

# WORKSHOP PROGRAM N&N09 19-22 October 2009

## Monday 19

9.00 – 10.00 Registration and Welcome Coffee

### Monday 19 Nanotechnology for biomedical and environmental applications

10.00-13.00 Chair: S. Bellucci

- 1) B. Panessa–Warren, Brookhaven Nat. Lab, N.Y. Upton, USA [Reduction in Human Cell Cytotoxicity Following Aqueous-Aging of Carbon Nanoparticles in pH neutral Saline and Natural Organic Matter \(NOM\)](#)
- 2) V. Bellotti, Dept. of Biochemistry, Univ. of Pavia ,Pavia, Italy [Misfolding and aggregation of proteins in their biological environment: challenging a fundamental issue in protein misfolding diseases](#)
- 3) F. Beltram, SNS, CNR (INFM) NEST (National Enterprise for nanoScience and nanoTechnology), Pisa, Italy [Towards a true molecular biology: the impact of nanotechnology](#)
- 4) S. Krol, AREA Science Park, (Consorzio di Biomedicina Molecolare- Trieste) Trieste, Italy [Polymeric nanostructure in medicine](#)
- 5) F. Bonfigli, ENEA - Frascati, Frascati, Italy [LiF-based detectors for lensless X-ray imaging at nano scale](#)
- 6) M. Abdel Salam King Abdulaziz University, Jeddah, KSA [Multi-walled carbon nanotubes and their roles for environmental remediation](#)

13.00-14.00 Lunch break

14.00-16.00 Chair: B. Panessa–Warren

- 7) S. Bellucci, INFN-LNF, Frascati, Italy [Toxicological and biological \*in vitro\* and \*in vivo\* effects of carbon nanotubes buckypaper](#)
  - 8) L. Héja, Dept. of Neurochemistry, Hungarian Academy of Sciences, Budapest, Hungary [Imaging single protein functions](#)
  - 9) M. Bizzarri, Dept. of Experimental Medicine and Pathology, Univ. of Rome "La Sapienza", Roma, Italy [How to reverse cancer phenotype through engineering the tumor cell microenvironment](#)
  - 10) P. Milani Dept. of Physics Univ. of Milan, Milano Italy [High-throughput characterization of protein adsorption and cell adhesion on nanostructured surfaces: a robust approach for microdevice-based clinical diagnostics](#)
- 16.00-16.30 Coffee break
- 16.30-17.30 Chair: L. Héja
- 11) F. Valle, ISMN CNR, Bologna, Italy [On nano-bio, nanofabrication and organic electronics](#)
  - 12) C. Marcelli, INFN-LNF, Frascati, Italy [Bio–nano interaction of proteins adsorbed on single-walled carbon nanotubes](#)

## **Tuesday 20**

### **9.30 – 13.00 Surface assembling by nanostructure**

9.30-11.00 Chair: A. Cricenti

1) G. Bussetti, Physics Dept, Univ. of Rome “Tor Vergata”, Roma, Italy *On the crucial role of molecular dipole-dipole interaction in the anisotropic optical properties of ultra-thin nanostructured porphyrin layers.*

2) E. Gatto, Dept. of Chemical Sciences and Technologies, Univ. of Rome “Tor Vergata”, Roma, Italy *Conformationally constrained peptides as new nanomaterials for electrons transfer*

3) A. Quatela Physics Dept, University of Rome “La Sapienza”, Roma, Italy *FEMTOsecond Stimulated Raman SpectroSCOPY: ultrafast transformations in Chemistry, Physics and Biology*

11.00-11.30 Coffee break

11.30-13.00 Chair: G. Bussetti

4) K. Wandelt, Institute of Physical and Theoretical Chemistry, Univ. of Bonn, Bonn, Germany *Selfassembly of Nanostructures at Surfaces*

5) A. Cricenti, CNR-ISM, Frascati, Italy *Scanning Probe Microscopy in Material Science and Biology*

6) C. Di Natale, Dept. Electronics Engineering, Univ. of Rome "Tor Vergata" , Roma, Italy *Chemical Sensing Properties of Supramolecular Structures of Metalloporphyrins*

13.00-14.00 Lunch break (Group picture)

### **14.00-19.00 Energy, Optic and optoelectronic nanodevices**

14.00-16.30 Energy and Solar Cells Chair: A. Zamboni

1) M. Muccini - ISMN-CNR Bologna , Bologna, Italy *Organic light-emitting field-effect transistor technology*

2) A. Goldoni Elettra Sincrotrone Trieste S.C.p.A. AREA Science Park, Trieste, Italy *Leaves, balls and sun: nanotechnology approach to solar cells*

3) L.C. Andreani Univ. of Pavia, Pavia, Italy *Photonic crystals and applications to photovoltaic cells*

4) A. Reale Dept. Electronics Engineering, Univ. of Rome "Tor Vergata" , Roma, Italy *DSC modules and panels: The pathway for the industrialization at CHOSE*

5) S. Mirabella, INFN Researcher-CNR-INFN MATIS, Catania, Italy *Group IV nanostructures for future PV cell generation*

16.30-17.00 Coffee break

17.00-19.00 Optic and optoelectronic nanodevices *Chair: L.C. Andreani.*

1) R. Zamboni, ISMN CNR, Bologna, Italy [Bio-based opto-electronic devices: toward a possible greentronics](#)

2) P. Hidalgo, D.pto Física de Materiales, Fac. CC. Físicas, Universidad Complutense de Madrid , Madrid, Spain [Oxide nanowires as photonic waveguides](#)

3) S. Huant CNRS, Grenoble, France [Near-field optical microscopy with a nanodiamond-based single-photon tip](#)

4) C. Oudea, EADS – Astrium – Electronics, MEMS and Nanotechnology, Toulouse, France [Nanotechnology for Space Needs](#)

**19.00 – 20.00 POSTER SESSION**

**20.30 Conference Dinner at HOTEL VILLA LA ROCCA**



Via dei Castelli Romani, 1  
00040 - Rocca Priora (Roma)  
Castelli Romani

## **Wednesday 21**

### **9.30-13.00 Graphene, nanotubes and carbon based nanostructures**

9.30-11.00 *Chair: K. Ishibashi*

1) R. Evarestov Saint-Petersburg State University, Chemistry Dept., St.Petersburg, Russia [Symmetry of Inorganic Nanotubes: from Bulk Crystal Space Group to Monolayer Diperic Group and Nanotube Line Group](#)

2) S. A. Maksimenko, Lab. of Electrodynamics of Nonhomogeneous Mediums Institute for Nuclear Problems, University, Minsk, Belarus [Theory of carbon nanotube-based electromagnetic devices: waveguide, antenna, traveling wave tube, etc.](#)

3) L. Ottaviano, Physics Dept., Univ. of L'Aquila, Italy [Rapid identification of graphene sheets: Alumina does it better](#)

11.00-11.30 Coffee break

11.30-13.00 *Chair: R. Evarestov*

4) K. Ishibashi Advanced Device Laboratory, RIKEN, Japan [Quantum dots with carbon nanotubes](#)

5) V. Kashcheyevs University of Latvia, Riga, Latvia [Decay cascade theory for dynamical quantum dot initialization and quantized charge transport](#)

6) S. Piskunov University of Latvia, Riga, Latvia [Theoretical predictions for initial stage of CNT growth on nano-structured Ni catalyst and inside the nanopore of alumina membrane](#)

13.00-14.00 Lunch break

### **14.00-17.00 Models and materials for Aerospace and Nanomechanics**

14.00-16.00 *Chair: S. Huant*

1) F. Pressecq, CNES, Toulouse, France [Micro and Nano Technologies for Space System: applications, challenges and practical cases](#)

2) C. R. Cabrera, University of Puerto Rico at Río Piedras, Puerto Rico [Advanced Nanoscale Materials for Aerospace Applications](#)

3) R. Radice Keithley Instruments Inc., Milano, Italy [Extreme Measurements: The Foundations for Success in Nanoscience](#)

15.30-16.00 Coffee break

16.00-17.00 *Chair: C. R. Cabrera*

4) S. Huant CNRS, Grenoble, France [Viscous cavity damping of microlevers in a simple fluid: implications for MEMS and NEMS design](#)

5) C. Apollo Dept. of Aerospace and Aeronautics Engineering, Univ. of Rome "Sapienza", Roma, Italy [X-Band Microwave Carbon-based Nanocomposite Material Characterization](#)

## **Thursday 22**

**9.30-11.00 Visit to LNF**

**11.30-13.00 Nanomaterials and applications**

11.00-11.30 Coffee break

**11.30-13.00 Chair: M. Abdel Salam**

- 1) M. Tommasini, Chemistry Dept., POLI-MI, Milano, Italy [Investigation of graphitic materials with Raman spectroscopy](#)
- 2) A. Dabrowska Warsaw University, Warsaw, Poland [1-D SiC nanostructure formation: looking into 'black box'](#)
- 3) *M. Placidi Jobin Yvon, Opera, Italy* [From Raman to Ellipsometry: a survey of different spectroscopic techniques in Nanotechnology](#)

13.00-14.00 Lunch break

**14.00-17.00 Low Dimensional Nanostructure**

**14.00-16.30 Chair: P. Onorato**

- 1) A. Dediu, ISMN CNR, Bologna, Italy [Spintronics with Organic Semiconductors](#)
- 2) A. Cornia Dept. of Chemistry UniMoRe, Reggio Emilia, Italy [Molecules, nanomagnetism and the chemist's toolbox](#)
- 3) M. Cini Physics Dept., Univ. of Rome "Tor Vergata", Roma, Italy [Circulating currents and magnetic moments in quantum rings](#)
- 4) E. Perfetto Physics Dept., Univ. of Rome "Tor Vergata", Roma Italy [Time-dependent electron dynamics in one-dimensional Josephson junctions](#)
- 5) G. Stefanucci Physics Dept., Univ. of Rome "Tor Vergata", Roma, Italy [Time-dependent quantum transport in nanoscopic Josephson junctions](#)

16.30-17.00 Coffee break

**END OF WORKSHOP**