

## **Symposium H**

### **Title:**

New Trends in Biomaterials and Nanomaterials Applied to Biosystems

### **Scope:**

The symposium will provide a platform for discussing current advancements and future trends in biomaterials for biomedical and dental applications and nanomaterials applied to biosystems. Through the synergistic approach of applied chemistry and physics, material science, electronics, mechanical engineering, biochemistry and medicine, this symposium about biomaterials includes how the deeper insight into biological events and its interplay with nanotechnology may support the development of a generation of novel materials, micro-nano-devices and molecular level approaches suited to solve relevant biomedical problems both for therapy and diagnostics. New materials also play an important role in veterinary, agriculture, biotechnology, smart packaging, food industry and natural environment. The subject matter of the symposium reflects the wide range and transdisciplinary nature of research in materials science and engineering applied to biological systems. The symposium will provide an excellent opportunity to meet and establish collaboration with large number of experts with several specializations including engineering, basic sciences, pharmacists, medical and dental professionals, etc.

### **Session Topics:**

- Biomaterials in constructing tissue substitutes
- Synthetic scaffolds as extracellular matrices
- Bioinspired and biomimetic materials
- Anti-infective biomaterials
- Adhesive biomaterials
- Biomaterials for cardiovascular applications, vascular grafts and embolic devices

- Biomaterials for cancer therapy
- Biomaterials for orthopedic and ophthalmic applications
- Controlled Release
- Biomaterials in dental applications
- Materials applied to Agriculture, smart packaging
- Biodegradable Polymers, Polymers from Renewable Resources and Hydrogels
- Nanotoxicology and Nanoecotoxicology
- Sensors and Biosensors

**Tentative List Invited Speakers:**

Mitsuo Niinomi, Institute for Materials Research Biomaterials Science, Japan

Thierry Gloriant, Institut National des Sciences Appliquées - INSA, France

Yannis Missirlis, University of Patras, Laboratory of Biomechanics and Biomedical Engineering, Greece

Garrett B. McGuinness, Dublin City University, Centre for Medical Engineering, Research, Ireland

Ketul C. Papat, Colorado State University, USA

Pedro L. Granja, Instituto de Ciências Biomédicas, Portugal

Jonny Blake, Imperial College, UK

Alexander L. Yarin, University of Illinois, USA

**Symposium Organizers:**

Carlos Roberto Grandini, Universidade Estadual Paulista "Júlio de Mesquita Filho", Bauru, Brasil

Ana Paula Rosifini Alves Claro, Universidade Estadual Paulista "Júlio de Mesquita Filho", Guaratinguetá, Brasil

Rossana Mara da Silva Moreira Thiré, Universidade Federal do Rio de Janeiro/COPPE, Brasil

Juliano Elvis Oliveira, Universidade Federal da Paraíba, Brasil

**Scientific Committee:**

Prof. Dr. Adalberto Luiz Rosa, Universidade de São Paulo, Faculdade de Odontologia de Ribeirão Preto, Brasil

Prof. Dr. Antonio Augusto Couto, Instituto de Pesquisas Energéticas e Nucleares, Brasil

Prof. Dr. Antonio Carlos Guastaldi, Universidade Estadual Paulista "Júlio de Mesquita Filho", Araraquara, Brasil

Profa. Dra. Clarice Steffens, Universidade Regional Integrada do Alto Uruguai e Missões / Erechim, Brasil

Prof. Dr. Clodomiro Alves Júnior, Universidade Federal do Rio Grande do Norte, Brasil

Dr. Daniel Souza Corrêa, Empresa Brasileira de Pesquisa Agropecuária / Centro Nacional de Pesquisa e Desenvolvimento de Instrumentação Agropecuária, Brasil

Prof. Dr. Durval Rodrigues Júnior, Universidade de São Paulo / Escola de Engenharia de Lorena, Brasil

Profa. Dra. Eliane Ayres, Universidade do Estado de Minas Gerais, Brasil

Prof. Dr. Eliton Souto Medeiros, Universidade Federal da Paraíba, Brasil

Prof. Dr. Ezequiel de Souza Costa Júnior, Centro Federal de Educação Tecnológica de Minas Gerais, Brasil

Prof. Dr. Fauze Ahmad Aouada, Universidade Estadual Paulista / Ilha Solteira, Brasil

Profa. Dra. Glória Dulce de Almeida Soares, Universidade Federal do Rio de Janeiro, Brasil

Prof. Dr. Herman Sander Mansur, Universidade Federal de Minas Gerais, Brasil

Prof. Dr. Luís Augusto Sousa Marques da Rocha, Universidade do Minho, Portugal

Prof. Dr. Marcelo Henrique Prado da Silva, Instituto Militar de Engenharia, Rio de Janeiro, Brasil

Prof. Dr. Marcos Pinotti Barbosa, Universidade Federal de Minas Gerais, Brasil

Dra. Maria Alice Martins, Empresa Brasileira de Pesquisa Agropecuária / Centro Nacional de Pesquisa e Desenvolvimento de Instrumentação Agropecuária, Brasil

Profa. Dra. Maria Cristina Rosifini Alves Rezende, Universidade Estadual Paulista /Araçatuba, Brasil

Prof. Dr. Paulo Henrique de Souza Picciani, Universidade Federal do Rio de Janeiro, Brasil

Prof. Dr. Romualdo Rodrigues Menezes, Universidade Federal de Campina Grande, Brasil

Profa. Dra. Sandra Giacomini Schneider, Universidade de São Paulo / Escola de Engenharia de Lorena, Brasil

Prof. Dr. William Ferreira Alves, Universidade Federal do Acre, Brasil