

bhhhhh INTERNATIONAL CONFERENCE

Nanotechnology and Smart Materials for Medical Applications: from Medical Diagnostics to Therapy

Rome, November 29.30, 2004
Centro Convegni Frentani

A Nanoforum event



Conference Organisers



conference programme

Conference Sponsor:



FARMINDUSTRIA



The Conference is endorsed by:
Istituto Superiore di Sanità

PRESENTATION

Following on from the successful “Nanotechnology and Smart Materials for Medical Devices” conference in Edinburgh in December 2003, this second Nanoforum Conference, is organized jointly by IoN and AIRI/Nanotec IT and it will highlight the potentialities of nanotechnology for human health care, with presentations from both the research community and industry. It will have an application oriented profile, with particular attention to those applications close to the market.

The Conference will tackle the following themes:

-New Frontiers of Medical Diagnostics

Sensors (chip devices and wearable); internal diagnostics:molecular probes and machines; new systems and material for imaging, to increase speed, accuracy and functionality.

-Novel Pharmaceuticals and Therapies

New manufacturing methods; intelligent delivery systems; gene therapy; nano-bio robotics.

-Implants, Prostheses and Tissue Engineering

Materials; surfaces modification and tissue engineering for improved biocompatibility and/or for biofunctionality; power systems for implants and prostheses.

-Effects of nanotechnology on medicine and health care system (panel discussion)

Nanomedicine compared to current medicine and medical trends, regulatory problems, social and ethical issues; barriers to commercialisation and other issues.

SCIENTIFIC COMMITTEE

- Dr. Joost D. De Bruijn, Ph.D. Progentix BV, NL
- Dr. Richard Moore Eucomed, UK
- Dr. Ichiro Nakatomi NanoCarrier,JP
- Prof. Roberto Cingolani NFM (CNR), Lecce University, IT
- Prof. Frank F. Bier Fraunhofer IBMT, DE

STEERING COMMITTEE

- Dr. Myriam Alcalay European Institute of Oncology and IFOM
- Dr. Enrico Alessi STMicroelectronics
- D. Gaetano Brambilla Farindustria
- Dr. Paolo Del Giudice Istituto Superiore di Sanità
- Dr. Giovanni Gaviraghi Siena Biotech
- Dr. Marco Mattiuzzi Bracco
- Dr. Monica Pighini Technobiochip
- Dr. Gian Michele (Jimmy) Ratto CNR – Institute of Neurosciences
- Dr. Claudio Semeraro Z. Cube (Zambon Group)
- Ing. Franco Vallana Sorin

PROGRAMME

Monday, 29 November

8.30 Registration

9.0 OPENING ADRESSES

Enrico Garaci- President ISS

Mark Morrison – Nanoforum Coordinator (IoN)

Guido Frigessi di Rattalma - Vice President AIRI

9.30 NEW TOOLS FOR MEDICAL DIAGNOSTICS

Chair: Frank F. BIER (Frauhofer Institute-IBMT, Germany)

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Benefits of nanotechnology for diagnostics and cell handlings

Gianfranco GILARDI (University of Torino/Imperial College, UK)

Construction of a liver chip for drug metabolism: amperometric sensing with human cytochrome P450s

James M. WILKINSON (Technology for Industry - Cambridge, UK)

Micro and nano fluidics for drug discovery, drug delivery and diagnosis

10.50 Coffee break

11.20 Andrew CAMPITELLI (MiniFab, Australia)

Polymer based MNT solutions for future medical diagnostic platforms.

Mark ECCLESTON (University of Cambridge/Vivamer Ltd, UK)

Bioorganic nanoprobes for non invasive tumour imaging

12.30 Lunch

14.00 NANOSCALE PHARMACEUTICALS and THERAPIES

Chair: Fabio BELTRAM (NEST - Pisa, Italy)

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Biology one molecule at a time: nanoscience techniques for molecular medicine

Ichiro NAKATOMI (NanoCarrier, Japan)

Drug targeting delivery as nano-bio technology

Martin MONZEL (Geschäftsführer NanoBioNet e.V – Germany)

Nanotechnological based material and product development for medical applications

15.30 Coffee break

16.00 Holger BECKER (Microfluidic Chip Shop – Jena, Germany)

Innovative medical devices: challenges and opportunities

Mauro FERRARI (Ohio State Univ., USA)
The hallmarks of cancer nanotechnology

Roberta CARBONE (Dip. Oncolog. Sperimentale, Inst. Europeo Oncologia, Milan, Italy)
Development of retroviral microarrays on nanostructured Titania for new drug target identification and gene therapy application

Mauro MAGNANI (Università Urbino, Italy)
Cell based drug delivery and targeting systems

Tuesday, 30 November

9.00 IMPLANTS, PROSTHESES and TISSUE ENGINEERING

Chair: Harry HEINZELMANN (Centre Suisse d'Electronic and Microtechnique, Switzerland)

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Top-down and bottom up approaches for functional surface structuring

Nicolaj GADEGAARD (Glasgow University, UK)
Nano textured surfaces: applications in cell engineering

Gianluca CIARDELLI (Univ. of Pisa/CNR – Pisa, Italy)
Engineered approaches for the realisation of smart scaffolds for tissues repair

10.20 Coffee break

10.40 Brian G. COUSINS (Univ. of Liverpool – Liverpool, UK)
Nanoparticulate Silica coatings and their effects on the cellular response

Daniela PASQUI (Univ. of Siena - Siena, Italy)
Cell response to micro/nano-patterned polysaccharides on different substrates (PET, glass, carbofilm)

Michael BALL (Univ. of Ireland – Galway, Ireland)
Osteoblast response to chemically modified and nano-patterned polymer substrates

12.00 PANEL DISCUSSION - Effects of nanotechnology on medicine and health care system

Moderator: Vincent TORRE (SISSA, Italy)

Richard MOORE (Eucomed, Belgium)
Alfred NORDMANN (Institut für Philosophie, Technische Universität Darmstadt, Germany)
Antonietta M. GATTI (University of Modena and Reggio Emilia, Italy)
David G. RICKERBY (European Commission – Joint Research Centre, Italy)
Paolo PICCO (STMicroelectronics, Italy)

13.30 Lunch

14.30 Poster session

16.30 End of Conference