FCSE-2011

PRELIMINARY PROGRAM

www.fcse-montreal.ca

6th Symposium on

FUNCTIONAL COATINGS AND SURFACE ENGINEERING

Organized by

RQMP - Regroupement québécois sur les matériaux de pointe

in collaboration with **AVS** Science and Technology of Materials, Interfaces and Processing

and hosted by École Polytechnique de Montréal *and* Université de Montréal

MONTREAL
QUEBEC
CANADA

JUNE 5-8
2011

SYMPOSIUM TOPICS

- Thin films with tailored optical, mechanical, tribological, electrical, thermal and other functional properties
- Smart coating materials and film systems
- Vacuum and non-vacuum deposition processes, process control and diagnostics
- Plasma processes and plasma-surface interactions
- Thin film systems for passive and active optical filters and waveguides
- Protective tribological coatings with enhanced wear, scratch, abrasion, erosion and corrosion resistance
- Characterization methods of the microstructure and of the functional properties
- Thin film materials and systems for optical, optoelectronic, aerospace, energy-control, biomedical, micro-system, sensor and other applications
- Surface and interface engineering approaches for the control of adhesion, stress and environmental stability

PROGRAM AND SCHEDULE

Short courses (full day) – Sunday, June 5, 2011

"Nucleation and growth of nanostructures: Materials science of small things: self-assembly and self-organization" by Joe Greene, University of Illinois at Urbana-Champaign, IL, USA

"Pulsed plasmas for materials processing" by André Anders, Lawrence Berkeley National Laboratory, Berkeley, CA, USA

Symposium technical program – Monday, June 6, and Tuesday, June 7, 2011

Invited lectures and contributed oral presentations - Poster presentations - Awards for the best posters -
Table-top exhibit by manufacturers and vendors - Visit of research facilities - Symposium reception and social event

Hands-on workshops – full day – Wednesday, June 8, 2011

"Mechanical properties of films and coatings" (sponsored by Hysitron)
"Optical characterization and reverse engineering - Spectroscopic ellipsometry" (sponsored by J.A. Woollam Co.)
"Tribological and scratch-adhesion properties of surface engineered materials" (sponsored by CSM Instruments)

ÉCOLE POLYTECHNIQUE MONTRÉAL

Université de Montréal

RQMP

ORGANIZERS OF THE FCSE-2011 SYMPOSIUM

MEETING CHAIRS | Ludvik Martinu and Jolanta E. Klemberg-Sapieha
Department of Engineering Physics, École Polytechnique de Montréal

MEMBERS OF THE ORGANIZING COMMITTEE | B. Baloukas, E. Bousser, M. Hála, D. Li
E. Saint-Jacques, R. Vernhes, O. Zabeida

DATES AND DEADLINES

			Pre-deadline	Post-deadline
Technical program *June 6 & 7*	Students	*With conference dinner and social event*	120$	150$
		Without conference dinner and social event	100$	120$
	Regular participants	*With conference dinner and social event*	250$	280$
		Without conference dinner and social event	220$	250$
Short course *June 5*	Students		100$	130$
	Regular participants		400$	440$
Workshop *June 8*	Students		100$	120$
	Regular participants		360$	400$
Exhibitors *June 6*	One table, one representative		400$ per table *for special arrangements, please contact the organizers*	

Prices in US$

Registration fee includes: *book of abstracts, documentation, refreshments & lunches*

Registration deadline for all activities **April 29, 2011**

PRELIMINARY LIST OF INVITED SPEAKERS

Joseph E. Greene, University of Illinois, Urbana, Illinois, USA
"Growth of self-assembled nanostructures: The materials science of small things" **Plenary lecture**

André Anders, Lawrence Berkeley National Laboratory, Berkeley, California, USA
"Progress in understanding HIPIMS discharges"

Ralf Bandorf, Fraunhofer IST, Braunschweig, Germany
"Nanocomposite materials for strain gauge applications"

Richard R. Chromik, McGill University, Montreal, Quebec, Canada
"Third bodies and scaling effects in tribology"

Gregory J. Exarhos, Pacific Northwest National Laboratory, Richland, WA, USA
"Electro-optical properties modification in laser irradiated films"

Masoud Farzaneh, Université du Québec à Chicoutimi, Chicoutimi, Quebec, Canada
"Nanostructured coatings for protecting power network equipment subjected to atmospheric icing and pollution"

Carl Lampert, Star Science, Santa Clara, California, USA
"Smart materials and coating systems for energy efficiency in building and transportation"

David McKenzie, University of Sydney, Sydney, Australia
"Advances in the modeling of nanostructured materials"

Kevin Robbie, Queen's University, Kingston, Ontario, Canada
"Heat of condensation-driven self-assembly of thin film nanostructures"

Luc Stafford, Université de Montréal, Montreal, Quebec, Canada
"Functionalization of wood surfaces using atmospheric pressure dielectric barrier discharges"

M.C.M. (Richard) van de Sanden, Eindhoven University of Technology, Eindhoven, The Netherlands
"High rate remote plasma deposition of a-C:H: radical chemistry vs. ion energy"

Andrey A. Voevodin, Wright Patterson AFB, Ohio, USA
"Adaptive nanostructured surfaces for contact interfaces: tribological, electrical, thermal"

Wenjun Zhang, City University of Hong Kong, Kowloon, Hong Kong SAR, China
"Growth and property studies of cubic boron nitride films"

Short course A

"Nucleation and growth of self-assembled nanostructures: materials science of small things: self-assembly and self-organization"

by Joe Greene, University of Illinois at Urbana-Champaign, IL, USA

The goal of this course is to:

- *Understand the primary experimental variables and surface reaction paths controlling nucleation/growth kinetics and microstructural evolution during vapor-phase deposition.*
- *Learn about the primary classical and quantum effects which controllably alter the properties of increasingly small nanostructures.*
- *Understand the mechanisms controlling self-assembly and self-organization during nanostructure growth.*
- *Learn how to better design nanostructure growth processes.*

Short course B

"Pulsed plasmas for materials processing"

by André Anders, Lawrence Berkeley National Laboratory, Berkeley, CA, USA

This course is intended for engineers, technicians, students, and others interested in high power pulse plasma processing of materials. The course consists of a general introduction to the basics of plasma and sheath physics, followed by detailed explanations of the processes in pulsed plasmas and in pulsed bias approaches, and of the effects of power density on plasma properties.

www.fcse-montreal.ca
for program, registration, accommodation, travel, information updates

Specific information
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