

SMS / NanoMed / Sensors / EGF 2024
Joint International Conferences Program
23 - 25 October 2024, Barcelona - Spain

Wed. 23 Oct. 2024		
08:00 - 12:00	Conference Registration	
09:00 - 09:30	Welcome Coffee Break	
SMS 2024 / EGF 2024 / Sensors 2024 / NanoMed 2024 Joint Plenary Session I		
RUBÍ Conference Room RUBÍ (- 1 Floor)		
Session Chairs: Prof. Lucia Baldino, University of Salerno, Italy Prof. T Venkatesh, Stony Brook University, USA		
10:00 - 10:30	Nanoengineered Biomaterials for Medicine and Beyond K. Vasilev	Prof. Krasimir Vasilev , Flinders University, Australia
10:30 - 11:00	Scalable High-Throughput Mechanical Exfoliation for Cost-Effective Production of van der Waals Nanosheets Y. Sozen, E. Zamora, J.J. Riquelme, Y. Xie, C. Munuera and A. Castellanos-Gomez	Dr. Andres Castellanos Gomez , ICMM-CSIC, Spain
11:00 - 11:30	Moiré Multilayers — Towards Topological Quasicrystals M. Koshino	Prof. Mikito Koshino , Osaka University, Japan
11:30 - 12:00	Detailed structural, chemical composition and optoelectronic properties studies of 2D materials via TEM. R. Arenal	Dr. Raul Arenal , University of Zaragoza, Spain
12:00 - 12:30	Towards new 2D quantum materials from single-layer chemically expanded graphenic lattices S.T. Bromley	Prof. Stefan T. Bromley , University of Barcelona, Spain
12:00 - 14:00	Lunch Break - Rossini Room (Ground floor)	
SMS 2024 / Sensors 2024 / NanoMed 2024 Joint Session I. A: Materials synthesis, characterization and properties		
Session Chairs: Prof. Rumen Krastev, Reutlingen University, Germany Prof. Tae June Kang, Inha University, Incheon, Rep. of Korea Prof. Athar Hussain, Netaji Subhas University of Technology, India		
14:00 - 14:15	Role of Phenolic Functional Group in Peptide-Based Bimodal Memristors S. D. Namgung	Prof. Seok Daniel Namgung , Chung-Ang University, Seoul, Rep. of Korea
14:15 - 14:30	Integration of cubic switches as active layer into memristor prototypes through electrochemical methods S.F. Russi , T. Petenzi, C. Methivier, J. Landoulsi, L. Fillaud, E. Maisonhaute, N. Daffe, J. Dreiser, Y. Li, V. Malytskyi and R. Lescouëzec	Mrs. Sofia Frida Russi , Sorbonne University, France
14:30 - 14:45	Nanofabrication of large-scale stretchable surface relief diffraction gratings Y. Bdour and R.G. Sabat	Prof. Ribal Georges Sabat , Royal Military College of Canada, Canada
14:45 - 15:00	Self-assembling colloids a new route to photonic structures A. Chiappini , A. Carpentiero, M. Bollani, R. Mudi, B.M. Squeo, M. Pasini, C. Botta, L. Pasquardini, B.N. Shivakiran Bhaktha, K. Debnath and T. Virgili	Dr. Andrea Chiappini , IFN-CNR CSMFO Lab & FBK Photonics Unit, Italy
15:00 - 15:15	Curminoid-based active surfaces towards the preparation of sensors A. González-Campo , R. Gimeno-Muñoz and N. Aliagaa	Dr. Arántzazu González-Campo , Institute of Materials Science of Barcelona, Spain
15:15 - 15:30	Chemical 'Click' sintering of noble nanoparticles for direct fabrication of nanoporous electrodes for (bio)sensing applications M. Urban , G. Rosati, G. Maroli, F. Della Pelle, A. Bonini, L. Sajti, M. Fedel, R. Blanch Rivera and A. Merçoçi	Mr. Massimo Urban , Catalan Institute of Nanoscience and Nanotechnology (ICN2), Barcelona, Spain

15:30 - 15:45	Lanthanide doped up-converting nanoparticles for bioimaging and thermal sensing L. Mancic , I. Dinic, M. Tomic, M. Vukovic, M. Lazarevic, M. Bukumira and M. Rabasovic	Dr. Lidija Mancic , Institute of Technical Sciences of SASA, Serbia
15:45 - 16:00	Influence of Electron-Phonon Interaction on Optoelectronic properties of Halide Double Perovskite B.R. Sahoo and P. A. Bhohe	Mr. Bikash Ranjan Sahoo Indian Institute of Technology Indore, India
16:00 - 16:30	Afternoon Coffee Break	
Session Chairs: Dr. Andrea Chiappini, IFN-CNR CSMFO Lab & FBK Photonics Unit, Italy Prof. Athar Hussain, Netaji Subhas University of Technology, India		
16:30 - 16:45	Stamping Platinum Electrodes - a new method for modifying the geometry of electrochemical sensors K. Jedlińska , J. Eidenschink, F.-M. Matysik and B. Baś	Dr. Katarzyna Jedlińska , AGH University of Krakow, Kraków, Poland
16:45 - 17:00	Zinc Oxide Nanotubes doped by Palladium by Combining Electro-spinning and Atomic Layer Deposition Techniques for H ₂ production X. Sandua , L. Badouric, I. Pellejero, P.J. Rivero, M. Bechelany and R. Rodríguez	Mr. Xabier Sandua , Public University of Navarre, Spain

Wed. 23 Oct. 2024

SMS 2024 / NanoMed 2024 - Session I. B:
Smart coatings and Surfaces / Biomaterials/ Bionanomaterials

Conference Room DIAMANT (- 1 Floor)

Session Chairs:

Prof. Krasimir Vasilev, Flinders University, Australia

Prof. Ping Xiao, University of Manchester, UK

Dr. Federico Barrino, University of Palermo, Italy

14:00 - 14:30	Smart design with graded nanostructures for enhanced wear resistance of surfaces exposed to extreme conditions T. Yang, T. A. Venkatesh and M. Dao	Prof. T Venkatesh , Stony Brook University, USA
14:30 - 14:45	Development and Characteristics of sub-Stoichiometric High Entropy Carbonitride Coatings for Friction Applications N. C. Zoita , M. Dinu and A. C. Parau	Dr. Nicolae C. Zoita , National Institute of Research and Development for Optoelectronics- INOE 2000, Romania
14:45 - 15:00	Nanostructured polymer particle coatings for biological studies and sensing E. Rosqvist and J. Peltonen	Dr. Emil Rosqvist , Åbo Akademi University, Finland
15:00 - 15:15	Hydrodynamic testing of viscous drag reduction by bioinspired hybrid coatings A. Rodríguez-Ortiz , P. Pinilla-Cea and J.C. Suárez-Bermejo	Dr. Álvaro Rodríguez Ortiz , Universidad Politécnica de Madrid, Spain
15:15 - 15:30	Design and Development of Novel Additive Manufactured Structures with Optimised Properties for Biomedical Applications V. Spinelli , V. Gallicchio, C. Marino, V. D'Antò, G. Spagnuolo and S. Rengo	Dr. Vincenzo Spinelli , University of Naples, Italy
15:30 - 15:45	Development of magnetic molecular imprinted polymer systems for biomedical applications C. Ciarlantini , G. Carnevale, E. Lacolla, I. Francolini, M. Fernández-García, C. Muñoz-Núñez, A. Muñoz-Bonilla and A. Piozzi	Dr. Clarissa Ciarlantini , University of "La Sapienza", Rome, Italy
15:45 - 16:00	4D printing of triple-shape memory polymer using a thermal stimulus for biomedical applications S. Shankar Mohol and P. Mohan Pandey	Mr. Shubham Shankar Mohol , Indian Institute of Technology Delhi, India
16:00 - 16:30	Afternoon Coffee Break	
Session Chairs:		
Prof. T Venkatesh, Stony Brook University, USA		
Dr. Valentina Castagnola, Italian Institute of technology, Italy		
16:30 - 16:45	Flexible nanostructured electrodes for neural interfacing including core-shell nanowires including core-shell nanowires N. Rodríguez-Díez , B.L. Rodilla, A. Arché-Nuñez, S. Ruiz-Gómez, P. Ocón, L. Pérez and M. T. González	Mrs. Noelia Rodríguez Díez , Fundación IMDEA, Spain
16:45 - 17:00	Sol-Gel Synthesis of Silica-based Biomaterials with different weight percentages of Rosmarinic Acid F. Barrino , F. Giuliano, F. Sedita and C. Dispenza	Dr. Federico Barrino , University of Palermo, Italy
17:00 - 17:15	Graphene oxide is biocompatible and strengthens gelatine through non-covalent interactions with its amorphous region H. Jin Sim, K. Marinkovic, P. Xiao and H. Lu	Dr. Hui Lu , The University of Manchester, UK
17:15 - 17:30	Characterization of lyophilized, extruded histidylated liposome, a versatile platform for mRNA delivery A. Ngalle Loth , M. Maroquenne, Ayoub Medhmedj, C. Pichon, Delphine Logeart- Avramoglou and F. Perche	Mr. Albert Ngalle Loth , University of Orleans, France
17:30 - 17:45	Synthesis and Characterization of Cadmium Sulphide Nanoparticles with Antimicrobial Assay E.U. Ekwujuru , M. G. Peleyeju, C. Ssemakalu, M. E. Monapathi and M. J. Klink	Ms. Ezinne Ekwujuru , Vaal University of Technology, South Africa

Wed. 23 Oct. 2024

EGF 2024 - Session I. C:
Graphene and 2D Materials synthesis, characterization, and properties

Conference Room CORAL + CRISTAL (-1 Floor)

Session Chairs:

Dr. Raul Arenal, University of Zaragoza, Spain

Dr. Emiliano Bonera, Università degli Studi di Milano Bicocca, Italy

14:00 - 14:30	Chemistry of 2D Materials for Patterning and Building of Heterostructures E.M. Pérez	Prof. Emilio M. Pérez Alvarez, IMDEA Nanoscience, Spain
14:30 - 14:45	Tuning the exchange coupling in graphene-based synthetic antiferromagnets M. Hsouna, C.A. Brondin, TO. Menteş, A. Locatelli and N. Stojić	Ms. Maha Hsouna, The Abdus Salam International Centre for Theoretical Physics, Italy
14:45 - 15:00	Band Gaps Engineering in the 2D Mo(S1-X,TeX)2-Alloy Adsorbed on Graphite, or Sandwiched Between Layers of Graphene B. P. Burton	Dr. Benjamin Burton, NIST, USA
15:00 - 15:15	Emergent cavity junction around metal-on-graphene contacts Y. Zhao, M. Kapfer, K. Watanabe, T. Taniguchi, O. Zilberberg and B. S. Jessen	Mr. Yuhao Zhao, ETH Zurich, Switzerland
15:15 - 15:30	The Effects of Drying Method and Gelation Time on Reduced Graphene Oxide Aerogels S. Mallia, A. Agius Anastasi and D. A. Vella	Mr. Sean Mallia, University of Malta, Malta
15:30 - 15:45	The Chemistry of Graphene Oxide and its derivatives, a multi-purpose nanolaboratory F. Amato, A. Motta, L. Giaccari, P. Altimari and A. G. Marrani	Dr. Francesco Amato, University "La Sapienza", Rome, Italy
15:45 - 16:00	A continuous approach to developing new pathways for the synthesis of graphene derived materials S. Kellici	Dr. Suela Kellici, London South Bank University, UK
16:00 - 16:30	Afternoon Coffee Break	
Session Chairs :		
Prof. Emilio M. Pérez Alvarez, IMDEA Nanoscience, Spain		
Prof. Mikito Koshino, Osaka University, Japan		
Dr. Emiliano Bonera, Università degli Studi di Milano Bicocca, Italy		
16:30 - 16:45	Nonionic, Cationic and Anionic Surfactants-Assisted Liquid Exfoliation of Graphite into Few-Layer Graphene: Impact of Ultrasound, Solvents and Surfactants M. Saeed, A. Ismail, M. AlSaeedi and Sh. Ahmad	Dr. Maryam Saeed, Kuwait Institute for Scientific Research, Kuwait
16:45 - 17:00	Effect of Graphene Reinforcement on the Tribological and Fracture Behaviours of Silicon-Based Nanocomposites H. Abo El-Einein, A. Berrais, A. Weibel, C. Laurent, B. Berthel and M.I. De Barros Bouchet	Mr. Hussein Abo El-Einein, Ecole Centrale de Lyon, France
17:00 - 17:15	Multi-Probe Evaluation of the Mechanical Response of Monolayer Graphene J. Varillas, J. Lukeš, A. Manikas, J. Maňák, Jiří. Dluhoš, Z. Melníková, C. Galiotis, O. Frank and M. Kalbáč	Dr. Javier Varillas, J. Heyrovský Institute of Physical Chemistry, Czech Rep.
17:15 - 17:30	Laser-induced graphene on biocompatible polymers T. Vičentić, M. V. Pergal, M. Rašljčić Rafajilović, A. Gavran, S. D. Ilić and M. Spasenović	Ms. Teodora Vicentic, University of Belgrade, Serbia
17:30 - 17:45	Development of new substrates for super-resolution studies of supported Lipid Bilayers (slb) by graphene induced energy transfer H. Evcı	Mr. Hüseyin Evcı, J. Heyrovsky Institute of Physical Chemistry, Czech Rep.

Thu. 24 October 2024

**EGF 2024 / SMS 2024 Session II. A:
Graphene properties and applications
Functional / Multifunctional, Hybrid, Composites and Responsive Materials**

Conference Room RUBÍ (-1 Floor)

Session Chairs:

**Prof. Mikito Koshino, Osaka University, Japan
Prof. Emilio M. Pérez Alvarez, IMDEA Nanoscience, Spain**

09:00 - 09:30	Thermal properties of Xenon measured by optothermal Raman spectroscopy E. Bonera	Dr. Emiliano Bonera, Università degli Studi di Milano Bicocca, Italy
09:30 - 10:00	Interfacial Ferroelectricity in van der Waals semiconductors and their heterostructures V. Falko	Prof. Vladimir Falko, Manchester University, United Kingdom
10:00 - 10:15	Low resistance laser-reduced graphene oxide: electrical and mechanical characterization for flexible electronic applications M. G. Bonando, N. M. M. Fernandes, S. S. Piva, R. J. E. Andrade, C. C. C. Silva and L. A. M. Saito	Mr. Matheus Guitti Bonando, Mackenzie Presbyterian University, Brazil
10:15 - 10:30	Manufacturing and Thermal Simulation of Graphene Doped Carbon Fiber Reinforced Composites for Through Thickness Heat Transfer J. M. J. Gugliuzza, S. Carosella and P. Middendorf	Mr. Jakob Gugliuzza, University of Stuttgart, Germany

10:30 - 11:00

Morning Coffee Break

Session Chairs:

**Prof. Mikito Koshino, Osaka University, Japan
Dr. Emiliano Bonera, Università degli Studi di Milano Bicocca, Italy
Prof. Vladimir Falko, Manchester University, United Kingdom**

11:00 - 11:30	On the origin of cyclic instability of SMA actuators P. Šittner, O. Tyc, E. Iaparova, O. Molnarová and L. Heller	Dr. Petr Šittner, Czech Academy of Sciences, Czech Rep.
11:30 - 11:45	Hybridization of Materials and Processes by means of Additive Manufacturing Technologies T. Moritz, U. Scheithauer, A. Günther, L. Gottlieb, E. Schwarzer-Fischer and J. Abel	Dr. Tassilo Moritz, Fraunhofer Institute for Ceramic Technologies and Systems, Germany
11:45 - 12:00	Moiré Engineering in Twisted WTe ₂ Structures S.J. Kheirabadi, F. Gity, P.K. Hurley and L. Ansari	Dr. Sharieh J. Kheirabadi, University College Cork, Ireland

12:00 - 14:00

Lunch Break - Rossini Room (Ground floor)

Group Photo at 13:45

**Smart Materials and Surfaces / Sensors 2024 Session II. B:
New Materials for sensors and actuators: Sensing the Future with New Materials**

Session Chairs:

**Dr. Petr Šittner, Czech Academy of Sciences, Czech Republic
Dr. Andrea Chiappini, IFN-CNR CSMFO Lab & FBK Photonics Unit, Italy**

14:00 - 14:30	Conducting research on the use of curcuminoid-based surfaces as sensors N. Aliaga-Alcalde	Prof. Nuria Aliaga-Alcalde, Institute of Materials Science of Barcelona, Spain
14:30 - 14:45	Engineering Porosity for Tuning Electromechanical Properties in Piezoelectric Systems K. S. Challagulla and T. A. Venkatesh	Prof. T Venkatesh, Stony Brook University, USA
14:45 - 15:00	Combined optical and conductivity properties of ZnO for gas sensor devices Z. Shao, K. Jacob, M. Jakoobi, V. Collière, L. Vendier, Y. Coppel, K. Fajerweg, J-D. Marty, A. Ryzhikov, C. Mingotaud and M. L. Kahn	Mr. Zhigang Shao, CNRS-University of Toulouse, France
15:00 - 15:15	Toward Highly Sensitive Biosensing Systems Based on Perovskite Fluorescent Labels	Mr. William Teixeira, Polytechnic University Valencia, Spain

	W. Teixeira , C. Collantes, P. Martínez, J. Carrascosa, V. González-Pedro and M-J. Bañuls and A. Maquieira	
15:15 - 15:30	Printing technologies at the forefront of analytical tools and sensors innovation F. Paré , G. Gabriel and M. Baeza	Mr. Franc Paré , Autonomous University Barcelona, Spain
15:30 - 15:45	Wearable Textile-based Chemiresistive pH Sensors with MXene-Chitosan Composite P. Kumar , G. M. Stojanović, M. Gupta and H. F. Hawari	Dr. Pradeep Kumar , University of Novi Sad, Serbia
15:45 - 16:00	Smart Patch for Continuous Monitoring and Stretchable Electronics in Enhancing Patient Outcomes A. Ben-Aissa , M. Moreno, B. Molina, M. Alique and A. Moya	Dr. Alejandra Ben-Aissa Soler , Eurecat, Spain
16:00 - 16:30	Afternoon Coffee Break	
SMS / NanoMed / Sensors 2024 Joint Session II. C: Biosensors and sensors for medical applications		
Session Chairs: Prof. Nuria Aliaga-Alcalde , Institute of Materials Science of Barcelona, Spain Dr. Petr Sittner , Czech Academy of Sciences, Czech Republic		
16:30 - 17:00	MOF-based sensors with enhanced electroconductivity: application for vascular endothelial growth factor (VEGF) detection R. Antiochia , M.C. di Gregorio, V. Gigli, T. Gentili, C. Tortolini, A.M. Isidori and M. Nuti	Prof. Riccarda Antiochia , University of Rome "La Sapienza", Italy
17:00 - 17:15	Non-invasive, minimalistic, and self-operated glucose sensor for point-of-care testing in saliva E. G. San Vicente , D. Martin Prats, X. Palmer, R. Grinyte and J. M. Cabot	Ms. Elena G. San Vicente , LEITAT Technological Centre- Barcelona, Spain
17:15 - 17:30	Introducing all-inkjet-printed microneedles for in-vivo biosensing G. Rosati , P.B. Deroco, M.G. Bonando, G.G. Dalkiranis, K. Cordero-Edwards, G. Maroli, L.T Kubota, O.N. Oliveira Jr, L.A. Miyazato Saito, C.C.C. Silva and A. Merkoçi	Dr. Giulio Rosati , Catalan Institute of Nanoscience and Nanotechnology, Spain

Conference Dinner
Conference venue hotel
24 Oct. 2024 from 19:30

Thu. 24 October 2024		
NanoMed / Sensors joint Session II. D: Bioinspired, Biomimetic bioactive biomaterials Intelligent drug delivery and release system		
Conference Room DIAMANT (-1 Floor)		
Session Chairs: Prof. Luca Gentilucci, University of Bologna, Italy Prof. Vesselin N. Paunov, Nazarbayev University, Kazakhstan		
09:00 - 09:30	biomimetic approach for designing superhydrophobic surfaces J. Rumeau	Prof. Jannick Rumeau , University of Lyon, France
09:30 - 10:00	Design of Nanomaterials for Radiation Therapy G. Tobías-Rossell	Dr. Gerard Tobías-Rossell , Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain
10:00 - 10:30	Bioinspired nanovesicles as bioengineered hybrid tools against cancer cells V. Cauda	Prof. Valentina Cauda , Polytechnic University of Turin, Italy
10:30 - 11:00	Morning Coffee Break	
11:00 - 11:30	Emerging nanotechnologies for targeting pathogenic bacterial biofilms V.N. Paunov	Prof. Vesselin N. Paunov , Nazarbayev University, Kazakhstan
11:30 - 11:45	Using Label-Free Single Particle Tracking to Characterise the Effect of Cell Layers on Nanoparticle Diffusion in Experimental Models G. Schleyer, E.A. Patterson and J.M. Curran	Ms. Genevieve Schleyer , University of Liverpool, UK
11:45 - 12:00	Platinum nanozymes against central nervous system dysfunctions L. Boselli , G. Tarricone, G. Mirra, L. Cursi, V. Castagnola, F. Benfenati and P.P. Pompa	Dr. Luca Boselli , Italian Institute of technology, Italy
12:00 - 14:00	Lunch Break - Rossini Room (Ground floor)	
Group Photo at 13:45		
SMS / NanoMed / Sensors 2024 joint Session II. E: Biomaterials / NanoBioMaterials / Bioimaging / Biosensors		
Session Chairs: Prof. Jannick Rumeau, University of Lyon, France Dr. Valentina Castagnola, Italian Institute of technology, Italy		
14:00 - 14:30	Integrin-Targeting Peptides for the Design of Cell- Eager Nanostructured Biomaterials L. Gentilucci and T. He	Prof. Luca Gentilucci , University of Bologna, Italy
14:30 - 14:45	Destination brain: trans- and paracellular strategies to overcome the blood-brain barrier V.Castagnola , M. Trevisani, S. Vercellino, L. Boselli, L. Pappagallo, F. De Chirico, A. Danielli, A. Berselli, G. Alberini, L. Maragliano and F. Benfenati	Dr. Valentina Castagnola , Italian Institute of technology, Italy
14:45 - 15:00	Control of protein adsorption, cell adhesion and growth on polysaccharide based multilayer films by incorporation of graphene oxide T. Andreeva and R. Krastev	Dr. Tonya Andreeva , Reutlingen University, Germany
15:00 - 15:15	Exploring the Protein Surface Interactions of a Protein Inspired by a Natural Glue D. Ayed , Z. Khalil, C. R. Picot, M. Weidenhaupt, F. Bruckert, R. Mathey, Y. Hou-Broutin and C. Vendrely	Dr. Dhekra Ayed , CNRS- University Grenoble Alpes, France
15:15 - 15:30	Locally Selective Immobilisation of DNA Origami for Raman Spectroscopy based Biosensors J. Hann , M. Janssen, C. Meinecke, S. Hartmann, A. Heerwig, D. Reuter and M. Mertig	Ms. Julia Hann , University of Technology Chemnitz, Germany
15:30 - 15:45	Multi-scale nanoimprinted nanopillar structures within a microfluidic device fabrication with surface functionalization H.O. M. Chu , P. Goldberg Oppenheimer and L. M. Grover	Dr. Hin On Chu , University of Birmingham, UK

15:45 - 16:00	Advanced Integrated Multipurpose Spectroscopic Lab-on-a-chip for Timely Detection of Extracellular Vesicles as Key-Markers of Inflammatory Bowel Disease E.Buchan , J.J.S.Rickard, M.R.Thomas and P.Goldberg Oppenheimer	Dr. Emma Buchan , University of Birmingham, UK
16:00 - 16:30 Afternoon Coffee Break		
Session Chairs: Prof. Jannick Rumeau, University of Lyon, France Dr. Federico Barrino, University of Palermo, Italy		
16:30 - 17:00	Multifunctional Stimuli-Responsive Systems for Sensing L.L. del Mercato	Dr. Loretta L. del Mercato , Institute of Nanotechnology of CNR, Italy
17:00 - 17:30	Validation of an Intracranial Raman Spectroscopic Probe for In-Situ Monitoring of Traumatic Brain Injury C. A. Stickland , Z. Sztranyovszky, J. J. S. Rickard and P. Goldberg Oppenheimer	Ms. Clarissa Stickland , University of Birmingham, UK
17:30 - 17:45	CMOS-Compatible Electrochemical ELISA Platform for Semi-continuous Cytokine Monitoring in Organ-on-Chip Systems S. J. Zapiain-Merino , A. Torosyan, K. Jans, R. Vos, L. Lagae and O. Henry	Mr. Santino Zapiain , IMEC - Leuven, Belgium

Conference Dinner
Conference venue hotel
24 Oct. 2024 from 19:30

Thu 24 Oct. 2024

**NanoMed 2024 Session II. F:
Nanomaterials for Biomedical / Tissue engineering, drug, and gene delivery**

Conference Room CORAL + CRISTAL (-1 Floor)

Session Chairs:

Prof. Valentina Cauda, Polytechnic University of Turin, Italy
Prof. Anna Laurenzana, University of Florence, Italy
Prof. Krasimir Vasilev, Flinders University, Australia

14:00 - 14:30	Production and Characterization of Deformable Vesicles for Transdermal Application L. Baldino, S. Sarnelli and E. Reverchon	Prof. Lucia Baldino, University of Salerno, Italy
14:30 - 14:45	Potential neuroprotective effects of intranasally delivered multi-walled carbon nanotubes S.Fiorito, M.Soligo and D.Uccelletti	Dr. Silvana Fiorito, Sapienza University- CNR, Italy
14:45 - 15:00	PIC micelles encapsulating medical Cu-64 as a Drug Delivery System for Cancer Therapy M.A.G. Mikhail, N. Hayashi, T. Eto, K. Tsukada, A. Kishimura, and H. Kamizawa6	Mrs. Mary Mikhail, Kyushu University, Japan
15:00 - 15:15	Release of indocyanine green from nanostructured absorbable patch manufactured by bio-printer A. de Nigris, G. Quero, G. P. Vanoli and L. Ambrosone	Dr. Antonio de Nigris, University of Molise, Italy
15:15 - 15:30	Developing Experimental Models to Characterise the Diffusion of Nanoparticles Through Complex Environments using a Novel Real-Time Label-Free Tracking Platform M. Lorenzo López, V.R. Kearns, E.A. Patterson and J.M. Curran	Ms. Moira Lorenzo Lopez, University of Liverpool, UK
15:30 - 15:45	Gold Nanoparticles and endothelial progenitor cells: a win-win alliance for targeting tumors C. Anceschi, E. Frediani, J.Ruzzolini, F. Margheri, A. Chillà, F. Ratto, P. Armanetti, L. Menichetti, M. Del Rosso, G. Fibbi and A. Laurenzana	Dr. Cecilia Anceschi, University of Florence, Italy

16:00 - 16:30

Afternoon Coffee Break

Session Chairs:

Prof. Lucia Baldino, University of Salerno, Italy
Prof. Krasimir Vasilev, Flinders University, Australia

16:30 - 17:00	Yin/Yang effectiveness of gold nanoparticles in controlling tumor progression and promoting vascularization in vasculopathies A. Laurenzana, C. Anceschi, F. Scavone, A. Chillà, E. Frediani, F. Margheri, F. Ratto, C. Borri, M. Del Rosso, T. del Rosso and G. Fibbi	Prof. Anna Laurenzana, University of Florence, Italy
17:00 - 17:15	Synthesis of nanostructured polymer systems for quantification of circulating biomarkers P. Mastella, S. Luin and F. Beltram	Mr. Pasquale Mastella, Scuola Normale Superiore and CNR-Nano, Italy
17:15 - 17:30	Perfluorocarbon-PLGA particle ultrastructure affects pH sensitivity in 19F NMR and MRI A. Mali, M. Daal, N. Ziolkowska, N. Stumpe, N. Larreina Vicente, N.K. van Riessen, V.V.S. Pillai, F.S. Ruggeri, C. Cadiou, F. Chuburu, D. Jirak, P.B. White and M. Srinivas	Ms. Alvja Mali, Wageningen University and Research, The Netherlands

Conference Dinner
Conference venue hotel
24 Oct. 2024 from 19:30

Fri. 25 Oct. 2024

**SMS / EGF 2024 Session III.A:
Applications for energy and environment**

Conference room DIAMANT (-1 Floor)

Session Chairs:
Prof. Vladimir Falko, Manchester University, United Kingdom
Prof. Rumen Krastev, Reutlingen University, Germany

09:30 - 10:00	Anaerobic Biodegradation of Pharmaceutical Herbal Waste Using Batch Test Study A. Hussain , M. Priyadarshi and P. Das	Prof. Athar Hussain , Netaji Subhas University of Technology, India
10:00 - 10:30	Morning Coffee Break	
10:30 - 10:45	Ca(OH) ₂ pellets with mesoporous alumina as a binder for thermochemical energy storage D. Castro , E. S. Sanz-Pérez, L. Briones and J. M. Escola	Mr. David Castro , Rey Juan Carlos University, Spain
10:45 - 11:00	Ecological enhancement of PVDF electroactive phase with plant-sourced ZnO for sustainable energy harvesting H. Rejdali , I. Salhi, M. Boutaous, J. Jay, A. Hajjaji and F. Belhora	Ms. Hajar Rejdali , University Chouaib Doukkali, Morocco
11:00 - 11:15	Covalent immobilization of EDTA onto graphene oxide and its application for heavy metal removal A. Al-Shammakhi, E-S I. El-Shafey , B. Al-Wahaibi, S.N.F. Ali	Prof. El-Said I. El-Shafey , Sultan Qaboos University, Oman
11:15 - 11:30	PEO coatings for photocatalytic remediation of water D. Czekanowska , C. Blawert, M. Serdechnova, A. Bamburov, R. Vasilic and P. Głuchowski	Ms. Dominika Czekanowska , Graphene Energy LTD, Poland
11:30 - 11:45	Biodegradation of 2-Chlorophenol by anaerobic reduction on graphene oxide membranes supported on tubular ceramic filtration elements. D. Guevara , J. Font and F. Stüber	Ms. Daniela Guevara Correa , Rovira i Virgili University, Spain
11:45 - 12:00	Efficient CoZnCr@MXene based electrocatalyst for High-Current-Density Alkaline Water Splitting at Industrial Temperature P. Chauhan and Z. Sofer	Dr. Payal Chauhan , Univ. of Chemistry and Technology, Czech Rep.

Fri. 25 Oct. 2024

Sensors 2024 Session III.B: gas sensors, physical sensors, etc

Conference room CORAL + CRISTAL (-1 Floor)

Session Chairs:

Prof. Riccarda Antiochia, University of Rome "La Sapienza", Italy
Prof. Sang Sub Kim, Inha University, Rep. of Korea

09:30 - 09:45	Enhancement of Sensing Properties of Semiconductor Resistive Gas Sensors by Surface Treatment H. Woo Kim and S. Sub Kim	Prof. Sang Sub Kim, Inha University, Rep. of Korea
09:45 - 10:00	Development of an electrochemical oxygen micro sensor for industrial application A. Benayache, V. Martini, C. Marlot and K. Aguir	Ms. Amira Benayache, Aix Marseille Univ, France
10:00 - 10:30	Morning Coffee Break	
10:30 - 10:45	Optimizing Gas Sensing Response: High-Temperature Gradient Laser Annealing of Block Copolymer-Templated Metal Oxide Nanowires P. Pula and P.W. Majewski	Mr. Przemyslaw Pula, University of Warsaw, Poland
10:45 - 11:00	Experimental Investigation of Thermal Tuning for Laterally Excited Bulk Acoustic Wave MEMS Resonators using SOI Bulk Heating M. Bengashier, O. Casha, I. Grech, R. Farrugia, J. Micallef and E. Gatt	Mrs. Munira Bengashier, University of Malta, Malta
11:00 - 11:15	Impact of Optical Fiber Design on the Performance of Interferometric Temperature Sensors at Elevated Temperature S. Pevec, M. Njegovec, V. Budinski, V. Žužek, J. Bojkovski and D. Donlagic	Dr. Simon Pevec, University of Maribor, Slovenia
11:15 - 11:30	A modular gamma-ray scanner consisting of two linear CsI+SiPM arrays for radioactive waste sorting G. Elio Poma, C. Rita Failla, L. Giovanni Cosentino, F. Longhitano, G. Vecchio and P. Finocchiaro	Dr. Gaetano Elio Poma, INFN-LNS, Italy

N.	Poster Title	Author, Affiliation, Country
1.	Sol gel microencapsulated additives for auto-healing coatings of galvanized stainless steel L. Florentino , O. Conejero and R. B. de la Rua	Mrs. Lucia Florentino , Idonial technology Centre, Spain
2.	Development of hybrid sol-gel coatings with improved anticorrosion properties for Cr-free passivation of galvanized steel M. Prado , P. Sánchez and O. Conejero	Mrs. Marta Prado Garcia , Idonial Technology Centre, Spain
3.	Short Electrospun Cellulose Acetate Nanofibers as Seed Coating Applications P.A.M. Chagas , G. B. Medeiros, W. P. Oliveira and M.L. Aguiar	Dr. Paulo A.M. Chagas , Federal University of São Carlos, Brazil
4.	Structural, mechanical, wear and anticorrosive properties of protective multilayers based on TiSi carbo-nitrides used for the development of cutting tools L.R. Constantin , A. C.Parau, M. Dinu, I. Pana, C. Vitelaru, D. M. Vranceanu and A ; Vladescu Dragomir	Dr. Lidia R. Constantin , INOE 2000, Romania
5.	The Impact of Plasma Treatment on Magnesium's Corrosion Resistance and Biocompatibility A. Kocijan , J. Kovač, I. Junkar, M. Resnik, V. Kononenko and M. Conradi	Dr. Aleksandra Kocijan , Institute of Metals and Technology, Ljubljana, Slovenia
6.	Tribological properties of laser-textured Ti6Al4V alloy upon addition of MoS2 nanotubes under water and oil lubrication: introducing the concept of green tribology M. Conradi , B. Podgornik, A. Kocijan, M. Remškar and D. Klobčar	Dr. Marjetka Conradi , Institute of metals and technology, Ljubljana, Slovenia
7.	Bipolar Current Collectors of Carbon Fiber Reinforced Polymer for Laminates of Energy Storage Structural Composites B. Jun So, G. Shin, Y. Choi, H. Lee and T. June Kang	Prof. Tae June Kang , Inha University, Incheon, Rep. of Korea
8.	Containment of Heavy Metal Diffusion from River Yamuna to the Surrounding Geology using Bentonite Based Nanomaterial M. Priyadarshi , P. Das and A. Hussain	Ms. Manjeeta Priyadarshi , Netaji Subhas University of Technology, India
9.	CoPt alloys catalysts for Methanol Oxidation Reaction (MOR): influence of material shape onto their catalytic properties O.G. Dragos-Pinzaru , G. Buema, M. Tibu, F. Borza, G.Ababei, G. Stoian, C. Hlenschi, I. Tabakovic and N. Lupu	Dr. Oana G. Dragos Pinzaru , National Institute of R&D for Technical Physics, Romania
10.	Effect of Complete Dealumination on Acidic, Textural and Adsorption Properties of BEA Zeolite M. Mihaylov , O. Lagunov, V. Zdravkova, E. Ivanova, I. Spassova and K. Hadjiivanov	Prof. Mihail Mihaylov , Institute of General and Inorganic Chemistry- Sofia, Bulgaria
11.	Oxidation of Hydrogen Sorbed in Reduced Nanoceria E. Ivanova , M. Mihaylov, N. Drenchev, K. Chakarova and K. Hadjiivanov	Mrs. Elena Ivanova , Institute of General and Inorganic Chemistry, Sofia, Bulgaria
12.	Green synthesized Au-Ag core-shell nanoparticles as catalyst for reductive degradation of carmoisine V. Moroşan, B. Moldovan and L. David	Prof. Luminita David , "Babeş-Bolyai" University, Cluj-Napoca, Romania
13.	Comparative study of the graphene morphology on the effective electroelastic behavior of PVDF matrix composites S. Elbarnaty , W. Azoti, JPM. Correia and S. Ahzi	Mr. Salah Elbarnaty , University of Strasbourg, France
14.	Hydrogenated graphene superlattices: electronic and optical properties V. A. Saroka , L. A. Chernozatonskii and O. Pulci	Dr. Vasil Saroka , University of Rome Tor Vergata, Italy
15.	pH sensor for the in-situ environmental measurements N. Lenar , R. Piech and B. Paczosa-Bator	Dr. Nikola Lenar , AGH University of Krakow, Poland
16.	FDM technology and the effect of printing parameters on the tensile strength of ABS parts M. Daly , M. Tarfaoui, M. Chihi and C. Bouraoui	Mr. Mohamed Daly , ENSTA Bretagne, France
17.	Advanced Deep Learning Framework for Damage Detection in 3D-Printed AEROSIL-Infused Polycarbonate Under Dynamic Loading Y. Qarssis , A. Karine, M. Nachtane and M. Tarfaoui	Mr. Youssef Qarssis , ENSTA Bretagne, France

18.	Numerical Simulation for Assessing Wave Energy Converter Structural Resistance and Hydrodynamic Behavior M. Karkab , A. Ghennioui, K. Bouziane, O. Jellouli and M. Tarfaoui	Mr. Mohammed Karkab , ENSTA Bretagne, France .
19.	Polymethyl Methacrylate Fresnel Lenses to Focalize Ultrasound at Megahertz M. Ghasemishabankareh , F. Torres and N. Barniol	Mr. Mohammadamir Ghasemishabankareh , Autonomous Univ. Barcelona, Spain
20.	Investigation of a QCM sensing system using the concentration of low-concentration biomarker gas H. Ito , S. Hashimoto and T. Katsuno	Dr. Hirofumi Ito , Toyota Central R&D Labs, Japan
21.	Automatic skin cancer diagnosis using a robotic hyperspectral sensor. C. Sáez, O. Sanmartín, A. García and R. Díaz	Mr. Ricardo Díaz , Sensor and Robotic Department-AINIA, Valencia, Spain
22.	Electrospun carbon nanofibers doped with metal nanoparticles used as sensors for highly sensitive voltametric drug determination J. Smajdor , M. Zambrzycki, M. Marzec, B. Paczosa-Bator and R. Piech	Dr. Joanna Smajdor , AGH University of Science and Technology, Poland
23.	Optimising Raman Spectroscopy for Early Detection of Microbial Spoilage in Meat D. Bhowmik , J. Rickard and P. Goldberg Oppenheimer	Ms. Debarati Bhowmik , University of Birmingham, UK
24.	Reliability Analysis of Hydrogen Pressure Sensor for Automotive Applications H. Lee , C. Han, J. Lee, K. Lee, and H. Sagong	Dr. Hojoon Lee , Korea Automotive Technology Institute, Rep. of Korea
25.	Development of an Integrated Self-Diagnostic System for Water Quality Measurement Sensors K.-Y. Hwang and S. Bae	Dr. Kyung-Yup Hwang , BLUESEN Co. Ltd., Rep. of Korea
26.	Integrating Satellite, Ground Sensors, and AI for Surface Water Protection: The EcoNet Project G. Grasso, D. Zane, B. Brunetti, S. Foglia , G. Ferrara, V. La Pegna, D. De Santis, D. Cappelli, M. Frezza, I. Petracca, F. Del Frate, G. Licciardi, P. Sacco, D. Tapete and R. Dragone	Dr. Sabrina Foglia , CNR-ISMN, Italy
27.	Biosynthesis of cellulose using Antarctic bacterial strains M.C. Biondini , A. Vassallo, M. di Sessa, M. Zannotti, R. Giovannetti and S. Pucciarelli	Dr. Maria Chiara Biondini , University of Camerino, Italy
28.	Characterization of a blue pigment isolated from an Antarctic Rhodococcus bacterial strain M. di Sessa , M. Chiara Biondini, A. Vassallo, M. Zannotti, S. Pucciarelli and R. Giovannetti	Mrs. Martina di Sessa , University of Camerino, Italy
29.	Antimicrobial effect on coated catheter surface Á. Deák , L. Janovák, D. Szabó, L. Rovó, A. Zore, A. Abram and K. Bohinc	Dr. Ágota Imre-Deák , Univ. of Szeged, Hungary
30.	Advancements in Biodegradable Magnesium-Based Implants: Enhancing Biocompatibility and Corrosion Resistance through Alloy Development T. Tański, A. Woźniak , P. Snopiński, K. Cesarz-Adreczke and M. Król	Dr. Anna Woźniak , Silesian University of Technology, Poland
31.	Tailoring Fibrinogen Adsorption on Layer-by-Layer Films: the impact of hydrophilicity and film structure of cross linked PAA/PAH multi-layers B. Borisova, Andreeva, R. Tzoneva and R. Krastev	Prof. Rumen Krastev , Reutlingen University, Germany
32.	Development of a Novel Photothermal Material Using Gold Nanoparticles Synthesized Inside a Hydrogel for Biomedical and Biocatalytic Applications M.J. Martínez-Tomé , A. Balah Tahiri, M. Rubio-Camacho, J. Gómez, C.R. Mateo, R. Esquembre	Dr. María José Martínez Tomé , Miguel Hernández University, Spain
33.	Antioxidant Effect of New Green Synthesized Bimetallic Nanoparticles using Phytocompounds from Goji Fruits B. Moldovan , V. Morosan, L. David and I. Baldea	Dr. Bianca Moldovan , Babeş-Bolyai University, Romania
34.	Design and development of cyclodextrin nano-sponges based in situ gelling systems to co-deliver polyphenols for candidiasis therapy S. V Paramshetti, M. Angolkar, A. Al Fatease and R.A.M Osmani	Prof. Adel Al Fatease , King Khalid University, Saudi Arabia
35.	Synthesis of Photo-crosslinked Nanoparticulate Polymer Supports Using Cyclodextrin and Chitosan Derivatives C-L. Logigan , C. Peptu and C-A. Peptu	Dr. Corina-Lenuta Logigan , Gheorghe Asachi Technical University, Romania
36.	Innovative Nanoparticulate Polymer Supports via Thiol–Ene Polymer Conjugation for Enhanced Drug Delivery C-A. Peptu , C. Peptu and L. Corina-Lenuta	Dr. Catalina A. Peptu , Gheorghe Asachi Technical University, Romania

37.	Novel Egg Protein-Based Nanoplatfoms as Drug Delivery Systems for Personalized Medicine F. Seidita , F. Barrino, M. Mangione, P. Picone, D. Nuzzo, A. Girgenti, D. Chmielewska, M. Walo, S. Cabo Verde and C. Dispenza	Dr. Federica Seidita , Università degli Studi di Palermo, Italy
38.	Reprogramming human ferritin nanoparticles for multivalent inhibition of PCSK9: a novel strategy to enhance LDL cholesterol clearance. C. Cappelletti , A. Incocciati, S. Masciarelli, F. Liccardo, R. Piacentini, S. Botta, L. Bertuccini, B. De Berardis, F. Fazi, A. Boffi, A. Bonamore and A. Macone	Ms. Chiara Cappelletti , Sapienza University of Rome, Italy
39.	ROS responsive dextran-thioketal conjugate nanocarriers for the delivery of various low and high molecular weight hydrophilic payloads S. Nayak , E. Pirlet, N. Caz, E. Wolfs, A. Bronckaers, W. Maes and A. Ethirajan	Mr. Sourav Nayak , Hasselt University, Belgium
40.	Fluorometholone loaded Solid Lipid Nanoparticles: a new strategy for ocular delivery of anti-inflammatory drugs R. Da Ana , J. Fonseca, S. Cravo, F. Fathi5, E. Sanchez-Lopez, M.B.Oliveira, M. Garcia and E. Souto	Ms. Raquel da Ana University of Porto, Portugal
41.	Innovative Gold-Liposome Nanohybrids: Revolutionizing Photothermal Nanoplatfoms with Tunable Plasmonic Properties M. Rubio-Camacho , C. Cuestas-Ayllón, R. Esquembre, M.J. Martínez-Tomé, J.M. de la Fuente and C. R. Mateo	Mrs. Marta Rubio Camacho , Miguel Hernández University, Spain
42.	Optimization of Lipid Nanoparticles for RNA Encapsulation: Influence of the Nature and Content of Ionizable Lipid M. Frohly, C. Favre, E. Lacazette, F. Montury and L. Sanchez Gonzalez	Dr. Laura Sanchez Gonzalez , CEA NanO'up Plateform, France
43.	Improving antibiotics quantification using label-free SERS-based microfluidic platform. Challenges of therapeutic drug monitoring at intensive care units. R. Slipets and M. Pytlarz	Mr. Roman Slipets , Technical University of Denmark, Denmark
44.	Microphysiological systems based on liver on chip for drug discovery and testing. E. Guerrero, A. Rigat, P. Monterde, X. Barceló and J. M. Cabot	Dr. Joan Marc Cabot , Leitat, Barcelona, Spain
45.	Influence of the Nature and Content of Bile Salts on the Properties of Bilosomes Developed for Nose-to-brain Applications J. Aussourd , C. Favre, F. Montury and L. Sanchez Gonzalez	Ms. Justine Aussourd , CEA NanO'up Plateform, France
46.	Development of photosensitizing nanoparticles of nanodiamonds using femtosecond lasers R. C. Queiroz , C. R. Hurtado, G. R. Hurtado, A. M. dos Santos, M. F. Diniz, H. C. Junqueira, A. U. Fernandes, H. Besser, W. Pfleging and D. B. Tada	Ms. Rafaela Campos Queiroz , Karlsruher Institute of Technology, Germany
47.	Lipophilic molecular rotor to assess the viscosity of oil core in nano-emulsion droplets M. Elhassan , C. Faivre, H. Anton, G. Conzatti, P. Didier, T. Vandamme, A. S. Elamin, M. Collot and N ; Anton	Mr. Mohamed Elhassan , University of Strasbourg, France
48.	Nanovehicles for a combined cell differentiation therapy and cancer stem cell-targeting drugs: towards a new way to prevent resistance and tumor recurrence in glioblastoma (TARG-DIFFERENT). T. Fernandez-Cabada , P. Melón, M. Mulero-Acevedo, P. Alfonso-Triguero, A. P. Candiota and J. Lorenzo	Dr. Tamara Fernandez Cabada , Autonomous University of Barcelona, Spain
49.	Shining Light on Cancer Treatments: Integrated Photonic Biosensors for Immunotherapy Monitoring A. Morgado , V. Gil-Ocaña, L. Rueda Calzada, Y. Aceta and A. Con-de-González	Dr. Anjara Morgado , Bioherent S.L, Spain
50.	NIR responsive gold nanorod for targeted cancer photothermal therapy S. Gul , F. Barbero, A. Bellone, G. Perrone, R. Mazzoli and I. Fenoglio	Ms. Shagufta Gul , University of Turin, Italy
51.	Self-targeted magnetic nanoparticles for combined magnetothermal therapy and immunotherapy in cancer treatment X. Xie , C-C. Fong and M. Yang	Ms. Xulin Xie , City University of Hong Kong, China
52.	New Insight in the radius of influence in Electric Force Microscopy L. Lehnert , R. Thoelen and H. Möbius	Mr. Lukas Lehnert , Univ. of Applied Sciences Kaiserslautern, Germany
53.	Hydrogen-like atoms with shielded ions in the tight-binding approximation B. Freinkman	Dr. Boris Freynkman , Independent researcher, Russia
54.	A miniaturized, wireless and implantable sensory system to screen bone healing. E. G. San Vicente , C. Hennemann , J. Disser, R. Grinyte, N. Marjanovi and J. M. Cabot	Ms. Elena G. San Vicente , LEITAT Technological Centre- Barcelona, Spain

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