

POSTER SESSIONS

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 $N_2(C)$, $NO(A)$, 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), Thessaloniki (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 CO_2 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)*
- #153** Study of the plasma pyrolysis of methane in a rotating gliding arc for carbon black synthesis
N. Roy¹, **A. Panepinto**², **T. Godfroid**², **F. Mazeri**², **A. Usoltseva**³, **V. Smits**³, **R. Snyders**^{1,2}
¹ *Plasma-Surface Interaction Chemistry (ChIPS), Univ. Mons (BE)*
² *Materia Nova Research Center, Mons (BE)*
³ *Innovation Centre, Phillips Carbon Black Limited, Ghislenghien (BE)*
- #157** Time-resolved measurements of secondary electron emission during ion bombardment
S. Mändl¹, **H. Kersten**², **D. Manova**¹
¹ *Leibniz Institute of Surface Engineering (IOM) - Leipzig (DE)*
² *Institut für Experimentelle und Angewandte Physik, Christian-Albrechts-Universität Kiel - Kiel (DE)*

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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)
- #154** Optimizing ammonia decomposition for enhanced hydrogen production in a novel rotating gliding arc reactor
M. Garcia Martinez¹, S. Marin-Meana², A. Megías-Sánchez², M. Ruiz-Martin², J. Cotrino², A. González-Elipe², M. Oliva-Ramírez³, A. Gómez-Ramírez³
¹ *Univ. Cordoba (ES)*
² *Instituto de Ciencia de Materiales de Sevilla (ES)*
³ *Univ. Sevilla (ES)*
- #160** Liquid flow control in a dual-frequency APPJ on water solutions
R. Fiorotto, E. Shakerinasab, M. Pierno, A. Patelli
Department of Physics and Astronomy "G. Galilei", Univ. Padova (IT)

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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. Nia, J. Vlcek
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)

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. Toumi¹, S. Achache¹, A. Al Hussein¹, 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)

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DEPO / Plasma-assisted deposition, coatings and layers (*following*)

#158 Utilizing gas rarefaction to optimize preferential metal ion acceleration for epitaxial AlN growth on Silicon(111)

**N. Behravan¹, T. Pitonakova², T. Terzic³, A. Farhadizadeh¹, M. Deluca⁴, M. Moridi⁴,
D. Solonenko⁴, D. Lundin¹**

¹ *Linköping Univ. - Linköping (SE)*

² *Masaryk Univ. - Brno (CZ)*

³ *Otto-von-Guericke-Univ. Magdeburg - Magdeburg (DE)*

⁴ *Silicon Austria Labs GmbH - Villach (AT)*

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. Lefaucheux¹, 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)

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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)

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)

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DEPO / Plasma-assisted deposition, coatings and layers (*following*)

- #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. Carneiro De 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)
² IFP Energies nouvelles - Solaize (FR)
³ Nantes Univ., CNRS, Institut des Matériaux de Nantes Jean Rouxel - Nantes (FR)
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)
- #151** Atomic Layer Deposition of ZnO on fullerene: comparing thermal and plasma-enhanced approaches towards a photoactive nanocomposite
R. Del Sole^{1, 2}, A. Milella^{1, 2}, F. Fracassi^{1, 2}, P. Parlanti³, M. Gemmi³, A.M. Coclite^{4, 5}, F. Palumbo²
¹ Univ. Bari Aldo Moro, Department of Chemistry - Bari (IT)
² CNR-Institute of Nanotechnology - Bari (IT)
³ Center for Materials Interfaces, Electron Crystallography, Istituto Italiano di Tecnologia - Pontedera (IT)
⁴ Univ. Bari Aldo Moro, Department of Physics - Bari (IT)
⁵ Institute of Solid State Physics, NAWI Graz, Graz Univ. of Technology, - Graz (AT)
- #159** Recyclable thin coatings deposited by mean of plasma-assisted techniques on polymer foils for food packaging applications
F. Delfin^{1, 2}, C. Forsich¹, M. Schachinger¹, S. Augl¹, S. Brühl², C. Burgstaller¹, D. Heim¹
¹ Univ. Applied Sciences Upper Austria - Wels (AT)
² Univ. Tecnológica Nacional, Facultad Regional Concepción del Uruguay - Concepción del Uruguay (AR)

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 $N_2\text{-}H_2$ 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)
- #156** Spectroscopy study of the LTE condition in the Laser Induced Breakdown used for the chlorine ion determination in building materials
M. Garcia Martinez, J. Mateo Calvo, A. Rodero Serrano
 Univ. Cordoba (ES)