

PLENARY SESSIONS

Lecturer	Institution	Lecture
Peter Green	Department of Materials Science and Engineering, University of Michigan MRS President 2006, USA	Our shared Responsibility for the Future and Health of Materials Research.
Luis Davidovich	UFRJ, Rio de Janeiro, Brazil	Quantum Information: From Einstein To Quantum Computers
Georg Grathwohl	Keramische Werkstoffe und Bauteile, University of Bremen, Germany	Bioceramics - Materials Engineering at the Interface to Biology
Randall German	Center for Advanced Vehicular Systems, Mississippi State University, USA	Mapping Particle Characteristics into Predictions of Properties for Consolidated Powders.
Thomas Weber	Director of Materials Division, National Science Foundation, USA.	Funding Opportunities in Materials Research with NSF.
Anthony Cheetham	Director of the International Center of Materials Research, UCSB, USA	Opportunities of Collaboration with the ICMR and third countries".

INVITED SPEAKERS

<p>SYMPOSIUM A</p> <p>TRIBOLOGY AND SURFACE ENGINEERING</p>

Invited speaker	Institution	Lecture
David Rigney	Ohio State University, USA	Three approaches to understanding sliding friction and wear
André Paulo Tschiptschin	State University of São Paulo (USP), São Paulo, Brazil	Cavitation-erosion resistance of stainless steels: a strong composition and microstructure dependent property

<p>SYMPOSIUM B</p> <p>RECENT ADVANCES ON POWDER TECHNOLOGY</p>
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Invited speaker	Institution	Lecture
Randall German	Center for Advanced	Modeling of Powder Metallurgy Processes –

	Vehicular Systems, Mississippi State University, USA	die compaction, sintering, injection molding, and pressure-assisted sintering
Sonja-Michaela Gross	Forschungszentrum, Jülich, Germany	Glass-ceramic materials as sealants for Solid Oxide Fuel Cell applications
Dulce Maria de Araújo Melo	State University of Rio Grande do Norte, Brazil	Ceramic Oxides in Catalysis

<p>SYMPOSIUM C</p> <p>MATERIALS FOR HIGH TEMPERATURE APPLICATIONS</p>

Invited speaker	Institution	Lecture
Anton Möslang	Karlsruhe Research Center, Germany	Structural materials for fusion nuclear reactors
Carlos Angelo Nunes	Universidade de São Paulo (USP), Lorena, Brazil	Refractory metals and alloys: processing and applications
Ronald Lesley Plaut	Universidade de São Paulo (USP), São Paulo, Brazil	Austenitic stainless steels at high temperatures: processing, microstructure and performance
Terence G. Langdon	University of Southern California, Los Angeles, USA	The processing of ultrafine-grained materials through the application of severe plastic deformation

<p>SYMPOSIUM D</p> <p>MATERIALS FOR PHOTODEVICES</p>
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Invited speaker	Institution	Lecture
Frank Nüesch	EMPA, Zürich, Switzerland	Cyanine Dyes for Organic Photovoltaics
Vladimir Dyakonov	University of Würzburg, Germany	Influence of the active layer morphology on the device performance of polymer-fullerene bulk heterojunction solar cells
Victor Klimov	Los Alamos National Laboratory, USA	New Paradigm For Solar Energy Conversion Using Semiconductor Nanocrystals
Younes Messadeq	UNESP, Araraquara, Brazil	Photosensitive glasses for optical storage

<p>SYMPOSIUM E</p> <p>INTERNATIONAL SYMPOSIUM ON HYBRID MATERIALS AND THEIR APPLICATIONS</p>
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Invited speaker	Institution	Lecture
Allan Jacobson	University of Massachusetts, USA	Chirality and flexibility in hybrid inorganic – organic structures
Bruce Dunn	UCLA, USA	Biohybrid Materials: Designing Sol-Gel Materials with Biochemical Properties
Fernando Galembeck	Unicamp, Brazil	Adhesion in heterogeneous systems: formation of nanohybrid aggregates
Jairton Dupont	UFRGS, Porto Alegre, Brazil	The Template-Like Effect of Ionic Liquids for the Preparation of Nanoparticles
Peter Green	University of Michigan, USA	The ordering transition and structural instabilities in block copolymer/nanoparticle thin film systems
Tony Cheetham	UCSB	Recent Developments in Hybrid Inorganic-Organic Framework Materials

SYMPOSIUM F
NANOSTRUCTURES AND DEFECT ANALYSIS BY ELECTRON MICROSCOPY

Invited speaker	Institution	Lecture
Barry Carter	University of Minnesota	Use of in situ tem to Study Nanomaterials
Christian Colliex	Orsay, France	Sub-NM EELS mapping of physical properties in individual nanostructures
Daniel Ugarte	Unicamp, Brazil	Nanowires and Suspended Atomic Chains from Au-Ag Alloys
Grant Norton	Washington State, USA	Fabrication and Characterization of Nanostructures for Advanced Energy Applications
Jim Bentley	Oak Ridge NL	Elemental mapping of nano-materials in TEM and STEM modes
Jimmy Liu	Monsanto	Understanding the nature of nanostructured heterogeneous catalysts
Mark Aindow	U. Connecticut, USA	Transmission electron microscopy studies of mesoporous carbon aerogels and carbon/metal nano composites produced using supercritical carbon dioxide based process
Nigel Browning	University of California	Atomic scale scanning transmission electron microscopy
Paul Midgley	Cambridge, England	Electron Tomography of Nanostructures
Walter Botta	UFSCar, São Carlos, Brazil	Gas Atomization of Fe ₇₂ Nb ₄ Si ₁₀ B ₁₄ Metallic Glass

		Characterization by Electron Microscopy of the Reactive Milled Powders of Mg + 5%FeF
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SYMPOSIUM G SYNCHROTRON RADIATION IN MATERIALS SCIENCE

Invited speaker	Institution	Lecture
Anne Marie Flank	Synchrotron-SOLEIL, Saclay, France	Micro-spectroscopies extended to the soft x-ray domain.
Arnaldo N. de Brito	Laboratório Nacional de Luz Síncrotron (LNLS), Campinas	Synchrotron based spectroscopic studies applied to material science at LNLS
Cesar Cusatis	Departamento de Física, UFPR, Curitiba	Phase contrast radiography for characterization of materials
Félix Requejo	INIFTA and Instituto de Física, Universidad Nacional de La Plata, Argentina	Hard and soft x-ray absorption studies of structure, electronics and magnetism in nanostructured systems: films, nanoparticles and ordered porous materials
Hélio Tolentino	Laboratoire de Cristallographie/CNRS, Grenoble, France	Structure and magnetism of thin films by surface X-ray diffraction
Iris Torriani	Instituto de Física G. Watagin and LNLS, UNICAMP, Campinas	Real time SAXS-WAXS experiments in oriented macromolecular systems and triblock copolymer materials
Rogério Paniago	Instituto de Física, UFMG, Belo Horizonte	Chemical and magnetic mapping of interfaces by resonant x-ray scattering
Sérgio Morelhão	Instituto de Física, USP, São Paulo	A few contributions in synchrotron X-ray analysis of nanostructured semiconductor devices and amorphous thin films

SYMPOSIUM H 5TH BRAZILIAN ELECTROCERAMICS SYMPOSIUM
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Invited speaker	Institution	Lecture
D. Z. de Florio	UNESP, Araraquara, Brazil	Ceramic materials and industrial development directions of solid oxide fuel cells
E. Traversa	University Tor Vergata, Roma, Italy	Influence of the Nanostructure on the Electrochemical Performance of Materials for Intermediate Temperature Solid Oxide Fuel Cells (IT-SOFCs)
F. C. Fonseca	IPEN, S. Paulo, Brazil	Fabrication and testing of solid oxide fuel cells
J. A. Eiras	UFSCar, S. Carlos, Brazil	Dielectric dispersion in ferroelectric

		materials
E. R. Leite	UFSCar, S. Carlos, Brazil	Chemical Synthesis of Nanostructured Ceramic Thin Film for Electronic Electrochemical Devices
Dr. Agusti Sin	Pirelli Labs, Torino, Italy	NiCu/CGO anodes for direct oxidation of hydrocarbons and alcohols
A. Caballero	Instituto de Ceramica y Vidrio, Madrid, Spain	Microstructure and Charge Transport in WO ₃ -Bi ₄ Ti ₃ O ₁₂ Ceramics
Miriam S. Castro	INTEMA, Mar del Plata, Argentina	Development of BaTiO ₃ -epoxy composites of high permittivity
P. R. Bueno	UNESP, Araraquara, Brazil	Admittance Spectroscopy of Polycrystalline Semiconductors
Danilo Suvorov	Advanced Materials Department, Jozef Stefan Institute, Slovenia	Designing Materials For Glass-Free LTCC Modules

**SYMPOSIUM I
NANOSTRUCTURED BIOLOGICAL MATERIALS**

Invited speaker	Institution	Lecture
Redouanne Borsali	CNRS, Bordeaux, France	Micelle/Protein Complexes: A route towards drug delivery
Bruno Samori	University of Bologna, Italy	Mastering the complexity of DNA nanoconstructions
Pietro Ciancaglini	FFCLRP, Universidade de São Paulo, Ribeirão Preto	Construction of carrier liposome systems for alkaline phosphatase obtained from culture of human alveolar bone cells
Henrique L. Gomes	Universidade do Algarve, Portugal	Impedance Based Bio-Chip To Monitor Interactions Between Cells
Alberto Pasquarelli	University of Ulm, Germany	Biochips: Technologies And Applications
Robert Pecora	Stanford University, USA	Self and Mutual Diffusion in Solutions of Nanosize Biological Electrolytes
Enrico Traversa	Universita di Roma Tor Vergata, Italy	Nanostructured Materials for the Environmental Control of Cell and Microorganism Growth
Maria Elena Vela	Universidad de La Plata, Argentina	Contributions from the Interface and Surface Science to the Understanding of Biological Processes

**SYMPOSIUM J
2nd BRAZILIAN SYMPOSIUM ON MICROSCOPIC APPLIED TO FORENSIC**

SCIENCE (2nd SBMACF)

Invited speaker	Institution	Lecture
Skip Palenik	Microtrace Scientific, Elgin - Illinois, USA	Casework examples illustrating the integration of polarized light and scanning electron microscopy in the study of microscopic trace evidence
Horst Katterwe	"Bundeskriminalamt", Forensic Science Institute, Materials Technology, Wiesbaden, Germany	<ul style="list-style-type: none"> ✓ Serial number restoration in metals and polymers ✓ Toolmarks and fracture matching by SEM
Frank Bauer	Oxford Instruments GmbH, Wiesbaden, Germany	Limits in Particle Detection with Automated Systems in GSR
David G. Howitt	Graduate Program in Forensic Science - University of California, Davis, California, USA	Tool marks and impression evidence in the analysis of bullets
Ladário da Silva	Escola Naval - Marinha do Brasil, Rio de Janeiro, Brazil	Recovering serial numbers in laser engraved frames of firearms
Andrea Porto Carreiro Campos	Departamento de Polícia Técnico-Científica, Rio de Janeiro, Brazil	Firearms comparisons
André P. Tschiptschin	Escola Politécnica, State University of São Paulo (USP), São Paulo, Brazil	Failure analysis of an exploded drum of a 454 CASULL Gun

SYMPOSIUM L MICROSCOPY APPLIED TO THE INDUSTRIAL WORLD

Invited speaker	Institution	Lecture
Rogério Kwitko	CVRD, Brazil	Automated Mineralogy Applied to Characterization of Larite Ores : Experience of CVRD
George Vander Voort	Buhler, USA	Preparation of medical devices
Carlos Nelson Elias	Instituto Militar de Engenharia, Rio de Janeiro, Brazil	Applications of the electronic microscopy in the research, development and manufacturing of dental implants
Paciornik, S.	DCMM PUC-Rio, Rio de Janeiro, Brazil	Advances In Composite Material Characterization Through Digital Microscopy

SYMPOSIUM M
ADVANCED MICROSCOPY TECHNIQUES FOR MATERIALS
CHARACTERIZATION AND MODIFICATION

Invited speaker	Institution	Lecture
Alice F. Bastos da Silva	Max-Planck-Institut für Eisenforschung, Germany	3D Orientation Microscopy In A Fib-Sem
Daniel Ugarte	IFGW-Unicamp and LNLS, Brazil	Nanomanipulator for in-situ SEM experiments
Fernando A. Ponce	Department of Physics - Arizona State University, USA	Combined determination of the structural, electrical, and optical nano-scale properties of semiconductors
Fernando Galembeck	IQ-Unicamp, Brazil	Electrostatic Charging Of Insulators: Role Of Atmospheric Water Adsorption
Flávio Plentz	UFMG, Brazil	Electron beam lithography as a tool for nanofabrication
Jacobus W. Swart	FEEC/CCS-Unicamp, Brazil	The Research Networks NAMITEC and NANOFAB: nanocharacterization and nanofabrication activities
Mônica Cotta	IFGW-Unicamp, Brazil	Semiconductor nanostructures: tuning shapes, spatial positioning and electrical properties.
Pavel Dorozhkin	Institute of Solid State Physics, Chernogolovka, Russia and NT-MDT Company	Modern trends in subwavelength microscopy: confocal and tip enhanced raman and fluorescence microscopy, 3D imaging, light transport in nanostructures, combination with AFM
Phillip E. Russell	Materials Science and Engineering - North Carolina State University, USA	Focused Ion Beam (FIB) Applications in Nanofabrication, Nanomanipulation, Microscopy, and Microanalysis
Rogério Kwitko Ribeiro	CVRD – Centre for Mineral Development, Brazil	QEMSCAN technology: A complete tool for sem-based automated mineralogy
Oliver Wilhelmi	FEI Co., Holland	Nanoprototyping for material characterization with DualBeam instruments

SYMPOSIUM N
COMPUTATIONAL SIMULATION AND NUMERICAL APPROACHES TO
MATERIALS DESIGN

Invited speaker	Institution	Lecture
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Carlos Alberto Kuhnen	Departamento de Física - Universidade Federal de Santa Catarina, Florianópolis, Brazil	Ab initio methods and ground-state properties of materials
Marco Antonio Chaer Nascimento	Instituto de Química, State University of Rio de Janeiro, Brazil	Modeling Materials: Methodologies and Applications
Carlton A. Taft	Centro Brasileiro de Pesquisas Físicas, Brazil	Applications of empirical, semi- empirical, ab-initio and bandtheoretical models to interdisciplinary problems in physical chemistry, material science and biology
Juan Andres	Universitat Jaume I, Castelló, Spain	Theoretical and Computational Studies in Material Science
Helena Maria Petrilli	Instituto de Física – USP, Brazil	Computer Simulations Through ab initio Electronic Structure Calculations