

Symposium B : Biological, biopolymer-based and bio-inspired materials

Scope of the Symposium

Nature serves as inspiration for the development of new high-performance materials through the mimicking of biological architectures or use of materials such as biopolymers. The mimicking of biological architectures serves for the development of new high-performance synthetic materials as they often exhibit combinations of properties that are mutually exclusive. Understanding the underlying principles that lead to these unusual combinations of properties in biological materials allows materials scientists and engineers to fabricate synthetic materials with unprecedented performance. Biopolymers possess properties such as biocompatibility, low toxicity, biodegradability, as well as abundant raw material which draws the attention for its use in areas such as medical-pharmaceutical, food, environment or energy. This symposium aims at strengthening the interactions between Brazilian and international researchers who are working on biological, biopolymer-based and bio-inspired materials and encourage scientific discussions of recent research, challenges and findings to foster new interdisciplinary collaborations.

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

- *Bio-inspired materials*
- *Bio-mimetic materials*
- *Technologies inspired by nature*
- *Characterization of biological and bio-inspired materials*
- *Processing of cellulose-based materials (e.g. cellulose nanocrystals, nanofibrillated cellulose and bacterial cellulose)*
- *3D printing of Nano cellulose-based materials*
- *Applications of nano and bacterial cellulose products*
- *Biopolymer-based devices in food applications*
- *Biopolymer-based devices in medical-pharmaceutical applications*
- *Biopolymer-based devices in environment or energy applications*

Tentative list of invited speakers (To be confirmed)

Nico Bruns (University of Strathclyde- Scotland) **Orlando Rojas** (Aalto University - Finland) **Thomas Crouzier** (KTH Royal Institute of Technology - Sweden) **Marisa Masumi Beppu** (UNICAMP - Brazil) **Oswaldo Novais de Oliveira Junior** (USP - Brazil) **German Salazar-Alvarez** (Stockholms Universitet - Sweden) **LaShanda Korley** (University of Delaware - USA) **Hortense Le Ferrand** (Nanyang Technological University - Singapore) **Gustav Nyström** (EMPA - Switzerland) **Tanja Zimmerman** (EMPA - Switzerland) **Jon Pokorski** (UCSD - USA) **Pedro Massaguer** (3D Biotechnology Solutions - Brazil) **Ana Luiza Mills** (3D Biotechnology Solutions - Brazil) .

Symposium Organizers

Nico Bruns (University of Strathclyde) **Rafael Libanori** (ETH Zurich) **Gilberto Siqueira** (EMPA) **Sara Velasquez** (University of Strathclyde) **Classius Ferreira da Silva** (Universidade Federal de So Paulo) **Mariana Agostini de Moraes** (Universidade Federal de So Paulo) **Marisa Masumi Beppu** (UNICAMP) **Thomas Crouzier** (KTH Royal Institute of Technology) .