

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. Abadias¹, B. Bouaouina¹, R. Mareus¹, F. Nita¹, C. Mastail¹, A. Besnard²

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

² *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. Klima¹, N. Jäger¹, M. Meindlhumer¹, H. Hruby², C. Mitterer³, J. Keckes⁴, R. Daniel¹

¹ *Montanuniversität Leoben - Leoben (AT)*

² *Eifeler-Vacotec GmbH - Düsseldorf (DE)*

³ *Department Physical Metallurgy and Materials Testing, Montanuniversität Leoben (AT)*

⁴ *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 Ramírez¹, S. Bruyère¹, N. Thurieau¹, C. Gendarme¹, E. Jimenez-Piqué², J.J. Roa²,
J.F. Pierson¹, F. Mücklich³, D. Horwat¹**

¹ *Institut Jean Lamour, Univ. Lorraine, Nancy (FR)*

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

³ *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. Lelong¹, M. Lejeune¹, A. Zeinert¹, S.E. Rodil², J. Perez Álvarez², R. Mirabal-Rojas²

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

² *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**

Session II – Innovative characterization techniques

- 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. Marx¹, V. Linseis²
¹*Linseis Messgeräte GmbH - Selb (DE)*
²*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 TiO₂/SiO₂ thin films with X-ray photoelectron spectroscopy - combined experimental and computational study**
P. Ondracka¹, M. Richard², D. Necas¹, D. Holec³, S. Elisabeth², A. Gouillet², L. Zajicková¹
¹*CEITEC, Masaryk Univ. - Brno (CZ)*
²*Univ. Nantes (FR)*
³*Montanuniversität Leoben - Leoben (AT)*
- 17:05 2-7_OR84 - Photoelectric properties of brush electrodeposited CuIn_{0.7}Ga_{0.3}S₂ films**
A. Panneerselvam¹, B. Kajamaideen², K.R. Murali³
¹*Department of Physics, Paavai Engineering College, Pachal - Namakkal (IN)*
²*Department of Physics, Kalaignar Karunanidhi Institute of Technology - Coimbatore (IN)*
³*Department of Theoretical Physics, Univ. Madras - Chennai (IN)*
- 17:25 2-8_OR31 - Influence of RE concentration in TiO₂ thin films on the anatase to rutile phase transformation**
D. Scoca¹, V. Antunes¹, S. Cucatti¹, A. Zanatta², F. Alvarez¹
¹*UNICAMP - Campinas (BR)*
²*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 Sanchez¹, M. Jullien¹, J.F. Pierson¹, Y. Battie², A. En Naciri², F. Mücklich³
¹ *Institut Jean Lamour, Univ. Lorraine, Nancy (FR)*
² *LCP-A2MC, Institut Jean Barriol, Univ. Lorraine, Metz (FR)*
³ *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. Motamedi¹, K. Bosnick¹, K. Cui¹, K. Cadien², J. Hogan³
¹ *National Research Council Canada – National Institute for Nanotechnology - Edmonton (CA)*
² *Department of Chemical and Materials Engineering, Univ. Alberta - Edmonton (CA)*
³ *Department of Mechanical Engineering, Univ. Alberta, Edmonton (CA)*
- 09:55 3-4_OR39 - Phase stability and morphology in the vapor transport growth of Bi₂Te₃ using elemental Bi and Te sources**
O. De Melo Pereira¹, O. Concepción², A. Escobosa³, J. Roque⁴, V. Torres Costa⁵, M. Manso Silván⁵
¹ *Univ. La Habana (CU) &, Univ. Madrid (ES)*
² *CINVESTAV, IPN, Mexico (MX)*
³ *Sección de Electrónica del Estado Sólido, Departamento de Ingeniería Eléctrica, Mexico (MX)*
⁴ *Laboratorio Avanzado de Nanoscopía Electrónica, CINVESTAV, IPN, Mexico (MX)*
⁵ *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. Marascu¹, A. Lazea-Stoyanova¹, C. Stancu¹, S.D. Stoica¹, G. Dinescu²
¹ *National Institute for Lasers, Plasma and Radiation Physics - Magurele (RO)*
² *Faculty of Physics, University of Bucharest - Magurele (RO)*
- 11:35 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)
- 11:55 3-7_OR33 - Evidence of vacancies enhanced nitrogen diffusion in Xe ion bombarded AISI 316L**
S. Cucatti¹, C.M. Menezes², V.G. Antunes¹, C.A. Figueroa², F. Alvarez¹
~~¹ IFGW - Unicamp - Campinas (BR)~~
~~² PGMAT - Univ. Caxias do Sul - Caxias Do Sul (BR)~~
- 12:25 Lunch**

14:00 **Poster session**

15:55 **Coffee break 30'**

Session IV – Process Control

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. Sublemontier¹, Y. Rousseau¹, Y. Leconte¹, C. Petit², E. Monsifrot³, F. Perry³, J.P. Gaston⁴, P. Chapon⁴, M. Stchakovski⁴, P. Briois⁵, A. Billard⁵, F. Torrent⁶
¹CEA-IRAMIS-NIMBE, Saclay (FR)
²SOCRATE-INDUSTRIE, Le Belieu (FR)
³DEPHIS, Etupes (FR)
⁴HORIBA-JOBIN YVON, Palaiseau (FR)
⁵UTBM/FEMTO-ST, Montbéliard (FR)
⁶DECAYEUX-STI, Saucourt (FR)
- 09:35 5-3_OR49 - Large area Au films permeated through hexagonal close packed Si pillars**
M. Manso Silvan¹, P. Pellacani¹, D. Gallach Pérez¹, C. Morasso², L. Fornasari³, F. Marabelli³
¹Univ. Madrid (ES)
²Fondazione Don Carlo Gnocchi - Milan (IT)
³Univ. Pavia (IT)
- 09:55 5-4_OR81 - Synthesis and characterization of Ni-based nanoparticles by low-pressure plasma treatment of a solid precursor**
E. Haye¹, Y. Busby¹, M. Da Silva Pires¹, N. Job², J.J. Pireaux¹
¹LISE, PMR, Univ. Namur (BE)
²Univ. 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. Trad¹, A. Nominé¹, J. Ghanbaja¹, C. Noël¹, M. Tabbal², T. Belmonte¹
¹Institut Jean Lamour, CNRS - Université de Lorraine - Nancy (FR)
²American 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**

Session VI – Health & life sciences

- 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. Luo¹, C. Hein², M. Solioz³, J.F. Pierson⁴, F. Mücklich¹
¹ Functional Materials, Saarland Univ. - Saarbruecken (DE)
² Inorganic Solid State Chemistry, Saarland Univ. - Saarbruecken (DE)
³ Department of Clinical Research, Univ. Bern (CH)
⁴ Institut Jean Lamour, Univ. Lorraine - Nancy (FR)
- 15:05 6-3_OR55 - Development of antibacterial Zr-Cu-based thin film metallic glasses
A. Etienne¹, G.I. Nkou Bouala², C. Der Loughian², C. Langlois², S. Cardinal², J.M. Pelletier², S. Philippe², J.F. Pierson¹
¹ Institut Jean Lamour, Univ. Lorraine - Nancy (FR)
² 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. Kratochvíl¹, D. Kahoun², H. Langhansová², J. Lieskovská², P. Fojtíková², J. Šterba², A. Kuzminová³, J. Kousal³, J. Hanuš³, O. Kylián³, V. Stranák², H. Biedermann³
¹ Charles Univ., Prague & Univ. South Bohemia in České Budejovice (CZ)
² Univ. South Bohemi, České Budejovice (CZ)
³ Charles Univ. Faculty of Mathematics and Physics - Prague (CZ)
- 17:05 6-7_OR7 - Porous silicon nanowire (PSiNW) 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. Oliveira¹, F. Ferreira¹, A. Anders², A. Cavaleiro¹
¹ Department of Mechanical Engineering, Univ. Coimbra (PT)
² 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. Jamnig¹, K. Sarakinos², G. Abadias¹
¹ Institut Pprime, Département Physique et Mécanique des Matériaux, Poitiers (FR)
² 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. Coddet¹, J. Vulliet², A. Caillard³, T. Sauvage⁴, T. Lecas³, A.L. Thomann³
¹ GREMI / Univ. Orléans (FR)
² CEA DAM - Monts (FR)
³ GREMI / CNRS - Orléans (FR)
⁴ 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. Vasina¹, P. Soucek¹, S. Mirzaei¹, M. Alishahi¹, L. Zabransky¹, J. Bursik²
V. Perina³, V. Bursikova¹**
¹ Masaryk Univ. - Brno (CZ)
² Institute of Physics of Materials of CAS - Brno (CZ)
³ 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. Canut¹, C. Bernard², E. Damond³**~~
~~¹ Institut des Nanotechnologies de Lyon (FR)~~
~~² Institut de Physique Nucléaire de Lyon (FR)~~
~~³ Ionbond France SAS, Chassieu (FR)~~
- 12:10 Closing Ceremony**
Ceremony for "SFV Student Grant"