Wardah¹, Geoff Fowler¹, Kritel Fobelets¹ (1. Imperial College London)

S10A-T2-P-44 Development of a fluidic μ -transistor based on the elasto-capillary effect

» Marc Prudhomme¹, Quentin Lahondes¹, Aude Bolopion², Antoine Barbot² (1. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, Besançon, France, 2. Université Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST, 25000 Besançon, France)

S10A-T2-P-45 Fabrication of Flexible Force Sensors Using Femtosecond Laser-Induced Graphene for Rehabilitation Assistance and Robotic Applications

» Tien-Li Chang¹, Chun-Ta Chen¹, Wen-Tse Hsiao², Mei-Yung Chen¹, Shih-Feng Tseng³ (1. Department of Mechatronic Engineering, National Taiwan Normal University, 2. National Center for Instrumentation Research, National Institutes of Applied Research, 3. Department of Mechanical Engineering, National Taipei University of Technology)

S10A-T2-P-46 Mid-Infrared Extreme Grazing Brewster Effect in Natural Crystals for Surface-Enhanced Molecular Spectroscopy

» Shuwen Xue¹, Yu Xie¹, Dongli Liu², Fengjiang Liu², Chuanjie Hu³, Xiaoyu Sun¹, Shan Zhu⁴, Huanyang Chen⁵, Min Qiu¹ (1. Westlake University, 2. Westlake Instruments, 3. Nanjing University of Aeronautics and Astronautics, 4. Guangdong Technion-Israel Institute of Technology, 5. Xiamen University)

16:00

Poster : S10A-T3-P

POSTER 2 - EVEN - T3

Venue - Auditorium Foyer OG - T3

Organised by: Katharina Maniura

S10A-T3-P-1 Evaluation of the effect of Protein Adsorption on the Mechanical Bactericidal Performance of Nanostructured COP Film

» Takeshi Ito¹ (1. Kansai University)

S10A-T3-P-2 Dry etching bacteria-sized features into silicon wafers for the fabrication of microfluidic devices

» Maria Portela¹, Florent Seichepine¹, Claire Stanley¹ (1. Imperial College London)

S10A-T3-P-3 Plasma-Free Wettability Control of PMMA Capillary Microfluidics Using Tween 20 for Field-Compatible Bioassays

» Zhuoyue Wang¹, Azadeh Hashemi¹, Sarah Sale², Daniel Mak¹, Renwick Dobson¹, Claudia Meisrimler¹, Volker Nock¹ (1. University of Canterbury, 2. University of Queensland)

S10A-T3-P-4 Harnessing Artificial Cilia Generated Flow to Study Cancer Cell Migration

» Phani Krishna Sudarsanam¹, Yiqing Sun¹, Jaap Den Toonder¹, Ye Wang¹ (1. Eindhoven University of Technology)

S10A-T3-P-5 Upscaling of compartmentalized PDMS microfluidics processing for in vitro brain models: methods comparison for efficient, precise and biocompatible fabrication

» Claudia Villarreal¹, Samuel Maraschin¹, Surangrat Thongkorn², Arto Heiskanen², Jenny Emnéus², Stephan Sylvest Keller² (1. National Centre for Nano Fabrication and Characterization, DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, 2800, Denmark, 2. Technical University of Denmark)

S10A-T3-P-6 EBL lithography and plasmonic analysis for detection of single amino acid mutation

» Alberto Ballezio¹, Antonio Macrina¹, Vito Trevisi¹, Daniele Pescatore², Massimo D'Angelo³, Enzo Di Fabrizio⁴, Simone Luigi Marasso⁵ (1. More Care Srl, 2. Beta 80 SpA, 3. StarHealth, 4. Politecnico di Torino, 5. CNR imem)



Continued from Wednesday, 23 September

S10A-T3-P-7 Evaluation of graphene degradation in graphene based- solution gated field effect transistors technology: implications in biomedical applications

» Leo Salgado-Chane¹, Laura Bono-Ros¹, Marta Delgà², Sergi Valero¹, Xavi Illa¹, Elena Del Corro², Rosa Villa¹, Elisabet Prats-Alfonso³, Sergi Brosel-Oliu¹, Anton Guimerà-Brunet¹ (1. Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, 08193, Barcelona, Spain., 2. Catalan Institute of Nanoscience and Nanotechnology (ICN2), Universitat Autònoma de Barcelona, Cerdanyola del Vallès, 08193, Barcelona, Spain, 3. Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, 28029, Spain)

S10A-T3-P-8 An in vitro neuroelectronic platform integrating bilayer X-Cut LiNbO3 PMUTs for in situ monitoring of focused ultrasound stimulation (FUS)

» Stefania Tsilivaki¹, Xiaoxi Zhao¹, Tomás Manzaneque¹, Vasiliki Giagka¹ (1. Delft University of Technology)

S10A-T3-P-9 Long-term operation system for micro passive pumps

» Katsuo Mogi¹, Reo Shimada¹, Hiroyuki Kimura², Naoki Takada³ (1. Tokyo Denki University, 2. Kyoto University, 3. National Institute of Advanced Industrial Science and Technology (AIST))

S10A-T3-P-10 Effect of Oxygen Flow Rate on Biomimetic Microstructure Formation on Commercial PMMA Plates by Atmospheric Pressure Low-Temperature Plasma

» Masashi Yamamoto¹, Ayumu Takada², Akihiro Kawata², Atushi Sekiguchi³ (1. National Institute of Technology Kagawa College, 2. National Institute of Technology, Kagawa College, 3. Litho Tech Japan Corporation)

S10A-T3-P-11 Ultra-sensitive Detection of Citrullinated Histone H3 using Rh-PG-based SERS on Hydrophobic SU-8 Nanopillar Substrates

» Wen-Huei Chang¹, Yu-Cheng Wu², Wei-Chen Kuo², Kuan-Ting Kuo², Min-Ling Chen², Chih-Chia Huang², Chun-Hung Lin² (1. Department of Applied Chemistry, National Pingtung University, 2. Department of Photonics, National Cheng Kung University)

S10A-T3-P-12 Probing Cell Mechanosensitivity in Microengineered 3D Scaffolds

» Aída Gabriela Fernández Contreras¹, Boudewijn van der Sanden², Olivier Stephan³, Jean-Hervé Tortai¹, Alice Nicolas¹ (1. LTM-CNRS, 2. TIMC, 3. LiPhy)

S10A-T3-P-13 Nanofibrous microparticles and microporous nanofibers for diverse biomedical applications

» Fatemeh Ajallouei¹ (1. DTU Health Tech, Technical University of Denmark)

S10A-T3-P-14 Spectroscopy and Machine Learning for Early Detection of Chronic Wound Biomarkers

» Guanting Guo¹ (1. Empa, Dübendorf, Switzerland;)

S10A-T3-P-15 Simple And Versatile Capture of Circulating Tumor Cells Via Magnetic Field-Effect Microfluidic Devices Based on Paramagnetic Nanomaterial-Doped Silicon Wafers

» Levent Trabzon¹, İrem Bahar Gül², Durdane Serap Kuruca³, Selcan Karakuş⁴, Emre Yılmazoğlu⁴, Sobirjon Isamov⁵, Giyosiddin Mavlonov⁵, Yoldoshali Abduganiev⁵ (1. Prof. Dr., 2. Istanbul Technical University, 3. Atlas University, 4. Istanbul University - Cerrahpaşa, 5. Tashkent State Technical University)

16:00

Poster : S10A-T4-P

POSTER 2 - EVEN - T4

Venue - Auditorium Foyer OG - T4

Organised by: Cyrille Hibert

S10A-T4-P-1 Single-Layer Colored Radiative Cooling Paint Enabled by Ultrahigh NIR Reflectance

» Jaein Park¹, Seongwoo Park¹, Hangyu Lim², Jisung Ha², Sangho Kang², Deokhwan Lee¹, Heon Lee² (1. ZERC, 2. Korea University)

S10A-T4-P-2 Life-cycle assessment of a MEMS optomechanical technological process

» Mathis Lefebvre¹, Laura Vauche¹, Marc Gély¹, Marc Sansa¹ (1. Univ. Grenoble-Alpes, CEA, Leti, Grenoble, 38000, France)



Continued from Wednesday, 23 September

S10A-T4-P-3 Novel positive-tone photoresists for sustainable 193 nm lithography

» [Theodoros Manouras](#)¹, Georgia Markozanne¹, Alexandros Vasilakis², Vasilios Sarakatsianos³, Angeliki-Sofia Foscolos⁴, Stavros Pissadakis³, Panagiotis Argitis⁵, Veroniki P Vidali⁴, Maria Vamvakaki¹ (1. Department of Materials Science and Engineering, University of Crete, 2. Department of Chemistry, University of Crete, 3. Institute of Electronic Structure and Laser, FORTH, 4. Institute of Nanoscience & Nanotechnology, NCSR "Demokritos", 5. NCSR Demokritos)

S10A-T4-P-4 Recyclable digital microfluidic chips for sustainability in bioassays

» [Mert Ozden](#)¹, Jaap Den Toonder¹, Burcu Gumuscu¹ (1. Eindhoven University of Technology)

S10A-T4-P-5 Carbon Nanotube Composite Paper as a Flexible Platform for Paper-Dye-Sensitized Solar Cells

» [Yi Kou](#)¹, Takahide Oya¹ (1. Graduate School of Engineering Science, Yokohama National University)

S10A-T4-P-6 Real-Time EI-TOF-MS Monitoring of Byproducts during ICP Etching of GeSn- and Ge-on-Si

» [Ira Villinger](#)¹, Rutuja Rajendra Mandavkar², Simone Iadanza², Kirsten Moselund², Stephan Pfister¹ (1. ETH Zurich, 2. Paul Scherrer Institut)

S10A-T4-P-7 Real-Time Airborne Molecular Contamination Monitoring for Advanced Micro- and Nano-Fabrication

» [Priyanka Bansal](#)¹, Carla Frege¹, Gabrielle Macgregor¹, Urs Rohner¹, Felipe Lopez-Hilfiker¹ (1. ToFwerk AG)

S10A-T4-P-8 Novel bio-sourced resists for near-UV lithography towards environment-friendly semiconductor manufacturing processes

» Dipti RANI¹, Kylian Virieux², Stephane Trombotto³, Charalampos Katsogridakis⁴, Angeliki Sofia Foscolos⁴, Anastasia Soultati⁴, Veroniki P Vidali⁴, Corinne GABLIN⁵, Didier Leonard⁵, Magin Benedict Ferrer⁶, Olivier Soppera⁶, Panagiotis Argitis⁴, [Yann Chevolut](#)¹, [Jean-louis leclercq](#)¹ (1. CNRS, Ecole Centrale de Lyon, INSA Lyon, Université Claude Bernard Lyon 1, CPE Lyon, INL, UMR5270, Ecully, 69134, 2. Université Lyon 1, INSA Lyon, Université Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, 3. Université Lyon 1, INSA Lyon, Université Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, France, 4. National Centre for Scientific Research "Demokritos" (NCSR "Demokritos"), Institute of Nanoscience and Nanotechnology, Agia Paraskevi, Athens, 15341, 5. Université Lyon 1, CNRS, UMR 5280, Lyon, 69100, 6. Université de Haute Alsace, CNRS, IS2M UMR 7361, Mulhouse, 68100)

S10A-T4-P-9 Fabrication of new electrodes for high performance Li ion Battery

» [Seungmin Hyun](#)¹, Hye-Mi So¹, Areum Kim¹, Jin Young Lee¹, Minsub Oh¹ (1. Korea Institute of Machinery and Materials)

S10A-T4-P-10 Cu-Ni Electroplating on Carbon Microelectrodes for Silver free Solar Cells

» [Jens Munk Nielsen](#)¹, Stephan Sylvest Keller², Rasmus Schmidt Davidsen³ (1. DTU Nanolab, Technical University of Denmark, 2. Technical University of Denmark, 3. Aarhus university)

S10A-T4-P-11 Plasma free etching of silicon to ultra-high aspect ratios with metal assisted chemical etching

» [Bryan Benz](#)¹, Marco Stampanoni¹, Martino Poggio², Lucia Romano¹ (1. Paul Scherrer Institut, 2. University of Basel)

S10A-T4-P-12 Electrical nanoprobe role in developing new, efficient, and sustainable energy solutions.

» [Anya Grushina](#)¹, [Karl Boche](#)¹ (1. Imina Technologies)



Continued from **Wednesday, 23 September**

S10A-T4-P-13 Superhydrophobic SERS Substrates with Patterned Superhydrophilic Regions for Localized Analyte Enrichment

» [Tzu-Yu Chiu](#)¹, Wen-Huei Chang², Wei-Chen Kuo¹, Chun-Hung Lin¹ (1. Department of Photonics, National Cheng Kung University, 2. Department of Applied Chemistry, National Pingtung University)

S10A-T4-P-14 Chitosan-based resists toward sustainable DUV 248 nm photolithography

» [Jeanne Aigoïn](#)¹, Anaïs Delehelle d'Affroux¹, Kylian Virieux², Veroniki Vidali³, Charalampos Katsogridakis³, Angeliki-Sofia Foscolos³, Anastasia Soultati³, Panagiotis Argitis³, Stephane Trombotto⁴, Ivanie Mendes¹ (1. Univ. Grenoble-Alpes, CEA, Leti, Grenoble, 38000, France, 2. Universite Lyon 1, INSA Lyon, Universite Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, 3. National Centre for Scientific Research "Demokritos" (NCSR "Demokritos"), Institute of Nanoscience and Nanotechnology, Agia Paraskevi, Athens, 15341, 4. Universite Lyon 1, INSA Lyon, Universite Jean Monnet, CNRS, IMP, UMR 5223, Villeurbanne, 69622, France)

S10A-T4-P-15 Electrodeposition-driven tuning in chitosan semi-crystalline structure and implications on piezoelectric performances

» [Valeria D'Errico](#)¹, Gaia de Marzo², Antonio Qualtieri¹, Massimo De Vittorio¹ (1. Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia, 2. Department of Health Technology, Technical University of Denmark)

S10A-T4-P-16 3D pyrolytic carbon electrodes as biophotoanodes in microbial solar cells

» [Rikke Andersen](#)¹, Stephan Sylvest Keller¹, Jenny Zhang², Jenny Emnéus¹, Mohammad Ramezannezhad¹, Linying Shang², Rachel Egan² (1. Technical University of Denmark, 2. University of Cambridge)

S10A-T4-P-17 Cradle-to-gate Life Cycle Assessment (LCA) of Silver-Nanoparticle-Decorated Laser-Induced Graphene (LIG) Environmental Sensors

» [Ivan Ling](#)¹, Rou Xuan Goh¹, Ishant Patil¹, Suan Hui Pu¹, Harold Chong¹ (1. University of Southampton)

19:00

General : MNE-BANQUET

MNE Conference BANQUET

Venue - Kongress-Saal

Organised by: Johanna Antoch

Thursday, 24 September

08:55

General : SNC WELCOME

SNC WELCOME

Venue - Auditorium - ORAL - PLENARY

Organised by: Lorenz Herrmann

09:00

Oral : S11A-T5

SNC 1 Photonics (invited session)

Venue - Auditorium - ORAL - PLENARY

Organised by: Tobias Lamprecht

S11A-T5-1-INVITED III-V Photonic Devices for AI and Computation from fabrication to application

» [Kirsten Moselund](#)¹ (1. Paul Scherrer Institut)

S11A-T5-2-INVITED Tip-enhanced Raman spectroscopy (TERS) for Nanoscale Analysis

» [Naresh Kumar](#)¹ (1. ETH Zürich, Department of Chemistry and Applied Biosciences)

S11A-T5-3-INVITED Plasmonic nanocavities and molecular spectroscopy

» [Christophe Galland](#)¹ (1. EPFL, Laboratory of Quantum and Nano-Optics)



Continued from **Thursday, 24 September**

S11A-T5-4-INVITED A quantum dot in an open microcavity

» Richard Warburton¹ (1. University of Basel, Department of Physics, 4056 Basel)

09:00

Oral : S11B-T1

3D Lithography

Venue - Theatersaal - ORAL

Organised by: Dimitrios Kazazis

S11B-T1-1 3D ice lithography printed structures using gold organometallic precursor and post-processing purification

» Guilherme Ferreira¹, Bingdong Chang¹, Gwendoline A. E. Anand¹, Xiyuan Liu¹, Hoà Lê Than², Thomas Willum Hansen³, Jose María de Teresa⁴, Anpan Han¹ (1. DTU Construct, Technical University of Denmark, 2. Lotus Microsystems, 3. DTU Nanolab, Technical University of Denmark, 4. Instituto de Nanociencia y Materiales de Aragón)

S11B-T1-2 A Framework for the Controlled Tip-Surface Approach in Tip-based Electron Beam Induced Deposition

» Johannes Krech¹, Steffen Strehle¹, Richard Draxler¹ (1. Technische Universität Ilmenau)

S11B-T1-3 Two-photon polymerized protein imprinted 3D microstructures for biosensing applications

» Miriam Polano¹, Valentina Bertana¹, Francesca Frascella¹, Simone Luigi Marasso² (1. Politecnico di Torino, 2. CNR imem)

S11B-T1-4 Staircase Based Design for Optimization of Hollow Microneedle Fabrication by Projection Micro Stereolithography

» Beatriz Viegas¹, Stephan Sylvest Keller², Ada-Ioana Bunea¹, Line Hagner Nielsen³ (1. DTU Nanolab, Technical University of Denmark, Kongens Lyngby, 2800 Denmark, 2. Technical University of Denmark, 3. DTU Health Tech, Technical University of Denmark)

S11B-T1-5 Dual Photoresist Maskless UV lithography of Multi-Level 3D Suspended Microstructures for Pyrolytic Carbon Microelectrode Fabrication

» Mohammad Ramezannezhad¹, Stephan Sylvest Keller¹, Mohammad Khoskalam², Babak Rezaei³, Ivano Eligio Castelli², Rasmus Zarp Lintrup⁴ (1. Technical University of Denmark, 2. DTU Energy, Technical University of Denmark, 3. DTU Nanolab, Technical University of Denmark, 4. DTU Health Tech, Technical University of Denmark)

09:00

Oral : S11C-T3

Bioiontronics and Organ-on-Chip

Venue - Brünig - ORAL

Organised by: Katharina Maniura

S11C-T3-1-INVITED Bioiontronics for biointerfaces and future medicine

» Yujia Zhang¹ (1. EPFL)

S11C-T3-2 Micro-Coil Neuromodulation for Inhibiting Natural Neuroactivity, Neutralizing Electric Neural Excitation, and Suppressing Seizures

» Su Genelioglu¹, Kayeon Kim², Xiyuan Liu¹, Bingdong Chang¹, Guanghui Li², Gwendoline A. E. Anand¹, Alexandra Katherine Isis Yonza², Andrew J. Whalen³, Rune W. Berg², Shelley I. Fried⁴, Changsi Cai², Anpan Han¹ (1. DTU Construct, Technical University of Denmark, 2. Department of Neuroscience, Faculty of Health and Medical Sciences, University of Copenhagen, 3. Department of Neurosurgery, Yale School of Medicine, 4. Department of Neurosurgery, Massachusetts General Hospital and Harvard Medical School)

S11C-T3-3 Ultrasound-actuated piezoelectric microdevice for remote electrical cell stimulation

» Marc Navarro¹, Laura Lefaix¹, Marcos Duque¹, Andreu Blanquer², Gonzalo Murillo¹ (1. Institute of Microelectronics of Barcelona (IMB-CNM, CSIC), 2. Departament de Biologia Cel.lular, Fisiologia i Immunologia, Universitat Autònoma de Barcelona)



Continued from **Thursday, 24 September**

S11C-T3-4 A precise lesion localization system with integrated battery and wireless communication capabilities

» Woojin Yun¹, Huijae Cho¹, Gapseop Sim¹, Hyungbo Jin², Young Jin Seo², Hyeonjune Kim³ (1. National Nanofab Center, 2. Gaspel Plus, 3. Seoul National University of Science and Technology)

09:00

Oral : S11D-T2

Neuromorphic & Mox Devices

Venue - Grimsel - ORAL

Organised by: Luis Guillermo Villanueva

S11D-T2-1-INVITED How to engineer photocatalytic metal-oxide surfaces

» Rafael Taboryski¹, Rucha Deshpande², Jesper Navne¹, David Christoffer Bisp Nielsen¹, Mathias Adelmark¹ (1. DTU Nanolab, Technical University of Denmark, 2. SPIO ApS, DK-3520 Farum, Denmark)

S11D-T2-2 Fully Integrated pH-Triggered Smart Microbatteries via ALD-alumina growth

» Orlane Nicolardot¹, Sandra Perez-Jimenez², Julia Gonzalez², Jaume Esteve², Neus Sabaté¹, Ferran Pujol¹ (1. Institute of Microelectronics of Barcelona, 2. Institute of Microelectronics of Barcelona (IMB-CNM, CSIC))

S11D-T2-3 Transient Threshold-Switching Dynamics of a Bidirectional TaOx Memdiode for Event-Driven Vision Systems

» Zohreh Hajiabadi¹, Aiden Graham¹, Harold Chong¹, David Thomas¹, Firman Simanjuntak¹ (1. University of Southampton)

S11D-T2-4 Microstructure Evolution of doped Ge-rich GeSbTe Heterostructures under Nanosecond and Microsecond Laser Cycling

» Nicolas Bottin¹, Mathieu Abel², Yannick Le-Friec¹, David Grojo³, Isabelle Berbezier² (1. STMicroelectronics, 2. IM2NP, Aix Marseille University, CNRS, 3. LP3, Aix Marseille University, CNRS)

10:45

Keynote : S12A-T5

SNC 2 Watch Tec (plenary session)

Venue - Auditorium - ORAL - PLENARY

Organised by: Lorenz Herrmann

S12A-T5-1-PLENARY Bridging heritage and innovation: Pioneering technologies and advanced materials for the watchmaking industry

» Xavier Multone¹ (1. Rolex SA)

S12A-T5-2-PLENARY MEMS miniaturization over the last 40 years at Bosch

» Heiko Stahl¹ (1. Robert Bosch GmbH)

13:15

Oral : S13A-T5

SNC 3 Nano Bio (invited session)

Venue - Auditorium - ORAL - PLENARY

Organised by: Barbara Rothen-Rutishauser

S13A-T5-1-INVITED Designs substrates to steer cell reactions

» Alke Fink¹ (1. Adolphe Merkle Institute)

S13A-T5-2-INVITED Principles in Tissue Engineering

» Katharina Maniura¹ (1. Empa, St. Gallen)

S13A-T5-3-INVITED Intervertebral disc repair using biomaterials as scaffolds

» Benjamin Gantenbein¹ (1. University of Bern, Dept. for BioMedical Research (DBMR), Murtenstrasse 35, 3008 Bern)

S13A-T5-4-INVITED Molecular design rules at the bio-interface

» Maartje Bastings¹ (1. EPFL, Programmable Biomaterials Lab, Lausanne)



Continued from **Thursday, 24 September**

13:15 **Oral : S13B-T1**
UV and Laser Lithography
Venue - Theatersaal - ORAL
 Organised by: Dimitrios Kazazis

S13B-T1-1 Laser-Induced Re-entrant Nanobead Structures for Hydrophobic Transparent Surfaces

» [Ren Goto](#)¹, Masaki Yamaguchi¹ (1. Shinshu University)

S13B-T1-2 Monolithic fabrication and integration of complementary organic mixed ionic-electronic circuits using direct photo-patterning

» [Charles-Théophile Coen](#)¹, Niels Burghoorn¹, Jaap Den Toonder¹, Yoeri van de Burgt¹ (1. Eindhoven University of Technology)

S13B-T1-3 UV-lithography on rough and industrially relevant surfaces

» [Emelie Haettner](#)¹, Susanne Norgren², Rachid M'Saoubi³, Adam Burke¹, Anders Mikkelsen¹, Ivan Maximov¹ (1. Lund University, 2. Sandvik Coromant, 3. Seco Tools)

S13B-T1-4 First experimental results of holographic single-exposure patterning in spray coated resist on structured Si-wafers with 100µm deep etched cavities

» [Mikhail Borisov](#)¹, [Vitaly Chernik](#)¹, Vadim Rakhovsky¹, Alexey Shamaev¹, Sebastian Schermer², Christian Helke², Danny Reuter² (1. SWHL GmbH, 2. Fraunhofer ENAS)

S13B-T1-5 Quasi-periodic masks for enhanced Displacement Talbot Lithography

» [Leo Nind](#)¹, Pengfei Fan¹, Pierre Chausse¹, [Philip Shields](#)¹ (1. University of Bath)

13:15 **Oral : S13C-T3**
Microneedles and Sensing
Venue - Brünig - ORAL
 Organised by: Katharina Maniura

S13C-T3-1 Organic Electrochemical Transistors for Enhanced Potentiometric Sensing of Neurochemicals

» [Emily Schafer](#)¹, Timothe Dufour¹, Sandra Hernandez Escobar¹, Alexandra Banbanaste¹, Niel Mistry¹, Nako Nakatsuka¹ (1. EPFL)

S13C-T3-2 High-resolution SLA 3D-printed cochlear twins with scala tympani and vestibuli for electrode insertion force analysis and surgical optimization

» [Chloé Morice](#)¹, Margaud Rivière², Niels Brun³, Christophe Guissard⁴, Adrian Laborde¹, Laurent Malaquin¹, Guillaume TOUREL⁵, [Julie Foncy](#)¹ (1. LAAS-CNRS, 2. Toulouse INP – ENSIACET_LAAS-CNRS, 3. INSA Toulouse-LAAS-CNRS, 4. RESTORE Research Center, Université de Toulouse, INSERM 1301, CNRS 5070, EFS, ENVT,, 5. COCHLEAR)

S13C-T3-3 Bi-directional Nanoelectrode Array Platform for High-Resolution Interfacing of in-vitro Neural Network

» [Nathan Andler](#)¹, Ines Muguet¹, Emilie Belot¹, Fabrice Mathieu¹, Marie-Charline Blatche¹, Laurent Mazenq¹, Guilhem Larrieu¹ (1. LAAS-CNRS)

S13C-T3-4 Organ-on-a-Chip Integration of a Fluorescent-Nanodiamond/Collagen Porous Membrane for All-Optical Extracellular Thermometry

» Momoka Yoshitake¹, Daiki Ueshima¹, Taiichi Shikama¹, Kenichiro Kamei², Osamu Tabata³, [Yoshikazu Hirai](#)¹ (1. Kyoto University, 2. New York University Abu Dhabi, 3. Kyoto University of Advanced Science)

S13C-T3-5 High-density flexible neural implants with submicron feedline resolution

» [Lina Koschinski](#)¹, George Malliaras², Andreas Offenhäusser¹, Viviana Rincon Montes¹ (1. Forschungszentrum Jülich, 2. University of Cambridge)

13:15 **Oral : S13D-T2**
Quantum and Novel Devices
Venue - Grimsel - ORAL
 Organised by: Luis Guillermo Villanueva



Continued from Thursday, 24 September

S13D-T2-1 Towards in-plane monolithic integration of Ge on SOI for photodetector architectures

» [Mariona Bonàs Vera](#)¹, Ludovica Lunghi², Beiqi Ding¹, Simone Iadanza¹, Anna Fontcuberta i Morral², Kirsten Moselund¹ (1. EPFL, Paul Scherrer Institut, 2. EPFL)

S13D-T2-2 Laser-based Local Contacts Activation of Carbon Nanotube Field Effect Transistors

» [Ines Kraiem](#)¹, Michael Young¹, David Wolf¹, Christofer Hierold², Miroslav Haluska¹ (1. ETH Zurich, 2. ETH Zürich, Zürich, Switzerland)

S13D-T2-3 InP Micropillar Single-Photon Sources at Telecom Wavelengths: Selective-Area Epitaxy Toward Deterministic Quantum Dots

» [Konstantinos Papatryfonos](#)¹, Louis Thomas¹, Ludovic Desplanque¹ (1. Institute of Electronics, Microelectronics and Nanotechnology (IEMN), UMR CNRS 8520, University of Lille)

S13D-T2-4 Electron-beam defined MEMS break junctions for controlled single-molecule measurements

» [Peter Lendway](#)¹, Ute Drechsler², Antonis Olziersky², Christofer Hierold², Michel Calame³, Mickael L. Perrin¹ (1. Empa, Dübendorf, Switzerland - ETH Zürich, Zürich, Switzerland, 2. ETH Zürich, Zürich, Switzerland, 3. Empa, Dübendorf, Switzerland - University of Basel, Basel, Switzerland)

S13D-T2-5 Development of Suspended Graphene Bridges as High-Brightness Cold Field Emission Cathodes

» [Soheil Hajibaba](#)¹, Takatoshi Yamada², Christof Schneider¹, Narmadha Devi Suresh Kumar³, Thomas Jung¹, Soichiro Tsujino¹ (1. Paul Scherrer Institut, 2. National Institute of Advanced Industrial Science and Technology (AIST), 3. University of Basel)

15:00

Oral : S14A-T5

SNC 4 Awards

Venue - Auditorium - ORAL - PLENARY

Organised by: Lorenz Herrmann

15:00

Oral : S14B-T1

Etching

Venue - Theatersaal - ORAL

Organised by: Dimitrios Kazazis

S14B-T1-1 Ion-Loaded Solid-State Electrochemical Etching for Direct Hierarchical Patterning of Copper

» [Atsuki Tsuji](#)¹, Junji Murata¹ (1. Ritsumeikan University)

S14B-T1-2 A Hybrid Physics-Machine Learning Framework for Fast, Predictive Low-Pressure Plasma Etching Models

» [Eneri Boniakou](#)¹, [Sotiris Mouchtouris](#)², [Chloi Zormpa](#)², [Katerina Oikonomou](#)³, [Alex Kondi](#)⁴, [Vassilios Constantoudis](#)⁵, [Evangelos Gogolides](#)⁶, [George Kokkoris](#)¹ (1. National Technical University of Athens, 2. Institute of Nanoscience & Nanotechnology, NCSR "Demokritos", 3. Institute of Informatics and Telecommunications NCSR Demokritos, 4. Nanometrisis PC, 5. NCSR D, 6. National Centre for Scientific Research "Demokritos" (NCSR "Demokritos"), Institute of Nanoscience and Nanotechnology, Agia Paraskevi, Athens, 15341)

S14B-T1-3 Atomic layer etching of nickel aluminide binary intermetallic using a super-cycle sequence based on Hhfac and Al(CH3)3

» [Ali Abdelgawad](#)¹, [Guillaume Krieger](#)², [Jean-Philippe Soulie](#)³, [Harm Knoops](#)², [Erwin Kessels](#)², [Stefan Degendt](#)⁴, [Jean-François de Marneffe](#)³ (1. imec v.z.w., Kapeldreef 75, B-3001 Leuven, Belgium, 2. Dept. of Applied Physics, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, Netherlands, 3. imec, 4. Dept. of Chemistry, K.U. Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium)

15:00

Oral : S14C-T3

Microfluidics 2

Venue - Brünig - ORAL

Organised by: Katharina Maniura

S14C-T3-1 Additive manufacturing of thin-film heater integrated for microfluidic loop-mediated isothermal amplifications

» [Namwon Kim](#)¹ (1. Texas State University)



Continued from **Thursday, 24 September**

S14C-T3-2 Miniaturized Self-Unfolding Foil for Oral Gastric Mucosal Vaccination Against *H. pylori*

» [Johnson Ebenezer Rajendran](#)¹, Juliane Fjelrad Christfort¹, Anja Boisen¹ (1. DTU Health Tech, Technical University of Denmark)

S14C-T3-3 Toward Brain Organoid-on-a-Chip: 3D Nanoprinted Structures Drive Robust Integration of Brain Organoids

» [Tobias Müller](#)¹, Malte Siegmund¹, Emma Wollesen¹, Kim Krieg², Maya Luongo¹, Wolfgang Parak³, Ole Pleß², Jan Hahn⁴, Robert Zierold¹, Robert Blick¹ (1. University of Hamburg, 2. Fraunhofer ITMP, 3. University of Hamburg, Cluster of Excellence "CUI: Advanced Imaging of Matter", 4. Section Mass Spectrometry and Proteomics, Center for Diagnostics, University Medical Center Hamburg-Eppendorf)

15:00

Oral : S14D-T2

Chemical Sensors and Simulation

Venue - Grimsel - ORAL

Organised by: Luis Guillermo Villanueva

S14D-T2-1 Coupled lattice Boltzmann-discrete element modeling of deterministic lateral displacement devices

» [Alap Mundayoor](#)¹, Samuel Kemmler², Christian Schwemmer¹, Andreas Erdmann¹, Harald Koestler³, John T. Fourkas⁴ (1. Fraunhofer IISB, 2. Bundesanstalt für Materialforschung und -prüfung, 3. Friedrich-Alexander-Universität Erlangen-Nürnberg, 4. University of Maryland)

S14D-T2-2 Reactive ion etching-based fabrication of pyrolytic carbon interdigitated microelectrodes for electrochemical redox cycling amplification

» [Nicolai Støvring](#)¹, Mohammad Ramezannezhad², Marc Bernet I Garcia¹, Henri Jansen¹, Stephan Sylvest Keller² (1. DTU Nanolab, Technical University of Denmark, 2. Technical University of Denmark)

S14D-T2-3 Humidity-Driven Wrinkling of Plasma-Oxidized PDMS Bilayers for Reversible Optical Sensing

» [Zain Ahmad](#)¹, Christopher Stafford², Jack Douglas², Jerry Heng¹, Joao Cabral¹ (1. Imperial College London, 2. National Institute of Standards and Technology)

16:00

Keynote : S15A-T3

MNE Keynotes 2 - Microfluidics 3 (plenary session)

Venue - Auditorium - ORAL - PLENARY

Organised by: Nako Nakatsuka, Katharina Maniura, and Michel Calame

S15A-T3-1-PLENARY BioMEMS and microfluidics

» [Ellis Meng](#)¹ (1. University of Southern California)

S15A-T3-2-PLENARY Microfluidic technologies for high throughput biological experimentation

» [Andrew deMello](#)¹ (1. ETH Zurich)

17:30

General : MNE-CLOSING

MNE Closing CEREMONY

Venue - Auditorium - ORAL - PLENARY

Organised by: Yasin Ekinici and Nako Nakatsuka