**Program N&N 2023**

**Monday 29 May**

**9:20-9:30** Welcome N&N

**Stefano Bellucci**

*Chair: Stefano Bellucci*

Session one

**9:30-10:00** Horizon Europe, the European Framework Programme for Research and Innovation, and its role in supporting Materials research and innovation

**Marco Falzetti - Direttore APRE - Agenzia per la Promozione della Ricerca Europea, Italy**

**10:00-10:30** Synergies between European Defence Fund and "civil" Research & Innovation Framework programmes

**Luisa Riccardi - Direttore del V Reparto "Innovazione Tecnologica" del Segretariato Generale della Difesa/DNA, Italy**

**10:30-11:00** Research, Development, Innovation: the Soft Revolution

**Nicoletta Amodio - Responsabile Industria e Innovazione Confindustria, Italy**

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**11:00-11:30 Coffee break**

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*Chair: Marco Regi*

Session two

**11:30-11:50** Profiling biogenic nanoparticles by nanomechanical characterization

**Francesco Valle – CNR, Italy**

**11:50-12:10** Strategies and methodologies to improve performances of electrodes in supercapacitors: nanostructured materials and nano-treatings

**Pier Gianni Medaglia – University Roma Tor Vergata, Italy**

**12:10-12:30** Towards ultrashort lasers and their unique performance to develop functional surfaces

**Iaroslav Gnilitskyi – INFN LNF, Italy**

**12:30-12:50** Hybrid carbon fiber reinforced laminates with interlaminar nanostructures

**Fabrizio Quadrini – University Roma Tor Vergata, Italy**

**12:50-13:10** Optical Nanospectroscopy applied in Material Science and Biomedicine

**Antonio Cricenti – CNR, Italy**

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**13:30-14:50 Lunch**

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*Chair:*

Session three

**14:50-16:10** **Round table**

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**16:10-16:40 Coffee break**

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*Chair: Federico Micciulla*

Session four

**16:40-17:00** Luminescent Sulfophosphate Glass Doped with Plasmonic Nanoparticles: Spectral and Self-cleaning Features

**Zeinab Ebrahimpour – INFN LNF, Italy**

**17:00-17:20** Optical and Electrical Properties of Low-Temperature Treated Oxides Graphenes

**Cristian Vacacela Gomez – INFN LNF, Italy**

**17:20-17:40** Investigating the activation of passive metals by a combined in-situ AFM and Raman spectroscopy system: a focus on titanium

**Marco Menegazzo – Milan Polytechnical University, Italy**

**17:40-18:00** Nanoelectrochemistry: mechanisms of sulphate adsorption on Cu (111) electrode surfaces studied by EC-STM and EC-AFM

**Gianlorenzo Bussetti – Milan Polytechnical University, Italy**

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**18:00-20:00 Welcome Party**

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**Tuesday 30 May**

*Chair: Cristian Vacacela Gomez*

Session five

**9:00-9:20** Multiphysics modelling of quantum-EM transport in ballistic graphene devices

**Luca Pierantoni – Marche Polytechnical University, Italy**

**9:20-9:40** Synthesis and thermal and mechanical characterisation of nanocomposites based on epoxy resin and graphene nanoplates

**Matteo La Pietra – Marche Polytechnical University, Italy**

**9:40-10:00** Atomistic modeling and simulation of HfO2 in Metal-Insulator-Metal devices

**Eleonora Pavoni – Marche Polytechnical University, Italy**

**10:00-10:20** Towards new optimization of geometrical graphene ballistic diodes: a atomistic DFTB approach

**Elaheh Mohebbi – Marche Polytechnical University, Italy**

**10:20-10:40** Nano optical antennas and nonlinear elements for harvesting of light power

**Davide Mencarelli – Marche Polytechnical University, Italy**

**10:40-11:00** Inverted Scanning Microwave Microscopy (iSMM): a novel metrological tool for advanced material characterization

**Joseph Hardly Christopher – Marche Polytechnical University, Italy**

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**11:00-11:30 Coffee break**

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*Chair: Antonino Cataldo*

Session six

**11:30-11:50** Use of lignin in the photochemical iodoalkylation of olefins

**Francesco Palazzi - Università di Trieste, Italy**

**11:50-12:10** Synthesis and Characterization of MWCNTs-Porphyrin Hybrid Architectures as Active Light Harvesting Systems

**Manuel Minnucci – University of Milan, Italy**

**12:10-12:30** Innovative materials and additive technologies for the energy sector

**Daniele Mirabile Gattia – ENEA, Italy**

**12:30-12:50** Identification of ultra-thin molecular layers atop monolayer terraces in sub-monolayer organic films with scanning probe microscopy

**Cristiano Albonetti – ISMN-CNR Italy**

**12:50-13:10** Nanostructured glass substrate for SERS detection and characterization of micro and nanoplastics

**Matteo Giardino – Politecnico di Torino, Italy**

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**13:30-14:50 Lunch**

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*Chair: Gaio Paradossi*

Session seven

**14:50-15:10** Radiation-Sensitive Phase-Change Nanodroplets for Hadron Therapy Dosimetry and Range Verification Assessed by Ultrasound Imaging

**Yosra Toumia – INFN sez.Roma Tor Vergata, Italy**

**15:10-15:30** Synthesis and characterization of oxidized alginate-doxorubicin nanoparticles for the treatment of breast cancer

**Alessio Truglia, University of Tor Vergata, Italy**

**15:30-15:50** Sensitivity analysis of a THz graphene-based passive device

**Patrizia Lamberti – University of Salerno, Italy**

**15:50-16:10** Quantum chemical analysis of structures and THz spectra of hexagonal boron-nitride quantum dots

**Maksim Shundalau – University of Salerno, Italy**

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**16:10-16:40 Coffee break**

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*Chair: Lala Gahramanli*

Session eight

**16:40-17:10** Influence of thermal annealing and gamma irradiation on structure and optical properties of go/pva nanocomposites

**Mustafa Muradov – Baku State University, Azerbaijan**

**17:10-17:30** Polymeric Nanoparticles – Tool in a Drug Delivery Systems

**Aynura Karimova** **- Baku State University, Azerbaijan**

**17:30-17:50** Surface functionalization of graphene oxide nanolayers with Schiff bases based on covalent and non-covalent approaches

**Gunel Aliyeva - Baku State University, Azerbaijan**

**17.50-18.10** High frequency electromagnetic interference shielding materials on the basis of polymer nanocomposites

**Habiba Shirinova - Baku State University, Azerbaijan**

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**19:30-23:00 Conference Dinner**

**(bus departs at 18.45 in front of Conference Auditorium, back at 23.45)**

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**Wednesday 31 May**

*Chair: Pietro Matricardi and Anna Scotto d’Abusco*

Session nine

**9:30-10:20** Nanotechnologies for the delivery of nucleic acids and glucocorticoids in inflammatory diseases

**Elias Fattal - Universitè Paris Saclay, France**

**10:20-10:40** Modulation of hyaluronic acid hydrogels enables their use as 3D cell culture model

**Maddalena Grieco – National Research Council-Nanotechnology Institute (CNR Nanotec), Italy**

**10:40-11:00** Human erythrocytes and beta-amyloid, what we can learn from a combined AFM and biochemical study.

**Simone Dinarelli – CNR Institute of Material Structure, Italy**

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**11:00-11:30 Coffee break**

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*Chair: Luciana Mosca and Anna Scotto d’Abusco*

Session ten

**11:30-11:50** Ultra-fast separation of extracellular vesicles from physiological fluids by a portable microstructured electrochemical device

**Vadim Krivitski - ETH Zurich, Switzerland**

**11:50-12:15** Self-assembled chitosan-sodium usnate nano drug delivery systems against osteosarcoma 143B cells

**Iolanda Francolini – Sapienza University, Italy**

**12:15-12:35** Enhanced Functionalised Carriers for Drug Delivery Applications – Novel Glycerol and Diglycerol Derived Polyesters

**Vincenzo Taresco – Nottingham University, UK**

**12:55-13:15** N-Acetylglucosamine in nanoform as an antiviral and anti-inflammatory alternative against respiratory viral infections

**Alessia Mariano – Sapienza University, Italy**

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**13:30-14:45 Lunch**

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*Chair: Giovanni Longo and Pietro Matricardi*

Session eleven

**14:45-15:35** Strategies and challenges to improve the targeting ability of anticancer nanomedicines

**Silvia Arpicco – Torino University, Italy**

**15:35-15:55** Hyaluronan-cholesterol nanogels for enhancing the ocular delivery of therapeutics

**Nicole Zoratto –ETH Zurich, Switzerland**

**15:55-16:15** Targeting muscular tissue by polymer nanoparticles

**Ilaria Andreana – Torino University, Italy**

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**16:10-16:40 Coffee break**

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*Chair: Silvia Arpicco and Luciana Mosca*

Session twelve

**16:40-17:00** Role of membrane lipids in the development of biosensors based on engineered ion channels

**Enrico Dainese – University of Teramo, Italy**

**17:00-17:20** Organic Nanoparticles: synthesis and applications

**Sergio Ammendola – Ambiotec, Italy**

**17:20-17:40** Evidences of a different metabolic regulation in favism erythrocytes and consequences on the cells aging pattern

**Marco Girasole – CNR Institute of Material Structure, Italy**

**17:40-18:00** Cantilevers: a nano-tool for biomedicine

**Giovanni Longo – CNR Institute of Material Structure, Italy**

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**18.00-18.30 Poster session**

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**Posters:**

Molecular characteristics of sucrose aqueous solution

**Bakhtiyar Pashayev – Dean of the Physics Department at Baku State University, Azerbaijan**

Adsorption of heavy metal ions from an aqueous medium on thermochemically processed porous carbon materials from cellulose-containing wastes and micro- to nanoscale transition effect on their adsorption attributes

**Grigor Tatishvili – Director of TSU R.Agladze Institute of Inorganic Chemistry and Electrochemistry, Tbilisi, Georgia**

Coating and intercalation of h-BN nanoparticles with Fe and Fe3O4

**Shio Makatsaria - Georgian Technical University, Tbilisi, Georgia**

Physico-Chemical Characterization of Zinc Sulphide Ore of the Chaabat-El-Hamra Mine

**Soufiane Bouabdallah - Badji Mokhtar Annaba University, Algeria**

Nanostructured AZO thin films deposited by confocal RF magnetron sputtering: Effect of substrate and heat treatment on physical properties

**Said Boukerche - University Mohamed Cherif Messaadia Souk Ahras, Algeria**

P&O Algorithm with Different Temperatures in the Solar Panel

**Chouaib Rahli - Badji Mokhtar Annaba University, Algeria**

Review: Opportunities and challanges of Gas sensors based on graphene nanomaterials

**Lala Isayeva - Baku State University, Azerbaijan**

Optical and Photoluminescent Properties of Polypropylene/ZnO based Nanocomposites

**Sevinj Nuriyeva - Baku State University, Azerbaijan**

Hyaluronan-Cholesterol Nanogels: Novel Nano-delivery Systems for Topical Transdermal Delivery of Betamethasone in Potential Psgeorgiaoriasis Treatment

**Ju Wang - Sapienza University of Rome, Italy**

Hyaluronan cholesterol nanogels for the enhancement of the ocular delivery of therapeutics

**Claudia Migliorini - Sapienza University of Rome, Italy**

Dielectric response of atomically precise nanoribbons: band-gap effect vs low-dimensional confinement

**Francesca Mazzei - Università della Calabria, Italy**

Hyaluronan-estradiol nanogels as potential drug carriers to target ER+ breast cancer cell line

**Luca Paoletti - Sapienza University of Rome, Italy**

Hydrogen sulfide delivery nanotechnologies in wound healing:the sulfurous thermal spring water potential on a dressing

**Mario Fontana - Sapienza University of Rome, Italy**

Non-adiabatic time evolutions and irreversible entropy production

**Antonio Palamara - Università della Calabria, Italy**

Structural evaluation and thermal properties of nanocrystalline Ti 50 Ni43 Cu 7 prepared via Mechanical Alloying

**Sarra Rezgoun - Badji Mokhtar University, Annaba, Algeria**

Influence of synthesis method on structural properties and antibacterial effect of silver nanoparticles

**Sihem Ouchenane - Badji Mokhtar University, Annaba, Algeria**

Effect of Substrate Nature on the Microstructural, Morphological and Optical Properties of Nanostructured TiO2 Thin Films Deposited by RF Magnetron Sputtering

**Sebti Khodja - University Kasdi Merbah Ouargla, Algeria**

Synthesis, characterization and physical properties of sol-gel Ag doped ZnO thin films

**Mohamed Atoui - University Kasdi Merbah Ouargla, Algeria**

Sonochemical synthesis of Cu-doped Co3O4 nanoparticles for photocatalytic degradation of methylene blue

**Sevinc J. Mammadyarova - Baku State University, Azerbaijan**

Ni60Co40 nanoparticles supported on γ-Al2O3 as magnetic catalyst for induction heated reforming reactions

**Alessia Benedetti - ENEA, C.R. Casaccia, Roma, Italy**

Metal-organic-frameworks composites for innovative separation technology

**Mariangela Bellusci - ENEA, C.R. Casaccia, Roma, Italy**

Evaluation of stiffness influence in a 3d biomimetic microenvironment of glioblastoma

**Carolina Castillo - NANOTEC Institute of Nanotechnology, National Research Council (CNR), Rome, Italy**

Peptide-conjugated Gold Nanoparticles for Localized Doxorubicin Chemotherapeutic Treatment of Glioblastoma: Antitumoral Effects in Human Cellular Model

**Maria Grazia Lolli - NANOTEC Institute of Nanotechnology, National Research Council (CNR), Rome, Italy**

Surface Treatment of TiO2 Thin Films by Nitrogen Plasma Deposited by Spin Coating Sol-Gel Technique

**Boudjemaa Bouaouina - M’hamed Bougara University of Boumerdès, Algeria**

Radiation crosslinking of butadiene nitrile copolymer composites with zinc oxide nanoparticles: enhancing physicochemical properties

**Rana Khankishiyeva - Azerbaijan University of Architecture and Construction, Azerbaijan**

Novel peptide-based cholesterol biosensors

**Ana Lia Bernardo Leonardi - University of Teramo, Fondazione Santa Lucia, Italy**

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**18:00-20:00 Almost There Party**

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**Thursday 1 June**

*Chair: Matteo La Pietra*

Session thirteen

**9:10-9:40** Nanoantimicrobials for active food packaging applications

**Nicola Cioffi – University of Bari, Italy**

**9:40-10:00** Utilization of novel Ag-Ag2S-CdS nanocatalysts for photocatalytic dye degradation

**Lala Gahramanli, INFN LNF, Italy**

**10:00-10:20** Effect of grain size on the electrons mobility and photocatalysis activity of TiO2 thin films

**Faycal Bensouici - Abbas Laghrour University, Algeria**

**10:20-10:40** Chemical composition and evaluation of the biological activities of the essential oil of *cymbopogon citratus mill*

**Tahar Tata - Centre de recherche en environnement (CRE), Annaba, Algeria**

**10:40-11:00** Multilayered TiO2 and Cr-Doped TiO2 Nanostructured coatings for the Improvement of Stainless Steel 304 Corrosion Behaviour

**Said Boukerche - University Mohamed Cherif Messaadia Souk Ahras, Algeria**

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**11:00-11:30 Coffee break**

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*Chair: Nicola Cioffi*

Session fourteen

**11:30-11:50** Nose-to-Brain delivery of dopamine via nanocarriers or polymer conjugates: a comparative study

**Adriana Trapani – Università di Bari, Italy**

**11:50-12:10** Biotechnological production of hyaluronic acid: innovation and future for biomedical applications

**Giorgia Natalia Iaconisi, Università del Salento, Italy**

**12:10-12:35** Combined Dopamine and Grape Seed Extract-Loaded Solid Lipid Nanoparticles: Biological Evaluation

**Rosanna Mallamaci - Università di Bari, Italy**

**12:35-12:55** In vitro model to study different nanoformulations in human nasal epithelial cell line (RPMI2650)

**Antonello Caponio - Università di Bari, Italy**

**12:55-13:15** Mucopenetration properties and interaction with airway epithelial cells of solid lipid nanoparticles containing magneto sensitive iron oxide

**Stefano Castellani - Università di Bari, Italy**

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**13:30-14:45 Lunch**

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*Chair: Antonello Sindona*

Session fifteen

**14:50-15:10** Novel materials for energy applications: insight by ab-initio ground and excited state simulations

**Maurizia Palummo – University Roma Tor Vergata, Italy**

**15:10-15:30** A spatially-resolved XPS study of graphitic channels in diamond

**Roberto Flammini – ISM-CNR, Roma, Italy**

**15:30-15:50** Advanced sensing solutions with nanomaterials and machine learning

**Antonio Maffucci – University of Cassino, Italy**

**15:50-16:10** Photocatalytic Generation of Solar Fuels and Commodity Chemicals

**Francesca Arcudi –University of Padova, Italy**

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**16:10-16:40 Coffee break**

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*Chair: Antonio Maffucci*

Session sixteen

**16:40-17:00** Real Space-Time sub femtosecond imaging of electronic motion in molecules

**Michele Pisarra – INFN LNF Cosenza, Italy**

**17:00-17:20** Massive and massless plasmons in flat hexagonal nanosheets

**Antonello Sindona - Università della Calabria, Italy**

**17:20-17:40** Coherent-to-incoherent crossover of photoexcited electron-phonon dynamics in 2D materials

**Enrico Perfetto - Università Roma Tor Vergata, Italy**

**17:40-18:00** Are Xenes excitonic insulators? How screening, band dispersion and external electric field affect the prediction

**Paola Gori - Università Roma Tre, Italy**

**18:00-18:10** Concluding remarks

**Stefano Bellucci – INFN LNF, Italy**

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**End of conference**

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