

## CONFERENCE PROGRAM

### TUESDAY 24 OCTOBER

**8:00** **Welcome of the participants**  
*Registration and badges pick-up*

**8:45** **Opening ceremony**  
*Nikola Radic, Chair of Scientific Committee*

Session I - Nanomaterials and nanostructured thin films I / Magnetron sputtering

**9:00** **1-1\_PL24 - The materials science of fullerene-like carbon nitride (CNx) thin films;  
- Effects of doping on structure and mechanical resiliency**

*Plenary speaker*

**L. Hultman**

*Thin Film Physics Division, Department of Physics, (IFM), Linköping Univ. (SE)*

**9:45** **1-2\_OR85 - Towards a better understanding of Titanium Nitride thin film growth microstructures  
obtained by GLAD: computational vs. experiments**

**G. Abadias<sup>1</sup>, B. Bouaouina<sup>1</sup>, R. Mareus<sup>1</sup>, F. Nita<sup>1</sup>, C. Mastail<sup>1</sup>, A. Besnard<sup>2</sup>**

<sup>1</sup>*Institut Pprime, CNRS-Univ. Poitiers-ENSMA - Chasseneuil-Futuroscope (FR)*

<sup>2</sup>*ENSAM, LaBoMAP - Cluny (FR)*

**10:05** **1-3\_OR51 - Evolution of structure, residual stresses and mechanical properties of  
nanocrystalline multi-layered AlCrN-AlTiN coatings upon thermal loading revealed by cross-  
sectional X-ray diffraction**

**S. Klima<sup>1</sup>, N. Jäger<sup>1</sup>, M. Meindlhumer<sup>1</sup>, H. Hruby<sup>2</sup>, C. Mitterer<sup>3</sup>, J. Keckes<sup>4</sup>, R. Daniel<sup>1</sup>**

<sup>1</sup>*Montanuniversität Leoben - Leoben (AT)*

<sup>2</sup>*Eifeler-Vacotec GmbH - Düsseldorf (DE)*

<sup>3</sup>*Department Physical Metallurgy and Materials Testing, Montanuniversität Leoben (AT)*

<sup>4</sup>*Montanuniversität Leoben and Erich Schmid Institute for Materials Science, Leoben (AT)*

**10:25** **1-4\_OR78 - Structural and mechanical properties of ZrMo thin films: from the nano-crystalline  
to the amorphous state**

**A. Borroto Ramírez<sup>1</sup>, S. Bruyère<sup>1</sup>, N. Thurieau<sup>1</sup>, C. Gendarme<sup>1</sup>, E. Jimenez-Piqué<sup>2</sup>, J.J. Roa<sup>2</sup>,**

**J.F. Pierson<sup>1</sup>, F. Mücklich<sup>3</sup>, D. Horwat<sup>1</sup>**

<sup>1</sup>*Institut Jean Lamour, Univ. Lorraine, Nancy (FR)*

<sup>2</sup>*Department of Materials Science and Engineering, Univ. Politecnica de Catalunya, Barcelona (ES)*

<sup>3</sup>*Department of Materials Science and Engineering, Saarbrücken (DE)*

**10:45** **Coffee break 30'**

**11:15** **1-5\_KN26 - Catalytic nanomaterials for fuel cell by magnetron sputtering**

*Keynote speaker*

**A. Caillard, S. Cuynet, J. Berndt, T. Lecas, A.-L. Thomann, P. Brault**

*GREMI, Univ. Orléans (FR)*

**11:45** **1-6\_OR69 - Structural characterization and opto-electronical properties of copper  
carbon composite thin films**

**A. Lelong<sup>1</sup>, M. Lejeune<sup>1</sup>, A. Zeinert<sup>1</sup>, S.E. Rodil<sup>2</sup>, J. Perez Álvarez<sup>2</sup>, R. Mirabal-Rojas<sup>2</sup>**

<sup>1</sup>*Laboratoire de Physique de la Matière Condensée, Univ. Picardie Jules Verne - Amiens (FR)*

<sup>2</sup>*Instituto de Investigaciones en Materiales, Univ. Nacional Autónoma de México - Mexico (MX)*

**12:05** **1-7\_OR90 - Novel preparation route for thin electrolyte films for cathode supported  
solid oxide fuel cells**

**G. Tsimekas, C. Savaniu, P. Connor, J. Irvine**

*School of Chemistry, Univ. St. Andrews (UK)*

**12:25** **Lunch**

- 14:00 2-1\_PL20 - Live investigations of thin film deposition by advanced scanning tunneling microscopy**  
*Plenary speaker*  
**J.W.M. Frenken**  
*Advanced Research Center for Nanolithography, Amsterdam (NL)*
- 14:45 2-2\_OR65 - Study on metal nitride mono- and multi-layered films by spherical aberration corrected TEM  
**Z. Zhang**  
*Erich Schmid Institute of Materials Sciences, Austrian Academy of Sciences - Leoben (AT)*
- 15:05 2-3\_OR59 - EnviroESCA – Routine surface analysis under environmental conditions  
**L. Socaciu-Siebert, M. Meyer, P. Dietrich, S. Bahr, A. Thissen**  
*SPECS Surface Nano Analysis GmbH - Berlin (DE)*
- 15:25 2-4\_OR36 - Measurement system for thermophysical properties of thin films in a broad temperature range  
**H-W. Marx<sup>1</sup>, V. Linseis<sup>2</sup>**  
<sup>1</sup>*Linseis Messgeräte GmbH - Selb (DE)*  
<sup>2</sup>*Universität Hamburg - Hamburg (DE)*
- 15:45 Coffee break 30'**
- 16:15 2-5\_KN103 - Probing interface-driven properties in oxide heterostructured thin films by scanning transmission electron microscopy  
*Keynote speaker*  
**O. Stephan**  
*LPS, Univ. Paris Sud, Orsay (FR)*
- 16:45 2-6\_OR96 - Quantifying the phase separation in mixed TiO<sub>2</sub>/SiO<sub>2</sub> thin films with X-ray photoelectron spectroscopy - combined experimental and computational study  
**P. Ondracka<sup>1</sup>, M. Richard<sup>2</sup>, D. Necas<sup>1</sup>, D. Holec<sup>3</sup>, S. Elisabeth<sup>2</sup>, A. Goulet<sup>2</sup>, L. Zajicková<sup>1</sup>**  
<sup>1</sup>*CEITEC, Masaryk Univ. - Brno (CZ)*  
<sup>2</sup>*Univ. Nantes (FR)*  
<sup>3</sup>*Montanuniversität Leoben - Leoben (AT)*
- 17:05 2-7\_OR84 - Photoelectric properties of brush electrodeposited CuIn<sub>0.7</sub>Ga<sub>0.3</sub>S<sub>2</sub> films  
**A. Panneerselvam<sup>1</sup>, B. Kajamaideen<sup>2</sup>, K.R. Murali<sup>3</sup>**  
<sup>1</sup>*Department of Physics, Paavai Engineering College, Pachal - Namakkal (IN)*  
<sup>2</sup>*Department of Physics, Kalaignar Karunanidhi Institute of Technology - Coimbatore (IN)*  
<sup>3</sup>*Department of Theoretical Physics, Univ. Madras - Chennai (IN)*
- 17:25 2-8\_OR31 - Influence of RE concentration in TiO<sub>2</sub> thin films on the anatase to rutile phase transformation  
**D. Scoca<sup>1</sup>, V. Antunes<sup>1</sup>, S. Cucatti<sup>1</sup>, A. Zanatta<sup>2</sup>, F. Alvarez<sup>1</sup>**  
<sup>1</sup>*UNICAMP - Campinas (BR)*  
<sup>2</sup>*São Carlos Institute of Physics (USP) - São Carlos (BR)*
- 17:45 Flash Exhibitors presentations**
- 18:00 Cocktail**  
*sponsored by the exhibitors*

WEDNESDAY 25 OCTOBER

Session III - Nanomaterials and nanostructured thin films II / Renewable Energies

- 08:30 3-1\_PL21 - Atomic layer deposition for photovoltaics - ALD4PV**  
*Plenary speaker*  
**E. Kessels**  
*Department of Applied Physics, Eindhoven Univ. of Technology (NL)*
- 09:15 3-2\_OR79 - Atomic layer deposition of copper oxide and metallic copper thin films on ZnO  
**C. De Melo Sanchez<sup>1</sup>, M. Jullien<sup>1</sup>, J.F. Pierson<sup>1</sup>, Y. Battie<sup>2</sup>, A. En Naciri<sup>2</sup>, F. Mücklich<sup>3</sup>**  
<sup>1</sup> *Institut Jean Lamour, Univ. Lorraine, Nancy (FR)*  
<sup>2</sup> *LCP-A2MC, Institut Jean Barriol, Univ. Lorraine, Metz (FR)*  
<sup>3</sup> *Department of Materials Science and Engineering, Saarland Univ. Saarbrücken (DE)*
- 09:35 3-3\_OR67 - Study of the structure and the growth mechanism in hexagonal nickel thin films deposited via plasma-enhanced atomic layer deposition  
**P. Motamedi<sup>1</sup>, K. Bosnick<sup>1</sup>, K. Cui<sup>1</sup>, K. Cadien<sup>2</sup>, J. Hogan<sup>3</sup>**  
<sup>1</sup> *National Research Council Canada – National Institute for Nanotechnology - Edmonton (CA)*  
<sup>2</sup> *Department of Chemical and Materials Engineering, Univ. Alberta - Edmonton (CA)*  
<sup>3</sup> *Department of Mechanical Engineering, Univ. Alberta, Edmonton (CA)*
- 09:55 3-4\_OR39 - Phase stability and morphology in the vapor transport growth of Bi<sub>2</sub>Te<sub>3</sub> using elemental Bi and Te sources  
**O. De Melo Pereira<sup>1</sup>, O. Concepción<sup>2</sup>, A. Escobosa<sup>3</sup>, J. Roque<sup>4</sup>, V. Torres Costa<sup>5</sup>, M. Manso Silván<sup>5</sup>**  
<sup>1</sup> *Univ. La Habana (CU) &, Univ. Madrid (ES)*  
<sup>2</sup> *CINVESTAV, IPN, Mexico (MX)*  
<sup>3</sup> *Sección de Electrónica del Estado Sólido, Departamento de Ingeniería Eléctrica, Mexico (MX)*  
<sup>4</sup> *Laboratorio Avanzado de Nanoscopía Electrónica, CINVESTAV, IPN, Mexico (MX)*  
<sup>5</sup> *Departamento de Física Aplicada, Univ. Madrid (ES)*
- 10:15 Coffee break 30'**
- 10:45 3-5\_KN30 - What are the benefits of functional surface engineering partnerships and cross sectorial alliances for academia and industry?  
*Keynote speaker*  
**J.L. Endrino**  
*SENTI, Cranfield Univ. (UK)*
- 11:15 3-6\_OR116 - Erosion process of electrodes in atmospheric pressure plasma jets as source of metallic particles production  
**V. Marascu<sup>1</sup>, A. Lazea-Stoyanova<sup>1</sup>, C. Stancu<sup>1</sup>, S.D. Stoica<sup>1</sup>, G. Dinescu<sup>2</sup>**  
<sup>1</sup> *National Institute for Lasers, Plasma and Radiation Physics - Magurele (RO)*  
<sup>2</sup> *Faculty of Physics, University of Bucharest - Magurele (RO)*
- 11:35 3-7\_OR33 - Evidence of vacancies enhanced nitrogen diffusion in Xe ion bombarded AISI 316L  
**S. Cucatti<sup>1</sup>, C.M. Menezes<sup>2</sup>, V.G. Antunes<sup>1</sup>, C.A. Figueroa<sup>2</sup>, F. Alvarez<sup>1</sup>**  
<sup>1</sup> *IFGW - Unicamp - Campinas (BR)*  
<sup>2</sup> *PGMAT – Univ. Caxias do Sul - Caxias Do Sul (BR)*
- 11:55 3-8\_OR32 - Electrochemical synthesis of nanostructured coatings and nanomaterials in molten salts  
**S. Kuznetsov**  
*I.V. Tananaev Institute of Chemistry, Kola Science Centre RAS - Apatity (RU)*
- 12:25 Lunch**

14:00 **Poster session**

15:55 **Coffee break 30'**

Session IV – Process Control

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16:25 **4-1\_PL23 - Quantum mechanically guided materials design for surface engineering**

*Plenary speaker*

**J.M. Schneider**

*Materials Chemistry, RWTH Aachen Univ., Aachen (DE)*

17:10 **4-2\_OR94 - PEO processing with sequential bipolar pulsed current waveforms**

**V. Ntomprougkidis, J. Martin, A. Nominé, G. Henrion**

*Institut Jean Lamour, CNRS - Nancy (FR)*

17:30 **4-3\_OR76 - Plasma instabilities during low power magnetron sputtering**

**A. Nominé, R. Romain, N.S.J. Braithwaite**

*The Open Univ. - Milton Keynes (UK)*

17:50 **4-4\_OR47 - Hydrogen effect of the low-resistive ITO films on plastic substrates**

**T. Fukuda, Y. Kamada, T. Maeda, T. Shingu**

*Department of Physical Electronics and Informatics, Osaka City Univ. - Osaka (JP)*

18:10 **4-5\_OR14 - Molecular layer deposition of polyurethane on native Al deposition regime and layer properties**

**F. Fug, H. Jost, A. Ahmed, C. Pirro, W. Possart**

*Saarland Univ. - Chair for Adhesion and Interphases in Polymers - Saarbruecken (DE)*

19:30 **Gala dinner**

THURSDAY 26 OCTOBER

Session V - Nanomaterials and nanostructured thin films III / large area

08:30 5-1\_PL25 - Plasma assisted PVD approaches for synthesis 2D electronic materials

*Plenary speaker*

**A.A. Voevodin**

*UNT, Denton (USA)*

09:15 5-2\_OR46 - Elaboration of nanostructured coatings on large surfaces

**O. Sublemontier<sup>1</sup>, Y. Rousseau<sup>1</sup>, Y. Leconte<sup>1</sup>, C. Petit<sup>2</sup>, E. Monsifrot<sup>3</sup>, F. Perry<sup>3</sup>, J.P. Gaston<sup>4</sup>,  
P. Chapon<sup>4</sup>, M. Stchakovski<sup>4</sup>, P. Briois<sup>5</sup>, A. Billard<sup>5</sup>, F. Torrent<sup>6</sup>**

<sup>1</sup>CEA-IRAMIS-NIMBE, Saclay (FR)

<sup>2</sup>SOCRATE-INDUSTRIE, Le Belieu (FR)

<sup>3</sup>DEPHIS, Etupes (FR)

<sup>4</sup>HORIBA-JOBIN YVON, Palaiseau (FR)

<sup>5</sup>UTBM/FEMTO-ST, Montbéliard (FR)

<sup>6</sup>DECAYEUX-STI, Saucourt (FR)

09:35 5-3\_OR49 - Large area Au films permeated through hexagonal close packed Si pillars

**M. Manso Silvan<sup>1</sup>, P. Pellacani<sup>1</sup>, D. Gallach Pérez<sup>1</sup>, C. Morasso<sup>2</sup>, L. Fornasari<sup>3</sup>, F. Marabelli<sup>3</sup>**

<sup>1</sup>Univ. Madrid (ES)

<sup>2</sup>Fondazione Don Carlo Gnocchi - Milan (IT)

<sup>3</sup>Univ. Pavia (IT)

09:55 5-4\_OR81 - Synthesis and characterization of Ni-based nanoparticles by low-pressure plasma treatment of a solid precursor

**E. Hays<sup>1</sup>, Y. Busby<sup>1</sup>, M. Da Silva Pires<sup>1</sup>, N. Job<sup>2</sup>, J.J. Pireaux<sup>1</sup>**

<sup>1</sup>LISE, PMR, Univ. Namur (BE)

<sup>2</sup>Univ. Liège, Department of Chemical Engineering – NCE - Liège (BE)

10:15 Coffee break 30'

10:45 5-5\_KN29 - Reactive magnetron sputtering – process control and hysteresis-free?

Reactive HiPIMS

*Keynote speaker*

**T. Kubart**

*Angstrom Laboratory, Uppsala Univ. (SE)*

11:15 5-6\_OR102 - Enhancement of the surface plasmon polariton modes of thin films stack

**M. Achlan, G. Raseev, E. Boer-Duchemin, E. Le-Moal**

*ISMO, Univ. Paris Sud, CNRS - Orsay (FR)*

11:35 5-7\_OR63 - Synthesis of CdO nanostructures by nanosecond-pulsed discharges in liquid nitrogen

**M. Trad<sup>1</sup>, A. Nominé<sup>1</sup>, J. Ghanbaja<sup>1</sup>, C. Noël<sup>1</sup>, M. Tabbal<sup>2</sup>, T. Belmonte<sup>1</sup>**

<sup>1</sup>Institut Jean Lamour, CNRS - Université de Lorraine - Nancy (FR)

<sup>2</sup>American Univ. Beirut (LY)

11:55 5-8\_OR57 - Atomic Layer Deposition, a new tool to explore new applications

**G. Ribette**

*MICROTEST - Serignan Du Comtat (FR)*

12:25 Lunch

- 14:00 6-1\_PL22 - Plasma-assisted surface engineering of electrospun materials for tissue engineering purposes  
*Plenary speaker*  
**N. De Geyter**  
Ghent Univ. (BE)
- 14:45 6-2\_OR75 - Role of corrosion phenomenon in surfaces' anti-bacterial properties: a case study on copper based co-sputtered thin films  
**J. Luo<sup>1</sup>, C. Hein<sup>2</sup>, M. Solioz<sup>3</sup>, J.F. Pierson<sup>4</sup>, F. Mücklich<sup>1</sup>**  
<sup>1</sup> Functional Materials, Saarland Univ. - Saarbruecken (DE)  
<sup>2</sup> Inorganic Solid State Chemistry, Saarland Univ. - Saarbruecken (DE)  
<sup>3</sup> Department of Clinical Research, Univ. Bern (CH)  
<sup>4</sup> Institut Jean Lamour, Univ. Lorraine - Nancy (FR)
- 15:05 6-3\_OR55 - Development of antibacterial Zr-Cu-based thin film metallic glasses  
**A. Etienne<sup>1</sup>, G.I. Nkou Bouala<sup>2</sup>, C. Der Loughian<sup>2</sup>, C. Langlois<sup>2</sup>, S. Cardinal<sup>2</sup>, J.M. Pelletier<sup>2</sup>, S. Philippe<sup>2</sup>, J.F. Pierson<sup>1</sup>**  
<sup>1</sup> Institut Jean Lamour, Univ. Lorraine - Nancy (FR)  
<sup>2</sup> Mateis, Insa-Lyon - Villeurbanne (FR)
- 15:25 6-4\_OR50 - Biomedical properties of Ti doped ZnO thin films produced by MW plasma annealing sol-gel process  
**M. Manso Silvan, R. Ramadan, J.P. García Ruiz**  
Univ. Madrid (ES)
- 15:45 **Coffee break 30'**
- 16:15 6-5\_KN27 - Subsurface effects in plasma coatings by means of vertical chemical gradients  
*Keynote speaker*  
**D. Hegemann**  
EMPA, St Gallen (CH)
- 16:45 6-6\_OR100 - Antibacterial thin films prepared by means of low temperature plasma  
**J. Kratochvíl<sup>1</sup>, D. Kahoun<sup>2</sup>, H. Langhansová<sup>2</sup>, J. Lieskovská<sup>2</sup>, P. Fojtíková<sup>2</sup>, J. Šterba<sup>2</sup>, A. Kuzminová<sup>3</sup>, J. Kousal<sup>3</sup>, J. Hanuš<sup>3</sup>, O. Kylián<sup>3</sup>, V. Stranák<sup>2</sup>, H. Biedermann<sup>3</sup>**  
<sup>1</sup> Charles Univ., Prague & Univ. South Bohemia in České Budejovice (CZ)  
<sup>2</sup> Univ. South Bohemi, České Budejovice (CZ)  
<sup>3</sup> Charles Univ. Faculty of Mathematics and Physics - Prague (CZ)
- 17:05 6-7\_OR7 - Porous silicon nanowire (PSiNW<sub>r</sub>) film elaborated and modified by organic species for mercury detection  
**C. Yaddaden, N. Gabouze, M.A. Benamar**  
CRTSE - Algiers (DZ)



FRIDAY 27 OCTOBER

Session VII – Nanomaterials and nanostructured thin films IV / large area

- 09:00 7-1\_KN70 - Atomic shadowing in HiPIMS: role of the ionized species  
*Keynote speaker*  
**J. Oliveira<sup>1</sup>, F. Ferreira<sup>1</sup>, A. Anders<sup>2</sup>, A. Cavaleiro<sup>1</sup>**  
<sup>1</sup> Department of Mechanical Engineering, Univ. Coimbra (PT)  
<sup>2</sup> Lawrence Berkeley National Laboratory, Berkeley (USA)
- 09:30 7-2\_OR98 - Influence of adatom mobility on residual stress generation, evolution and relaxation for high mobility metal thin film growth  
**A. Jamnig<sup>1</sup>, K. Sarakinos<sup>2</sup>, G. Abadias<sup>1</sup>**  
<sup>1</sup> Institut Pprime, Département Physique et Mécanique des Matériaux, Poitiers (FR)  
<sup>2</sup> Nanoscale Engineering Division, Linköping Univ. (SE)
- 09:50 #54 - Study on bilayer yttria stabilized zirconia / gadolinia doped ceria deposits manufactured by reactive magnetron sputtering  
**P. Coddet<sup>1</sup>, J. Vulliet<sup>2</sup>, A. Caillard<sup>3</sup>, T. Sauvage<sup>4</sup>, T. Lecas<sup>3</sup>, A.L. Thomann<sup>3</sup>**  
<sup>1</sup> GREMI / Univ. Orléans (FR)  
<sup>2</sup> CEA DAM - Monts (FR)  
<sup>3</sup> GREMI / CNRS - Orléans (FR)  
<sup>4</sup> CEMHTI - Orléans (FR)
- 10:10 Coffee break 30'**
- 10:40 7-4\_KN28 - PVD coating research and job coating service: benefits and issues of doing both  
*Keynote speaker*  
**M. Cekada**  
Jozef Stefan Institute, Ljubljana (SI)
- 11:10 7-5\_OR34 - Ductile behavior of hard MoBC and WBC nanolaminated coatings  
**P. Vasina<sup>1</sup>, P. Soucek<sup>1</sup>, S. Mirzaei<sup>1</sup>, M. Alishahi<sup>1</sup>, L. Zabransky<sup>1</sup>, J. Bursik<sup>2</sup>  
V. Perina<sup>3</sup>, V. Bursikova<sup>1</sup>**  
<sup>1</sup> Masaryk Univ. - Brno (CZ)  
<sup>2</sup> Institute of Physics of Materials of CAS - Brno (CZ)  
<sup>3</sup> Nuclear Physics Institute of CAS - Prague (CZ)
- 11:30 7-6\_OR92 - Amorphous carbon thin films for long vacuum chambers in particle accelerators to mitigate electron-cloud phenomenon  
**W. Vollenberg, P. Costa Pinto, M. Taborelli, M. Van Gompel, A. Sapountzis, P. Cruikshank**  
CERN - Geneva (CH)
- 11:50 7-7\_OR71 - Contribution of RBS analysis for the characterization of PVD-CVD coatings used in mechanical applications  
~~**B. Canut<sup>1</sup>, C. Bernard<sup>2</sup>, E. Damond<sup>3</sup>**~~  
~~<sup>1</sup> Institut des Nanotechnologies de Lyon (FR)~~  
~~<sup>2</sup> Institut de Physique Nucléaire de Lyon (FR)~~  
~~<sup>3</sup> Ionbond France SAS, Chassieu (FR)~~
- 12:10 Closing Ceremony**  
Ceremony for "SFV Student Grant"