

nn12 Nanoscience & Nanotechnology



INFN - Laboratori Nazionali di Frascati
Via E. Fermi 40, Frascati Italy
October 1st - 4th, 2012

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<http://www.inf.infn.it/conference/nn2012/>

CONFERENCE PROGRAM n&n 2012 1st – 4th October 2012

<http://www.lnf.infn.it/conference/nn2012/>

Monday 1st October



9.00 – 9.30 Registration

9.30 – 9.40 Introduction to n&n2012 Conference by Dr. S. Bellucci, Director of the Conference

Session01: Touschek Auditorium

Chair: S. Bellucci

9.40 – 10.15 N. Pugno, Politecnico Torino, Italy - “The fantastic 4 (nanomaterials): graphene (the strongest), spider-silk (the toughest), gecko foot (the most adhesive) and lotus leaf (the most anti-adhesive)” - Skype Invited Speaker Lecture

10.15 – 10.50 G. Mistura University of Padova, Italy - “Nanofriction of monolayers on metallic, superconducting and graphene surfaces ” - Invited Speaker Lecture

10.50 - 11.20 Coffee Break

11.20 – 11.55 G. Miano, University of Naples Federico II, Naples, Italy - “Electrodynamics of graphene nanoribbons” - Invited Speaker Lecture

11.55 – 12.20 M. Pisarra, Dipartimento di Fisica, Università della Calabria and INFN, gruppo collegato di ozena, Rende (CS), Italy – “ Energy loss function calculation in pristine and doped Graphene”

12.20 – 12.45 L. A. Chernozatonskii, Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia – “Graphenes with nanoholes and CH(CF) nanoislands – comparison of analogous structures and similar electronic properties, applications”

12.45 – 13.10 E. Treossi, ISOF- CNR Bologna, Bologna, Italy “Graphene-organic composites for microelectronics and materials science”

13.10 - 14.30 Break

Session02 : Touschek Auditorium

Chair: D.Gatteschi

14.30 – 15.05 S. R. P. Silva, University of Surrey, London, England - “Multiwalled Carbon Nanotubes as Interconnects in Integrated Circuits” – Invited Speaker Lecture

15.05– 15.40 A. Maffucci, University of Cassino and Southern Lazio, Cassino Italy - “Electrical performance of carbon-based nano-interconnects”- Invited Speaker Lecture

15.40 - 16.10 Coffee Break

Chair: G.Mistura

16.10 – 16.45 D. Gatteschi, University of Firenze, Italy – “Playing with Molecular Nanomagnets on the Periodic Table” - Invited Speaker Lecture

16.45 – 17.10 Zaporotskova I.V., *Volgograd State University*, Volgograd, Russia – “**Hydrogenation of Boron-Carbon Nanotubes**”

17.10 – 17.35 Boroznin S.V., *Volgograd State University*, Volgograd, Russia – “**Structure and Some Properties of Boron-Carbon Nanotubes**”

17.35 – 18.00 M. Celino, *ENEA - C.R. Casaccia*, Rome, Italy – “**Ab-initio calculations and molecular dynamics simulations of peptide adsorption onto metal oxide surfaces**”

Session03 : Tuschek Auditorium

Chair: R.Purrello

9.30 – 10.05 U.Valbusa, *University of Genova, Genova,Italy* – “Nanotechnology in life science” - Invited Speaker Lecture

10.05 – 10.40 M. Mirasoli, *Department of Pharmaceutical Sciences, Alma Mater Studiorum - University of Bologna* - “Multiplex biosensor for point-of-care applications based on chemically- electrochemically- and thermally-triggered luminescence detection” –Invited Speaker Lecture

10.40 – 11.05 S. Sennato, *Dipartimento di Fisica & IPCF-CNR UOS Roma, La Sapienza Università di Roma, Roma, Italia* – “Polymer brushes as stationary phase for miniaturized devices for molecular detection and analysis of real matrices”

11.05 - 11.35 Coffee Break

Chair: E.Vázquez Fernández-Pacheco

11.35 – 12.10 B. Panessa-Warren, *U.S. Dept. of Energy, Brookhaven National Laboratory, Upton, USA* - “Lung Epithelial Cell Uptake of SWCNTs and intracellular formation of Nanorope Structures” – Invited Speaker Lecture

12.10– 12.45 F. Pirri, *Center for Space Human Robotics of Italian Institute of Technology, Torino, Italy* - “Lab on Chip and innovative sensors integration for biomedicine” - Invited Speaker Lecture

12.45 – 13.10 Matteo Morandi, *Microbiology and Mycobacteriology dept. Catholic University of the Sacred Heart, Rome* – “Role of nanotechnologies in combating infectious diseases: the paradigm of M. tuberculosis. Prevention, diagnosis and treatment”

13.10 - 14.30 Break

Session04: Tuschek Auditorium

Chair: F.Pirri

14.30 – 15.05 A. Cricenti, *CNR – ISM, Roma, Italy* - “Scanning near-field optical microscopy imaging in the 1-10 micron spectral range: overview and perspectives” - Invited Speaker Lecture

15.05 – 15.40 G. Sberveglieri, *Dipartimento di Chimica e Fisica per l’Ingegneria e per i Materiali, Università di Brescia and CNR-IDASC, Brescia, Italy* - “Metal oxides nanowires and nanotubes preparation and their optical and electrical characterisation for chemical sensing” - Invited Speaker Lecture

15.40 - 16.10 Coffee Break

Chair: M.Mirasoli

16.10 – 16.45 R. Purrello, *University of Catania, Catania,Italy* - “Self-assembly of porphyrins in aqueous environment” - Invited Speaker Lecture

16.45 – 17.10 A. D’Urso, *Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Catania, Italy* – “Porphyrins/Z-DNA chiral complexes: probes, storing system and logic gate”

17.10 – 17.35 K. Yu. Arutyunov, *University of Jyväskylä, Department of Physics, NanoScience Centre, Jyväskylä, Finland* - **“Quantum fluctuations in superconducting nanostructures: physics and applications”**

17.35 – 18.00 S. Piskunov, *University of Latvia, Riga, Latvia* – **“First Principle Calculations of Ni Filament Encapsulated Inside Single-Walled Carbon Nanotubes”**

Session05: Touschek Auditorium

Chair: S.Maksimenko

9.30 – 10.00 R. Muller, *National Institute for R&D in Microtechnologies (IMT-Bucharest)*, Romania - “**Overview of the research activities and the infrastructure in the field of nanotechnologies at IMT- Bucharest**” –Invited Speaker Lecture

10.00 – 10.30 G. Deligeorgis, *LAAS Toulouse*, France - “**Graphene electronics past present and future**” - Invited Speaker Lecture

10.30 – 11.00 L. Pierantoni, *Università Politecnica delle Marche*, Ancona, Italy - “**Radio-Frequency Nanoelectronics – Bridging the Gap between Nanotechnology and R.F. Engineering Applications**” - Invited Speaker Lecture

11.00 - 11.30 Coffee Break

Chair: R.Muller

11.30– 12.05 S. Maksimenko, *Belarus State University, Institute for Nuclear Problems*, Minsk, Belarus - “**Theory and MACROSCOPIC Evidence of Terahertz Carbon nanotube Antenna**” – Invited Speaker Lecture

12.05– 12.35 P. Kuzhir, *Research Institute for Nuclear Problems of Belarusian State University*, Minsk, Belarus - “**Pyrolytic carbon thin films in Microwaves**”

12.35 – 13.10 M. Prato, *University of Trieste*, Italy – “**Functional materials based on carbon nanostructures**” - Invited Speaker Lecture

13.10 - 14.30 Break

Session06: Touschek Auditorium

Chair: M.Prato

14.30 – 15.05 L. Prodi, *University of Bologna*, Italy - “**Luminescent Silica Nanoparticles: Extending the Frontiers of Brightness**” - Invited Speaker Lecture

15.05 – 15.40 E. Vázquez Fernández-Pacheco, *Universidad de Castilla-La Mancha Ciudad Real*, Spain - “**Non-conventional Techniques for the Modification of Carbon Nanoforms**” - Invited Speaker Lecture

15.40 – 16.05 G. Bussetti, *Department of Physics, Politecnico di Milano*, Milan, Italy – “**Chlorination of the pre-oxidized Cu(110) surface in electrochemical cell**”

16.05 – 16.35 Coffee Break

Chair: G.Bussetti

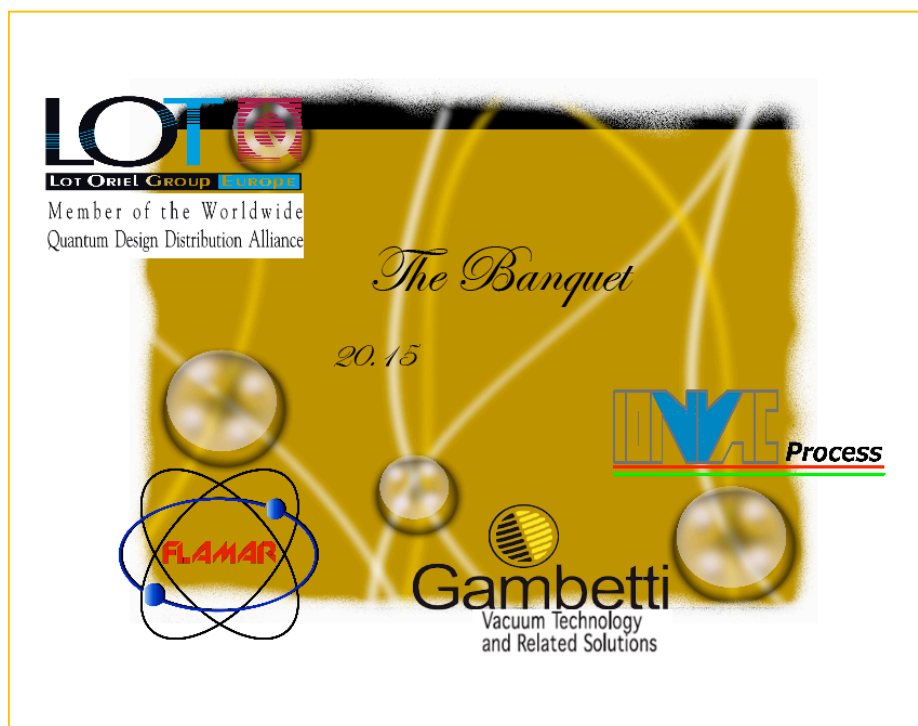
16.35 – 17.05 A. Dabrowska, *Warsaw University*, Warsaw, Poland - “ **The new vibration test of dynamic properties of epoxy resin/SiC nanofibres nanocomposites**” - Invited Speaker Lecture

17.05 – 17.35 P. Lamberti - “**Development and Electromagnetic Characterization of Nanostructured Carbon Based Polymer Composites**” - Invited Speaker Lecture

17.35 – 18.00 A. Marcelli, *INFN LNF*, Frascati, Italy - “**Identification of 13- and 14-Coordinated Structures of First Hydrated Shell of [AuCl₄]Acid Aqueous Solution by Combination of MD and XANES**”

18.00 – 18.25 E. Ivanov, *Open Laboratory of Experimental Mechanics (OLEM), Institute of Mechanics, Bulgarian Academy of Sciences Acad., Sofia, Bulgaria* – **“Comparison of Rheological Behaviour, Structure and Properties of modified and non-modified PP/MWCNT Composites”**

18.30 – 19.30 POSTER SESSION





Visit to LNF 9.30 – 11.30

Session07: Touschek Auditorium

Chair: P.N. D'yachkov

11.30– 12.00 J. Gonzalez, *Instituto de Estructura de la Materia, Consejo Superior de Investigaciones Científicas Serrano*, Madrid, Spain- **“Confinement of charge by pseudomagnetic fields in graphene”** - **Invited Speaker Lecture**

12.00 – 12.25 G. I. Mark, *Magyar Tudományos Akademia*, Budapest, Hungary - **“Effect of the defects on the properties of graphene”**

12.25 – 12.50 Y. Shunin, *Information Systems Management Institute*, Riga, Latvia - **“Nanocarbon Electromagnetics for Nanosensor Applications”**

12.50 – 13.15 A. Sindona, *Dipartimento di Fisica, Università della Calabria and INFN, gruppo collegato di Cosenza, Rende (CS), Italy* – **“Theoretical and experimental study of collective excitations in graphene/Ni(111)”**

13.15 - 14.30 Break

Session08: Touschek Auditorium

Chair: D. Giuliano

14.30 – 14.55 S. Bellucci, *INFN LNF*, Frascati, Italy – **“Microwave probing of composites based on exfoliated graphite and nanocarbons”**

14.55 – 15.20 Zehra Durmuş, *Department of Chemistry Fatih University Buyukcekmece, Istanbul, TURKEY* – **“Poly (3-thiophene acetic acid)/Fe₃O₄ Nanocomposite”**

15.20 – 15.45 Ayse Demir, *Istanbul Medeniyet University, Istanbul, Turkey* – **“Synthesis and Characterization of L-Histidine-Coated Fe₃O₄ Nanocomposite”**

15.45 – 16.15 Coffee Break

Chair: J. Gonzalez

16.15 – 16.45 P.N. D'yachkov, *Russian Academy of Sciences*, Moscow, Russia – **“Linear augmented cylindrical wave method and its applications to nanotubes electronic structure”** - **Invited Speaker Lecture**

16.45 – 17.10 D. Giuliano, *Dipartimento di Fisica, Università della Calabria and INFN, gruppo collegato di Cosenza, Rende (CS), Italy* - **“DC Josephson Current in a Long Quantum Wire”** - **Invited Speaker Lecture**

17.10 – 17.35 M. Pala, *IMEP-LAHC, Grenoble INP, Minatec, Grenoble, France* **“Transport inefficiency in branched-out mesoscopic networks: A mesoscopic analog of the “Braess paradox” encountered in road networks”**

17.35 – 18.00 M. Cini, *Dipartimento di Fisica, Università di Roma Tor Vergata, Rome, Italy*- **“Pumping through a Luttinger liquid ring threaded by a time-varying magnetic field”**

END OF CONFERENCE.