

Thursday, September 10, 2020

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## Event G | Panorama Saal

### Registration

Thursday, September 10, 2020 | 08:30 - 09:00

### PSE Award Session | Halle 1

09:00 - 10:15 PSE Conference Announcements

**PL0004** PSE Award Ceremony

Winners Lecture **Stages in the progress of plasma assisted PVD since its discovery and challenges for coating processes in future manufacturing.**

Allan Matthews

University of Manchester, Manchester, United Kingdom

### Session G1 | Plasma treatment

10:30 - 10:50 **Polymer surface functionalization with micro-flames**

ORG101 Andreas Holländer

Fraunhofer-Institut for Applied Polymer, Potsdam, Germany

10:50 - 11:10 **Highly productive pretreatment of metallic substrates**

ORG102 Jens-Peter Hei, Lars Klose

Fraunhofer FEP, Dresden, Germany

11:10 - 11:30 **Treatment of soft-PVC with dielectric barrier discharge to reduce the migration of plasticizers**

ORG103

Thomas Neubert, Veysel Zeren, Kristina Lachmann, Michael Thomas

Fraunhofer IST, Braunschweig, Germany

**11:30 - 12:00 Coffee Break**

Foyer Halle 1

### Session G2 | Plasma treatment

12:00 - 12:30 **Structuring surfaces from thin film metallic glasses: bottom-up and top-down approaches**

KNG101

A. Borroto<sup>1</sup>, M. Prudent<sup>2</sup>, S. Bruyère<sup>1</sup>, J.P. Colombier<sup>2</sup>, F. Bourquard<sup>2</sup>, D. Pilloud<sup>1</sup>, D. Horwat<sup>1</sup>, F. Garrelie<sup>2</sup>, J.F. Pierson<sup>1</sup>

<sup>1</sup> Institut Jean Lamour, Univ. de Lorraine, Nancy, France, <sup>2</sup> Laboratoire Hubert Curien, UJM, St-Etienne, France

12:30 - 12:50 **Comparison of four atmospheric pressure plasma jets applied for treatment of polypropylene**

ORG104

Katerina Polaskova<sup>1</sup>, Alp Ozkan<sup>2</sup>, Petr Jelinek<sup>1</sup>, Milos Klima<sup>1</sup>, Zdenka Jenikova<sup>3</sup>, Francois Reniers<sup>2</sup>, Lenka Zajickova<sup>1</sup>

<sup>1</sup> Masaryk University, Brno, Czech Republic, <sup>2</sup> Université Libre de Bruxelles, Brussels, Belgium, <sup>3</sup> Czech Technical University, Prague, Czech Republic

12:50 - 13:10 **Chlorine-based plasma etching of Fe-Cr alloys for the development of steel patterning: modeling, plasma diagnostics and etching rate measurements**

ORG105

Feriel Laourine<sup>1</sup>, Guillaume Ledaim<sup>2</sup>, Ahmed Rhallabi<sup>2</sup>, Gregory Marcos<sup>1</sup>, Stephane Guilet<sup>3</sup>, Cedric Noel<sup>1</sup>, Gerard Henrion<sup>1</sup>, Thierry Czerwiec<sup>1</sup>

<sup>1</sup> Institut Jean Lamour, Nancy, France, <sup>2</sup> Institut des matériaux Jean Rouxel, Nantes, France, <sup>3</sup> Centre de Nanosciences et de nanotech., Palaiseau, France

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13:10 - 13:30  
ORG106 **Core@shell Ag@Ti nanoparticles prepared by in-flight coating**  
Hana Libenska<sup>1</sup>, Jan Hanuš<sup>1</sup>, Amir M. Ahadi<sup>2</sup>, Ondřej Kylián<sup>1</sup>, Veronika Červenková<sup>1</sup>, Miroslav Cieslar<sup>1</sup>, Tereza Košutová<sup>1</sup>, Hynek Biederman<sup>1</sup>  
<sup>1</sup> Charles University, Prague 8, Czech Republic, <sup>2</sup> Shahid Chamran University, Ahvaz, Iran

### Event H | Halle 1

#### Registration

Thursday, September 10, 2020 | 08:30 - 09:00

#### PSE Award Session | Halle 1

09:00 - 10:15 PSE Conference Announcements

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Allan Matthews

University of Manchester, Manchester, United Kingdom

#### Session H1 | Protective and tribological coatings 3

10:30 - 11:00  
KNH101 **Electrochemical Properties of Hybrid Coating Systems on Mg-based alloys with Plasma Electrolytic Oxidation Process as Pretreatment**

Mahmood Aliofkhazraei

TMU, Chandler, United States

**11:00 - 11:30**  
**Coffee Break**  
Foyer Halle 1

#### Session H1 | Protective and tribological coatings 3

11:30 - 11:50  
ORH101 **High-temperature performance of quaternary system (Ti, Al, Cr) N deposited by HiPIMS**

Mohamed Riyad Alhafian<sup>1</sup>, Jean-Baptiste Chemin<sup>1</sup>, Marianne Penoy<sup>2</sup>, Laurent Bourgeois<sup>2</sup>, Flavio Soldera<sup>3</sup>, Frank Mücklich<sup>3</sup>, Patrick Choquet<sup>1</sup>

<sup>1</sup> Luxembourg Institute Science Technology, Luxembourg, Luxembourg, <sup>2</sup> Ceratizit Luxembourg S.à.r.l., Mamer, Luxembourg, <sup>3</sup> Saarland University, Functional Materials, Saarbrücken, Germany

11:50 - 12:10  
ORH102 **Elimination of Crazing Defects in Large Area Sputter Coating of Glass**

Wojciech Gajewski<sup>1</sup>, Moritz Heintze<sup>2</sup>, Jakub Świątnicki<sup>1</sup>, Jan Peter Engelstaedter<sup>2</sup>, Krzysztof Ruda<sup>1</sup>

<sup>1</sup> TRUMPF Huettinger, Zielonka, Poland, <sup>2</sup> TRUMPF Hüttinger GmbH + Co. KG, Freiburg, Germany

12:10 - 12:30  
ORH103 **Laser structural patterning for accelerating the self-adaption mechanism in low friction W-S-C coatings**

Albano Cavaleiro<sup>1</sup>, Mohammadreza Shamshiri<sup>1</sup>, Ana Manaia<sup>2</sup>, Todor Vuchkov<sup>2</sup>, Alexandre Carvalho<sup>3</sup>, Guilherme Gaspar<sup>3</sup>, Antonio Fernandes<sup>3</sup>, Florinda Costa<sup>3</sup>

<sup>1</sup> SEG-CEMMPRE Universidade de Coimbra, Coimbra, Portugal, <sup>2</sup> IPN - LED & MAT - Instituto Pedro Nunes, Coimbra, Portugal, <sup>3</sup> I3N, University of Aveiro, Aveiro, Portugal

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12:30 - 12:50  
ORH104      **Thermal stability of nanostructured TiAlN-based coatings deposited by HIPIMS with positive pulses**  
Alvaro Mendez Fernandez<sup>1</sup>, José Antonio Santiago<sup>2</sup>, Iván Fernández-Martínez<sup>2</sup>, Ambjörn Wennberg<sup>2</sup>, Miguel Panizo-Laiz<sup>3</sup>, Miguel Angel Monclús<sup>4</sup>, Jon Molina-Aldareguía<sup>4</sup>  
<sup>1</sup> Nano4Energy/IMDEA Materials, Madrid, Spain, <sup>2</sup> Nano4Energy, Madrid, Spain, <sup>3</sup> Universidad Politécnica de Madrid, Madrid, Spain, <sup>4</sup> IMDEA Materials Institute, Madrid, Spain

## Event I | Carl Zeiss Saal

### Registration

Thursday, September 10, 2020 | 08:30 - 09:00

### PSE Award Session | Halle 1

09:00 - 10:15      PSE Conference Announcements

**PL0004**      PSE Award Ceremony

Winners Lecture      **Stages in the progress of plasma assisted PVD since its discovery and challenges for coating processes in future manufacturing.**

Allan Matthews

University of Manchester, Manchester, United Kingdom

**10:30 - 11:00**      **Coffee Break**

Foyer Halle 1

### Session I1 | Biomedical and biological application

11:00 - 11:30  
KNI101      **Ceramic-Ag nanocomposite coatings produced by magnetron sputtering: effect of Ag nanoparticles on functional properties**  
Sandra Carvalho<sup>1</sup>, Isabel Carvalho<sup>2</sup>, Mariana Henriques<sup>1</sup>, S. Calderon V.<sup>3</sup>, A. Cavaleiro<sup>2, 2, 2, 2, 2</sup>  
<sup>1</sup> University of Minho, Braga, Portugal, <sup>2</sup> University of Coimbra, Coimbra, Portugal, <sup>3</sup> INL -International Iberian Nanotechnology, Braga, Portugal

11:30 - 11:50  
ORI101      **Plasmonic nanoparticle-built surfaces: The effective tool for (bio)molecules detection**

Jiri Kratochvíl<sup>1</sup>, Vadym Prysiazhnyi<sup>2</sup>, Filip Dycka<sup>3</sup>, Petr Sezemsky<sup>3</sup>, Jaroslav Kousal<sup>4</sup>, Zdenek Hubicka<sup>5</sup>, Martin Cada<sup>5</sup>, Ondrej Kylian<sup>4</sup>, Vitezslav Stranak<sup>3, 3</sup>

<sup>1</sup> University of South Bohemia&Charles Uni., Ceske Budejovice, Czech Republic, <sup>2</sup> Masaryk University, Brno, Czech Republic, <sup>3</sup> University of South Bohemia, Ceske Budejovice, Czech Republic, <sup>4</sup> Charles University, Prague, Czech Republic, <sup>5</sup> Czech Academy of Sciences, Prague, Czech Republic

11:50 - 12:10  
ORI102      **Study of the local segregation of multi-component powders during a plasma spray process for biological applications**

Thorben Kewitz, Holger Testrich, Antje Quade, Katja Fricke, Maik Fröhlich, Rüdiger Foest, Klaus-Dieter Weltmann  
INP, Greifswald, Germany

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12:10 - 12:30  
ORI103

**First insights of a novel antibacterial and cytocompatible porous Ta<sub>2</sub>O<sub>5</sub> surface doped with zinc oxide nanoparticles**

Luísa Fialho<sup>1</sup>, L. Grenho<sup>2</sup>, M. H. Fernandes<sup>2</sup>, S. Calderon V.<sup>3</sup>, S. Carvalho

<sup>1</sup> University of Minho, Guimarães, Portugal, <sup>2</sup> University of Porto, Porto, Portugal, <sup>3</sup> INL, Braga, Portugal