

# *Program N&N 2022*

**Tuesday 13**

9:10-9:20 Welcome N&N

*Chair Iaroslav Gnilitskyi*

9:20-10:00 Invited Lecture

Artificial intelligence for nano-biosensors

**Stefano Bellucci**

Session one

10:00-10:25 NEGF methods for real-time simulations: Ultrafast electron dynamics in ionized molecule

**Gianluca Stefanucci**

10:25-10:50 Dynamics of coherent excitons in resonantly driven semiconductors

**Enrico Perfetto**

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

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*Chair: Martino Aldrigo*

Session two

11:30-11:55 Evolution of the electronic and optical properties of meta-stable allotropic forms of 2D tellurium for increasing number of layers

**Simone Grillo**

11:55-12:20 Complexity of Bohmian positron dynamics inside a chiral carbon nanotube

**Marko Ćosić**

12:20-12:45 Structural, optical, and photocatalytic properties of SnO<sub>2</sub>/TiO<sub>2</sub> heterostructures

**Faycal Bensouici**

12:45-13:10-Towards femtosecond laser-induced periodic structures in developing functional surface properties

**Iaroslav Gnilitskyi**

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

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*Chair: Antonino Cataldo*

Session three

14:50-15:15 Preliminary studies on a potential "green" medium for liquid - phase exfoliation of GNPs

**Federico Micciulla**

15:15-15:40 2D nanoinks using a synthetic whiskey: DoE optimization and moisture device fabrication

**Michela Froio**

15:40-16:05 Synthesis and Characterization of MWCNTs-Porphyrin Hybrid Architectures as Active Light Harvesting Systems

**Manuel Minnucci**

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

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*Chair: Luca Pierantoni*

Session four

16:40-17:05 Carbon Nanodots: crossing the boundary between molecular and nanoscale world

**Beatrice Bartolomei**

17:05-17:30 Atomic force microscopy and Raman spectroscopy combined to in-situ and real time investigation of graphite anion intercalation

**Marco Menegazzo**

17:30-17:55 Synthesis and Characterization of Schiff Base Used for the Improvement of Corrosion Performance of XC38 Carbon Steel, in Acidic Medium

**Said Boukerche**

17:55-18:20 Chemical synthesis of nanostructured Ce-rare earth doped cobalt ferrite (CoCeFe<sub>1.9</sub>O<sub>4</sub>)

**Rania.Daha**

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**18:30-20:00 Welcome Party**

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## **Wednesday 14**

*Chair Luciana Mosca*

9:10-9:45 Invited Lecture

Infrared Nanospectroscopy: from heat transfer in nanoelectronics to early diagnosis of cancer.

**Antonio Cricenti**

Session five

9:45-10:10 ZnO nanostructures for antiviral coatings: green synthesis and analytical characterization

**Margherita Izzi**

10:10-10:35 Green methods for polyphenols extraction and stabilization: perspectives for nanoformulations

**Roberto Mattioli**

10:35-11:00 Nanoarchitectonics of Starch Nanoparticles Rosin Catalyzed by Algerian Natural Montmorillonite (Maghnite-H<sup>+</sup>) for Enhanced Antimicrobial Activity.

**Mohammed Bezzekhami**

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

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*Chair: Antonio Cricenti*

Session six

11:30-11:55 The Stability, Electronic and Optical Features of VO<sub>2</sub> (M) Polymorph: A First Principle DFT Study of Semi-local and Hybrid Functionals

**Elaheh Mohebbi**

11:55-12:20 The effect of Y doping on monoclinic, orthorhombic, and cubic polymorphs of HfO<sub>2</sub>: a first principles study

**Eleonora Pavoni**

12:20-12:45 Non-linear modelling for tunable radiofrequency circuits based on nanometric ferroelectric materials

**Simone Trovarello**

12:45-13:10 – Transitions in Xenon between excitonic, topological and trivial insulator phases: influence of screening, band dispersion and external electric field

**Olivia Pulci**

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**13:30-14:50 Lunch**  
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*Chair: Marko Čosić*

Session seven

14:50-15:15 Nanoscale materials for high-frequency applications

**Martino Aldrigo**

15:15-15:40 Wideband optical antennas for use in energy harvesting applications

**Davide Mencarelli**

15:40-16:05 High Gain Metamaterial based BiCMOS On-chip Sub-THz Antenna

**H. Joseph Christopher**

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**16:10-16:40 Coffee break**  
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*Chair: Stefano Bellucci*

Session eight

16:40-17:05 Synthesis and characterization of alginate-dopamine conjugates for the application to nose to brain delivery for the treatment of neurological diseases

**Cristina Mormile**

17:05-17:30 Edge functionalization of Graphene Nano-Plates via Friedel-Crafts reaction: spectroscopic and microscopic characterization

**Riccardo Curatolo**

17:30-17:55 MacGyvered Multiproperty Materials Using Nanocarbon and Jam: A Spectroscopic, Electromagnetic and Rheological Investigation

**Matteo La Pietra**

17:55-18:20 Synthesis, characterizations and applications of Layered Double Hydroxides (LDHs): an interesting family of dielectric nanostructured materials.

**Pier Gianni Medaglia**

18:20-18:30 Concluding remarks

*Antonino Cataldo & Davide Mencarelli*