



MicroNano 2024 International Conference



11-13 October 2024, FNS, University of the Aegean, LEMNOS

11th International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS

Venue: Garofalidio Lecture Hall & Municipal Cinema Maroula

Sponsors



We acknowledge the Municipality of Lemnos for the kind concession of the "Maroula" Cinema and the "Galiouri" hall.

We thank the director of SAEK Lemnos, Iulia Lygda, for the cooperation.



Silver Sponsorship
(For the coffee breaks)

Exhibitors



Saturday October 12th, 2024

11th International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS

Venue: Garofalidio Lecture Hall & Municipal Cinema Maroula

09:00 - 09:30	Registration Venue: Garofalidio Lecture Hall		
09:30 - 09:40	Award ceremony PROF. EM. D Poulikakos (Organizing committee 2024 & Micro-Nano Society President E.Gogolides) Venue: Municipal Cinema Maroula		
09:40 - 10:25	Plenary Presentation 2 The architecting of nanomaterials for water condensation applications PROF. EM. D Poulikakos Session chair K. Ellinas Venue: Municipal Cinema Maroula		
10:25 - 10:55	Invited Talk HFRI's impact in the Hellenic Academic and Research Eco-system Dr. Katerina Kouravelou (HFRI Director) Venue: Municipal Cinema Maroula		
10:55 - 11:25	Coffee Break		
Parallel Session 3	Micro and Nano Fabrication II Venue: Garofalidio Lecture Hall Session chair E.Gogolides	Parallel Session 4	Materials for Electronics Photonics & Sensors Venue: Municipal Cinema Maroula Session chair I.Raptis
11:30 - 11:45	30 years nanoimprint lithography: Past, present and future of nanoimprint lithography <u>N.Kehagias</u>	11:30 - 11:45	A study of Nanocrystalline Diamond electrical properties for RF-MEMS capacitive switches application <u>I.Kochylas</u> , J. Theocharis, G.Papaioannou, Z.Afshin
11:45 - 12:00	Next-Generation Electrocatalysts: Carbon-Engineered Nanomaterials for Sustainable Energy Solutions <u>A.Rapakousiou</u>	11:45 - 12:00	A Computational Lithography Approach for Enhancing Overlay Modeling in Lithographic Processes <u>A.Magklaras</u> , P.Alefragis, C.Gogos, A. Birbas
12:00 - 12:15	Ultra-thin, polymeric thermal diodes that incorporate stable superhydrophilic and superhydrophobic surfaces for phase change heat transfer applications <u>V.Tselepi</u> , I.Filippou, D.Nioras, K.Ellinas	12:00 - 12:15	Electrical Characterization of HfO ₂ Dielectric Films Deposited by ALD for RF-MEMS Capacitive Switches <u>J. Theocharis</u> , J. P. Martins, A. Mahjoub, E. Eustache, A. Ziaei and G. Papaioannou
12:15-12:30	Fabrication of Surface Dielectric Barrier Discharge Non-thermal Plasma Actuators Printed with Aerosol Jet Technology <u>M. Karani</u> , K. Kourtzanidis, P. Dimitrakellis, N. Hastas, N. Vlachos, G. Karagiannakis	12:15-12:30	Behavioural model for GaN heterojunction diodes implemented with standard diode models <u>L.Chevas</u> , N.Makris, M.Kayambaki, A. Kostopoulos, A. Stavriniadis, G.Konstantinidis, M. Bucher
12:30-12:45	Mechanical strain effect on AlGa _N /Ga _N based HEMTs <u>E.Aslanidis</u> , M.Makris, G.Stavriniadis, G. Christodoulakis, A.Stavriniadis, G.Kostantiniadis,	12:30-12:45	Investigation of AlN{0001}/Si(111) heterostructures <u>M.Kayambaki</u> , C.C.Katsidis, A.Adikimenakis, A.Kostopoulos, K.Tsagaraki, M.Androulidaki and A.Georgakilas
12:50-13:40	Micro Nano Society General Assembly Venue: Municipal Cinema Maroula		
13:40-14:40	Lunch Break		

Parallel Session 5	Electronic, optoelectronic, photonic devices and circuits II Venue: Garofalidio Lecture Hall Session chair D. Tassis	Parallel Session 6	Sensors and actuators Venue: Municipal Cinema Maroula Session chair M. Chatzichristidi
14:45 - 15:15	Invited Talk Advancements in perovskite solar cells (PSCs) and optoelectronic memristors Emmanuel Kymakis	14:45 - 15:00	Electrochemical sensors 3D printed from nano-doped filaments Leonidas Papagiannakopoulos, Eleni Koukouivity, Vasiliki Polyzopoulou, Eleni Sorkoy, Maria Kartsakli, Maria Marakomichelaki, Anastasios Economou, <u>Christos Kokkinos</u>
		15:00-15:15	Gradual thin film Interferometry GRADE: 3D structured Si chip for label free determinations at the Point-of-Need G.Zisis, G.Papageorgiou, P.Petrou, <u>I.Raptis</u> , N.Papanikolaou
15:15 - 15:30	A general purpose, low-power, edge AI analog integrated Threshold classifier <u>V.Alimisis</u> , S.Dimas, P.P.Sotiriadis	15:15 - 15:30	Comparison of aptamer immobilization approaches through spectroscopic and SPR measurements <u>P.Petrou</u> , S. Kakabakos, IN.Ivanov
15:30 - 15:45	Fully Inkjet-Printed PEDOT:PSS/ZnO Heterojunctions on a Flexible Polyamide Substrate <u>G.Kaltsas</u> , A.Apostolakis, D.Barmpakos	15:30 - 15:45	An experimental study of power related reliability in RF MEMS capacitive switches <u>L.Michalas</u> , A. Ngabonziza, G.Stavriniadis, P.Martins, M. Le Baillif, Z.Afshin, G.Konstantinidis
15:45 - 16:00	Construction of Organic Electrochemical Transistors based on PEDOT:PSS treated yarns and solid gel electrolyte in weft-knitted fabrics <u>E.Louris</u> , V. Koncar, T.Xuyuan, S.Vasiliadis, D.Tassis	15:45 - 16:00	Anisotropic Magnetoresistance Integrated Sensors for Steel Health Monitoring, Georgia Stamou, Spyros Angelopoulos, Aphrodite Ktena and Evangelos Hristoforou
16:00 - 16:15	LEDs as potential candidates for Physical Unclonable Functions (PUF) realization <u>Savvas Ermeidis</u> , Stavros Stavriniadis, Rodrigo Picos, Charalambos Dimitriadis and Dimitrios Tassis	16:00 - 16:15	Pressure Sensors for monitoring State of Charge of Li-ion Pouch Cells <u>F.Farmakis</u> , A.Kostantaras, N.Kakalis, M.Georgas, G.Zardalidis
16:20 - 17:05	Plenary Presentation 3 Laser Processing and Tip-Based Probing of Nanomaterials Costas P. Grigoropoulos Session chair D.Tsoukalas Venue: Municipal Cinema Maroula		
17:15-18:15	Poster session II (even numbers)- Coffee break-Exhibition Venue: Municipal Cinema Maroula Galiouri room		
20:40	Conference Dinner Venue: Grand Patelli Hotel		



MicroNano

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Sunday October 13th, 2024

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Venue: Garofalidio Lecture Hall & Municipal Cinema Maroula

09:00-09:45	Plenary Presentation 4 Hearables: Next generation solutions for eHealth and 24/7 Doctorless Hospitals? Dr Danilo Mandic Session chair E. Hourdakis		
Parallel Session 7	Communicating Science-Connecting Citizen, Science and Industry Venue: Garofalidio Lecture Hall Session chair K.Ellinas	Parallel Session 8	Micro and Nano Fabrication III Venue: Municipal Cinema Maroula Session chair V. Constantoudis
09:50 -10:05	Tackling water scarcity by using advanced technologies in business-academia-society cooperation. K.Zourou, S.Oikonomou, WEB2LEARN	09:50 -10:05	Fabrication and characterization of Thin Film Transistors with ZrO ₂ gate dielectric deposited via sol-gel method on flexible substrates G.Mitrousis, A.Zventzidis, F.Farmakis
10:05 - 10:20	Effective Science Communication: Bridging the Gap Between Research and Society Dr Aimilia Smyrli, Head of Education at the National Centre for Scientific Research (NCSR) "Demokritos"	10:05 - 10:20	Water harvesting using random and ordered hierarchical interfaces D.Nioras, I.Filippou, V.Tselepi, K.Ellinas
10:20-10:30	Gathering for excursion Venue: Municipal Cinema Maroula		
10:30	Excursion*		
15:30-16:30	Conference Closing Remarks-Lunch-Announcements Venue: Municipal Cinema Maroula		

*Free of charge, It requires confirmation during registration. It includes sightseeing around Lemnos, Stop for Coffee

Poster presentations (odd numbers on Friday and even numbers on Saturday)

Poster No	Presenter	Title
1	Chatzandroulis Stavros	Investigation of PDMS Microfluidic Channel Fabrication and Integration on Biosensing Platforms <u>S.Chatzandroulis</u> , M.K.Filippidou, S.Ntouskas, A.Tserepi
2	Karani Maria	Li-ion battery materials:Advanced characterization tools <u>M.Karani</u> , G.Kastrinaki, E.Daskalos, N.Vlachos, G.Karagiannakis
3	Hourdakis Emmanouel	Lateral Schottky-based photovoltaic devices <u>E.Hourdakis</u> , A.Kaidatzis
4	Theocharis Ioannis	Impact of Metal Contacts on Resistive Switching Behavior in SiN Dielectric Films for MEMS Capacitors <u>I.Theocharis</u> , S.Gardelis, G.Papaioannou
5	Tsounidi Dimitra	Carbyne-modified silicon chips as biosensing surfaces in White Light Reflectance Spectroscopy platform <u>D.Tsounidi</u> , P.Petrou, E.Manouras, A.Tserepi, E.Gogolides
6	Alimisis Vassilis	A low-power, analog integrated Artificial Neural Network classifier for IoT applications <u>V.Almisis</u> , C.Dimas, P.P.Sotiriadis
7	Kondi Alex	Enhancing Nanomanufacturing Precision and Efficiency through Machine Learning: Applications in Etching and Deposition Processes <u>A.Kondi</u> , E.M.Papia, V.Constantoudis,
8	Papia Efi-Maria	Machine Learning-Driven Inverse Design of Hexagonal Moiré Structures for Customizable Pore Characteristics <u>E.M.Papia</u> , A.Kondi, V.Constantoudis
9	Ioannou Dimosthenis	Fabrication of superhydrophobic, micro-nanotextured biopolymers produced through valorization of Brewer's spent yeast D.Ioannou, I.D.Koukoumaki, M.Karpeli, D.Sarris, E.Gogolides, K.Ellinas
10	Kaltsas Grigoris	Unique Identification of Printed Structures Through Edge Roughness Detection <u>G.Kaltas</u> , D.Mpampakos, A.Apostolakis, V.Constantoudis, E.Zois
11	Lefa Ioanna	Improved core-shell silicon anode for Lithium-Ion Batteries with the carbonization of a polydopamine layer <u>I.Lefa</u>
12	Tsagkaraki Katerina	Determination of III-Nitride compound semiconductors polarity by SPM methods <u>K.Tsagkaraki</u> , A.Adikimenakis, A.Kostopoulos, A. Georgakilas
13	Filippou Ioannis	Microfabricated, Asymmetric Flexible Ultra-Thin Polymer Vapor Chambers for phase change heat transfer applications <u>I.Filippou</u> , V.Tselepi, D.Nioras, K.Ellinas
14	Kontomitrou Vasiliki	Considering sustainability in nanofabrication cleanrooms: Initial thoughts to accelerate the concept <u>V.Kontomitrou</u> , S.Lymperopoulou, G. Stavriniadis, A. Stavriniadis, A.Kostopoulos, G.Konstantinidis, L.Michalás
15	Chatzichristidi Margarita	Fluoropolymer surfaces modification using ultraviolet irradiation <u>M.Chatzichristidi</u> , M.E.Mylona, T.Manouras, A.Kanioura, P.Petrou, M.Vamvakaki
16	Kleitsiotis Georgios	Ultra-Low Power CBRAM with Multilevel Cell Precision for Digital Twins of Engineered Living Materials <u>G.Kleitsiotis</u>
17	Skaltsounis Panagiotis	Inertial microfluidic device bearing cavities for microparticle separation <u>P.Skaltsounis</u> , G.Kokoris, E.Gogolides, A.Tserepi
18	Sarkiris Panagiotis	Superhydrophobic surfaces for reduced friction and pressure drop in laminar and turbulent flows <u>P.Sarkiris</u> , E.Kaloudis, K.Ellinas
19	Louris Evangelos	Memristive phenomena in fiber-based Organic Electrochemical Transistors for potential textile circuits <u>E.Louris</u> , S.Stavriniadis, D.Tassis
20	Fouka Athanasia	Hydrothermal Growth of CuO nanotextured layers on kapton substrates <u>A.Fouka</u> , M.Chatzichristidi, E.Makarona, A.Kostaki

21	Kostopoulos Athanasios	Transforming GaN Nanocones into Uniform Nanowires: Advanced Etching Techniques for NW-FET Applications <u>A.Kostopoulos</u>
22	Vasileios Charalampidis	Micro-optical elements via systolic miniaturization of free-form silica aerogel masters <u>V.Charalampidis</u> , K.Papachristopoulou ,N.A.Vainos
23	Eleftherios Bagiokis	Functional Polymer/CsPbBr ₃ Nanolayers by Pulsed Femtosecond-Laser Deposition <u>E.Bagiokis</u> , A. Ioannou, Z. Orphanos, I. Koutselas, N. A. Vainos
24	Zannis Orphanos	Agile Fabrication of Functional 3D-Microstructures for Advanced Optical Applications <u>Z.Orphanos</u> , V. Charalampidis, K. Papachristopoulou, N. A. Vainos
25	Eleni Makarona	Microwave-assisted Synthesis of NiO Nanoparticles and heir Application to Composite Lithographic Resist Materials M.Chatzychristidi, P. Katsoufis, N. Stavridis, A Kontoliou, V. Psycharis and E.Makarona
26	Eleni Makarona	Cost-efficient CuO Nanoarchitectures for SERS Biosensing A. Dimitriou, E. Manios, A.S. Kastania, A. Fouka, A. Kanioura, G. Geka, K. Mergia, P. Petrou, M. Chatzychristidi N. Papanikolaou and E. Makarona
27	Panagiotis Dimitrakellis	Low temperature plasma surface engineering of nanomaterials for applications in energy and environment <u>P.Dimitrakellis</u>
28	Panagiotis Dimitrakellis	From hydrophilic to hydrophobic surface modification of metals and polymer-based materials using atmospheric pressure plasma processing Panagiotis Dimitrakellis, Isabelle Géraud-Grenier, Konstantinos Kourtzanidis, Stephane Pellerin, Francois Faubert
29	George Tsekenis	Aptamer-ligand interactions through the unconventional use of classical biophysical techniques: New insights gained on the strength and mode of their association Christina Bizintiki, Nikitas Melios, Panagiotis Giannousas, Petros Kelemenis, Anastasios Economou, George Tsekenis