

## **Symposium: Sol-Gel Materials: From Fundamentals to Advanced Applications**

### **Scope of the Symposium**

The Sol-Gel Process is one of the most widely used procedures for the synthesis of advanced ceramics, nanomaterials, hybrid and nanocomposite materials and a versatile tool for coating technology. Several commercial products based on sol-gel technology are on the world market, such as the 3M™ Cubitron™ Abrasive Grain. The estimated expansion rate of the sol-gel business worldwide is 7.96% according TechNavio's analysts for the period from 2012 to 2016. Its wide success is due to simple and low temperature routes to produce a widespread number of multifunctional materials with applications in corrosion protection, art and historical patrimony conservation, optic materials and coatings, electronic coatings, catalysis, energy storage and production, biocatalysis and biosensors, environmental remediation, gas separation and storage, drug delivery, clinical analysis, image contrast agents, hard coatings, smart windows, radiation sensors, among other applications. In this symposium we intend to contemplate works on most of these areas, so as to give the participants an opportunity to learn and expand their awareness of the versatility and power of this methodology for obtaining materials aimed at advance applications.

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

- Sol-Gel Chemistry and New Precursors for Sol-Gel Chemistry
- Aerogels
- Sol-Gel for Photonics and Optical Devices
- Hybrid Materials and Nanocomposites through Sol-Gel process
- Sol-Gel Process For Corrosion Protection
- Sol-Gel Materials and Photocalysis, Photosynthesis, Photochromism
- Sol-Gel for Dentistry and Medical Devices
- Sol-Gel and Heterogeneous (Bio) Catalysts
- Magnetic and Photomagnetic Materials through Sol-Gel process
- Sol-Gel and Materials for Energy Production, Transport, and Storage

**Tentative list of invited speakers:**

- Dominik Eders, Universität Münster, Alemanha  
Nanocarbon-inorganic hybrid materials as next-generation photocatalysts
- Shirley Nakagaki, Universidade Federal do Paraná, Brasil  
Preparation of catalytic solids based on silica obtained by the sol-gel process and different complexes
- Jean M Ribeiro Gallo, Universidade Federal de São Carlos, Brasil  
Design of heterogeneous catalysts for biomass conversion;
- Nelcy Della Santina Mohallem, Universidade Federal de Minas Gerais, Brasil  
Characterization of thin films prepared by sol-gel process with ferroelectric and magnetic properties;
- Watson Loh, Universidade de Campinas, Brasil  
Surfactant and polymer dispersions with liquid crystalline cores
- Miguel Jafelicci Júnior, Universidade Estadual Paulista Julio de Mesquita Filho, Brasil  
Magnetic Nanoparticles surface Functionalization
- Marivalda de Magalhães Pereira, Universidade Federal de Minas Gerais, Brasil  
Sol-gel method as a route for bioactive glass synthesis: from nanoparticles to hierarchical scaffolds
- Mateus Borba Cardoso, Laboratório Nacional de Luz Síncrotron, Brasil  
Bactericidal Properties of Nanoparticles Obtained Through Sol-Gel Approach
- Sara A. Bilmes, Universidad de Buenos Aires, Argentina  
Sol-gel chemistry for the design of living inorganic materials
- Sandra Helena Pulcinelli, Universidade Estadual Paulista Júlio de Mesquita Filho, Brasil  
Nanostructure , swelling, and drug delivery profile of hydrophilic/hydrophobic ureasil-polyether hybrid blends
- Tânia Beatriz Creczynski Pasa, Universidade Federal de Santa Catarina  
Advances in nanotechnology and relationships with nanotoxicology and environment
- Mauricio Ferrari, Università degli Studi de Sassari, Itália  
Photonic Glasses and Confined Structures  
Mariana de Matos M Vieira de Souza (EQ/UFRJ)



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**Symposium Organizers:**

**1. Andrea S de Camargo**

Universidade de São Paulo (IFSC/USP)

**2. Edilson Benvenuti**

Universidade Federal do Rio Grande do Sul

**3. Katia J Ciuffi**

Universidade de Franca

**4. Rogéria Rocha Gonçalves**

Universidade de São Paulo (FFCLRP/USP)

**5. Sidney J. L. Ribeiro**

Universidade Estadual de São Paulo (IQ/UNESP)

**6. Ubirajara Pereira Rodrigues Filho**

Universidade de São Paulo (IQSC/USP)