

Overview

Surface Engineering

Surface Engineering is the technology of preparation and modification of engineering devices that fulfill specific functions without significant change in the component dimensions. It provides technological advantage and produces effective solutions in several industrial sectors like, oil and gas industry, aeronautic and aerospace, car industry, micro and nanoelectronics, etc. While the surface engineering, on one hand, allows for the synthesis of surfaces with unusual and valuable properties, on the other hand, the scientific knowledge and the processes control in this field is still insufficient. Despite of that, Surface Engineering is widely used in industrial production of developed countries and there are many potential applications for different branches of the Brazilian industries.

National Institute of Science and Technology of Surface Engineering

The National Institute of Science and Technology of Surface Engineering (INES) main goal is the development of scientific knowledge that will result in innovative and sustainable development in many industrial segments.

The main objectives of this National Institute of Surface Engineering are:

- investigation of physical-chemical interactions of solid surfaces and interfaces;
- applications of surface engineering and transfer of this knowledge to the industrial productive system and to society;
- formation of high level human resources in surface engineering.

Coordinator: Fernando Lázaro Freire Junior (PUC-Rio)

Executive Board:

Israel J. R. Baumvol (UCS)

Pedro Grande (UFRGS)

Francisco Marques (UNICAMP)

Amilton Sinatora (USP)

Clodomiro Alves (UFRN)

Vladimir Jesus Trava-Airoldi (INPE and Clorovale Diamante S.A.)

Carlos Figueroa (UCS and Plasmar Indústria Metalúrgica)

Besides the coordination of the research activity, the executive board is responsible for the budget, the distribution of fellowships and grants to graduated students and associate researchers, the diffusion of knowledge via the institute website, meetings and scientific conferences as well as contacts with the productive sector. The executive board has an annual meeting, in 2009 it was in Porto Alegre and this year it will be in October at Ouro Preto, during the Annual Meeting of the Brazilian Research Society, while several topics were discussed along the year using internet and video conferences.

Main Researchers:

Pedro Grande (Ion Implantation Laboratory /UFRGS)

Livio Amaral (Ion Implantation Laboratory /UFRGS)

Gabriel Vieira Soares (Ion Implantation Laboratory /UFRGS)

Fernando C. Zawislak (Ion Implantation Laboratory /UFRGS)

Paulo Fernando Fichtner (Ion Implantation Laboratory /UFRGS)

Johnny Ferraz Dias (Ion Implantation Laboratory /UFRGS)

Marcos Vasconcellos (Nanolitography Laboratory/UFRGS)

Cristiano Krug (Chemical-Physics of Surface and Interfaces Laboratory/UFRGS)

Daniel Eduardo Weibel (Chemical-Physics of Surface and Interfaces Laboratory/UFRGS)

João H. Zimnoch dos Santos (Catalysis Laboratory/UFRGS)

Carlos Fortis Kwietniewski (Physical Metallurgy Laboratory/UFRGS)

Dante Franceschini (Thin Films Laboratory /UFF)

Valdir Soldi (Polymeric Materials Laboratory/UFSC)

Claudia Trindade Oliveira (Materials Laboratory / Feevale)

Amilton Sinatora (Surface Phenomena Laboratory /USP)

Roberto Martins de Souza (Surface Phenomena Laboratory /USP)

Paulo Mei (Thermo Mechanical Treatments Laboratory /UNICAMP)

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Monica de Mesquita Lacerda (Thin Films Laboratory/UDESC)
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Francisco Marques (Photovoltaic Research Laboratory/UNICAMP)
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Vladimir Jesus Trava-Airoldi (Materials and Sensors Laboratory/INPE)
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Institutions:

