

CONFERENCE PROGRAM N&N 2013 30 September- 04 October 2013

<http://www.lnf.infn.it/conference/nn2013/>

Monday 30

SPINTRONICS Session

NANOSTRUCTURED MATERIALS Session

9.00 – 10.00 Registration

10.00 – 10.15 Introduction to n&n2013 Conference by Dr. S. Bellucci, Director of N&N2013 Conference

Session01: Touschek Auditorium

Chair: S. Bellucci

10.15 – 10.50 N. Pugno, Department of Civil, Environmental and Mechanical Engineering University of Trento, Italy - “The Egg of Columbus for making the world toughest fibres” - Skype Lecture

10.50 – 11.30 F. Dominguez-Adame, Universidad Complutense de Madrid, Madrid, Spain - “Graphene-based quantum rings for spintronics”

11.30 – 12.10 M. Cini, LNF-INFN and Univ. Tor Vergata, Roma, Italy - “Spin-polarized pumping in nanostructures”

12.10 – 12.45 A. Sindona, Università della Calabria and INFN, gruppo collegato di Cosenza, Dipartimento di Fisica, Rende (CS), Italy – “Core hole effects in fullerene molecules and small-diameter conducting nanotubes: a density functional theory study”

12.45 – 13.15 M. Pisarra, Dipartimento di Fisica, Università della Calabria and INFN, gruppo collegato di Cosenza, Rende (CS), Italy – “Theoretical and experimental study of plasmon excitations in graphene/Ferromagnet interfaces”

13.15 - 14.30 Lunch Break

Session02: Touschek Auditorium

Chair: F. Dominguez-Adame, Universidad Complutense de Madrid, Madrid, Spain

14.30 – 15.00 M.S. Sarto, Dip. Ing. Astronautica, Elettrica, Energetica (DIAEE), Centro di Ricerca per le Nanotecnologie applicate all'Ingegneria della Sapienza (CNIS) Univ. Sapienza, Roma, Italy – “tba

15.00 – 15.30 A. Dabrowska, Warsaw University, Warsaw, Poland , - “Combustion synthesis of nanomaterials: in situ diagnostics of structure growth”

15.30 – 16.00 J. Vejpravova, Institute of Physics AS CR, Prague, Czech Republic – “Graphene-magnetic nanoparticle heterostructures”

16.00 - 16.30 Coffee Break

Chair: A. Sindona, *Università della Calabria and INFN, gruppo collegato di Cosenza, Dipartimento di Fisica, Rende (CS), Italy*

16.30 – 17.00 G. Stefanucci, *Univ. Tor Vergata, Roma, Italy* – “Dynamical correction to Kohn-Sham conductances from static density functional theory**”**

17.00 – 17.30 E.Perfetto, *Univ. Tor Vergata, Roma, Italy* – “Excitonic enhancement of the electrical current and negative differential resistance in the Franck-Condon blockade regime**”**

17.30 – 18.00 S. Piskunov, *University of Latvia, Riga, Latvia* – “C-, N-, S-, and Fe-doped TiO₂- and SrTiO₃ nanotubes for photocatalytical water-splitting: prediction from first principles**”**

Session03: Tuschek Auditorium

Chair: O. Meerovskaya (BELISA), FP7 National Coordinator in Belarus

9.30 – 9.45 O. Meerovskaya (BELISA), FP7 National Coordinator in Belarus - “From EU Framework Programme 7 to Horizon 2020”

9.45 – 10.15 S. Bellucci, INFN-LNF, Frascati, Italy, “Electromagnetic properties of epoxy nanocomposites”

10.15 – 11.00 G. Miano, University of Naples Federico II, Napoli, Italy, A. Maffucci, University of Cassino and Southern Lazio, Cassino Italy - “Present status and future challenges for Graphene and Carbon Nanotubes nano-interconnects”

11.00 - 11.30 Coffee Break

Chair: G. Dovbeshko, Institute of Physics of NAS of Ukraine, Kyiv, Ukraine G. Dovbeshko, Institute of Physics of NAS of Ukraine, Kyiv, Ukraine

11.30 – 12.15 S. Maksimenko, , Belarus State University, Institute for Nuclear Problems, Minsk, Belarus - “tba”

12.15 – 12.45 Y. Shunin , Information Systems Management Institute, Riga, Latvia - “Nanocarbon Electromagnetics in CNT-, GNR - and Aerogel-Based Nanodevices”

12.45 – 13.15 L. Pierantoni, Università Politecnica delle Marche, Ancona, Italy - “Electromagnetics and Quantum Transport in Nanoelectronic Devices”

13.15 - 14.30 Lunch Break

Session04: Tuschek Auditorium

Chair: L. Pierantoni, Università Politecnica delle Marche, Ancona, Italy

14.30 – 15.00 P. Kuzhir, Research Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus - “Microwave properties of nitrogen- and boron-doped CNT composites: theory and experiment”

15.00 – 15.30 K. Batrakov, Research Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus - “Graphene-like films in microwaves”

15.30 – 16.00 D. Bychanok, Research Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus – “Electromagnetic characteristics of composites containing various types of carbonaceous inclusions in microwave frequency range”

16.00 - 16.30 Coffee Break

Chair: P. Kuzhir, Research Institute for Nuclear Problems of Belarusian State University, Minsk, Belarus

16.30 – 17.00 G. Dovbeshko, Institute of Physics of NAS of Ukraine, Kyiv, Ukraine - “Surface enhanced spectroscopy of biomolecules on graphene layers and carbon nanotubes”

17.00 – 17.30 L. Chernozatonskii, Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia – “Connected carbon nanotube structures from bi-layer graphene: geometries, formation mechanisms, electronic and mechanic properties, applications”

17.30 – 18.00 V. Levin, Institute of Biochemical Physics, RAS - “High resolution ultrasonic vision methods applied to studying structure and properties of nanostructured graphite materials”

Session05: Touschek Auditorium

Chair: A. Cricenti, CNR – ISM, Roma, Italy

9.30 – 10.00 G. Bussetti, Department of Physics, Politecnico di Milano, Milano, Italy – “Exploiting porphyrin tautomers in a first logic device prototype”

10.00 – 10.30 A. D’Urso, Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Catania, Italy – “Chiral transfer in supramolecular porphyrins system: for storage, memory and separation”

10.30 – 11.00 F. Paolucci, Dipartimento di Chimica, Università di Bologna, Bologna, Italy – “The redox properties of carbon nanostructures and their exploitation in energy conversion and biosensing devices”

11.00 - 11.30 Coffee Break

Chair: F. Paolucci, Dipartimento di Chimica, Università di Bologna, Bologna, Italy

11.30 – 11.55 C. Albonetti, CNR-ISMN, Bologna, Italy - “In - situ Dynamic SPM Studies of Organic Semiconductor Thin Film Growth on Silicon Dioxide”

11.55 – 12.20 A. Cricenti, CNR – ISM, Roma, Italy –“Near-field Optical Microscopy with an IR-Free Electron Laser applied to Cancer Diagnosis”

12.20 – 12.45 M.L. Saladino, CGA-UniNetLab Università di Palermo, Palermo, Italy -“As the filler influences morphology, mechanical properties and thermal degradation of a polymer”

12.45 – 13.10 M. D’Acunto, CNR – ISM, Roma, Italy –“ Optical Response of gold nanoparticles for sensing activity”

13.10 - 14.30 Lunch Break

Session06: Touschek Auditorium

Chair: S. Sennato, Dipartimento di Fisica & IPCF-CNR UOS Roma, La Sapienza Università di Roma, Roma, Italia

14.30 – 15.00 A. Masotti, Bambino Gesù Children's Hospital - “Polymer-coated carbon nanotubes as novel delivery vectors for DNA and RNA-based oligonucleotides in human primary endothelial cells”

15.00 – 15.30 C. Portioli, Department of Neurological and Movement Sciences, University of Verona, Strada Le Grazie 8, Verona, Italy -“Nanoceria short-term biodistribution in mice: focus on the brain”

15.30 – 16.00 I. Calabrese, Dipartimento di Fisica e Chimica, Università degli Studi di Palermo - “Inorganic materials as drug delivery systems for Vitamin A”

16.00 – 16.30 Coffee Break

Chair: A. Masotti, *Bambino Gesù Children's Hospital*

16.30 – 17.00 B. Panessa Warren, *U.S. Dept. of Energy, Brookhaven National Laboratory, Upton, USA* - “tba” - Skype Lecture

17.00 – 17.30 S. Sennato *Dipartimento di Fisica & IPCF-CNR UOS Roma, La Sapienza Università di Roma, Roma, Italia* – “Peptide-based biomaterials for life sciences applications”

17.30 – 18.00 L.Elbakyan, *Volgograd State University* - “The composite polimer material with carbon nanotubes as new material in stomatology”

18.00 – 18.30 I.V. Zaporotskova, *Volgograd State University, Volgograd, Russia* – “About boundary modification of Nanotube systems by carboxyl group”

Session07: Touschek Auditorium

Chair: M. Kalbac, J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic

**9.30 – 10.00 A. Dinescu, National Institute for R&D in Microtechnologies (IMT-Bucharest), Romania -
“Nanoscale patterning of graphene by electron beam lithography”**

**10.00 – 10.30 M. Di Giovannantonio, CNR – ISM, Roma, Italy – “Via Organometallic Intermediate to
Conjugated Polymers”**

**10.30 – 11.00 P. Lamberti, Dip. di Ingegneria Elettronica e Ingegneria Informatica, Univ. of Salerno,
Salerno, Italy – “On the numerical analysis of EM properties of materials based on carbon nanofiller
random network”**

11.00 – 11.30 Coffee Break

Session08: Touschek Auditorium

Chair: G. Bussetti, Department of Physics, Politecnico di Milano, Milan, Italy

**11.30 – 12.10 M. Kalbac, J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic –
“Spectroscopy of doped graphene layers”**

**12.10 - 12. 45 G. Spadaro, Università di Palermo, Dipartimento di Ingegneria Chimica dei Processi e dei
Materiali, Palermo, Italy - “Radiation processing: a versatile methodology to tune the structure of
polymeric materials”**

**12.45 – 13.15 A. Pantano, Università degli Studi di Palermo, Dipartimento di Ingegneria Chimica,
Gestionale, Informatica e Meccanica, Palermo, Italy - “Electrical conductance in carbon nanotubes
under mechanical deformation”**

13.15 - 14.30 Lunch Break

Visit to LNF 14.30 – 16.00

Session09: - Seminari Auditorium

Chair: A. Dinescu, National Institute for R&D in Microtechnologies (IMT-Bucharest), Romania

**16.00 -16.30 S. Bistarelli, INFN-LNF, Frascati and Dipartimento di Fisica, Università di Roma “Sapienza”,
Roma, Italy – “AFM characterization and cytotoxic effects induced by multiwalled carbon nanotubes
on human breast adenocarcinoma cell line”**

**16.30 – 17.00 R. Flammini, CNR-IMIP Roma. Italy – “Probing the electronic structure of the Si(111)/ β -
Si₃N₄(0001)-(8x8) system by ARPES”**

**17.00 – 17.30 G. Serrano, Dipartimento di Fisica, Università di Roma “Tor Vergata” ,Roma. Italy – “STM
and LEED study of self-assembled Si nanostructures on Ag(110) surface”**

17.30 – 18.00 B. Berzina, *Institute of Solid State Physics, Riga Latvia* – “Exciton luminescence of ternary AlGaN”

18.00 – 18.30 M. Bottini, *Univ. Roma Tor Vergata, Roma, Italy* - “Bionano research lines”

18.30 – 19.30 POSTER SESSION

I. R. Ivascu et al. “Gas trace detection based on laser photoacoustic technique case study: Methanol”

Krutoyarov A.A et al. “About adsorption of polyethylene monomer unit on the single-walled carbon nanotube surface”

Shinkarev R.V “The new medicinal superfine covering on base of polyvinylpyrrolidone for biliary stents”

M.A. Sabatino et al. “Photonic crystal hydrogel films responsive to ethanol vapors”

Yu.F. Zhukovskii et al. “Theoretical description of TiO₂ nanowires modelled from densely-packed rutile surfaces”

F. Micciulla et al. “Exfoliated Graphite Composites: E.M. Attenuation Materials of for Microwave Applications”

A. Cataldo et al. “Behaviour of epoxy nanocomposites in dc to microwave range: transport mechanisms and dielectric relaxation”

F. Antolini et al. “Synthesis and properties of CdS quantum DOTs from a single source precursor in solution and in film”

Boroznin S.V et al. “Research of boron-carbon nanotube modified by atoms of alkaline metals”

Polikarpova N.P. et al. “About boundary functionalization of boron nitride nanotube by CN- and NH₂-group”

Social Dinner 20.00

Session10: Touschek Auditorium

Chair: M. Cini, LNF-INFN and Univ. Tor Vergata, Roma, Italy

9.30 – 10.00 S. Carloni, European Space Agency, Advanced Concepts Team, ESTEC, Noordwijk, The Netherlands - “Analogue Transformations in Physics and their Application to Acoustics”

10.00 – 10.30 P. Di Sia, Free University of Bolzano-Bozen - “Advances in Nano - Bio - Devices Performance: an interesting Analysis”

10.30 – 11.00 G. Campagnano, Dipartimento Scienze Fisiche di Napoli, Università di Napoli “Federico II”, Napoli, Italy – “Hanbury Brown and Twiss interference of anyons”

11.00 – 11.30 P. Lucignano, CNR-SPIN, Napoli, Italy - “Majorana Fermions meet high Tc superconductivity”

11.30 – 12.00 D. Giuliano, Dipartimento di Fisica, Università della Calabria, I.N.F.N. - LNF, Gruppo Collegato di Cosenza - “Frustration effects and phase diagram of topological superconductor-Luttinger liquid junctions.”

END OF CONFERENCE.