

# Health effects of Nanoparticles

## Specific Toxicity of some Nanoparticles and Physico-Chemical Basis for Testing strategies

### A joint Colloquium NIS – Centro "G. Scansetti"

Torino, september 19<sup>th</sup>, 2006

Dipartimento di Chimica IFM, via P. Giuria, 7 – Torino – Aula Diagonale

Organizers: **Ivana Fenoglio, Bice Fubini, Maura Tomatis** – NIS & Centro "G. Scansetti",  
Dip. Chimica IFM – Università di Torino

In the past few years, both media and scientific journals, have given much emphasis to the potential toxicity of the nanoparticles generated by the new nanotechnologies. A general fear was raised that they might turn up, similarly to asbestos, in an occupational and environmental disaster, or become a debated issue, like OGM.

The idea, however, that all nanoparticles are harmful or similarly hazardous – irrespective from their chemical composition and micromorphology - can not be accepted by the scientific community who conversely suggests that each family of nanosized particles should be studied, in view of its potential toxicity, in a systematic way and with a multidisciplinary approach. A new discipline, "Nanotoxicology" has thus been established.

This colloquium deals with some aspects of Nanotoxicology, others will be covered in future colloquia.

## PROGRAMME

Chair: **Bice Fubini**

14.00 *Welcome: Adriano Zecchina*

### Nanotoxicology

14.10–15.10 **Nancy Monteiro-Riviere** – North Carolina State University  
Center for Chemical Toxicology Research and Pharmacokinetics

*"Nanomaterial Interactions with Skin"*

15.10–15.30 **Qamar Rahman** – Fibre Toxicology Division, Industrial Toxicology  
Research Centre, Lucknow and Integral University, New Delhi

*"Nanotoxicology: a threat from Ultrafine Particles"*

15.30–15.50 **Stefano Bellucci** – INFN-Laboratori Nazionali di Frascati  
*"Applications of Carbon Nanotubes-Silica Nanoparticles Composites to Biology and Medicine"*

15.50–16.10 **Bice Fubini** – NIS & Centro "G. Scansetti", Dip. Chimica IFM – Università di Torino  
*"Chemical Aspects in Nanotoxicology"*

*Coffee break*

### A joint organization to tackle problems raised by nanotechnology

16.40–17.00 **Iolanda Olivato** – Centro ECSIN, Veneto Nanotech  
*"ESCIN – European Center for the Sustainable Impact of Nanotechnology: Perspectives and Objectives"*

### Preparation of nanoparticles for toxicology tests

17.00–17.15 **Giorgio Lesci** – Dip. Chimica "G. Ciamician"- Università di Bologna  
*"Synthesis and Characterization of Asbestos Nanofibres"*

17.15–17.30 **Francesco Turci** – NIS & Centro "G. Scansetti", Dip. Chimica IFM – Università di Torino  
*"Synthetic Asbestos Nanofibres: a Model Solid for Studies on Asbestos Toxicity, Chemical Aspects"*

17.30–17.45 **Elena Gazzano** – Centro "G. Scansetti", Dip. Genetica, Biologia e Biochimica – Università di Torino  
*"Synthetic Asbestos Nanofibres: a Model Solid for Studies on Asbestos toxicity, Biological Aspects"*

17.45–18.05 **Domenica Scarano** – NIS, Dip. Chimica IFM – Università di Torino  
*"Variability in Composition, Structure and Size of Carbon Nanotubes"*

18.05–18.25 **Daniele Marchisio** – Dip. S.M.I.C. – Politecnico di Torino  
*"From Micro- to Nano-Particles: Strategies to control Surface Properties and Particle Size in Precipitation Processes"*

**Conclusions**