# Workshop
# NanoMetrology 2007
## *Metrology for Nanotechnology*

June 14-15, 2007

National Institute of Metrological Research - INRIM
Torino - Italy

The interest for nanotechnology and its applications is going to keep growing steadily, but both R&D activity and its translation into product for the market are hampered by the lack of a consolidated framework of metrology techniques at nanoscale and related measurement standards. The solution of this problem is made more complex by the multi-disciplinary and multi- sectoral character of nanotechnology and not by chance, nanometrology is an important area in FP7.

An open dialogue and cooperation between industry and the metrology community is fundamental to highlight the relevant problems and needs of metrology in the various areas of application of nanotechnology as well as the contribution that the research community can offer to solve these problems.

The workshop, organized in 2004 by AIRI/Nanotec IT and INRIM, was aimed at this goal. The success of that initiative, prompted by the content of the presentations, the variety of the participants, and the opportunity for contacts offered, has suggested to replicate the event.

This new workshop will be, as the previous one, application-oriented and it will focus on real industrial experiences and needs. It will bring together industrial users and experts from the national metrology community and also some prominent international experts to discuss both needs in nanometrology and recent developments with reference to techniques and methods of measurement, instrumentation and standards. The attention will concentrate on the sectors of major interest at national level to favour synergies and cooperation.
The program will also consider topics related to safety issues and an updating of present trends on regulations and documentary standards.

## POSTER SESSION:

The workshop will exhibit a poster session aimed at encouraging the exchange of information and to enrich the panorama of R&D activities going on in the field. The poster session will be open to the delegates throughout the workshop. Those interested to present a poster must send an abstract (300 words) illustrating their contribution to the Secretary of the Workshop not later than **May 11th 2007**.
The acceptance of the poster will be communicated to the author by May 25th 2007. The abstracts of the poster accepted will be included in the proceeding of the workshop.

## EXHIBITORS:

# PROGRAM

## 1° Day, June 14

**9.30 -11.00 Registration**

***11.00 Opening Remarks***

***Elio Bava**, President of INRIM ,*

***Elvio Mantovani**, Managing Director AIRI/NanotecIT,*

***Speech from UNI (Italian Organization for Standardization) ,** Regulation in nanotechnology and metrology*

**11.30-15.00 Nanofabrication, top-down techniques, nanoelectronics, quantum devices**

***11.30-12.00*** ***Florestano Evangelisti, CNR Institute of Photonics and Nanotechnology***
*Mesoscopic physics and quantum devices*

***12.00-12.20*** ***Fabrizio Giacometti, Pirelli Labs SpA***
*Nanometrology for optical structures in Silicon on Insulator*

***12.20-12.40*** ***Giuseppe Milano, Modeling Lab. for Nanostructure and Catalysis, Chemical Dep., University of Salerno***
*Multiscale Modelling and nanofabrication*

***12.40-13.00*** ***Antonio Cetronio, Selex Sistemi Integrati SpA***
*Nanolitography for high speed electronic components in composite semiconductors*

**13.00-14.20 Lunch and poster session**

***14.20-14.40*** ***Anna Morra, STMicroeletronics, Post Silicon Tecnhnology Division***
*Soft and Nano-lithographies in organic electronics and memories*

***14.40-15.00*** ***Michele Giordano, CNR Institute for Composite and Biomedical Materials***
*Sensors based on photonic crystals and polymers*

**15.00-18.20 Surfaces, layers and atomic scale metrology**

***15.00-15.30*** ***Guenter Wilkening, Precision Engineering Division, Physikalisch-Technische Bundesanstalt, Braunschweig, Germany***
*Scanning Force Microscopy for Dimensional Metrology*

***15.30-15.50*** ***Enrico Massa, National Institute for Metrological Research- INRIM***
*Atomic scale Metrology at INRIM*

**15.50-17.00 Coffe break and poster session**

***17.00-17.20*** ***Stefano Prato et al, APE Research Srl***
*Near field Techniques and Surface Metrology*

***17.20-17.40*** ***Maurizio Vannoni, CNR National Institute of Applied Optics***
*New approaches towards nanometre accuracy in absolute planarity measurements*

***17.40-18.00*** ***Alberto Pasquini, Sorin Biomedica Cardio Srl***
*Sub-micron dimensional characterizations in biomedical devices*

***18.00-18.20*** ***Elza Bontempi, INSTM and Chemistry for Technologies Lab., University of Brescia***
*Metrology for Nanoscale Properties: X-ray methods*

**2° Day, June 15**

**8.30-9.00 Registration**

**9.00 Opening remarks**

**9.15-11.00 Nanostructured materials, nanocomposites, particles analysis**

***9.15-9.45*** ***Stefano Bellucci, INFN-Laboratori Nazionali di Frascati***
*Screening Electromagnetic Interference Effects using Nanocomposites based on Carbon Nanotubes*

***9.45-10.05*** ***Nello Li Pira, Centro Ricerche Fiat SCpA***
*Electro-optical and morphological analysis of nanostructures for applications in automotive display*

***10.05-10.25*** ***Andrea Goldoni, Sincrotrone Trieste SCpA***
*Quantitative measurements of the Interaction of Single-Wall Carbon Nanotubes with Gas Phase Molecules*

***10.25-10.45*** ***Massimo Pasquale, National Institute for Metrological Research- INRIM***
*Characterization of nanostructures*

***10.45-11.05*** ***Speech in definition***

***11.05-11.25*** ***Giovanni Baldi, Colorobbia SpA Research Centre***
*Title in definition*

**11.00-15.00 Interdisciplinary techniques**

***11.25-11.55*** ***Giampiero Amato, National Institute for Metrological Research- INRIM***
*Quantum Dots for biomedical imaging*

***11.55-12.15*** ***Marco Lazzarino, TASC National Laboratory***
*Determination of the "Effective" Size of Bio-Molecules: New Strategies on the Nano-Scale*

**12.15-13.20 Lunch and poster session**

***13.20-13.40*** ***M. Muccini, CNR-ISMN, Institute for the Study of Nanostructured Materials,***
*Optical nanoprobes for soft matter and molecular electronics*

***13.40-14.00*** ***Michael Först, RWTH Aachen University, Institut für Halbleitertechnik, Aachen, Germany***
*High-resolution medical imaging by optical coherence tomography*

***14.00-14.20*** ***Speech in definition***

***14.20-14.40*** ***Spartaco Santi, CNR-IGM, Institute of Molecular Genetics***
*Measurement and Analysis of Fluorescence Imaging in Neuroscience*

**15.00 Closing Remarks**

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