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NANOTECHNOLOGY ENABLES PERSONALIZED MEDICINE

**BioNanoMed
2013**

**4th International Congress
NANOTECHNOLOGY, MEDICINE & BIOLOGY
13 - 15 MARCH 2013, KREMS/AUSTRIA**


TECHKONNEX
High-Tech Promotion



BioNanoMed 2013

13 - 15 March, Krems/Austria

Nanotechnology Enables Personalized Medicine

New Frontiers in Medicine & Biology

- Novel Nanomedical Solutions - Advances in Nanomedicine

Cancer / Oncology, Neurodegenerative Diseases, Cardiovascular Diseases, Ophthalmology, Inflammation, Infection & Immunology, Dentistry

- Regenerative Nanomedicine

Stem Cell Regeneration, Tissue Engineering, Organ Transplantation, Implants, Nanostructured Materials

- Nano-Bio-Technology based Diagnostics

Biological Sensor Systems, Point of Care Diagnostics, Advanced Nano-Bio Sensor Technologies, Magnetic Nanodevices, Nano Arrays

- Nano-Bio-Technology based Therapy

Magnetic Nanoparticles, Novel Drug Delivery Systems, Theranostic Nanotechnologies, siRNA Therapeutics and Nanovectors, Nanotechnology for Therapeutic Vaccines, Biomarkers & Targeting, Nano-Carriers, Optical Tools and Photon based Methods in Nanomedicine, Photodynamic Therapy in Cancer Disease, Disease Targets – Explored & Unexplored

Thematic Sessions

- Nano-Imaging-Technologies in Medicine

Perspectives of Nano-Imaging, Imaging Technologies (Nanoscale Imaging, In-Vivo Nano-Imaging, Nano- MRI, Molecular Imaging, Quantum Dot Imaging)

- Aspects of NanoSafety

Benefits of Nanotechnology, Risks of Nanotechnology, Nanotoxicology, Regulatory Aspects in Nanomedicine Development, NanoSafety, Standardization

Special Session & Panel Discussion

- Nanotechnology in Pharmacy – Chances for Clinical Applications

Special Symposium

- Nanotechnology in Artificial Organ Support

(organized by ESAO - European Society for Artificial Organs)

We are looking forward to welcoming you at BioNanoMed 2013!

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Poster Awards 2013

Abstract submission is now open for Posters only

We accept a limited amount of abstracts for the high-quality poster session! Poster presentations will offer delegates a good opportunity to discuss their research outcomes and to initiate cooperation projects.

- **Erwin Schrödinger Society Poster Awards 2013** are intended to recognize outstanding research and are granted to the three best poster contributions (€ 300 for the first, € 200 for the second and € 100 for the third place).

- **„Nanotoxicology“ Poster Award by BioNanoNet** The best poster in the field of Nanotoxicology will be awarded with € 250,- and published in the EURO-NanoTox-Letters.

Authors wishing to contribute for a poster presentation must submit an abstract electronically to office@bionanomed.at

Information

Congress Language

English

Credit - (CME/DFP) Points

For attending the BioNanoMed 2013- Congress participants will get Credit - (CME/DFP) points.

Participation for Students

The student fee applies to full-time students only (please send a letter with signature and stamp from the University to office@bionanomed.at).

Exhibition & Sponsoring

BioNanoMed 2013 serves as an excellent platform to present your company/institution, to promote your product portfolio and to establish direct links to a broad audience of experts. By becoming an exhibitor or sponsor you will make a great contribution to support the BioNanoMed 2013 congress.

Congress Fees

Early registration: € 390,- (valid til 24 January 2013)

Late registration: € 440,- (On-Site € 490,-)

Students: € 270,- (valid til 24 January 2013)

Students late registration: € 320,- (On-Site € 370,-)

Congress Dinner participation: € 30,- (On-Site € 35,-)

All prices exclude VAT of 20%. The congress fee includes admission to scientific programme, poster sessions, congress documentation and refreshments during the coffee breaks.

Program - 13 March 2013

8.00 Registration

9.00 Opening and Welcome

NOVEL NANOMEDICAL SOLUTIONS - Advances in Nanomedicine

9.15 **The use of Nanomedical devices from treatment to ADME: How we can reassemble the disconnected parts of the body and CNS while measuring the progress of repair noninvasively** – *Plenary Talk*

Rutledge Ellis-Behnke, *Medical Faculty Mannheim of the Ruprecht-Karls-University Heidelberg, Director, Nanomedicine Translational Think Tank, MIT - Massachusetts Institute of Technology, Department of Brain & Cognitive Sciences (Germany/USA)*

10.00 **“NAD” Nanoparticles for Therapy and Diagnosis of Alzheimer Disease**
Massimo Masserini, *University Milano-Bicocca, Department Health Sciences, Monza (Italy)*

10.15 **Antitumor activity of apoferritin encapsulated PbS quantum dots in human-derived colorectal carcinoma cell lines**

Tracey Bradshaw, *University of Nottingham, Centre for Biomolecular Sciences, School of Pharmacy, Nottingham (United Kingdom)*

10.30 **Polymer Nanoreactors shown to produce and release Antibiotics locally**
Karolina Langowska, *University of Basel, Department of Chemistry, Basel (Switzerland)*

10.45 Coffee Break

11.15 **Passive vs. Active Drug Targeting**

Twan Lammers, *RWTH Aachen University, Department of Experimental Molecular Imaging (Germany) and University of Twente, Department of Targeted Therapeutics (The Netherlands) - invited*

11.40 **Synthesis Characterization and Biological activity of Bio-reduced gold Nanoparticles**

Suvidya Ranade, *Pune University, Biochemistry Department of Chemistry, Pune (India)*

11.55 **Preparation, Optimization and Characterization of anastrozole loaded PEGylated PLGA Nanoparticles for Tumor Targeting**

Abhinesh Kumar, *The Maharaja Sayajirao University of Baroda, Pharmacy Department, Gujarat (India)*

12.10 **Microfluidic controlled assembly of Nanocontainers as Delivery Systems for Osteogenic Differentiating Agents**

Gabriele Pitingolo, *University of Ferrara, Department of Life Sciences and Biotechnology, Ferrara (Italy)*

12.25 **Nanomedical Vignettes** (*Satellite Talk*)

Mauro Ferrari, *President Alliance for NanoHealth, President and CEO, The Methodist Hospital Research Institute, Institute for Academic Medicine at The Methodist Hospital, Houston (USA) - invited*

12.50 Lunch Break

Program - 13 March 2013

Special Session & Panel Discussion Nanotechnology in Pharmacy

13.50 Optimize the Delivery of Nanomedicine to Solid Tumors

Triantafyllos Stylianopoulos, *University of Cyprus, Department of Mechanical and Manufacturing Engineering, Nicosia (Cyprus) - invited*

14.15 Cellular delivery into bacteria, fungi and mammalian cells using a novel and clinically compatible polymer-based nanoparticles

Liam Good, *University of London, Department of Pathology and Infectious Diseases, Royal Veterinary College, London (United Kingdom)*

14.30 Oral Peptide Delivery using Thiomers-coated Liposomes

Kerstin Gradauer, *Medical University of Graz, Institute of Biophysics, Graz (Austria)*

14.45 Chitosan-Pentagamavunon-0 Nanoparticle Formulation and its Anti Inflammatory Activity In Vivo

Ronny Martien, *Gadjah Mada University, Sekip Utara, Department of Pharmaceutics, Faculty of Pharmacy, Yogyakarta (Indonesia)*

15.00 Nanoparticle-dendrimer bound paclitaxel: innocuity/efficacy study by a pharmacological approach

Diane Braguer, *NSERM UMR 911, Centre de Recherche en Oncologie Biologique et en Oncopharmacologie, Aix-Marseille Université, Faculté Pharmacie, Marseille (France)*

15.15

Panel Discussion

Nanotechnology in Pharmacy - Chances for Clinical Applications

Panel Leader: Jörg Vienken, *Vice President BioSciences, Fresenius Medical Care Deutschland GmbH, Bad Homburg (Germany)*

Panelists:

Triantafyllos Stylianopoulos, *University of Cyprus, Department of Mechanical and Manufacturing Engineering, Nicosia (Cyprus)*

Liam Good, *University of London, Department of Pathology and Infectious Diseases, Royal Veterinary College, London (United Kingdom)*

Kerstin Gradauer, *Medical University of Graz, Institute of Biophysics, Graz (Austria)*

Ronny Martien, *Gadjah Mada University, Sekip Utara, Department of Pharmaceutics, Faculty of Pharmacy, Yogyakarta (Indonesia)*

Diane Braguer, *Centre de Recherche en Oncologie Biologique et en Oncopharmacologie, Aix-Marseille Université, Marseille (France)*

15.50 Coffee Break

Program - 13 March 2013

Special Symposium Nanotechnology in Artificial Organ Support

(Organized by ESAO – European Society for Artificial Organs)

16.20 Microbubbles of Air may interfere with experimental Systems - Data from a Human Research

Bernd Stegmayr, *President of ESAO (European Society for Artificial Organs) University Hospital of Northern Sweden, Umeå University, Department of Public Health and Clinical Medicine, Umeå (Sweden) - invited*

16.50 Nano-scaled Products in Medical Device Technology Observations, Risks and Specifications

Jörg Vienken, *Vice President BioSciences, Fresenius Medical Care Deutschland GmbH, Bad Homburg (Germany) – invited*

17.10 Use of Nanotechnology for Nerve Guides for Peripheral Nerve Repair and Heart Valves

Birgit Glasmacher, *President Elect EAMBES, Leibniz Universität Hannover, Centre for Biomedical Engineering, Hannover (Germany) - invited*

17.30 Nano and Microstructured Surfaces functionalized with Glycosaminolycans

Thomas Groth, *Martin Luther University Hall-Wittenberg, Biomedical Materials Group, Institute of Pharmacy, Halle (Germany) – invited*

17.50 Adsorption Properties of Carbon Beads with highly developed Nanoporosity

Carla Tripisciano, *Danube University Krems, Center for Biomedical Technology, Krems (Austria)*

18.05 Poster Session with Wine & Snacks

optional >> Lab Tour



Program - 14 March 2013

REGENERATIVE NANOMEDICINE

9.00 Human Biomaterials and Stem Cells for Tissue Regeneration

Heinz Redl, *Austrian Cluster of Tissue Regeneration, Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna (Austria) – invited*

9.30 Enhancing Uremic Toxins Fluxes Across Nanofabricated Hemodialysis Membranes

Assem Hedayat, *University of Saskatchewan, College of Dentistry, Saskatoon (Canada)*

9.45 Development of nanostructured membrane to cellular and pharmacological deliveries for human tissue regeneration

K.A.T. Carvalho, *Cell Therapy and Biotechnology in Regenerative Medicine Research. The Pelé Pequeno Príncipe Institute- Child and Adolescent Health Research, Paraná Federal University-Brazil, Curitiba-Paraná (Brazil)*

10.00 Bio-inspired, self-assembling of surface nanostructures by nano-wrinkled thin films on polyurethane based biomaterials

Jürgen M. Lackner, *JOANNEUM RESEARCH Forschungsgesellschaft mbH, MATERIALS - Institute of Surface Technologies and Photonics, Functional Surfaces, Niklasdorf (Austria)*

10.15 Nanostructured Biomaterial Surfaces and their Influence on Adhesion and Growth of Human Fibroblasts

Marcus Niepel, *Martin Luther University Halle-Wittenberg, Institute of Pharmacy, Department of Pharmaceutics and Biopharmaceutics, Biomedical Materials Group, Halle (Saale) (Germany)*

10.30 Designing Nanocellulose Qualities for Wound Dressings

Gary Chinga Carrasco, *Paper and Fibre Research Institute (PFI), Trondheim (Norway)*

10.45 Coffee Break, Poster Session

Thematic Session Nano- Imaging-Technologies in Medicine

11.30 Potentials of Imaging Biomarkers

Thomas Helbich, *Medical University Vienna - General Hospital Vienna, Vice-chairman Department of Radiology, Head of Molecular and Gender Imaging, Vienna (Austria) - invited*

11.55 Nanoclusters for Targeting and for Detection with SERRS Multiplexing

Moreno Meneghetti, *Presidente dei CCS di Scienza dei Materiali, Nanostructures for Optics Laboratory, University of Padova, Department of Chemical Sciences Padova (Italy)*

Program - 14 March 2013

12.10 Au-Fe Nanovectors loaded with SERS reporter for double Imaging Modalities

Marco Colombatti, *University of Verona, Department of Pathology and Diagnostics, Verona (Italy)*

12.25 Elongated Nanocrystals – the next Step toward applied Nano Imaging Tools

Tobias Jochum, *Centrum für Angewandte Nanotechnologie (CAN) GmbH, Hamburg (Germany)*

12.40 A multimodal Approach to time-resolved optical Nanoscopy

Gabriele Ferrini, *Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) & Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Brescia (Italy)*

12.55 Lunch Break

13.55 Living Nanoparticles

Peter Brader, *Medical University of Vienna - General Hospital Vienna, Department of Radiology, Molecular Imaging, Vienna (Austria) - invited*

14.15 On the Road to Cellular and Molecular MRI with Iron-Nanoparticles

Rudolf Stollberger, *Graz University of Technology, Head of Institute of Medical Engineering, Graz (Austria) - invited*

14.35 Multispectral Optoacoustic Tomography (MSOT) Imaging of Heterogeneity within the Tumor Microenvironment

Wouter Driessen, *iThera Medical, Neuherberg (Germany)*

14.50 Characterisation of BioNanoMaterials using Nanoparticle Tracking and Analysis (NTA)

Joerg Uhlig, *NanoSight Ltd, Amesbury (United Kingdom)*

15.05 Drug Screening on Signal Transduction Proteins via μ -patterned Surfaces

Julian Weghuber, *University of Applied Sciences Upper Austria, Wels (Austria)*

15.20 *Agilent Technologies - Company Presentation*

15.25 *Scienion AG - Company Presentation*

15.30 Coffee Break



Program - 14 March 2013

Thematic Session Aspects of NanoSafety

16.00 Nanoscale Interface between engineered Matter and living Organisms: Understanding the biological Identity of nanosized Materials

Kenneth Dawson, *UCL - University College Dublin, Director Centre For Bionano Interactions, European Board Member of the International Council of Nanotechnology (ICON), Dublin (Ireland) - invited*

16.30 Modeling Nanotoxicity: Large Scale Molecular Simulation of Nanoparticle-Protein Interactions with IBM Blue Gene

Ruhong Zhou, *Computational Biology Center, IBM Watson Research Center, Yorktown Heights, NY & Department of Chemistry, Columbia University, New York (USA) - invited*

16.55 High Aspect Ratio Nanomaterials: Shape and aerodynamic Diameter determine their biologically effective Dose

Anja Schinwald, *The University of Edinburgh, Center for Inflammation Research, The Queens Medical Research Institute, Edinburgh (United Kingdom)*

17.10 Plain and Carboxylated short Carbon Nanotubes may cause Genotoxic Effects by different Mechanisms

Eleonore Fröhlich, *Medical University Graz, Center for Medical Research, Graz (Austria)*

17.25 The Need for new Methods in NanoSafety Assessment

Albert Duschl, *University of Salzburg, Department of Molecular Biology, Salzburg (Austria) - invited*

17.45 Toxicological Assessment Strategy to Secure the Safe Implementation of Nanomaterials

Sonja Hartl, *BioNanoNet Forschungsgesellschaft mbH, Graz (Austria)*

18.00 - End of Sessions

19.00 Congress Dinner

at a traditional „Wachauer Heurigen“



Program - 15 March 2013

NANO-BIO TECHNOLOGY based DIAGNOSTIC

9.00 From Nanoproteomics and Nanogenomics to Personalized Medicine

Claudio Nicolini, *Eminent Chair of Biophysics, Genova Medical School, Genova, President of Fondazione ELBA Nicolini, (Italy) - invited*

9.25 Development of a Diagnostic EIS ImmunoChip with integrated Microfluidic Components for Point of Care Analysis

Maria Serena Chiriaco, *National Nanotechnology Laborator, CNR-Institute of Nanoscience, Lecce (Italy)*

9.40 Rapid Detection of RSV Virus using hand held SERS Platform

J.P. Singh, *Indian Institute of Technology Delhi, Physics Department, New Delhi (India)*

9.55 Direct Nanomechanical Detection of Cancerous Condition

Hans Peter Lang, *Swiss Nanoscience Institute, University of Basel, Department of Physics, Basel (Switzerland)*

10.10 Biosensors based on Particle Plasmons

Verena Häfele, *Karl-Franzens University Graz, Institute of Physics, Graz (Austria)*

10.25 Conductive Polymer-Based Olfactory Biosensor

Amal Kasry, *AIT Austrian Institute of Technology GmbH, BioSensor Technologies, Vienna (Austria)*

10.40 Coffee Break, Poster Session

NANO-BIO TECHNOLOGY based THERAPY

11.20 Overcoming Radiation resistance of Tumors using Nanoparticles

Sunil Krishnan, *Department of Radiation Oncology, Division of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston (USA) - invited*

11.45 Multifunctional Nanoparticles for Ultrasound-mediated Diagnosis and Therapy

Ruth Schmid, *SINTEF Materials and Chemistry, Department of Synthesis and Properties, Trondheim (Norway) - invited*

12.10 Designed Ankyrin Repeat Proteins for Tumor-specific siRNA Delivery

Johannes Winkler, *University of Vienna, Department of Medicinal Chemistry, Vienna (Austria)*

Program - 15 March 2013

12.25 Plasmid DNA based Systems: a promising Approach for Cancer Therapy

Diana Costa, *Health Sciences Research Center (CICS), University of Beira Interior, Covilhã (Portugal)*

12.40 Cellular Dynamics of Redox-Responsive Polymer Capsules and their Drug Delivery

Yan Yan, *The University of Melbourne, Victoria (Australia)*

12.55 Lunch Break

13.55 Nanotechnology for Drug and Gene Delivery to the Eye

Uday B. Kompella, *University of Colorado Anschutz Medical Campus, Aurora (USA) - invited*

14.20 Colloidal Nanoclusters: from Materials Design to Theranostic Applications

Athanasia Kostopoulou, *Institute of Electronic Structure & Laser (IESL), Foundation for Research & Technology - Hellas (FORTH) Vassilika Vouton, Heraklion (Greece)*

14.35 Polysaccharide Nanogels for local and systemic siRNA Delivery

Koen Raemdonck, *Ghent University, Lab. of General Biochemistry and Physical Pharmacy, Faculty of Pharmaceutical Sciences, Ghent (Belgium)*

14.50 A Cancer Treatment Modality Based on the Tumor-Specific Localization of Cancer Therapeutics

Jim Klostergaard, *The University of Texas, MD Anderson Cancer Center, Houston (USA)*

Charles Seeney, *NanCogenics Inc., Houston (USA)*

15.05 Dox-loaded thermosensitive liposomal Formulation for Antitumor Therapy

Olga Samsonova, *Philipps Universität Marburg, Department of Pharmaceutics and Biopharmacy, Marburg (Germany)*

15.20 The Design of Hybrid Nanosystems as Potential Agents for Theranostics

Balázs Söptei, *Hungarian Academy of Sciences, Institute of Molecular Pharmacology, Research Centre for Natural Sciences, Budapest (Hungary)*

15.35 Poster Awards Ceremony & Closing Remarks

- Erwin Schrödinger Society Poster Award 2013
- Nanotoxicology Poster Award by BioNanoNet GmbH

16.00 End of the Congress

BioNanoMed 2013

13 - 15 March, Krems /Austria

Venue

Danube University Krems
Section A, Audimax

Dr. Karl Dorrek Str. 30

3500 Krems/Austria

Information and Registration

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