

Symposium: Surface Engineering - functional coatings and modified surfaces

Scope of the Symposium:

The aim of this symposium is to offer an overview on the frontiers of research, technology and applications of functional coatings and surface modifications by plasma, electron, ion or laser beams. Physicists, chemists, materials scientists, mechanical, material, metallurgical and mining engineers working in the field are the target audience. Areas of particular interest will include, but will not be limited to:

- Nanostructured coatings, such as diamond-like carbon films, nanodiamond films, multi-component systems based on transition metal nitrides/oxides/carbides/borides, hard nanocomposites and multi-functional nanolaminates, with a wide range of industrial applications (automotive and machinery industries, aeronautic and aerospace industries, mining industry, oil and gas industry, medical implants, decoration, electronic industry, decorative, etc.);
- Surface modifications induced by energetic techniques such as ion implantation, laser treatment, plasma processing, etc.;
- Physical and chemical routes of synthesis with emphasis on emerging techniques: hybrid sputtering/CVD techniques, highly ionized sputter deposition, ion enhanced pulsed laser deposition, plasma-assisted chemical vapor deposition, atmospheric plasma, pulsed plasma, plasma-based ion implantation, activated reactive evaporation, cathodic arc, etc;
- Fundamentals of deposition processes, growth modeling, substrate/surface effects, residual stresses, thermodynamics and kinetic modeling;
- Characterization and properties of functional coatings and modified surfaces, including morphology, microstructure, composition, mechanical and tribological properties, tribochemistry, MEMS/NEMS interfaces and chemical properties comprising chemical inertness, anti-microbial or self-cleaning finalities.

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

- super hard coatings and/or nanostructured coatings
- smart and/or self-repairing surfaces
- plasma-assisted diffusion techniques in metal alloys
- decorative coatings
- new deposition techniques
- ultra-low friction coatings
- (super)hydrophobic and hydrophilic coatings
- biocompatibility and anti-microbial and self-cleaning surfaces

- recent progress in nanoindentation
- macro/micro/nanotribology
- advanced surface characterization
- surface metrology
- coatings for oil and gas industry
- coatings for automotive and machinery industries
- coatings for aeronautic and aerospace industries
- surface engineering for mining industries

Tentative list of invited speakers:

1. Amilton Sinatora - Escola Politécnica da Universidade de São Paulo - Brazil
2. Christoph Genzel - Helmholtz-Zentrum Berlin für Materialien und Energie - Germany
3. Tiberiu Minea - Université Paris-Sud - France
4. Christopher Muratore - University of Dayton - USA



Manuscript submission:

Authors are encouraged to prepare manuscripts intended for publication in the international scientific journal **"Surface and Coatings Technology" by Elsevier**.

Requirements for consideration for publication include both satisfactory English usage and novelty of experimental results that are clearly justified or demonstrated by appropriate arguments. Papers not meeting these criteria will be rejected for publication in the Proceedings volume. The same stringent peer-review evaluation process on the basis of the one adopted for regular papers, will be applied.

Symposium Organizers:

1. Carlos Alejandro Figueroa

UCS and Plasmar Tecnologia, Caxias do Sul, RS

2. Haroldo Cavalcanti Pinto

Universidade de São Paulo - EESC-USP, São Carlos, SP

3. Luiz Carlos Casteletti

Universidade de São Paulo - EESC-USP, São Carlos, SP



Sociedade Brasileira de
Pesquisa em Materiais

Scientific committee (tentative list)

Fernando Alvarez (UNICAMP, Campinas, Brazil)

Fernando Lázaro Freire Jr. (PUC-Rio and CBPF, Rio de Janeiro, Brazil)

José Luis Garcia (AB SandvikCoromat R&D, Sweden)

Pedro Grande (UFRGS, Porto Alegre, Brazil)

Thierry Czerwiec (Institut Jean Lamour, Nancy, France)

Vladimir Jesus Trava-Airoldi (INPE, São José dos Campos, Brazil)

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