



Symposium T : Nanomaterials in Medicine, Nanotoxicology and Nanoregulation

Scope of the Symposium

Nanomaterials have been proven efficient theranostic agents to disease detection and diagnosis. Their unprecedented properties over biological applications are mainly due to their prolonged blood circulation and reduced side effect. For example, there is a large body of scientific works and interest in the use of nanotechnology for cancer therapy. The accumulation of nanomaterials in tumours by the Enhanced Permeation Effect (EPR) has triggered the development of a battery of materials for cancer therapy and diagnosis. Some of these development have been successful applied. Nanotechnology offers indeed multiple possibilities for drug formulation, controlled delivery, targeting and the combination of therapeutic approaches. Nevertheless, understanding the bio-nano interface is of key importance to guide the design of drug delivery systems with the better therapeutic outcomes. In this context, functionality, and safety is considered an integrated way from the earliest phases of the research and innovation of the nanoproduct, which opens up the focus on safety, making agencies around the world to supply specific regulatory guidelines for such materials before their commercialization. The latter is an openness of toxicology studies which can give information to guide regulatory decisions toward developing a safety net to enable the marketing of products before commercialization. We propose the symposium "Nanomaterials in Medicine, Nanotoxicology and Nanoregulation", which will bring together a state-of-the-art discussion on the safe-by-design nanomaterials to be used in medicine as well as their toxicological aspects, a topic which is increasing over the world, and has been covered by important international conferences. The symposium welcomes all researchers in the field of Nanoscience and Nanotechnology that is interesting in the nanomaterials applied to medicine and Nanotox field. Brazilian and Europeans researchers, in particular, are invited to participate in the symposium as a way of identifying partners and potential collaborative projects between Brazil and EU, following the collaborative research program launched in 2014 by Ministry of Science, Technology, Innovation and Communication of Brazil (MCTIC) and Inmetro. The symposium will create opportunities for participants to present and share experiences, explore new directions and to debate topics with experts from across the globe in the fields of Nanomedicine and Nanotoxicology. This symposium has been offered since 2015 in SBPMat.

Abstracts will be solicited in (but not limited to) the following areas

- *Nanomaterials for Diagnosis and Therapy*
- *Nanomaterials for Biosensors*
- *Nanomaterials for Cancer Immunology*
- *Nanomaterials for Photodynamic (PDT) and photothermic therapy and novel immune therapies for Cancer*
- *Nanomedicine and Bio-Nano Interfaces*
- *Nanomedicine and Imaging*
- *Nanomedicine in Cancer*
- *Nanocarriers for Drug-Delivery*
- *Nanomedicine for Tissue Regeneration*
- *In vitro and In vivo Nanotoxicology issues*
- *Eco/Environmental Nanotoxicology*
- *Risk Management*
- *Regulation and Standardization for Nanoproducts*

Tentative list of invited speakers (To be confirmed)

Dr. Marco Monopoli (Royal College of Surgeons in Ireland) **Dr. Gnter Oberdrster** (University of Rochester Medical Center, USA) **Prof. Dr. Bengt Fadeel** (Karolinska Institutet, Institute of Environmental Medicine) **Dr. Tambet Teesalu** (University of tartu) **Dr. Twan Lammers** (RWTH Aachen University) **Dr. Joao Paulo Figueir Longo** (Universidade de Braslia) **Dr. Luis Alexandre Muehlmann** (Universidade de Braslia)

) **Dr. Alejandro Sosnik** (*TECHNION*) .

Symposium Organizers

Prof. Dr. Valtencir Zucolotto (*Professor Titular do Instituto de Física de São Carlos, Universidade de São Paulo (IFSC-USP)*) **Dra. Juliana Cancino-Bernardi** (*Instituto de Física de São Carlos, Universidade de São Paulo*) **Prof. Dr. Ricardo Bentes de Azevedo** (*Prof. Titular de Nanobiotecnologia - Universidade de Brasília*) **Prof. Dr. Sergio E. Moya** (*Soft Mater Nanotechnology Laboratory, CIC biomaGUNE*) **Prof. Dr. Jos Mauro Granjeiro** (*Especialista Sênior em Metrologia e Qualidade do Instituto Nacional de Metrologia, Qualidade e Tecnologia (Inmetro), e Professor Associado da Faculdade de Odontologia da Universidade Federal Fluminense*) **Dr. Felipe Silva Bellucci** (*Coordenação-Geral de Desenvolvimento e Inovação em Tecnologias Convergentes e Habilitadoras - CGTC Secretaria de Desenvolvimento Tecnológico e Inovação - SETEC Ministério da Ciência, Tecnologia, Inovações e Comunicações - MCTIC*) .

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XIX Brazil MRS Meeting