

POSTER SESSIONS

Poster Session #1 - Tuesday 23 September (17:30 – 19:30)

DEPO / Plasma-assisted deposition, coatings and layers

- #013** Elaboration of 316L/Cu composite alloy using a hybrid PVD/SPS process
Y. Pinot¹, A. Besnard², M.R. Ardigo-Besnard³, F. Bussiere³
¹ Arts et Métiers Institute of Technology, LaBoMaP - Cluny (FR)
² Univ. Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST - Besançon (FR)
³ Laboratoire ICB, UMR 6303 CNRS, Univ. Bourgogne Europe - Dijon (FR)
- #027** Development and investigation of advanced coatings for high-temperature applications
I. Touni¹, S. Achache¹, A. Alhussein¹, B. Panicaud²
¹ ICD-LASMIS, UTT, UMR 6281, CNRS, Nogent (FR)
² ICD-LASMIS, UTT, UMR 6281, CNRS, Troyes (FR)
- #050** Deposition of dielectric, and metal layer solution for TSV integration, innovative sequential process, application of low temperature deposition
M. Segers, P.D. Szkutnik, S. Benkoula
 Plasma-Therm Europe - Grenoble (FR)
- #068** Development of hydrogen barrier thin films based on silicon carbonitride
M. Tetouani¹, A. Al Hussein¹, S. Achache¹, M. Cherkaoui²
¹ UR LASMIS, Univ. Technologie de Troyes - Nogent (FR)
² Univ. Ibn Tofail - Kenitra (MA)
- #072** Study of the impact of different dielectric materials on the performance and optical features of a Micro-Hollow Cathode Discharge (MHCD)
N. Chazapis, B. Menacer, D. Stefan, G. Lombardi, C. Lazzaroni, K. Gazeli
 LSPM - CNRS & Univ. Sorbonne Paris Nord, Villetaneuse, Paris (FR)
- #140** On thermal stability and oxidation behavior of metastable W–Zr thin-film alloys
M. Červená, J. Houška, R. Čerstvý, P. Zeman
 Department of Physics and NTIS - European Centre of Excellence, Univ. West Bohemia, Pilsen (CZ)
- #141** Microstructural and mechanical properties of flash SPS WC-Co/AiSi 304L diffusion bonded
B. Maamache¹, N. Ouali¹, B. Belkessa¹, P. Hvizdos², M. Fides², B. Cheniti¹
¹ Research Center in Industrial Technologies - CRTI - Cheraga, Algiers (DZ)
² Institute of Materials Research, Slovak Academy of Sciences - Watsonova, Kosice (SK)
- #143** Nanocrystalline nickel synthesis by pulsed current
A. Boukhouiete¹, S. Boumendjel²
¹ Univ. Badji-Mokhtar, Annaba (DZ)
² Univ. Hassiba Benbouali-Chlef, Chlef (DZ)
- #148** Influence of substrate bias on the properties and conformality of TiN thin films deposited by High Power Impulse Magnetron Sputtering (HiPIMS)
L. Seigneur¹, J. Barbé^{1, 2}, M.P. Besland¹
¹ Nantes Univ., CNRS, Institut des Matériaux de Nantes Jean Rouxel, Nantes (FR)
² Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS FR 3459, Amiens (FR)
- #149** Plasma-grown vertically oriented graphene for supercapacitor electrodes
A. Vesel, R. Zaplotnik, G. Primc
 Jozef Stefan Institute - Ljubljana (SI)

Poster Session #1 - Tuesday 23 September (17:30 – 19:30)

ITEC / Innovative applications, solutions and technologies

- #062** Functionalized amorphous carbon coatings for low secondary electron yield and controlled surface resistance in particle accelerators
W. Vollenberg¹, P. Costa Pinto¹, L. Mourier¹, Y. Rabetsimalona¹, N. Bundaleski², I.M. Marrucho Ferreira², J. Deuermeier²
¹ CERN - Genève (CH)
² Univ. Nova de Lisboa - Lisbon (PT)
- #064** A low-temperature synthesis of strongly thermochromic VO₂-based coatings for energy-saving smart windows
M. Kaufman, E. M. Nla, J. Vicek
Department of Physics and NTIS - European Centre of Excellence, Univ. West Bohemia, Pilsen (CZ)
- #085** Magnetron deposition of chromogenic thin films for smart windows
J. Purans, M. Zubkins
Institute of Solid State Physics, Univ. Latvia - Riga (LT)
- #129** Transforming Leak Detection in Vacuum environment with Remote Plasma Optical Emission Spectroscopy
B. Daniel^{1,2,3}
¹ Gencoa Ltd - Liverpool (UK)
² Gencoa Ltd - Marcus Law (UK)
³ Gencoa Ltd - Oisin Boyle (UK)

AMELI / Plasma and/in liquids interaction

- #053** Slow pulsed sputtering onto liquid: importance of surface refreshment and of plasma heating
A. Caillard, S. Atmane, A. Diop, E. Millon, P. Brault
GREMI CNRS / Univ. Orléans (FR)
- #128** The influence of the discharge parameters on the physicochemical properties of plasma activated water
L. Marcinauskas¹, E. Jankaitytė², M. Aikas¹, L. Ragelienė², R. Uscila¹, A. Tamošiūnas¹, Z. Naučienė², V. Mildažienė²
¹ Plasma Processing Laboratory, Lithuanian Energy Institute - Kaunas (LT)
² Faculty of Natural Sciences, Vytautas Magnus Univ. - Kaunas (LT)
- #146** Exfoliation and functionalization of graphite particles by pulsed plasma discharges in the gas-liquid phase
A. Reguig, R. Chevigny, S. Cuynet, S. Fontana, C. Herold-Mareche, M. Ponçot, L. Adrien
Institut Jean Lamour, UMR 7198 CNRS – Univ. Lorraine - Nancy (FR)
- #147** Enhancement of grain quality of brewer's rice cultivar with plasma treatment of caryopsis using "Smart Agriculture System" based on collected data
M. Hori, H. Hashizume
Nagoya Univ. - Nagoya (JP)

Poster Session #1 - Tuesday 23 September (17:30 – 19:30)

MODIDD / Modelling, diagnostics and data-driven optimization of plasma processes

- #036** Open-source modeling of gas phase dynamics in industrial magnetron sputtering processes
J. Beyer, **P. Nizenkov**, **S. Copplestone**, **A. Mirza**
boltzplatz - numerical plasma dynamics GmbH - Stuttgart (DE)
- #073** Rotational temperature measurements of N₂(C), NO(A), and OH(A) in different micro hollow cathode discharge configurations using Optical Emission Spectroscopy
D. Stefas¹, **G. Makrypodi**², **B. Menacer**¹, **P. Svarnas**², **G. Lombardi**¹, **C. Lazzaroni**¹, **K. Gazeli**¹
¹ LSPM - CNRS & Univ. Sorbonne Paris Nord - Villetaneuse (FR)
² High Voltage Lab., Electrical & Computer Eng. Dept., Univ. Patras - Rion (GR)
- #081** Assessing actinometry and line ratio techniques for species densities and electric field determination in DC glow discharges
T. Silva¹, **L. Kuijpers**², **E. Baratte**³, **V. Guerra**¹, **R. Van De Sanden**², **J.P. Booth**³, **O. Guaitella**³
¹ Institute for Plasmas and Nuclear Fusion (IPFN) - Lisbon (PT)
² Dutch Institute for Fundamental Energy Research (DIFFER) - Eindhoven, (NL)
³ Laboratoire de Physique des Plasmas (LPP) - Paris (FR)
- #094** Two dimensional distribution of atomic nitrogen absolute density in three DC MHCD
K. Gazeli¹, **A. Remigy**¹, **B. Menacer**¹, **K. Kourtzanidis**², **O. Gazeli**³, **G. Lombardi**¹, **C. Lazzaroni**¹
¹ Univ. Sorbonne Paris Nord, LSPM, CNRS, UPR 3407 - Villetaneuse (FR)
² CPERI, Centre for Research & Technology Hellas (CERTH), Thermi (GR)
³ FOSS Research Centre for Sustainable Energy, Univ. Cyprus - Nicosia (CY)
- #095** Analysis of sputtered species transport in High Power Impulse Magnetron Sputtering (HiPIMS) discharge employing magnetized QCM probe
A. Kapran¹, **C. Ballage**¹, **Z. Hubička**², **T. Minea**¹
¹ Laboratoire de Physique des Gaz et des Plasmas (LPGP), CNRS - Univ. Paris-Saclay - Orsay (FR)
² FZU - Institute of Physics of the Czech Academy of Sciences - Prague (CZ)
- #101** Plasma-surface interactions in CO₂ glow discharges
V. Guerra¹, **B. Berdugo**², **A. Filipe**¹, **O. Guaitella**², **A.S. Morillo Candás**², **P. Viegas**¹
¹ Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Univ. Lisboa (PT)
² LPP, CNRS, Sorbonne Univ., École Polytechnique, Institut Polytechnique de Paris - Palaiseau (FR)

POSTER SESSIONS

Poster Session #2 – Wednesday 24 September (16:35 – 18:30)

PSURF / Plasma surface processing

- #032** Stability of expanded austenite during annealing in vacuum
S. Mändl, D. Manova
Leibniz Institute of Surface Engineering (IOM) - Leipzig (DE)
- #074** Atomic Layer Etching of SiO₂ using CF₄ plasma in deposition regime at cryogenic temperature
T. Tillocher¹, M. Adjabi¹, J. Nos¹, S. Iseni¹, G. Cunge², M. Kogelschatz², P. Lefauchaux¹, L. Becerra¹, E. Despiaud-Pujo², R. Dussart¹
¹ GREMI – Univ. Orléans / CNRS - Orléans (FR)
² LTM – Univ. Grenoble Alpes / CNRS / Grenoble INP / CEA - Grenoble (FR)
- #079** Novel atmospheric-pressure plasma curing of anti-corrosion transparent silicon-based coating
P. Ghourchi Beigi, L. Zahedi, R. Krumpolec, D. Kováčik
Dpt. Plasma Physics and Technology, CEPLANT, Faculty of Science, Masaryk Univ. - Brno (CZ)
- #133** Enhancing fiber/matrix interface in bio-based composites by cold plasma treatment: a step towards better fluid sealing
F. Perrier-Michon¹, S.A.E. Boyer², A. Burr², V. Rohani¹
¹ PERSEE (MINES Paris PSL) - Sophia Antipolis (FR)
² CEMEF CNRS 7635 (MINES Paris PSL) - Sophia Antipolis (FR)
- #144** Regulation of peripheral plasma characteristics via engineered alterations in electrode shielding materials under a direct current-biased power configuration
C. Park^{1,2}, J. Cho³, G. Woo⁴
¹ Department of Semiconductor and Display Engineering, Sungkyunkwan Univ. - Suwon (KR)
² Samsung Electronics Semiconductor - Suwon (KR)
³ School of Mechanical Engineering, Sungkyunkwan Univ. - Suwon (KR)
⁴ SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan Univ. - Suwon (KR)
- #150** Optimizing active screen plasma nitriding of AISI 316L through alternative approaches: reactor conditioning and argon addition
A. Adami Vidal, R. Hugon, C. Noël, T. Czerwicz, G. Marcos
Univ. Lorraine, CNRS, Institut Jean Lamour - Nancy (FR)

Poster Session #2 – Wednesday 24 September (16:35 – 18:30)

NANO / Plasma nanotechnologies

- #012** Photoluminescent ZnO-SiO₂ nanocomposites prepared by a hybrid process coupling aerosol and Plasma Enhanced Chemical Vapour Deposition
M. Richard-Plouet¹, J. Chevet¹, M. Feron^{2,3}, A. Granier¹, M. Kahn³, R. Clergereaux², A. Goullet¹

¹ Nantes Univ., CNRS-IMN - Nantes (FR)

² CNRS-Laplace - Toulouse (FR)

³ CNRS-LCC - Toulouse (FR)

- #087** Pulsed laser sources for nanometer-scaled complex materials and devices
M. Gireau¹, F. Du², J. Youssef^{3,4}, S. Vergnole⁴, G. Humbert³, S. Zeng², C. Champeaux¹, F. Dumas-Bouchiat¹

¹ Univ. Limoges, CNRS, IRCER, UMR 7315, Limoges (FR)

² Univ. Troyes, CNRS, L2N, UMR 7076, Troyes (FR)

³ Univ. Limoges, CNRS, XLIM, UMR 7252, Limoges (FR)

⁴ ALPhANOV, Optics and Lasers Technology Ctr., Institut d'optique d'Aquitaine - Limoges (FR)

GROM / Thin films growth and modelling

- #043** Influence of discharge parameters on the properties of TiO₂ films grown by reactive Bipolar HiPIMS discharges

S. Debnarova¹, M. Michiels^{1,2}, S. Konstantinidis¹

¹ Plasma-Surface Interaction Chemistry, Univ. Mons, Mons (BE)

² Haute École en Heinaut, Mons (BE)

- #127** Multisource deposition conditions prediction towards required composition of thin films
J. Gutwirth¹, T. Halenkovič¹, S. Šlang¹, V. Nazabal^{2,1}, P. Němec¹

¹ Univ. Pardubice - Pardubice (CZ)

² Univ. Rennes - Rennes (FR)

Poster Session #2 – Wednesday 24 September (16:35 – 18:30)

DEPO / Plasma-assisted deposition, coatings and layers

- #002** Influencing the properties of TiN and (Ti,Al)N hard coatings by modifying their composition and structural design
D. Munteanu¹, C. Lopes², I. Borsan¹, C. Gabor¹, M.S. Rodrigues², A. Ferreira², F. Macedo², E. Alves³, N.P. Barradas³, F. Vaz²
¹ Dept. of Material Science, Transilvania Univ. Brasov - Brasov (RO)
² Physics Centre of Minho and Porto Univ. (CF-UM-UP), Univ. Minho - Braga (PT)
³ IPFN, Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Univ. Lisboa - Lisbon (PT)
- #011** HEA thin films as protective barrier against carbon diffusion during SPS
A. Besnard¹, M. El Garah², F. Sanchette², Y. Pinot³, R. Charvet⁴, M.R. Ardigo-Besnard⁴, F. Herbst⁴, N. Geoffroy⁴
¹ Univ. Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST - Besançon (FR)
² LASMIS, Antenne de Nogent et LRC CEA-LASMIS, NICCI, Nogent (FR)
³ Arts et Métiers Institute of Technology, LaBoMaP - Cluny (FR)
⁴ Laboratoire ICB, UMR 6303 CNRS, Univ. Bourgogne Europe - Dijon (FR)
- #014** Thermodynamic modeling and experimental investigation of Ti PVD coatings as protective barriers against carbon diffusion during SPS
Y. Pinot¹, R. Charvet², M.R. Ardigo-Besnard², F. Baras², S. Le Gallet², F. Herbst², N. Geoffroy², A. Besnard³
¹ Arts et Métiers Institute of Technology, LaBoMaP - Cluny (FR)
² Laboratoire ICB, UMR 6303 CNRS, Univ. Bourgogne Europe - Dijon (FR)
³ Univ. Marie et Louis Pasteur, SUPMICROTECH, CNRS, Institut FEMTO-ST - Besançon (FR)
- #035** Reversible functionalization of citronellal plasma polymers - towards pH responsive thin films
J. Oliveira, P. Covin, A. Airoudj, F. Bally-Le Gall, V. Roucoules
 Univ. Haute-Alsace, Univ. Strasbourg, CNRS, IS2M UMR 7361, Mulhouse (FR)
- #066** Nanostructuring of bismuth oxyfluoride thin films by oblique angle deposition for CO₂ photoconversion
A.E. Kabouia¹, A. Bousquet¹, S. Roth², A. Bonduelle², M. Richard-Plouet³, M. Le Granvalet³, R. Smaali⁴, E. Centeno⁴
¹ Univ. Clermont Auvergne (UCA), ICCF - Clermont-Ferrand (FR)
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⁴ Univ. Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal - Clermont-Ferrand (FR)
- #134** Discriminating between morphological and chemical effects on the antibacterial properties of metal thin films through laser surface structuring
A.-L. Thomann¹, P. Birnal¹, F. Brule-Morabito², B. Aspe¹, N. Semmar¹, P. Andreazza³, E. Bourhis³, P. Brault¹, M. Cavarroc⁴, A. Sauldubois¹, T. Vaubois⁴, E. Menou⁴, A. Caillard¹, C. Andreazza³
¹ GREMI (CNRS / Univ. Orléans) - Orléans (FR)
² ART ARNmessenger US55-INSERM / LI²RSO / Univ. Orléans, CHU d'Orléans - Orléans (FR)
³ ICMN (CNRS / Univ. Orléans) - Orléans (FR)
⁴ Safran Paris-Saclay – Safran Tech - Magny-les-Hameaux (FR)
- #142** Nanostructure engineering and properties enhancement of Cu-based films by Zr and Ta alloying
M. Zhadko, A. Benediktová, J. Houška, R. Čerstvý, P. Baroch, P. Zeman
 Univ. West Bohemia - Pilsen (CZ)

Poster Session #2 – Wednesday 24 September (16:35 – 18:30)

MODIDD / Modelling, diagnostics and data-driven optimization of plasma processes

- #009** Pure ammonia microwave discharges: a global model
T. Belmonte¹, M.Y. Awaji^{1,2}, L. Pentecoste¹, C. Noel¹, M. Belmahi¹, T. Gries¹
¹ Univ. Lorraine, CNRS, IJL, Nancy (FR)
² Department of Physical Sciences, Physics Division, College of Science, Jazan Univ., Jazan (SA)
- #017** Rate coefficients of the $N + H + M(\text{Ar}, N_2) \rightarrow NH + M$ recombination reaction in flowing afterglows of microwave plasmas
A. Ricard, V. Ferrer, J.P. Gardou, F. Marchal, J.P. Sarrette
 LAPLACE, Univ. Toulouse, CNRS, UPS, INPT, Toulouse (FR)
- #059** Experimental investigations on the impact of gas flow on the propagation dynamics of a pulsed-driven μm -scale plasma jet
Y. Agha¹, K. Giotis^{1,2}, D. Stefan¹, L. Invernizzi¹, H. Hoeft³, P. Svarnas², K. Gazeli¹, G. Lombardi¹
¹ Univ. Sorbonne Paris Nord, LSPM, CNRS, UPR 3407, Villetaneuse (FR)
² Univ. Patras, Electrical & Computer Engineering Dept., High Voltage Lab., Rion - Patras (GR)
³ Leibniz Institute for Plasma Science and Technology (INP), Greifswald (DE)
- #098** Modelling N_2-H_2 for ammonia production
C. Pintassilgo^{1,2}, S. Baghel¹, M. Budde³, A. Gonçalves¹, O. Guaitella³, L. Marques⁴, P. Pereira¹, N. Pinhão¹, L.L. Alves¹
¹ IPFN, Instituto de Plasmas e Fusão Nuclear - Lisboa (PT)
² FEUP, Faculdade de Engenharia, Univ. Porto - Porto (PT)
³ LPP, Ecole Polytechnique - Palaiseau (FR)
⁴ Centro de Física da Univ. do Minho e do Porto - Braga (PT)
- #100** Ion energy distribution function measurement in hybrid HiPIMS with carbon target
I. Naiko^{1,2}, M. Čada¹, A. Ostapenko¹, Z. Hubička¹
¹ Institute of Physics, Academy of Sciences of the Czech Republic - Prague (CZ)
² Charles Univ., Faculty of Mathematics and Physics, Dpt. Surface and Plasma Science - Prague (CZ)
- #126** Optimizing ECR plasma ashing for high yield during spintronic sensor fabrication on 200mm wafers
F. Favita¹, S. Cardoso^{1,2}
¹ INESC MN - Lisbon (PT)
² Instituto Superior Técnico (IST) - Lisbon (PT)
- #137** Enhancing surface emission in micro-gap atmospheric discharge via harmonic excitation
Y. Liu¹, N. Le Thomas^{2,3}, C. Leys¹, A. Nikiforov¹
¹ RUPT, Dpt. Applied Physics, Faculty of Engineering and Architecture, Ghent Univ., Ghent (BE)
² Photonics Research Group, INTEC Dpt., Ghent Univ. - IMEC, Ghent (BE)
³ Center for Nano- and Biophotonics, Ghent Univ., Ghent (BE)