

# SurfCoat Korea 2018 Preliminary Program

28 - 30 March, 2018 | Seoul/Incheon, Republic of Korea

**March 28<sup>th</sup>, 2018**

**Session I: Surface treatments and coatings deposition processes**

**Conference Room 116/117**

**Session Chairs:**

**Prof. Norbert Koch, Humboldt-Universität zu Berlin, Germany**

**Prof. Han Cheol Choe, Chosun University, Rep. of Korea**

**08:00-10:00 Registration + Welcoming coffee**

<b>10:00-10:40</b>	Electrodeposition of ceria-based coatings on metal substrates <b>F. Pedraza</b>	<b>Prof. Fernando Pedraza</b> , University de La Rochelle, <b>France</b>
<b>10:40-11:20</b>	Development of Thermal Barrier Coating with High Oxidation Resistance by Grit Blasting K. Ito, T. Shima, <b>M. Arai</b> , T. Suidzu and A. Kanno	<b>Prof. Masayuki Arai</b> , Tokyo University of Science, <b>Japan</b>
<b>11:20-12:00</b>	Transfer-Free Large-Scaled High Quality Graphene Synthesized Directly on Flexible Substrates B-J. Park, J-S. Choi, Y. Kim, C. Jeon, S. Lee, H. Shin, J-H. Eom and <b>S-G. Yoon</b>	<b>Prof. Soon-Gil Yoon</b> , Chungnam National University, <b>Rep. of Korea</b>
<b>12:00-12:30</b>	Enhancing magnetron sputtered protective coatings via hierarchical structuring <b>F. Huang</b>	<b>Prof. Feng Huang</b> , Chinese Academy of Science-Ningbo, <b>China</b>

**12:00-14:00 Lunch Break / Posters Session I**

**Session I.A: Coatings deposition and processing**

**Conference Room 116/117**

**Session Chairs:**

**Prof. Soon-Gil Yoon, Chungnam National University, Rep. of Korea**

**Prof. Fernando Pedraza, University de La Rochelle, France**

**Dr. David Ruch, Luxembourg Institute of Science and Technology, Luxembourg**

<b>14:00-14:15</b>	Processing of an organosilazane-based glass/ZrO <sub>2</sub> composite coating system by laser pyrolysis <b>A. Horcher</b> , K. Tangermann, G. Barroso, W. Krenkel and G. Motz	<b>Mr. Alexander Horcher</b> , University of Bayreuth, <b>Germany</b>
<b>14:15-14:30</b>	Effect of annealing Nickel feedstock powder to produce WC-5wt%Ni cold sprayed coatings <b>T. Chingosho</b> , N. Sacks and I. Botef	<b>Mr. Tatenda Chingosho</b> , University of the Witwatersrand, <b>South Africa</b>
<b>14:30-14:45</b>	Multi-technical characterization of the impact of S3P surface heat treatments on galling in stainless steels <b>T. Lesage</b> , S. Bouvier, P. Jacquot, M. Risbet, Y. Chen and P.-E. Mazeran	<b>Mr. Thibault Lesage</b> , FRE UTC-CNRS 2012-Sorbonne University- <b>France</b>
<b>14:45-15:00</b>	Effect of External Magnetic Fields on Iron Oxide Nanoparticulate Films Prepared by Sparking Process <b>R. Siriariyachai</b> , E. Kantarak, W. Sroila, T. Kumpika, P. Singjai and W. Thongsuwan	<b>Mr. Rukpat Siriariyachai</b> , Chiang Mai University, <b>Thailand</b>

**Session I.B: Functional/ Multi-functional, composite/ hybrid, graded and multilayers coatings**

**Session Chairs:**

**Dr. David Ruch, Luxembourg Institute of Science and Technology, Luxembourg**

**Dr. Quanshun Luo, Sheffield Hallam University, United Kingdom**

<b>15:00-15:30</b>	Multi-functional nanocomposites thin films: from molecules to applications <b>D. Ruch</b>	<b>Dr. David Ruch</b> , Luxembourg Institute of Science and Technology, <b>Luxembourg</b>
<b>15:30-15:45</b>	Polydimethylsiloxane-Polythiourethane polymer blend with potential as Fouling-Release coating	<b>Dr. Martina Baum</b> , Kiel University, <b>Germany</b>

	H. Qui , A. Gapeeva, I. Hölken, R. Adelong and <b>M. Baum</b>	
<b>15:45- 16:00</b>	Estimation of barrier properties of the composite hydrophobic coatings on PEO-pretreated metals S.V. Gnedenkov, S.L. Sinebryukhov, <b>V.S. Egorkin</b> and I.E. Vyaliy	<b>Dr. Vladimir Egorkin</b> , Institute of Chemistry FEB RAS, Vladivostok, <b>Russia</b>
<b>16:00-16:30 Coffee Break / Posters Session I</b>		
<b>16:30-16:45</b>	Functionalised Silica based Surface Coating for Enhancing the Hygroscopic Properties of Bio-based Building Insulation Materials <b>A. Hussain</b> , J. Calabria- Holley and M. Lawrence	<b>Mr. Atif Hussain</b> , University of Bath, <b>United Kingdom</b>
<b>16:45-17:00</b>	Flame retardancy surface coating with functionalised silica-based for wood waterborne coatings <b>T. D-T. Hoang</b> , V. Landry, P. Blanchet and C. Dagenais	<b>Ms. Thi Doan Trang Hoang</b> , Laval University, <b>Canada</b>
<b>17:00-17:15</b>	An efficient method for three-dimensional thermoelastic contact of functionally graded materials under frictional heating <b>H. Zhang</b> and W.Wang	<b>Mr. Haibo Zhang</b> , Beijing Institute of Technology, <b>China</b>
<b>17:15-17:30</b>	Adjustment of the composition Al, Cr, Si, Ti in AlCrSiTi nitride film by Taguchi method to obtain optimal composition <b>P-Y. Lu</b> and S-J. Lin	<b>Ms. Pei-Yu Lu</b> , National Tsing Hua University, <b>Taiwan</b>
<b>17:30-17:45</b>	Bioorthogonal in situ Hydrogels based on Polyether-Polyols for new Biosensor Materials with high Sensitivity <b>A. Herrmann</b> , U. Schedler and R. Haag	<b>Mrs. Anna Herrmann</b> , Free University of Berlin, <b>Germany</b>

**March 29<sup>th</sup>, 2018**

**Session II: Thin Films characterization and properties**

**Conference Room 116/117**

**Session Chairs:**

**Prof. Alessandro Lavacchi, Institute of Chemistry of Organometallic Compounds (ICCOM), Italy,**

**Prof. Masayuki Arai, Tokyo University of Science, Japan**

**Dr. David Ruch, Luxembourg Institute of Science and Technology, Luxembourg**

**Prof. Sandra Carvalho, University of Minho, Portugal**

<b>09:30-10:00</b>	Using the Concept of Self-Adaption for Improving the Performance of Tribological Coatings <b>A. Cavaleiro, F. Fernandes and T. Polcar</b>	<b>Prof. Albano Cavaleiro, University of Coimbra, Portugal</b>
<b>10:00-10:15</b>	Micro/ macroscopic elastic constants of thin films determined by using Impulse Excitation Technique and X-ray diffraction <b>A. Alhussein, M.F. Slim and M. François</b>	<b>Prof. Akram AlHussein, University of Technology of Troyes, France</b>
<b>10:15-10:30</b>	Industrial X-ray Fluorescence Coating Thickness Analyzer Application for Phosphate Coating Thickness on Steel <b>A.Sokolov, E.Hasikova, A.Pechersky,V.Gostilo, H.B. Jeong, J.H.Lim and K.Y.Lee</b>	<b>Mr HB Jung, Euro Science Co., Ltd, Rep.of Korea</b>

**10:30-11:00 Coffee Break / Posters Session II**

<b>11:00-11:15</b>	Wetting of highly super-hydrophobic textures <b>L. Vonna</b>	<b>Dr. Laurent Vonna, CNRS, IS2M UMR 736/ University of Upper Alsace, France.</b>
<b>11:15-11:30</b>	Prediction Model for Oil-water Separation Based on Membranes with Special Wettability <b>S. Oh, S. Ki, S. Ryu, M-C. Shin, J. Lee, C. Lee and Y. Nam</b>	<b>Mr. Seungtae Oh, Kyung Hee University, Rep. of Korea</b>
<b>11:30-11:45</b>	Direct influence of the surface roughness on contact angle and surface free energy <b>J. Korpela, H. Auvinen, A. Junnila, G. Ohlsson and S. Lauren</b>	<b>Mr. Jyrki Korpela, Biolin Scientific Oy, Finland</b>
<b>11:45-12:00</b>	An Analysis on effects of Weathering on EPDM Vehicle Sealing System Surfaces <b>Y.Güner, S. Yildiz, A.E. Kutlu and U.Olgun</b>	<b>Mrs. Sevgi Yildiz, Standard Profil Automotive Sealing Systems, Turkey</b>
<b>12:00-12:15</b>	Smart coatings with interfacial thermoreversible properties <b>M. Vauthier, L. Jierry, V. Roucoules and F. Bally-Le Gall</b>	<b>Ms. Madeline Vauthier, UMR-CNRS/ University of Upper Alsace, France</b>

**12:00-14:00 Lunch Break / Posters Session II**

**Focused session on thin film/ coatings tribology**

**Session chairs: Prof. Albano Cavaleiro, University of Coimbra, Portugal**

**Dr. Quanshun Luo, Sheffield Hallam University, United Kingdom**

**Prof. Sandra Carvalho, University of Minho, Portugal**

<b>14:00-14:30</b>	The dry sliding wear and self-adaptive friction property of transition metal nitride coatings <b>Q. Luo, M Kitchen, P Allender, F Huang, Q Wang and S Yang</b>	<b>Dr. Quanshun Luo, Sheffield Hallam University, United Kingdom</b>
<b>14:30-15:00</b>	Catalytically active coating for tribological applications <b>G. Ramirez, O. Erilmaz and A. Erdemir</b>	<b>Dr. Giovanni Ramirez, Bruker Nano Surfaces, CA, USA</b>
<b>15:00-15:30</b>	Zinc and Zinc-Iron Nanoparticles as Oxygen Scavengers <b>I. Carvalho, S. Calderon, P. J. Ferreira, A. Cavaleiro and S. Carvalho</b>	<b>Prof. Sandra Carvalho, University of Minho, Portugal</b>
<b>15:30-16:00</b>	Development of robust and self-lubricating coatings of nickel-nanoparticle Composite <b>S.C. Wang, N. Zhou, F.C. Walsh and Y. He</b>	<b>Dr. Shunca Wang, University of Southampton, United Kingdom</b>

**16:00-16:30 Coffee Break / Posters Session II**

<b>16:30-17:00</b>	Nanoscale friction: From solid lubricants to electricity nanogenerators <b>T. Polcar</b>	<b>Dr. Tomas Polcar, University of Southampton, United Kingdom</b>
<b>17:00-17:15</b>	An examination of structural and mechanical properties of carbon doped CrAlN thin films deposited by HiPIMS/DC-hybrid processes	<b>Mr. Dominic Stangier, TU Dortmund University, Germany</b>

	W. Tillmann and <b>D. Stangier</b>	
<b>17:15-17:30</b>	Atomic Force Microscopy PinPoint Nanomechanical Mode for Nanoscale Modulus Mapping Wenqing Shi, Gerald Pascual, <b>Byong Kim</b> , and Keibock Lee	<b>Dr. Byong Kim</b> , Park Systems, Inc., Santa Clara, CA, <b>USA</b>
<b>17:30-17:45</b>	Growth and characterisation of Fe-Ti-N coatings <b>S. Thirumalai</b> and A.L. Greer	<b>Mr. Sundararajan Thirumalai</b> , University of Cambridge, <b>United Kingdom</b>
<b>17:45-18:00</b>	Evaluation of tribological properties of water-based nanolubricant added with TiO <sub>2</sub> nanoparticles at elevated temperatures <b>H. Wu</b> , J. Zhao, S.Huang, L. Wang, H. Huang, S. Jiao and Z. Jiang	<b>Mr. Hui Wu</b> , University of Wollongong, <b>Australia</b>
<b>18:00-18:15</b>	The effect of chromium content on cutting performance and oxidation resistance of TiAlCrN coatings <b>M.Danek</b> , F. Fernandes, T.Polcar and A. Cavaleiro	<b>Mr. Martin Danek</b> , Technical University in Prague, <b>Czech Republic</b>

March 30<sup>th</sup>, 2018

Session III: Coatings for energy and environmental applications

Conference Room 116/ 117

Session chairs:

Prof. Akram AlHussein, University of Technology of Troyes, France

Prof. Alessandro Lavacchi, Institute of Chemistry of Organometallic Compounds (ICCOM), Italy

09:00-09:30	Functionalization of electronic material interfaces with organic molecular agents <b>N. Koch</b>	<b>Prof. Norbert Koch</b> , Humboldt-Universität zu Berlin, Germany
09:30-10:00	Coatings: Opportunities and Challenges in Fuel Cells and Electrolysis <b>A. Lavacchi</b>	<b>Prof. Alessandro Lavacchi</b> , Institute of Chemistry of Organometallic Compounds (ICCOM), Italy
<b>10:00-10:30 Coffee Break</b>		
10:30-10:45	Effect of novel treatment based on PLD-Deposited PbS Nanoparticles:porous Si on the optoelectronic properties of mc-Silicon <b>M. Gaidi</b> , Hajjaji, M. Ben Rabha, K. Trabelsi, B. Bessais and M. A. El Khakani	<b>Prof. Mounir Gaidi</b> , University of Sharjah, United Arab Emirates
10:45-11:00	Development of a silica-gel coated finned-tube heat exchanger for the performance enhancement of adsorption technologies <b>S. J. Oh</b> , M. W. Shahzad, M. Burhan and K. C. Ng	<b>Dr. Seung Jin Oh</b> , King Abdullah University of Science & Technology, Kingdom of Saudi Arabia
11:00-11:15	Corrosion Inhibition Properties of Cerium Doped Waterborne Polyurethane/Clay Coatings on Mild Steel <b>M.M. Rahman</b>	<b>Dr. Mohammad Mizanur Rahman</b> , King Fahd University of Petroleum and Minerals, Saudi Arabia

## Posters Sessions

**March 28<sup>th</sup>, 2018**

**Session I: Surface treatments and coatings deposition processes**

**Conference Room 118**

N.	Poster Title	Author/Affiliation/Country
1	Graphite Raman vibrations as a probe of thermal degradation in hydrophobic graphite-based thin film coatings. <b>V. Gutiérrez-Cano</b> , F. Rodríguez and J.A. González	<b>Ms. Vanessa Gutiérrez Cano</b> , University of Cantabria, <b>Spain</b>
2	Investigation of robust hydrophobic coating on glass surface by an atmospheric pressure plasma jet for plasma-polymerization of Hexamethyldisiloxane conjugated with (3-Aminopropyl) triethoxysilane. <b>M. M. Hossain</b> , Q. Hung Trinh, D. Ba Nguyen, M.S.P. Shdhakaran and Y. Sun Mok	<b>Mr. Md Mokter Hossain</b> , Jeju National University, <b>Rep. of Korea</b>
3	Acetone sensing properties of WO <sub>3</sub> -ZnO core-shell nanorods S. M. Lee, <b>J. K. Lee</b> , W. S. Lee, C. Lee and W. I. Lee	<b>Ms. Jae Kyung Lee</b> , Inha University, <b>Rep. of Korea</b>
4	Photocatalytic activity of Fe <sub>2</sub> O <sub>3</sub> -doped TiO <sub>2</sub> Nanoparticulate Films Prepared by Sparking off Fe Electroplated Ti Tips under external electric fields <b>A. Hankhantod</b> , E. Kantarak, W. Sroila, T. Kumpika, P. Singjai and W. Thongsuwan	<b>Ms. Apinya Hankhantod</b> , Chiang Mai University, <b>Thailand</b>
5	Transparent (Sn, Nb)O <sub>2</sub> thin film with high conductivity as high-rate anode for Lithium-ion Batteries <b>S. Zhang</b> , J. Zhang, G.Cao, J. Hu and G. Shao	<b>Mr. Shilin Zhang</b> , Zhengzhou University, <b>China</b>
6	Modification of the Phase Structure of the Nanocrystalline ZrO <sub>2</sub> Thin Films by Argon-ion Irradiation at Room Temperature <b>Y. Yun</b> , G.Cao, J.Hu and G. Shao	<b>Mr. Yifan Yun</b> , Zhengzhou University, <b>China</b>
7	Synthesis and mechanism study of Samarium Cobalt Particles using Modified Spray Pyrolysis-Calcination and reduction-diffusion process <b>T-Y. Hwang</b> , J. Lee, G-M. Go and Y-H. Choa	<b>Dr. Tae-Yeon Hwang</b> , Hanyang University, <b>Rep. of Korea</b>
8	Electrospun porous SnO <sub>2</sub> -CuO hollow nanofiber mat for H <sub>2</sub> S gas sensing with high performance <b>K-R. Park</b> , Y. Song, H-B. Cho and Y-H. Choa	<b>Mr. Kee-Ryung Park</b> , Hanyang University, <b>Rep. of Korea</b>
9	Fabrication of uniform sized hexagonal boron nitride nanopowder for thermal applications <b>Y. Song</b> , S. Ryu, J.Kim and Y-H. Choa	<b>Mr. Yoseb Song</b> , Hanyang University, <b>Rep. of Korea</b>
10	Electrostatic coupling of graphite nanoplates and poly(methyl methacrylate) particles using ethylene maleic anhydride copolymer for highly conductive polymer composites <b>S.H. Ryu</b> , S. Kim, Y-T. Kwon, S-O. Kang, H-B. Cho, M. Hussain, Y-J. Lee and Y-H. Choa	<b>Mr. Seung Han Ryu</b> , Hanyang University, <b>Rep. of Korea</b>
11	Electromagnetic and Microwave Absorption Properties of Fe@SiO <sub>2</sub> Core-Shell Composites with Tunable Shell Thickness <b>H-R. Lim</b> , S-J. Jung, T-Y. Hwang, J. Lee, Y. Song, H-B. Cho and Y-H. Choa	<b>Ms. Hyo-Ryoung Lim</b> , Hanyang University, <b>Republic of Korea</b>
12	Facile synthesis of prussian blue-reduced graphene oxide nanocomposites by irradiation <b>C. Roh</b> , S-C. Jang, I. Lee and Y.S. Huh	<b>Prof. Changhyun Roh</b> , Korea Atomic Energy Research Institute, <b>Rep. of Korea</b>
13	A facile approach to fabrication of hollow ZnO nanoparticles <b>G.R. Cho</b> , D. H. Kim and D-H. Lee	<b>Mr. Gwang Rae Cho</b> , Uiduk university, <b>Rep. of Korea</b>
14	The relationship between wettability and glass transition temperature of nanoparticles on the paper <b>Y. Kim</b> , K. S. Hwang, J.H. Ahn and J-Y. Lee	<b>Mr. Yongsoo Kim</b> , Korea Institute of Industrial Technology, <b>Rep. of Korea</b>
15	Meniscus Line-Induced Molecular Misorientation of Chemically Patterned Organic Semiconductor in Solution Blade Coating <b>D.-K. Kim</b> and J.-H. Bae	<b>Mr. Do-Kyung Kim</b> , Kyungpook National University, <b>Rep. of Korea</b>

March 29<sup>th</sup>, 2018

Session II: Surfaces and Coatings applications

Conference Room 118

N.	Poster Title	Author/Affiliation/Country
1	Analyse of TiO <sub>2</sub> Oxide Multilayer by X-ray Photospectroscopy <b>H-C. Choe</b> and J-M. Jang	<b>Prof. Han Cheol Choe</b> , Chosun University, <b>Rep. of Korea</b>
2	Bioactive Surface Formation on Ti-6Al-4V alloy by PEO-treatment after Anodic Titanium Oxide (ATO) <b>S-G. Lim</b> and H.C. Choe	<b>Mr. Sang-Gyu Lim</b> , Chosun University, <b>Rep. of Korea</b>
3	Effects of Alloying Elements on the Morphology of PEO-treated Ti-40Ta-xZr Alloys for Dental Implant Materials <b>J-M. Yu</b> and H-C. Choe	<b>Ms. Ji-Min Yu</b> , Chosun University, <b>Rep. of Korea</b>
4	Ion Release of Hydroxyapatite Film on theTi-6Al-4V after Hybrid Surface Modification by Electrochemical Oxidation <b>M-G. Park</b> and H-C. Choe	<b>Mr. Min-Gyu Park</b> , Chosun University, <b>Rep. of Korea</b>
5	Precipitation of Functional Elements on PEO-treated Ti-6Al-4V Al-loy after Nanotube Formation <b>S-P. Kim</b> and H-C. Choe	<b>Mr. Seung-Pyo Kim</b> , Chosun University, <b>Rep. of Korea</b>
6	Matrix Coated Fuel Powder for Research Reactor Fuel <b>K. Lee</b> , S. Kim, K. Kim, Y. J. Jeong and J.M. Park	<b>Dr. Kyuhong Lee</b> , Korea Atomic Energy Research Institute, <b>Rep. of Korea</b>
7	Removal of radioactive cesium from surface by polyvinyl alcohol/boronate-grafted alginate hydrogel with Cs adsorbent <b>H-M. Yang</b> , C.W. Park, K-W. Lee, I. Kim and I-H. Yoon	<b>Dr. Hee Man Yang</b> , Korea Atomic Energy Research Institute, <b>Rep. of Korea</b>
8	Effects of U <sub>3</sub> MoSi <sub>2</sub> and Ti-rich layers on the diffusion between U and Al <b>S.H. Kim</b> , Y.J. Jeong, K.H. Lee, K.N. Kim and J.M. Park	<b>Dr. Sunghwan Kim</b> , Korea Atomic Energy Research Institute, <b>Rep. of Korea</b>
9	Low-Temperature Solution-Processed Sn-doped TiO <sub>2</sub> as Electron Transporting Layer for Efficient Perovskite Solar Cells <b>C. Qingbin</b> , L. Chao, L. Pengwei, H. Junhua, Z. Yiqiang and S. Guosheng	<b>Mr. Qingbin Cai</b> , Zhengzhou University, <b>China</b>
10	Interfacial behaviors of hybrid thin films constituted by organic bulk-heterojunction and amorphous silicon layers <b>Y. Kim</b> , H. Park, J. Stuchlik, T. H. Stuchlikova, B. Jin, Z. Remes, J. Micova and C. Im	<b>Mr. Yonghyun Kim</b> , Konkuk University, <b>Rep. of Korea</b>
11	AlSi-Al <sub>2</sub> O <sub>3</sub> Nanocomposite Coatings Prepared by Plasma Spraying C. Banjongpraserta, C. Chairuangria, <b>S. Moonngama</b> and S. Jiansirisomboonb	<b>Ms. Suphitcha Moonngam</b> , Chiang Mai University, Chiang Mai, <b>Thailand</b>
12	Grain growth of Ag reflective p-type electrode by electron beam irradiation for 32x32 pixelated micro-LED arrays. I.Y. Hong, Y-J. Cha, J. Bong So, J. H. Lee, <b>T.K. Kim</b> , J.H. Choi, S.H. Oh and J. S. Kwak	<b>Mr. Tae Kyoung Kim</b> , Sunchon National University, <b>Rep. of Korea</b>
13	Influences of current density on cavitation damage characteristics of marine grade Al alloy in seawater J.H. Lee, <b>K.H. Jung</b> and S.J. Kim	<b>Mr. Kwang-Hu Jung</b> , Mokpo Maritime University, <b>Rep. of Korea</b>
14	Cavitation-erosion characteristics of electroless nickel plated gray cast iron in seawater I.C. Park, <b>K.H. Jung</b> and S.J. Kim	<b>Mr. Kwang-Hu Jung</b> , Mokpo Maritime University, <b>Rep. of Korea</b>