

MONDAY, NOVEMBER 22TH – MORNING

Opening

Callelongue Room

- 08:45 Opening Ceremony
I. Martin-Graur (co-chair of EVC16)
A. Galtayries (IUVSTA President)

IUVSTA Highlights

Callelongue Room – Chair: A. Galtayries (FR)

- 09:15 Introduction to ITER project
Plenary lecture
A. Bécoulet - ITER Organization, St-Paul lès Durance (IO)
- 09:55 At the 150th anniversary of Martin Knudsen: a pioneer in gas flows
Plenary lecture
J. Schou - DTU Fotonik (DK)

10:35 *Break*

IUVSTA Highlights

Callelongue Room – Chair: M. Wuest (CH)

- 10:55 Biointerfaces - a nanoscale world with a huge potential
Plenary lecture
S. Giordani - Dublin City Univ. (IE)
- 11:40 Gas-surface interactions in astrophysics
Plenary lecture
F. Dulieu - Cergy Paris Univ. (FR)

Lunch Break

MONDAY, NOVEMBER 22TH – AFTERNOON

SS1 / Surface Science 1

Callelongue Room – Chair: L. Masson (FR)

- 14:00 Understanding the bio-interface at the nanoscopic level: the sample case of amino acids at Ag surfaces
Keynote lecture
L. Savio - IMEM CNR Genova (IT)
- 14:30 Complex 2D oxide phases in reduced SrTiO₃ grown on Pt(111)/Al₂O₃(0001)
V. Fournée, C. Ruano Merchan, T. Dorini, F. Brix, L. Pasquier, S. Andrieu, K. Dumesnil, J. Ledieu, O. Copie, E. Gaudry, M. Sicot
Institut Jean Lamour UMR 7198, Univ. Lorraine – CNRS - Nancy (FR)
- 14:50 Beam-induced surface modification of the vacuum system of the Large Hadron Collider
V. Petit, D.A. Zanin, M. Himmerlich, M. Taborelli, H. Neupert, P. Chiggiato, G. Iadarola
CERN - Meyrin (CH)
- 15:10 Pyrene on noble metal surfaces: from the adsorption to electron-stimulated processes
M. Minissale¹, E. Salomon¹, F. Lairado-Romero¹, S. Coussan¹, P. Rousselot-Pailley², F. Dulieu³, T. Angot¹
¹ PIIM - Aix Marseille Université - CNRS - Marseille (FR)
² ISM2 - Aix Marseille Université - CNRS - Marseille (FR)
³ LERMA - CY Cergy Paris Université - OBSPM - Cergy (FR)

15:30 *Break*

SS2 / Surface Science 2

Callelongue Room – Chair: L. Savio (IT)

- 15:50 Origin of resistive switching at Ti/LSMO interface by operando HAXPES measurements
J. Courtin¹, C. Moncasi², C. Jimenez², M. Burriel², N. Gauthier¹, E. Martinez¹, O. Renault¹
¹ Univ. Grenoble Alpes, CEA, Leti, Grenoble (FR)
² Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, Grenoble (FR)
- 16:10 C₆₀ on Au(111) investigated using scanning tunnelling spectroscopy with DC and radio-frequency modulated bias voltages
B. Wit, S. Feigl, R. Vranik, A. Kumar, S. Müllegger
Johannes Kepler Univ. – Linz (AT)

Poster Session #1

Rez-de-Jardin – level 0

- 16:45 Topics: **BIO / EMP / SE / SS / TF**

MONDAY, NOVEMBER 22TH – AFTERNOON

TF1 / Thin Film 1

Morgiou Room – Chair: M. Veillerot (FR)

- 14:00 MAX phase thin films: from design and processing to environmental resistance
Keynote lecture
C. Azina - Materials Chemistry, RWTH Aachen Univ. (DE)
- 14:30 Transparent thermoelectric ZnO-based thin films for thermal energy harvesting: the role of Ga and Bi doping
C. Tavares¹, J. Ribeiro¹, F.C.O.R. Correia¹, F. Rodrigues¹, A. Kuzmin², I. Pudza², A. Mendes³, M.R. Correia⁴, T. Monteiro⁴, N.B. Sedrine⁴, J. Rodrigues⁴, A. Kalinko⁵, E. Welter⁵
¹ Centre of Physics, Univ. Minho - Guimaraes (PT)
² Institute of Solid State Physics, Univ. Latvia - Riga (LV)
³ LEPABE, Faculty of Engineering, Univ. Porto (PT)
⁴ Departamento de Física & i3N, Univ. Aveiro (PT)
⁵ Deutsches Elektronen-Synchrotron - A Research Centre of the Helmholtz Association - Hamburg (DE)
- 14:50 Lab-scale Hard X-ray Photoelectron Spectroscopy (HAXPES) study of transition metal dichalcogenide TiS₂ prepared by Molecular Layer Deposition and thermal annealing
N. Gauthier¹, P. Abi Younes^{1,2}, D. Rouchon¹, H. Renevier²
¹ Univ. Grenoble Alpes, CEA, Leti, Grenoble (FR)
² LMGP, Univ. Grenoble Alpes, CNRS, Grenoble-INP, Grenoble (FR)
- 15:10 Tuning work function in Graphene by thermally assisted metal intercalation
I. Arnay¹, A. Gudín¹, A. Guedeja-Marrón^{1,2}, J.M. Díez^{1,3}, A. Anadón¹, R. Guerrero¹, M. Varela², J. Camarero^{1,3}, R. Miranda^{1,3}, P. Perna¹
¹ IMDEA Nanociencia - Madrid (ES)
² Departamento de Física de Materiales & Instituto Pluridisciplinar, Univ. Madrid (ES)
³ Departamento de Física de la Materia Condensada, IFIMAC, Univ. Madrid (ES)
- 15:30 *Break*

TF2 / Thin Film 2

Morgiou Room – Chair: C. Azina (DE)

- 15:50 Structural and electrical properties of insulating self-assembled monolayers for germanium passivation
L. Patrone¹, M.A. Guerboukha¹, V. Gadenne¹, H. Mrezguia², L. Giovanelli², Y. Ksari², G. Monier³, V. Jeux⁴, J.M. Raimundo⁵
¹ Aix Marseille Univ., Univ. Toulon, CNRS, IM2NP UMR 7334, ISEN Toulon - Toulon (FR)
² Aix Marseille Univ., Univ. Toulon, CNRS, IM2NP UMR 7334, Domaine de St Jérôme, Marseille (FR)
³ Univ Clermont Auvergne, CNRS, SIGMA Clermont, Inst Pascal - Clermont-Ferrand (FR)
⁴ ESCOM Chimie, Compiègne (FR)
⁵ CINaM UMR CNRS 7325, Aix-Marseille Univ. - Marseille (FR)
- 16:10 Optimization of (CrN/AlCrN) multilayers coatings for cryogenic assisted machining
C. Nouveau, Y. Zhang, J. Outeiro, A. Besnard, B. Marcon
Arts et Metiers Institute of Technology - Cluny (FR)

Poster Session #1

Rez-de-Jardin – level 0

- 16:45 Topics: **BIO / EMP / SE / SS / TF**

TUESDAY, NOVEMBER 23TH – MORNING

PST / Plasma Science & Technique

Callelongue Room – Chair: A. Delcorte (BE)

09:00 Surface kinetics in CO₂ plasmas

Plenary lecture

V. Guerra¹, L. Vialetto², A.S. Morillo-Candas³

¹ Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Univ. Lisboa (PT)

² Dutch Institute For Fundamental Energy Research (DIFFER) – Eindhoven (NL)

³ LPP, Ecole Polytechnique, Palaiseau (FR)

VST1 / Vacuum Science and Technology 1

Callelongue Room – Chair: M. Wuest (CH)

09:50 Outgassing of dynamic vacuum components

M. Rössner¹, E. Henker¹, F. Haidu¹, A. Trüttschler¹, K. Bergner¹

VACOM GmbH - Grosslöbichau (DE)

10:10 Outgassing considerations for the cryogenic vacuum system of the Einstein telescope

K. Battes, C. Day, S. Hanke, V. Hauer, X. Luo

Karlsruhe Institute of Technology - Eggenstein-Leopoldshafen (DE)

10:30

Break

VST2 / Vacuum Science and Technology 2

Callelongue Room – Chair: Y. Marandet (FR)

10:50 Photon stimulated desorption from molecular condensates in space and laboratory

Keynote lecture

J-H. Fillion - LERMA, Sorbonne Univ. & Observatoire de Paris (FR)

11:20 Particle tracing the ISO Gauge

**M. Wüest¹, F. Scuderi¹, B. Jenninger², A. Stöltzel², P. Kucharski², O. Teodoro³,
R.A.S. Silva³, N. Bundaleski³, C. Illgen⁴, J. Šetina⁵, K. Jousten⁴, M. Bernien⁴, F. Boineau⁶,
M. Vicar⁷**

¹ INFICON AG - Balzers (LI)

² CERN - Geneva (CH)

³ Nova School of Sciences and Technology, CEFITEC - Caparica (PT)

⁴ Physikalisch-Technische Bundesanstalt - Berlin (DE)

⁵ Institute of Metals and Technology - Ljubljana (SI)

⁶ Laboratoire national de métrologie et d'essais - Paris (FR)

⁷ Czech Metrology Institute - Brno (RT)

11:40 Comparison of ionisation vacuum gauges close to their pressure limit and design ideas for high sensitivity vacuum gauges for XHV

B. Jenninger, A. Stöltzel

CERN - Geneva (CH)

12:00 A progress in development of non-evaporable getter coating in UK

O. Malyshev, R. Valizadeh, A. Hannah

UKRI/STFC Daresbury Laboratory - Warrington (UK)

TUESDAY, NOVEMBER 23TH – MORNING

PST / Plasma Science & Technique

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09:00 Surface kinetics in CO₂ plasmas

Plenary lecture

V. Guerra¹, L. Vialetto², A.S. Morillo-Candas³

¹ Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Univ. Lisboa (PT)

² Dutch Institute For Fundamental Energy Research (DIFFER) – Eindhoven (NL)

³ LPP, Ecole Polytechnique, Palaiseau (FR)

NSN1 / Nanometer Structures & Nanotechnology 1

Morgiou Room – Chair: G. Schneider (NL)

09:50 Statistical analysis of carbon sphere diameter obtained by Chemical Vapor Deposition

**L. Domratheva-Lvova¹, C.J. Gutiérrez-García², J.J. Contreras-Navarrete²,
J.M. Ambriz-Torres², F.G. Granados-Martínez³, D.L. García-Ruiz¹, J.A. Guzmán-Fuentes¹,
L.F. Ortega Varela¹, F. Mendez⁴**

¹ Univ. Michoacana de San Nicolas de Hidalgo - Morelia (MX)

² Instituto Tecnológico de Morelia, Tecnológico Nacional de México - Morelia (MX)

³ Instituto de Investigaciones en Materiales, Univ. Nacional Autónoma de México, Morelia (MX)

⁴ Univ. Autónoma Metropolitana, Unidad Iztapalapa - México (MX)

10:10

Break

NSN2 / Nanometer Structures & Nanotechnology 2

Morgiou Room – Chair: L. Domratheva-L. (MX)

10:50 From polycyclic aromatic hydrocarbons to nanopore-nanogap devices

Keynote lecture

G.F. Schneider - Leiden Institute of Chemistry, Univ. Leiden (NL)

11:20 Laser induced emission from nickel nanowires

A. Gomes Silva¹, K. Pedersen²

¹ FCT-NOVA, New Univ. Lisbon - Caparica (PT)

² Aalborg Univ. (DK)

11:40 Surface enhanced Raman spectroscopy of methylene blue deposited on Ag nanostructured substrate

**J.G. Morales Méndez¹, B.A. Macías Ayala¹, A.A. Aguilar Cardoso¹, J.G. Limas González¹,
L. Escobar Alarcón², M. Picquart¹, E. Haro Poniatowski¹**

¹ Departamento de Física, Univ. Autónoma Metropolitana Iztapalapa, Apdo. Mexico (MX)

² Departamento de Física, Instituto Nacional de Investigaciones Nucleares, Apdo. Mexico (MX)

12:00 Phyllosilicates as a platform for air-stable 2D magnetism

C. Teichert¹, A. Matkovic¹, L. Ludescher¹, K.P. Gradwohl¹, O. Peil², R. Bakker³,

J.G. Raith³, D. Knez⁴, E. Fisslthaler⁴, F. Hofer⁴, A. Sharma⁵, D.R.T. Zahn⁵, G. Salvan⁵

¹ Institute of Physics, Montanuniv. Leoben - Leoben (AT)

² Materials Center Leoben - Leoben (AT)

³ Chair of Mineralogy, Montanuniv. Leoben - Leoben (AT)

⁴ FELMI-ZFE, Graz Univ. of Technology - Graz (AT)

⁵ Semiconductor Physics, Chemnitz Univ. of Technology - Chemnitz (DE)

TUESDAY, NOVEMBER 23TH – AFTERNOON

ASS1 / Applied Surface Science 1

Callelongue Room – Chair: O. Renault (FR)

- 14:00 Argon cluster ions for surface analysis
Keynote lecture
A. Shard - National Physical Laboratory, Teddington (UK)
- 14:30 New possibilities offered by a novel laboratory-based Hard X-ray Photoelectron Spectroscopy (HAXPES) instrument for the characterization of buried interfaces
P-M. Deleuze, E. Martinez, O. Renault
Univ. Grenoble Alpes, CEA Leti, Grenoble (FR)
- 14:50 XPS study of oxide nucleation and growth mechanisms on a model FeCrNiMo stainless steel surface
B. Lynch, F. Wiame, V. Maurice, P. Marcus
Chimie ParisTech – Paris (FR)
- 15:10 Hybrid SIMS: new adaptive ion injection system (AIIIS) for improved repeatability of quantitative Orbitrap SIMS measurements
M. Kleine-Boymann¹, S. Kayser¹, H. Arlinghaus¹, A. Pirkl¹, A. Franquet², V. Spampinato²
¹IONTOF GmbH - Münster (DE)
²MCA, IMEC - Leuven (BE)
- 15:30 *Break*

ASS2 / Applied Surface Science 2

Callelongue Room – Chair: M. Kleine-Boymann (DE)

- 16:10 Evolution of beam screen surface conditioning upon particle irradiation for vacuum studies
S. Bilgen¹, G. Sattonnay¹, B. Mercier¹, S. Della Negra¹, D. Jacquet¹, I. Ribaud¹, V. Baglin²
¹Univ. Paris-Saclay, CNRS/IN2P3, IJCLab - Orsay (FR)
²CERN - Geneve (CH)
- 16:30 Plasma-induced polymerized amphiphobic coatings on textile substrates
H. Salapare, C. Fradin, S. Amigoni, F. Guittard, T. Darmanin
Univ. Côte d'Azur - Nice (FR)
- 16:50 DYVACS (DYnamic VACuum Simulation) code: calculation of gas density profiles in presence of Electron Cloud
G. Sattonnay¹, S. Bilgen¹, B. Mercier¹, V. Baglin²
¹Univ. Paris Saclay - IJCLab - Orsay (FR)
²CERN - Geneve (CH)

Poster Session #2

Rez-de-Jardin – level 0

- 17:20 Topics: **ASS / ITER / PST / VST**

TUESDAY, NOVEMBER 23TH – AFTERNOON

ITER: energy, plasma and materials

Morgiou Room – Chair: Y. Marandet (FR)

- 14:00 Acceptance tests performed for the WEST ITER-like tungsten actively cooled divertor
Keynote lecture
M. Richou¹, M. Missirlian¹, M. Diez¹, M. Ramaniraka¹, H. Greuner², J-C Hatchressian¹, M. Firdaouss¹
1 CEA, IRFM, Saint-Paul-Lez-Durance (FR)
2 Max Planck Institute for Plasma Physics, Garching (DE)
- 14:30 Modelling hydrogen transport in ITER divertor
R. Delaporte-Mathurin^{1, 2}, H. Yang¹, J. Denis³, J. Dark², E.A. Hodille¹, G. De Temmerman^{4, 5}, X. Bonnin⁴, J. Mougenot², Y. Charles², H. Bufferand¹, G. Ciralo¹, C. Grisolia¹
1 CEA, IRFM, Saint-Paul-lez-Durance (FR)
2 Univ. Sorbonne Paris Nord, LSPM, CNRS, UPR3407, Villetaneuse (FR)
3 Aix-Marseille Univ., CNRS, PIIM, Marseille (FR)
4 ITER Organization, Saint-Paul-lez-Durance (FR)
5 Zenon Research, Paris (FR)
- 14:50 The effect of a well-defined tungsten oxide layer on deuterium retention and release: a single crystal approach for macroscopic rate equations modeling
A. Dunand, M. Minissale, T. Angot, R. Bisson
Aix-Marseille Univ., CNRS, PIIM – Marseille (FR)
- 15:10 Sticking of ammonia on polycrystalline tungsten and 316L stainless steel
R. Bisson¹, M. Minissale¹, A. Dunand¹, J.B. Faure¹, T. Angot¹, G. De Temmerman²
1 Aix-Marseille Univ., PIIM, CNRS UMR7345 - Marseille (FR)
2 ITER Organization - St Paul Lez Durance (FR)
- 15:30 Optical properties of metals submitted to tokamak conditions
C. Louis De Canonville¹, M. Minissale², C. Pardanaud², R. Bisson², L. Gallais³
1 Aix Marseille Univ, CNRS, Centrale Marseille, Institut Fresnel, PIIM, Marseille (FR)
2 Aix Marseille Univ, CNRS, PIIM, Marseille (FR)
3 Aix Marseille Univ, CNRS, Centrale Marseille, Institut Fresnel, Marseille (FR)
- 15:50 *Break*

Special Topic: 150th Anniversary of Martin Knudsen

Morgiou Room – Chair: J. Schou (DK)

- 16:10 Knudsen effusion method for measuring vapor pressures of substances
V. Martis¹, D. Williams²
1 Surface Measurement Systems - London (UK)
2 Imperial College London - London (UK)

Poster Session #2

Rez-de-Jardin – level 0

- 17:20 Topics: **ASS / ITER / PST / VST**

WEDNESDAY, NOVEMBER 24TH – MORNING

VST3 / Vacuum Science and Technology 3

Endoume Room – Chair: V. Baglin (CH)

- 09:00 Building the world's largest complex vacuum system (ITER) – challenges and achievements
Keynote lecture
R.J.H. Pearce¹, G. Acien³, I. Banerjee¹, J. Benet³, J-L. Bersier¹, R. Blanco Martin¹, B. Boussier¹, J. Buckerfield¹, F. Canadell³, F. Chitu¹, A. Cobalt¹, M. Dremel¹, J. Dupuy³, J. Ferreol¹, S. Giors¹, G. Godia¹, D. Hughes², S. Hughes¹, A. Iannetti¹, C. Jarrige¹, D. Kostrova¹, G. Kouzmenko³, D. Laugier¹, O. Maleche¹, R. Martin³, L. Mora³, S. Nasluzov¹, E. Quinn¹, I. Reikh¹, M. Simon³, C. Smith², A. Teissier³, G. Vine¹, G. Wolfers¹, N. Woods¹, L. Worth¹
¹ ITER Organization, St. Paul lez Durance (FR)
² US ITER Project, Oak Ridge National Laboratory (USA)
³ Fusion for Energy, Barcelona (ES)
- 09:30 Overview of the Service Vacuum System (SVS), the ITER automatic leak localization system
A. Iannetti¹, N. Woods¹, B. Boussier¹, R. Pearce¹, L. Worth¹, C. Smiths², C. Harvey², N. Arnwin²
¹ ITER - St Paul Lez Durance (FR)
² ORNL - Oak Ridge (US)
- 09:50 Uncertainty analysis of the ITER torus effective pumping speed during the dwell phase
N. Vasileiadis, D. Valougeorgis
Univ. Thessaly - Volos (GR)
- 10:10 High-vacuum setup for permeability and diffusivity measurements by membrane techniques
G. Firpo¹, E. Angeli¹, L. Repetto¹, U. Valbusa¹, J. Setina²
¹ Univ. Genova Physics Department - Genova (IT)
² Institute of Metals and Technology - Ljubljana (SI)
- 10:30 *Break & Exhibition*

VST4 / Vacuum Science and Technology 4

Endoume Room – Chair: O. Malyshev (UK)

- 11:10 Investigation of the effects of valve closing in a static expansion system
M. Bernien, T. Bock, C. Buchmann, T. Rubin, K. Jousten
Physikalisch-Technische Bundesanstalt - Berlin (DE)
- 11:30 Evaporation and expansion of metal vapour in vacuum melting processes: experimental and numerical study applied to Zr and Ti
T. Poullain^{1,2}, J.P. Bellot², J. Jourdan², I. Crassous¹, A. Jardy²
¹ Framatome - Ugine (FR)
² Institut Jean Lamour - Nancy (FR)
- 11:50 Electrons on a straight path: a novel ionisation vacuum gauge suitable as reference standard
K. Jousten¹, M. Bernien¹, F. Boineau², N. Bundaleski³, M. Granovsky⁴, C. Gruber⁴, C. Illgen¹, B. Jenninger⁵, J. Šetina⁶, O. Teodoro⁷, M. Vicar⁸, M. Wüest⁹
¹ PTB - Berlin (DE)
² LNE - Paris (FR)
³ FCT-UNL - Lisboa (PT)
⁴ VACOM - Jena (DE)
⁵ CERN - Geneva (CH)
⁶ IMT - Ljubljana (SI)
⁷ IMT - Lisboa (PT)
⁸ CMI - Praha (RT)
⁹ INFICON - Balzers (LI)

WEDNESDAY, NOVEMBER 24TH – MORNING

EMP / Electronic Materials & Processing

Morgiou Room – Chair: J-H. Fillion (FR)

- 09:00 Materials integration and novel device applications using the silicon photonics integrated circuit
Keynote lecture
I. Crowe - Univ. Manchester (UK)
- 09:30 Synthesis, thermal stability and impedance behavior of a CNT-Rubber composite
L. Domratheva-Lvova¹, D.L. García-Ruiz¹, F.G. Granados-Martínez², J.M. Ambriz-Torres³, C.J. Gutiérrez-García³, J.J. Contreras-Navarrete³, J.A. Guzmán-Fuentes¹, D.R. Poiré-De La Cruz¹, N. Flores-Ramírez¹, L. García-González⁴, L. Zamora-Peredo⁴
¹ Univ. Michoacana de San Nicolas de Hidalgo - Morelia (MX)
² Instituto de Investigaciones en Materiales, Univ. Nacional Autónoma de México, Morelia (MX)
³ Instituto Tecnológico de Morelia/Tecnológico Nacional de México - Morelia (MX)
⁴ MICRONA, Universidad Veracruzana - Boca Del Rio (MX)
- 09:50 Thermodynamic Model for Wafer Bonding
K. Hingerl
Univ. Linz (AT)
- 10:10 Investigation of Al- and N-implanted 4H-SiC films by SIMS, XRD, TEM and Raman spectroscopy methods
M. Guziewicz¹, M. Wzorek¹, K. Piskorski¹, K. Pagowska¹, K. Czuba¹, M. Juchniewicz², R. Jakiela³, J. Domagala³
¹ Lukaszewicz Research Network – Institute of Microelectronics and Photonics - Warsaw (PL)
² CEZAMAT – Warsaw University of Technology - Warsaw (PL)
³ Institute of Physics, Polish Academy of Science - Warszawa (PL)

10:30 *Break & Exhibition*

SS3 / Surface Science 3

Morgiou Room – Chair: L. Savio (IT)

- 11:10 Synthesis of dumbbell silicene: a stable two-dimensional allotrope of silicon
L. Masson¹, T. Leoni¹, M. Daher Mansour¹, R. Parret¹, K. Zhang², R. Bernard², Y. Borensztein², G. Prévot², C. Hogan³, S. Colonna³, F. Ronci³, A. Resta⁴
¹ Aix Marseille Univ, CNRS, CINaM UMR 7325, AMUtech - Marseille (FR)
² Sorbonne Univ., CNRS, Institut des NanoSciences de Paris, INSP - Paris (FR)
³ Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche (ISM-CNR) - Roma (IT)
⁴ Synchrotron SOLEIL - Saint-Aubin (FR)
- 11:30 Collisional charge transfer of neon ions at surfaces
P. Riccardi
Dipartimento di Fisica Università della Calabria and INFN - Cosenza (IT)
- 11:50 Synchrotron radiation scanning photoelectron microscopy of electronic structure of ZnO and ZnO:N – comparison of experimental results and DFT calculations
E. Guziewicz¹, O. Volnianska¹, I. Demchenko², P. Zeller³, M. Amati³, L. Gregoratti³
¹ Inst. of Physics, Polish Academy of Sciences - Warsaw (PL)
² Dept. Chemistry, Univ. Warsaw (PL)
³ Elettra – Sincrotrone Trieste S.C.p.A., Trieste, Italy - Trieste (IT)

Lunch Break

WEDNESDAY, NOVEMBER 24TH – AFTERNOON

BIO / Biointerfaces

Callelongue Room – Chair: S. Giordani (IE)

- 14:00 Physico-chemical analysis of nanomaterials: it is all about surfaces!
Keynote lecture
G. Ceccone - Joint Research Centre, Ispra (IT)
- 14:30 In-situ matrix-enhanced secondary ion mass spectrometry for tissue analysis
T. Daphnis, B. Tomasetti, C. Dupont-Gillain, A. Delcorte
Institute of condensed matter and nanosciences, UCL - Louvain-La-Neuve (BE)
- 14:50 Correlative surface microscopy for healthcare technologies
O. Renault¹, A. Gomes De Carvalho¹, J-P. Barnes¹, A. Galtayries²
¹CEA-Leti - Grenoble (FR)
²Chimie ParisTech - Paris (FR)
- 15:10 *Break & Exhibition*

ASS3 / Applied Surface Science 3

Callelongue Room – Chair: H. Salapare (FR)

- 16:10 Tailoring protein soft landing using large argon cluster
B. Tomasetti, V. Delmez, T. Daphnis, C. Dupont, A. Delcorte
Univ. Catholique de Louvain, Institute of Condensed Matter and Nanosciences - Louvain-La-Neuve (BE)
- 16:30 Characterization of GaN structures by a combined SIMS & HAXPES approach
**T. Spelta¹, M. Veillerot¹, E. Martinez¹, L. Vauche¹, P. Fernandes Paes Pinto Rocha¹,
W. Vandendaele¹, B. Salem², B. Hyot¹**
¹CEA-LETI - Grenoble (FR)
²CNRS-LTM - Grenoble (FR)
- 16:50 Characterization of thin ferroelectric HfZrO films on III-V semiconductors
A. Irish
Lund Univ. (SE)
- 17:10 Enhanced electrocaloric response on antiferroelectric systems: an approach to solid-state cooling devices
**Y. Mendez-González¹, A. Peláiz-Barranco¹, J.D.S. Guerra², A. Pentón-Madrigo¹,
F. Calderón Piñar¹, O. García-Zaldívar¹**
¹Instituto de Ciencia y Tecnología de Materiales, Univ. La Habana (CU)
²Instituto de Física, Univ. Federal de Uberlândia (BR)
- 17:45 Cocktail with exhibitors
- 19:45 Cocktail dinner at “Le Mx Marseille”
Rue des Docks, Porte K, 13002 Marseille

WEDNESDAY, NOVEMBER 24TH – AFTERNOON

VST5 / Vacuum Science and Technology 5

Morgiou Room – Chair: J-L. Bersier (FR)

- 14:10 Towards the first direct measurement of the dynamic viscosity of gaseous tritium at cryogenic temperatures
J. Wydra, A. Marsteller, R. Grössle, L. Schlee
Karlsruhe Institute for Technology, Tritium Laboratory Karlsruhe - Eggenstein-Leopoldshafen (DE)
- 14:30 Characterization of gas-surface interaction in vacuum gas flows by comparison between computations and measurements
T. Basdanis, G. Tatsios, D. Valougeorgis
Univ. Thessaly - Volos (GR)
- 14:50 Numerical investigation of gas expansion from the gas cell source to accelerator regions of a laser wakefield accelerator
B. John¹, X. Gu¹, D. Emerson¹, K. Middleman², O. Malyshev², D. Symes³
¹ *Scientific Computing Department, STFC Daresbury Laboratory - Warrington (UK)*
² *ASTEC, STFC Daresbury Laboratory - Warrington (UK)*
³ *Central Laser Facility, STFC Rutherford Appleton Laboratory - Didcot (UK)*
- 15:10 Modeling and simulation of sputter-ion pump performances
L. Bonmassar¹, T. Isoardi², P. Manassero¹
¹ *Agilent Technologies Italia Spa - Torino (IT)*
² *Univ. Torino (IT)*
- 15:30 *Break & Exhibition*

VST6 / Vacuum Science and Technology 6

Morgiou Room – Chair: I. Martin-Graur (FR)

- 16:10 Modelling techniques for complex, distributed vacuum systems
A. Chew
Edwards Vacuum - Burgess Hill (UK)
- 16:30 All-in-one: time-of-flight spectroscopy as key technology for process monitoring and control
K. Kirsch, F. Fansa, J. Leiber, D. Heyne, S. Röhrig, A. Trüttschler, K. Bergner, M. Flämmich, U. Bergner
VACOM Vakuum Komponenten & Messtechnik GmbH - Grosslöbichau (DE)
- 16:50 Turbopumps: lowest vibration and highest uptime made with laser balancing technology
P. Wielsch, A. Schopphoff
Pfeiffer Vacuum GmbH - Asslar (DE)
- 17:10 How research demand drives product development
P. Schneider
VAT Vakuumventile AG - Haag (CH)
- 17:45 Cocktail with exhibitors
- 19:45 Cocktail dinner at “Le Mx Marseille”
Rue des Docks, Porte K, 13002 Marseille

THURSDAY, NOVEMBER 25TH – MORNING

ITER: energy, plasma and materials

Callelongue Room – Chair: J-L. Bersier (FR)

- 09:00 Physics of particle and heat exhaust in tokamaks
Plenary lecture
Y. Marandet - Aix-Marseille Univ., Marseille (FR)

SE1 / Surface Engineering 1

Callelongue Room – Chair: A. Cavaleiro (PT)

- 09:50 Characterization of laser ablated surface engineered surfaces of copper and stainless steel
R. Valizadeh¹, O. Malyshev¹, A. Hannah¹, P. Krkotic², M. Pont², J.M. O'callaghan³, D. Whitehead⁴, V.R.D. Dhanak⁵
¹ STFC - Daresbury (UK)
² CELLS - Barcelona (ES)
³ UPC - Barcelona (ES)
⁴ STFC - Manchester (UK)
⁵ Univ. Liverpool (UK)
- 10:10 Comparison of diffusion and reactivity between iron alloys and titanium as massive metal and magnetron sputtered coatings
J-M. Auger¹, C. Nouveau¹, A. Besnard¹, D. Cotton¹, F. Bussiere², M.R.L Ardigo-Besnard², F. Bernard², J.P. Monchoux³, C. Marcelot³, R. Cours³
¹ Arts et Metiers Institute of Technology, LABOMAP, HESAM Univ. - Cluny (FR)
² Laboratoire ICB, UMR 6303 CNRS – Univ. Bourgogne Franche-Comté - Dijon (FR)
³ CEMES-CNRS - Toulouse (FR)

- 10:30 *Break & Exhibition*

SE2 / Surface Engineering 2

Callelongue Room – Chair: F. Dulieu (FR)

- 11:10 Self-Reporting Ceramic Coatings: Proof of concept for tracking phase transitions, decomposition and oxidation behavior
Keynote lecture
J. Schneider - RWTH Aachen Univ. (DE)
- 11:40 Cr based sputtered decorative coatings for automotive industry
E. Carneiro¹, N. Parreira¹, T. Vuchkov^{2, 3}, A. Cavaleiro², J. Ferreira⁴, M. Andritschky¹, S. Carvalho^{2, 1}
¹ CFUM-UP, Physics Department, Univ. Minho, Guimarães (PT)
² Univ. Coimbra, CEMMPRE – Coimbra (PT)
³ LED & MAT-IPN - Laboratory for Wear, Testing and Materials, Instituto Pedro Nunes, Coimbra (PT)
⁴ KLC - Technical Plastics, Engineering Department, Marinha Grande (PT)
- 12:00 Tribo-mechanisms during sliding of TMD-based self-lubricant coatings
A. Cavaleiro¹, T.B. Yaqub¹, T. Vuchkov¹, J.F. Pierson², S. Bruyère²
¹ Univ. Coimbra - Coimbra (PT)
² Institut Jean Lamour – Nancy (FR)

Lunch Break

THURSDAY, NOVEMBER 25TH – MORNING

ITER: energy, plasma and materials

Callelongue Room – Chair: J-L. Bersier (FR)

09:00 Physics of particle and heat exhaust in tokamaks
Plenary lecture
Y. Marandet - Aix-Marseille Univ., Marseille (FR)

PST / Plasma Science & Technique

Morgiou Room – Chair: V. Guerra (PT)

- 09:50 The effects of surface processes on the characteristics of low-pressure capacitively coupled plasmas: insights from particle based simulations
Keynote lecture
A. Derzsi – Wigner Research Centre for Physics, Budapest (HU)
- 10:20 Analytical benefits of plasma gas changes in Glow Discharge Optical Emission Spectrometry for fast elemental depth profiles of a variety of materials
P. Chapon
HORIBA - Palaiseau (FR)
- 10:40 *Break & Exhibition*

THURSDAY, NOVEMBER 25TH – AFTERNOON

VST7 / Vacuum Science and Technology 7 Callelongue Room – Chair: E. Haro Poniatowski (MX)

14:00 Investigation of the interaction of hydrogen and nitrogen with the tantalum cathode of a new ionization vacuum gauge with a straight path of electrons

J. Setina, T. Verbovsek

Institute of Metals and Technology - Ljubljana (SI)

14:20 Heavy molecule residual gas analyzer

L. Hofer, R. Gerber, S. Gasc

Spacetek Technology AG - Gümligen (CH)

14:40 *Break & Exhibition*

VST8 / Vacuum Science and Technology 8 Callelongue Room – Chair: K. Jousten (DE)

15:20 Zr-Ti getter film integration in MEMS packaging

S. Lemettre, C. Bessouet, A. Aassime, P. Coste, A. Bosseboeuf, J. Moulin

C2N - Palaiseau (FR)

15:40 Electron conditioning of technical surfaces at cryogenic and room temperature in the 0-1 keV energy range

M. Haubner¹, V. Baglin², B. Henrist²

¹*Department of Physics, Faculty of Mechanical Engineering, Czech Technical Univ., Prague (CZ)*

²*European Organization for Nuclear Research (CERN) - Geneva (CH)*

16:00 Edge effect on helium outgassing from ULE glass

S. Avdiaj, I. Tredhaku

Univ. Prishtina., Department of Physics - Prishtina (XK)

Closing Callelongue Room

16:30 **Closing Ceremony**
I. Martin-Graur (co-chair of EVC16)

THURSDAY, NOVEMBER 25TH – AFTERNOON

TF3 / Thin Film 3

Morgiou Room – Chair: C. Tavares (PT)

- 14:00 Contact-less methods to study carrier kinetics in SnS thin films for photovoltaic applications
R. Schwarz¹, P. Sanguino¹, M. Kunst¹, M. Ben Mbarek², M. Reghima², N. Bundaleski³, O. Teodoro³
¹ Instituto Superior Técnico - Lisboa (PT)
² Institut d'Ingénieurs de Nabeul (IPEIN) - Mrezka (TN)
³ Univ. Nova de Lisboa - Caparica (PT)
- 14:20 Corrosion resistance of zirconium thin films deposited by GLAD PVD for biomedical application
K. Rahmouni^{1,2}, A. Besnard¹, C. Nouveau¹, M. Zaabat², K. Oulmi³, L. Aissani²
¹ Arts et Métiers Institute of Technology, LaBoMaP, HESAM Univ. - Cluny (FR)
² Laboratory of active components and materials, Larbi Ben M'hidi Univ. - Oum El Bouaghi (DZ)
³ Laboratory of Electrochemistry, Faculty of material sciences, Batna Univ. 1 - Batna (DZ)

14:40 *Break & Exhibition*

TF4 / Thin Film 4

Morgiou Room – Chair: N. Gauthier (FR)

- 15:20 Atomic Layer Deposition of TiN thin film and Pd nanoparticles for hydrogen separative membranes
C. Badie¹, M. Drobeck², C. Charmette², A. Julbe², J.M. Decams³, M. Bechelany², L. Santinacci¹
¹ Aix-Marseille Univ., CNRS, CINAM - Marseille (FR)
² Institut Européen des Membranes, Univ. Montpellier, CNRS, ENSCM - Montpellier (FR)
³ Annealsys SAS - Montpellier (FR)
- 15:40 Hydrogen sorption of oxidized yttrium-based thin films getters
C. Kutyla¹, C. Bessouet¹, S. Lemettre¹, P. Coste¹, A. Bosseboeuf¹, T. Sauvage², A. Bellamy², O. Wendling²
¹ C2N - UMR9001, Palaiseau (FR)
² CEMHTI - UPR3079, Orléans (FR)

Closing

Callelongue Room

- 16:30 Closing Ceremony
I. Martin-Graur (co-chair of EVC16)