

Program Key

Conference Topics

- A** Coatings for Use at High Temperatures
- B** Hard Coatings and Vapor Deposition Technologies
- C** Fundamentals and Technology of Multifunctional Materials and Devices
- D** Coatings for Biomedical and Healthcare Applications
- E** Tribology and Mechanical Behavior of Coatings and Engineered Surfaces
- EX** Exhibitors Keynote Lecture
- F** New Horizons in Coatings and Thin Films
- G** Surface Engineering - Applied Research and Industrial Applications
- H** Advanced Characterization Techniques for Coatings and Thin Films
- PL** Plenary Lecture
- TS** Topical Symposia

Program Overview

Room /Time	California	Golden West	Grand Exhibit Hall	Royal Palm 1-3
MoPL				
MoM	B5-1: Hard and Multifunctional Nanostructured Coatings	B1-1: PVD Coatings and Technologies		F1-1: Nanomaterials and Nanofabrication
MoA	B5-2: Hard and Multifunctional Nanostructured Coatings	B1-2: PVD Coatings and Technologies		F1-2: Nanomaterials and Nanofabrication F3: 2D Materials: Synthesis, Characterization, and Applications
TuM	B4-1: Properties and Characterization of Hard Coatings and Surfaces	B1-3: PVD Coatings and Technologies		F2-1: HiPIMS, Pulsed Plasmas and Energetic Deposition
TuEx				
TuA	B4-2: Properties and Characterization of Hard Coatings and Surfaces	B1-4: PVD Coatings and Technologies B2-1: CVD Coatings and Technologies		F2-2: HiPIMS, Pulsed Plasmas and Energetic Deposition F5: Additive-manufacturing-based Methods and Surface Engineering
WeM	B4-3: Properties and Characterization of Hard Coatings and Surfaces	B2-2: CVD Coatings and Technologies		F4-1: Functional Oxide and Oxynitride Coatings
WeA	B4-4: Properties and Characterization of Hard Coatings and Surfaces	B3-1: Deposition Technologies and Applications for Diamond-like Coatings		F4-2: Functional Oxide and Oxynitride Coatings
ThM	TS2-1: Thermal, Cold, and Kinetic Sprayed Surface Coatings	B3-2: Deposition Technologies and Applications for Diamond-like Coatings		C3-1: Thin Films for Energy-related Applications
ThA	TS2-2: Thermal, Cold, and Kinetic Sprayed Surface Coatings	B6: Coating Design and Architectures		C3-2: Thin Films for Energy-related Applications
ThP			Poster Sessions	
FrM	TS1: Biointerfaces	B7: Plasma Diagnostics and Growth Processes		C4: Energetic Materials and Microstructures for Nanomanufacturing

Program Overview

Room /Time	Royal Palm 4-6	San Diego	Sunrise	Town & Country
MoPL				PL: Plenary Lecture
MoM	C2-1: Thin Films for Active Devices	A1-1: Coatings to Resist High Temperature Oxidation, Corrosion and Fouling	D2: Bio-corrosion, Bio-tribology, and Bio-tribocorrosion	
MoA	C2-2: Thin Films for Active Devices	A1-2: Coatings to Resist High Temperature Oxidation, Corrosion and Fouling	D1: Surface Coatings and Surface Modifications in Biological Environments	
TuM	C1: Optical Metrology in Design, Optimization, and Production of Multifunctional Materials	A1-3: Coatings to Resist High Temperature Oxidation, Corrosion and Fouling	D3: Medical Devices, Biosensors, and Biodegradation	
TuEx				EX: Exhibition Keynote Lecture
TuA	C2-3: Thin Films for Active Devices	E2-1: Mechanical Properties and Adhesion	A2-1: Thermal and Environmental Barrier Coatings	
WeM	H3-1: Characterization of Coatings in Harsh Environments	E2-2: Mechanical Properties and Adhesion	A2-2: Thermal and Environmental Barrier Coatings	
WeA	H3-2: Characterization of Coatings in Harsh Environments	E3: Tribology of Coatings for Automotive and Aerospace Applications	G2: Components Coatings G6: Application-driven Cooperation between industry and Research Institutions	
ThM	H2-1: Advanced Mechanical Testing of Surfaces and Coatings	E1-1: Friction, Wear, Lubrication Effects, and Modeling	G4: Pre-/Post-Treatment and Duplex Technology G5: Atmospheric Plasma Applications	
ThA	H2-2: Advanced Mechanical Testing of Surfaces and Coatings	E1-2: Friction, Wear, Lubrication Effects, and Modeling	G3: Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications	
ThP				
FrM	H1: Advanced Microstructural Characterization of Thin Films and Engineered Surfaces	E1-3: Friction, Wear, Lubrication Effects, and Modeling	G1: Advances in Industrial PVD, CVD and PCVD Processes and Equipment	

Special Events Monday

Special Events Monday

7:30 AM Conference Registration/Atlas Foyer
8:00 AM Plenary Lecture/Town & Country
8:30 AM Short Courses/Devonshire
10:00 AM Technical Sessions/See Room Matrix
12:15 PM Anton Paar: Focused Topic Session/Town & Country
5:30 PM Welcome Mixer/Lion Fountain Courtyard

Monday Morning, April 24, 2017

Plenary Lecture
Room Town & Country - Session PL
Plenary Lecture

8:00am **INVITED: PL-1** Grain Boundary Segregation: A Key Tool for Stabilizing Nanostructure in Next-Generation Coatings, *Chris Schuh*, Massachusetts Institute of Technology, USA

8:20am Invited talk continues.

Monday Morning, April 24, 2017

Coatings for Use at High Temperatures Room San Diego - Session A1-1 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Prabhakar Mohan, Solar Turbines, USA, Anton Chyrkin, Forschungszentrum Jülich GmbH		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-1 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Jyh-Ming Ting, National Cheng Kung University	
10:00am	INVITED: A1-1-1 High-resolution Studies of Phase Transformations in Metal/oxide Composite Films for High-temperature Applications, Gordon Tatlock , <i>M Duffield, K Dawson</i> , University of Liverpool, UK; <i>D Hernandez-Maldonado</i> , SuperSTEM Laboratory, UK; <i>J Lewis</i> , 2DHeat Ltd, UK	B1-1-1 Tunable Low Energy Ion Bombardment and its Influence on AlN Thin Films Deposited in Confocal DC Magnetron Sputtering, Mathis Trant , <i>M Fischer, K Thorwarth, J Patscheider, H Hug</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
10:20am	Invited talk continues.	B1-1-2 Unprecedented Al Supersaturation in Single-phase Rock Salt Structure VAlN Films by Al ⁺ Subplantation, Grzegorz Greczynski , Linköping University, (IFM), Sweden; <i>S Mraz, M Hans</i> , Aachen University, Germany; <i>D Primetzhofer</i> , Uppsala University, Angstrom Laboratory, Sweden; <i>J Lu, L Hultman</i> , Linköping University, (IFM), Sweden; <i>J Schneider</i> , Aachen University, Germany	
10:40am	A1-1-3 High Temperature Corrosion Of Ni-Base Coatings For Boiler Applications - A Microstructural Study, Johan Eklund , <i>J Phother-Simon</i> , Chalmers University of Technology, Sweden; <i>E Sadeghimeresht</i> , University West, Sweden; <i>L Johansson, T Jonsson</i> , Chalmers University of Technology, Sweden; <i>S Joshi</i> , University West, Sweden; <i>J Liske</i> , Chalmers University of Technology, Sweden	INVITED: B1-1-3 Ion Beam Designed Thin-film Metasurfaces, Carsten Ronning , Friedrich-Schiller-Universität Jena, Institut für Festkörperphysik, Germany	
11:00am	A1-1-4 Coatings for Oxidation and Hot Corrosion Protection of Disk Alloys, James Nesbitt , <i>T Gabb, S Draper</i> , NASA Glenn Research Center, USA; <i>R Miller</i> , Vantage Partners, LLC, USA; <i>I Locci</i> , University of Toledo, USA; <i>C Sudbrack</i> , NASA Glenn Research Center, USA	Invited talk continues.	
11:20am	A1-1-5 High Temperature Oxidation Protection of γ -Titanium Aluminide using Amorphous (Cr,Al)ON Coatings Deposited by High Speed Physical Vapor Deposition, K Bobzin, T Brögelmann, C Kalscheuer, Tiancheng Liang , Engineering Institute - RWTH Aachen University, Germany	B1-1-5 Mechanical and Thermal Behavior of Magnetron Sputtered Zr-Cu and Zr-Hf-Cu Metallic Glasses, Michal Zitek , <i>P Zeman, S Zuzjakova, R Čerstvý, S Haviar, M Kotrlova</i> , University of West Bohemia, Czech Republic	
11:40am	A1-1-6 Cyclic Oxidation and Hot Corrosion Behaviour of Plasma Sprayed CoCrAlY/WC-Co Coating on Turbine Alloys, H Nithin, V Desai, Ramesh Motagondanahalli Rangarasaiah , National Institute of Technology Karnataka, India	B1-1-6 The Development of Ultrathin Zr-Cu-Ni-Al-N Thin Film Metallic Glass as a Diffusion Barrier for Cu-Si Interconnect, Joseph Lee , National Tsing Hua University, Taiwan; <i>Y Chen</i> , Metal Industries R&D Centre (MIRDC), Taiwan; <i>J Duh</i> , National Tsing Hua University, Taiwan	

Monday Morning, April 24, 2017

Hard Coatings and Vapor Deposition Technologies Room California - Session B5-1 Hard and Multifunctional Nanostructured Coatings Moderators: Jiri Capek, University of West Bohemia, Robert Franz, Montanuniversität Leoben		Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 4-6 - Session C2-1 Thin Films for Active Devices Moderators: Vanya DarakchievaMarco Cremona, Pontificia Universidade Católica do Rio de Janeiro, Junichi Nomoto, Kochi University of Technology, Japan,	
10:00am	B5-1-1 Synthesis and Characterization of HfNbTiVZr High Entropy Alloy Thin Films, Stefan Fritze, D Karlsson, P Berastegui, D Rehnlund, L Nyholm, M Sahlberg, E Lewin, U Jansson , Uppsala University, Angstrom Laboratory, Sweden	INVITED: C2-1-1 Application of Gallium Oxide for High-Power Electronics, Masataka Higashiwaki, M Wong, K Konishi , National Institute of Information and Communications Technology, Japan; K Sasaki, K Goto , Tamura Corporation, Japan; H Murakami, Y Kumagai , Tokyo University of Agriculture and Technology, Japan; A Kuramata, S Yamakoshi , Tamura Corporation, Japan	
10:20am	B5-1-2 Structural Stability of ZrN/SiN _x Multilayered Coatings under Harsh Environments, Gregory Abadias , Institut P', Université de Poitiers-UPR 3346 CNRS-ENSMA, France; I Saladukhin, V Uglov, S Zlotski, V Shymanski , Belarusian State University, Belarus	Invited talk continues.	
10:40am	B5-1-3 Magnetron Sputtered High-Temperature Hf-B-Si-C-N Films with Controlled Electrical Conductivity and Optical Transparency, Veronika Simova, J Vlcek, S Zuzakova, R Čerstvý, J Houška , University of West Bohemia, Czech Republic	C2-1-3 Phenomenon of Oxygen Ion Migration in In ₂ O ₃ -Based Resistive Random Access Memory, Cheng-Hsien Wu , National Sun Yat-sen University, Taiwan; T Chang, T Tsai , National Sun Yat-Sen University, Taiwan	
11:00am	B5-1-4 Reactively Sputtered Multicomponent (TiZrHfVNb)N Thin Films, Kristina Johansson, E Lewin , Uppsala University, Angstrom Laboratory, Sweden	C2-1-4 Vapor-Liquid-Solid Growth of SnO ₂ Nanowires Utilizing Alternate Source Supply and Their Photoluminescence Properties, Tomoaki Terasako, K Kohno , Ehime University, Japan; M Yagi , National Institute of Technology, Kagawa College, Japan	
11:20am	B5-1-5 Deposition of Fluor-doped WS ₂ -C Coatings on Nanostructured Anodized Aluminum Alloy Substrates for Wettability Control, S Rodrigues , SEG-CEMUC, Portugal; Sandra Carvalho , University of Minho and University of Porto, Portugal; A Cavaleiro , SEG-CEMUC, Portugal	C2-1-5 Endurance Improvement and Resistance Stabilization of Transparent Multilayer ReRAM with Oxygen Deficient WO _x Layer and Heat Dissipating AlN Buffer Layer, Yu-Hsuan Lin , National Chiao Tung University, Taiwan; D Huang , Peking University, China; T Tseng , National Chiao Tung University, Taiwan	
11:40am		C2-1-6 Mechanism of Selectivity Increased during Operation on Vanadium Oxide Based Selector, C Lin , National Sun Yat-sen University, Taiwan; T Chang, K Chang , National Sun Yat-Sen University, Taiwan; T Tsai, C Pan , National Sun Yat-sen University, Taiwan; Jih-Chien Liao , National Tsing Hua University, Taiwan; P Chen , National Sun Yat-sen University, Taiwan; C Chen , National Sun Yat-Sen University, Taiwan; S Sze , National Chiao Tung University, Taiwan	

Monday Morning, April 24, 2017

Coatings for Biomedical and Healthcare Applications Room Sunrise - Session D2 Bio-corrosion, Bio-tribology, and Bio-tribocorrosion Moderator: Anna Igual Munoz, Ecole Polytechnique Federale de Lausanne		New Horizons in Coatings and Thin Films Room Royal Palm 1-3 - Session F1-1 Nanomaterials and Nanofabrication Moderators: R. Mohan Sankaran, Case Western Reserve University, Sumit Agarwal, Colorado School of Mines	
10:00am			F1-1-1 Sculptured Thin Films by Ion Beam Sputtering, Bernd Rauschenbach, C Grüner , Leibniz Institute of Surface Modification, Germany
10:20am	D2-2 Evaluation of Tribocorrosion Kinetics and Biocompatibility of Electrochemically Induced Tribolayer for Hip Implants, <i>M Lyvers, D Bijukumar</i> , University of Illinois College of Medicine at Rockford, IL, USA; <i>A Moore</i> , Winnebago High School, USA; <i>P Saborio</i> , Rush University Medical Center, USA; <i>D Royhman</i> , Rush University Medical Center and Northwestern University, USA; <i>M Wimmer</i> , Rush University Medical Center, USA; <i>K Shull</i> , Northwestern University, USA; Mathew T. Mathew , University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA		F1-1-2 The Effect of Thermal Treatment on the Structure and Surface Plasmon Resonance of Ag-coated ZnO Nanoparticles by Sol-gel Method, Chih-Chiang Wang , National Chung Hsing University, Taiwan; <i>H Shih</i> , Chinese Culture University, Taiwan
10:40am	INVITED: D2-3 Tribocorrosion from Nano to Macroscale – the Effect of Proteins on Friction of CoCrMo Biomedical Alloy, Nuria Espallargas , NTNU, Norway		INVITED: F1-1-3 In-situ Electron Microscopy of Synthesis, Chemistry and Self-Assembly of Colloidal Nanostructures, Eli Sutter , University of Nebraska-Lincoln, USA
11:00am	Invited talk continues.		Invited talk continues.
11:20am	D2-5 Fretting Corrosion of Biomaterials Dedicated to Dental Implants: Quantitative and Qualitative Insights, <i>P Corne, A Vaillant-Corroy, P De March, F Cleymand</i> , Institut Jean Lamour, France; Jean Geringer , Mines Saint Etienne, France		F1-1-5 Deposition of PTFE – TiO ₂ Composite Coatings Combining Superhydrophobic and Photocatalytic Properties by Reactive pDC Magnetron Sputtering from a Blended Powder Target, Marina Ratova, P Kelly, G West , Manchester Metropolitan University, UK
11:40am	D2-6 Mechanical and Anti-Corrosive Properties of Various Titania/Silica Hybrid Composite Film as the Interlayer of a Diamond-Like Carbon Deposited Ti6Al4V Substrate by Sol-Gel Technique, <i>N Wu, Wen-Hsien Wu, C Chou</i> , National Taiwan Ocean University, Taiwan; <i>R Wu</i> , National Institute for Materials Science, Japan; <i>J Lee</i> , Ming Chi University of Technology, Taiwan		F1-1-6 The Mechanisms of Growth of Zr-Fe-O Whiskers, Jingjing Gu , University of North Texas, USA; <i>P Petry</i> , University of Rouen, France; <i>I Hammood, M Carl, R Reidy, S Aouadi</i> , University of North Texas, USA

Monday Afternoon, April 24, 2017

	Hard Coatings and Vapor Deposition Technologies Room California - Session B5-2 Hard and Multifunctional Nanostructured Coatings Moderators: Jiri Capek, University of West Bohemia, Robert Franz, Montanuniversität Leoben	Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-2 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Jyh-Ming Ting, National Cheng Kung University
1:30pm	B5-2-1 B ₄ C and Mo Coatings Characterization regarding Stamping Dies Application, <i>F Silva, Liliana Fernandes, M Andrade</i> , ISEP - School of Engineering, Polytechnic of Porto, Portugal; <i>R Alexandre</i> , TeandM - Technology, Engineering and Materials, S.A., Portugal; <i>A Baptista</i> , INEGI - Instituto de Ciência e Inovação em Eng. Mecânica e Eng. Industrial, Portugal; <i>C Rodrigues</i> , Colep Portugal, S.A., Portugal	INVITED: B1-2-1 Air-based Deposition of Oxynitride Thin Films, <i>Fu-Hsing Lu</i> , National Chung Hsing University, Taiwan
1:50pm	B5-2-2 Effect of Energy on Structure, Microstructure and Enhanced Resistance to Cracking of Hard Sputter Deposited Ti(Ni) _x and Ti(Al,V) _x Films, <i>Martin Jaroš, J Musil, R Čerstvý, S Haviar</i> , University of West Bohemia, Czech Republic	Invited talk continues.
2:10pm	INVITED: B5-2-3 Ultra-thick, Superhard Nanocomposite Coatings Deposited using Plasma Enhanced Magnetron Sputtering (PEMS) and their Practical Applications, <i>Ronghua Wei</i> , Southwest Research Institute, USA	B1-2-3 Effect of Oxygen Contamination on PVD AlN Growth, <i>Katherine Knisely, B Griffin, R Timon, M Olewine, T Young, M Monochie, H Dallo</i> , Sandia National Laboratories, USA
2:30pm	Invited talk continues.	B1-2-4 Optical and Mechanical Properties of Al-doped Zinc Oxide Thin Film Fabricated by a High Power Impulse Magnetron Sputtering, <i>YuCi Hong, J Lee</i> , Ming Chi University of Technology, Taiwan; <i>B Lou</i> , Chang Gung University, Taiwan
2:50pm	B5-2-5 Role of Interfaces in Determining the Fracture Resistance of Nanocomposite/Metal Nitride Multilayers, <i>Naureen Ghafoor</i> , Linköping University, IFM, Thin Film Physics Division, Sweden	B1-2-5 Non-reactive and Reactive dc Magnetron Sputter Deposition of Molybdenum Oxide Thin Films, <i>J Pachhofer, Robert Franz</i> , Montanuniversität Leoben, Austria; <i>E Franzke</i> , Plansee SE, Austria; <i>A Tarazaga Martín-Luengo</i> , Johannes Kepler University, Austria; <i>H Köstenbauer, J Winkler</i> , Plansee SE, Austria; <i>A Bonanni</i> , Johannes Kepler University, Austria; <i>C Mitterer</i> , Montanuniversität Leoben, Austria
3:10pm	B5-2-6 Novel CrVN/TiN Nanoscale Multilayer Coatings Deposited by DC Magnetron Sputtering, <i>Elbert Contreras, Y Galindez, G Bejarano, M Rodas, M Gómez</i> , Universidad de Antioquia, Colombia	B1-2-6 Piezoelectric Coefficient Enhancement in Low Mg Content Wurtzite Mg _x Zn _{1-x} O Films, <i>Yiju Chen, S Brahma, C Liu, J Huang</i> , National Cheng Kung University, Taiwan
3:30pm	B5-2-7 Carbon Supersaturated Fe-Cr-Ni-C Thin Films with a Unique Nanocolumnar Structure - a Tough, Low Friction and Corrosion Resistant Coating, <i>Tomasz Suszko, W Gulbinski, E Dobruchowska</i> , Koszalin University of Technology, Poland; <i>J Morgiel</i> , Institute of Metallurgy and Materials Science of Polish Academy of Sciences, Poland	B1-2-7 Ternary and Quaternary Hard Transparent Thin Films Made from Al, Si, O and N, <i>Maria Fischer, M Trant, K Thorwarth, H Hug, J Patscheider</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
3:50pm	B5-2-8 Study of Wear Mechanism of Carbide and Ceramic Cutting Tools with Nano-structured Multi-layered Composite Functional Coatings, <i>Alexey Vereschaka, A Vereschaka</i> , MSTU Stankin, Russian Federation; <i>A Batako</i> , Liverpool John Moores University, UK; <i>N Sitnikov</i> , Federal State Unitary Enterprise "Keldysh Research Center", Russian Federation	B1-2-8 Characteristics of TiAlSiN Having a Hexagonal Structure, <i>Shingo Inagaki, A Kawana</i> , Japan Coating Center Co., Ltd., Japan
4:10pm		B1-2-9 A study of Preferred Orientation of VN Thin Film on Si Substrate Deposited by Unbalanced Magnetron Sputtering, <i>Cheng-Han Lin, J Huang, G Yu</i> , National Tsing Hua University, Taiwan
4:30pm		B1-2-10 Structure and Mechanical Property of AIP Deposited (Al _x Cr _{100-x})N Coatings with X > 70at%, <i>Kenji Yamamoto, H Nii, M Abe</i> , Kobe Steel Ltd., Japan; <i>S Takada, Y Iwai</i> , University of Fukui, Japan
4:50pm		B1-2-11 Control of Elastic-Plastic Deformability and Hardness in Nitride Hard Coatings on Cubic Boron Nitride Sintered Compact Cutting Tool, <i>Masakuni Takahashi, S Sato, T Maekawa</i> , Mitsubishi Materials Corporation, Japan
5:10pm		B1-2-12 Effect of Preferred Orientation on the Fracture Toughness of VN Hard Coatings, <i>Liang-Ru Wei, J Huang, G Yu</i> , National Tsing Hua University, Taiwan

Monday Afternoon, April 24, 2017

Room Royal Palm 1-3		
1:30pm	INVITED: F1-2-1 Accelerated Development of CuSb(S, Se) ₂ Thin Film Photovoltaic Device Prototypes, Colin Wolden , Colorado School of Mines, USA	New Horizons in Coatings and Thin Films Session F1-2 Nanomaterials and Nanofabrication Moderators: R. Mohan Sankaran , Case Western Reserve University, Sumit Agarwal , Colorado School of Mines
1:50pm	Invited talk continues.	
2:10pm	F3-3 Tunable MoS ₂ and MoS ₂ -based Electrocatalysts by Hot-injection Method for Hydrogen Evolution Reaction, Chia-Ling Wu , <i>P Huang, S Brahma, J Huang</i> , National Cheng Kung University, Taiwan; <i>S Wang</i> , Southern Taiwan University of Science and Technology, Taiwan	New Horizons in Coatings and Thin Films Session F3 2D Materials: Synthesis, Characterization, and Applications Moderators: Haitao Liu , University of Pittsburgh, USA, Jiaxing Huang , Northwestern University, Liping Wang , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences
2:30pm	F3-4 High-throughput Combinatorial Synthesis and Multimodal X-ray Analysis of Co-based Ternary Alloys, Janak Thapa , <i>C Gross, V Hegde, L Ward, S Naghavi, C Wolverson, Y Chung, M Bedzyk</i> , Northwestern University, USA	
2:50pm	F3-5 Development and Characterisation of Cost-Effective Graphene Oxide-Nickel Nanocomposite Coatings, <i>S Qi, X Li</i> , Hanshan Dong , The University of Birmingham, UK	
3:10pm	F3-6 Fabrication of Functional Graphene Reinforced Polyurethane Nanocomposite Coatings with Regular Textures for Corrosion Inhibition, Wenjie Zhao , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
3:30pm	F3-7 Structure and Tribological Properties of TiSiCN Coatings Incorporated with Layered Structure of MAX Phase in Artificial Seawater, Jinlong Li , <i>Y Wang, C Dang, L Wang, Q Xue</i> , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
3:50pm	F3-8 Graphene: Improving Material Performance by Keeping the Surface Cleaning, Haitao Liu , University of Pittsburgh, USA	

Monday Afternoon, April 24, 2017

Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 4-6 - Session C2-2 Thin Films for Active Devices Moderators: Vanya Darakchieva Marco Cremona, Pontificia Universidade Católica do Rio de Janeiro, Junichi Nomoto , Kochi University of Technology, Japan,		Coatings for Use at High Temperatures Room San Diego - Session A1-2 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: Vladislav Kolarik , Fraunhofer Institute for Chemical Technology ICT, Prabhakar Mohan , Solar Turbines, USA, Anton Chyrkin , Forschungszentrum Jülich GmbH
1:30pm	C2-2-1 Ga-doped ZnO Films by Magnetron Sputtered at Ultralow Discharge Voltages: Effects of Defect Annihilation, Yuyun Chen , <i>M Fanping, F Ge, H Feng</i> , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	A1-2-1 Pt Effect on Oxidation Resistance and Durability of β -NiAl Coatings : A Coupled <i>ab initio</i> and Physics-based Modeling, Prakash Patnaik , Gas Turbine Laboratory, Aerospace Portfolio, National Research Council, Canada; <i>K Chen</i> , Structures, Materials and Manufacturing Laboratory, Aerospace Portfolio, National Research Council, Canada
1:50pm	C2-2-2 Reactive Sputter Deposition and Annealing of Nanometer Scale NiO Thin Films for Metal-Insulator-Metal Tunnel Junction Diodes, Frank Urban , <i>S Bhansali</i> , Florida International University, USA; <i>A Singh</i> , Intel, USA; <i>D Barton</i> , Retired, USA	A1-2-2 Synthesis and Characterization of Superalloy Coatings by Cathodic Arc Evaporation, <i>J Ast</i> , Laboratory for Mechanics of Materials and Nanostructures, Empa, Switzerland; <i>M Döbeli</i> , Ion Beam Physics, ETH Zurich, Switzerland; <i>A Dommann</i> , Center for X-ray Analytics, Empa, Switzerland; <i>M Gindrat</i> , Oerlikon Metco AG, Switzerland; <i>X Maeder</i> , Laboratory for Mechanics of Materials and Nanostructures, Switzerland; <i>A Neels</i> , Center for X-ray Analytics, Empa, Switzerland; <i>P Polcik</i> , Plansee Composite Materials GmbH, Germany; Jürgen Ramm , <i>H Rudigier</i> , Oerlikon Surface Solutions AG, Liechtenstein; <i>K von Allmen</i> , Center for X-ray Analytics, Empa, Switzerland; <i>B Widrig</i> , Oerlikon Surface Solutions AG, Liechtenstein
2:10pm	INVITED: C2-2-3 HVPE GaN and AlGaN Thin vs Thick Freestanding Films for Electronic and Optoelectronic Devices, Tania Paskova , North Carolina State University, USA	A1-2-3 High Temperature Binary or Doped Nickel Aluminide Coatings on Superalloys: An Industrial Approach, Vasileios Papageorgiou , <i>S Vogiatzis, H Strakov, A Zainal, M Auger</i> , IHI Ionbond AG, Switzerland
2:30pm	Invited talk continues.	A1-2-4 Corrosion Behavior of Iron Based Alloys Coated with Aluminum Oxide by RF Magnetron Sputtering, <i>D Melo-Maximo, L Melo-Máximo, A Murillo, O Salas, Brenda García</i> , ITESM-CEM, Mexico; <i>E Uribe</i> , ITESM-QRO, Mexico; <i>J Oseguera</i> , ITESM-CEM, Mexico
2:50pm	C2-2-5 Characteristics of Non-polar ZnO Films Grown by Catalytic Reaction Assisted Chemical Vapor Deposition, <i>A Kato, M Ikeda, Y Adachi, R Tajima, Kanji Yasui</i> , Nagaoka University of Technology, Japan	A1-2-5 Effect of the Microstructure on Corrosion and Deformation Behavior of Zn-Mg Coatings on Steel Substrate, JoungHyun La , <i>K Bae, S Kim, S Lee, Y Hong</i> , Korea Aerospace University, Republic of Korea
3:10pm	C2-2-6 Mechanism of a Number of Operation Resulted in Degradation on Multilayer Resistance Random Access Memory, Yi-Ting Tseng , National Sun Yat-sen University, Taiwan; <i>T Chang, K Chang, T Tsai</i> , National Sun Yat-Sen University, Taiwan; <i>C Wu</i> , National Sun Yat-sen University, Taiwan; <i>P Chen, C Lin</i> , National Sun Yat-Sen University, Taiwan; <i>S Sze</i> , National Chiao Tung University, Taiwan	A1-2-6 A Comparative Analysis of Ternary Element Addition on Corrosion Behavior of Aluminide Coatings in Harsh Environmental Conditions, Umutkan Erturk , <i>B Imer</i> , Middle East Technical University, Turkey
3:30pm	C2-2-7 An Ion Mass and Ion Energy Selected Hyperthermal Ion-Beam Assisted Deposition Setup for Nitride Nanofilm Synthesis, Jürgen W. Gerlach , <i>P Schumacher, M Mensing</i> , Leibniz Institute of Surface Modification (IOM), Germany; <i>S Rauschenbach</i> , Max Planck Institute for Solid State Research, Germany; <i>B Rauschenbach</i> , Leibniz Institute of Surface Modification (IOM), Germany	A1-2-7 Cyclic and Isothermal Corrosion Testing of Aluminide Slurry Coatings in Molten Nitrates for Heat Storage in Concentrated Solar Power Plants, Alina Agüero , <i>S Rodriguez, P Audigié</i> , Instituto Nacional de Técnica Aeroespacial (INTA), Spain
3:50pm	C2-2-8 Improve Switching Characteristic of Resistive Random Access Memory with Chemical Plasma Treatment on TiN electrode, Chih-Hung Pan , <i>T Chang, T Tsai</i> , National Sun Yat-sen University, Taiwan	A1-2-8 Sol-gel ZrO_2 - Y_2O_3 Coatings Validated in Molten Salt Environment for CSP Applications, <i>V Encinas Sánchez, M Lasanta, M de Miguel, G García Martín, Francisco Javier Pérez Trujillo</i> , Complutense University of Madrid, Spain
4:10pm	C2-2-9 Critical Layer to Improve the Orientation Distribution and Carrier Transport of Direct-current Magnetron Sputtered Al-doped ZnO Polycrystalline Films using Various Al_2O_3 Contents Composite Targets, Junichi Nomoto , <i>H Makino, T Yamamoto</i> , Kochi University of Technology, Japan	
4:30pm	C2-2-10 Next-Generation Electronic Materials Processing Tools Newly Developed at AFRL, Brandon Howe , Air Force Research Laboratory, USA	
4:50pm	C2-2-11 The Role of Oxidized TiN Bottom Electrode in Resistive Random Access Memory with Supercritical CO_2 Fluid Treatment, Yu-Ting Su , <i>C Pan, T Chang</i> , National Sun Yat-sen University, Taiwan	
5:10pm	C2-2-12 Excellent Bipolar Resistive Switching Behavior in WN Thin Film for Non-volatile ReRAM Device Application, Ravi Prakash , <i>D Kaur</i> , Indian Institute Of Technology Roorkee, India	

Monday Afternoon, April 24, 2017

Room Sunrise		Coatings for Biomedical and Healthcare Applications Session D1 Surface Coatings and Surface Modifications in Biological Environments Moderators: Kerstin Thorwarth , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland, Mathew T. Mathew , University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA, Argelia Almaguer-Flores , Universidad Nacional Autonoma de Mexico, Mexico
1:30pm	D1-1 Reactively Sputtered Iridium Oxide Films for Biomedical Electrode Coatings: Microstructural Dependence of the In-Vitro Electrochemical Performance, <i>N Page, J Lucchi, J Buchan, T Scabarozzi</i> , Rowan University, USA; <i>S Amini</i> , Johnson Matthey Inc., USA; Jeffrey Hettinger , Rowan University, USA	
1:50pm	D1-2 Nanostructured Surfaces based on Tantalum Oxide for Osseointegrated Metallic Implants, CristianaFilipa Almeida Alves , <i>J Oliveira, S Pires, L Marques</i> , University of Minho, Portugal; <i>D Schneider</i> , Fraunhofer Institut für Werkstoffphysik und Schichttechnologie, Germany; <i>A Cavaleiro</i> , University of Coimbra, Portugal; <i>S Carvalho</i> , University of Minho, Portugal	
2:10pm	D1-3 Development of a Biocompatible Titanium Niobium Alloy Coating as a Buffer for Rigid Coatings on Polyetheretherketon, Markus König , <i>K Bergner, H Scheerer, G Andersohn, M Oechsner</i> , TU Darmstadt, Germany	
2:30pm	D1-4 Development of Novel Long-Lasting S-Phase based Anti-Bacterial Coatings, <i>D Formosa, Xiaoying Li, H Dong</i> , The University of Birmingham, UK	
2:50pm	INVITED: D1-5 Single-step, Environmentally-Friendly, Biological Functionalisation through Radicals generated by Plasma Surface Modification of Biomedical Devices, Marcela Bilek , <i>E Kosobrodova, A Kondyurin, B Akhavan, M Santos, E Wakelin, G Yeo, C Tran, D McKenzie, A Weiss</i> , University of Sydney, Australia; <i>M Ng, S Wise</i> , Heart Research Institute, Australia	
3:10pm	Invited talk continues.	
3:30pm	D1-7 Deposition and Characterisation of Silver Nanocomposite Coatings on Orthopaedic Grade Cobalt Chromium Alloys and the Related Antimicrobial Effects, Liuquan Yang , Wallwork Cambridge Ltd, UK; <i>L Richards</i> , MatOrtho Limited, UK; <i>A Misha, J Shelton</i> , Queen Mary University of London, UK; <i>S Collins</i> , MatOrtho Limited, UK; <i>S Banfield, L Espitalier</i> , Wallwork Cambridge Ltd, UK; <i>H Hothi, A Hart</i> , Royal National Orthopaedic Hospital, UK; <i>J Housden</i> , Wallwork Cambridge Ltd, UK	
3:50pm	D1-8 Oral Bacteria Adhesion on Saliva Coated and Uncoated Stainless Steel Surfaces: Experimental Characterisation and Modelling, Jinju Chen , <i>S Chinnaraj, Y Ammar, J Pahala Gedara, N Jakubovics</i> , Newcastle University, UK	
4:10pm	D1-9 Towards Antibacterial yet Biocompatible and Bioactive Surfaces, Dmitry Shtansky , <i>I Sukhorukova, A Sheveyko, E Levashov</i> , National University of Science and Technology "MISIS", Russian Federation	
4:30pm	D1-10 Characteristics of Plasma Polymerization Films using HMDSO Precursor on 316L Stainless Steel, Si-Bu Wang , <i>J Lee, Y Lee</i> , Ming Chi University of Technology, Taiwan; <i>B Lou</i> , Chang Gung University, Taiwan	
4:50pm	D1-11 Structure and Biocompatibility of Fluorine-containing TaCN Thin Films, JangHsing Hsieh , <i>H Lin</i> , Ming Chi University of Technology, Taiwan; <i>S Liu</i> , National Taipei University of Technology, Taiwan	

Special Events Tuesday

Special Events Tuesday

7:30 AM Conference Registration/Atlas Foyer
8:00 AM Technical Sessions/See Room Matrix
8:30 AM Short Course/Devonshire
11:00 AM Exhibition Keynote Lecture/Town & Country
12:00 PM Exhibition/Grand Hall
12:15 PM Exhibits Light Luncheon Refreshments/Grand Hall
5:30 PM Exhibition Reception/Grand Hall

Tuesday Morning, April 25, 2017

Coatings for Use at High Temperatures Room San Diego - Session A1-3 Coatings to Resist High Temperature Oxidation, Corrosion and Fouling Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Prabhakar Mohan, Solar Turbines, USA, Anton Chyrkin, Forschungszentrum Jülich GmbH		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-3 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Jyh-Ming Ting, National Cheng Kung University	
8:00am	A1-3-1 Thin Co and Ce/Co Coatings on Ferritic Stainless Steel Interconnects for Solid Oxide Fuel Cells, Hannes Falk-Windisch, M Sattari, L Johansson, J Svensson, J Froitzheim , Chalmers University of Technology, Sweden	INVITED: B1-3-1 Synthesis and Applications of High-precision Thin Film Multilayers, Andreas Leson, S Braun, P Gawlitza, C Gruhne, A Kubec, M Menzel , Fraunhofer Institute for Material and Beam Technology, Germany	
8:20am	A1-3-2 Long-term Oxidation of MCrAlY Coatings at 1000 ° C and an Al-activity Based Coating Life Criterion, Pimin Zhang, Y Kang, R Lin Peng , Linköping University, Sweden; X Li , Siemens Industrial Turbomachinery AB, Sweden; S Johansson , Linköping University, Sweden	Invited talk continues.	
8:40am	A1-3-3 The Preparation of Ti ₂ AlN MAX Phase Coatings and its Oxidation Mechanism under Different Atmosphere, Zhenyu Wang , University of Chinese Academy of Sciences, China; P Ke, A Wang , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	B1-3-3 Influences of Frequency and Duty Cycle on the Mechanical Properties of TiCrBN Thin Films Grown by a Hybrid Superimposed High Power Impulse Magnetron Sputtering and Radio Frequency sputtering technique, ChiYu Lu, J Lee, W Diyatmika , Ming Chi University of Technology, Taiwan	
9:00am	A1-3-4 Effect of Coating Architecture on the Corrosion Behavior of Ti-N/Cr-N Multilayer Coatings, Yu-Sen Yang , National Kaohsiung First University of Science and Technology, Taiwan	B1-3-4 Controllably Manipulating Adatom Mobility during PVD Deposition through Surface Acoustic Waves, Piyush Shah, A Reed, A Waite, B Howe, M McConney , Air Force Research Laboratory, USA	
9:20am	A1-3-5 Effects of Encapsulating Material and Healing Agent Ratio on Crack Propagation Behavior for Thermal Barrier Coatings, Soo-Hyeok Jeon, S Lee, S Jung, H Park, Y Jung , Changwon National University, Republic of Korea; J Zhang , Purdue University, USA	B1-3-5 Effects of Processing Parameters on the Fabrication of TiCrSiN Thin Films Deposited by a Hybrid HiPIMS and RF Sputtering System, Yi-Xiang Qiu, Y Yang , National Taipei University of Technology, Taiwan; J Lee , Ming Chi University of Technology, Taiwan	
9:40am	A1-3-6 Comparative Study of Monolayer and Multilayer CrAlSiN PVD Coatings Behavior at High Temperature in Steam Atmosphere, A Illana, S Mato , Complutense University of Madrid, Spain; E Almandoz, G Garcias Fuentes , Navarra Industry Association, Spain; F Pérez Trujillo, Mariasabel Lasanta , Complutense University of Madrid, Spain	B1-3-6 Exploring the High-temperature Hardness of Nanocrystalline W-Ti Coatings, Yip-Wah Chung, C Gross, X He , Northwestern University, USA	
10:00am	A1-3-7 Material Validation in Molten Salt Environment under Dynamic Conditions Using a Novel Pilot Plant Facility, M Lasanta, G Garcia Martin, Víctor Encinas Sánchez, M de Miguel, F Pérez Trujillo , Complutense University of Madrid, Spain	B1-3-7 Growth Mechanism of Sputter Deposited Self-assembled Alternating Layered Metal Containing Hydrogenated Amorphous Carbon Film, J Ting , National Cheng Kung University, Taiwan; Wan-Yu Wu , Da-Yeh University, Taiwan	
10:20am		B1-3-8 Phase Formation in Sputter Deposited Tantalum Coatings, Glen West, M Ratova, P Kelly , Manchester Metropolitan University, UK	

Tuesday Morning, April 25, 2017

	Hard Coatings and Vapor Deposition Technologies Room California - Session B4-1 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May , Robert Bosch GmbH, Diesel Systems, Chau-Chang Chou , National Taiwan Ocean University, Taiwan, Farwah Nahif , eifeler-Vacotec GmbH	Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 4-6 - Session C1 Optical Metrology in Design, Optimization, and Production of Multifunctional Materials Moderators: Ludvik Martinu , Polytechnique Montreal, Nikolas Podraza , University of Toledo
8:00am	B4-1-1 Thermal Stability and Mechanical Properties of Sub-stoichiometric TiAlN Thin Films, Katherine Calamba , Linköping University, Sweden; <i>I Schramm</i> , Saarland University, Sweden; <i>M Johansson-Jöesaar</i> , SECO Tools, Sweden; <i>J Pierson</i> , University of Lorraine, France; <i>M Odén</i> , Linköping University, Sweden	INVITED: C1-1 Metamaterials: from Design and Modeling to the Experimental Confirmation of their Optical Performance, Michel Lequime , Institut Fresnel, France
8:20am	B4-1-2 Microstructure and Hardness of Ti-B-N-C Nanocomposites Deposited from Ti and B ₄ C Targets, Christina Wüstefeld , Institute of Materials Science, TU Bergakademie, Germany; <i>M Motylenko</i> , Institute of Materials Science, TU Bergakademie Freiberg, Germany; <i>M Sima</i> , <i>M Jilek</i> , SHM Ltd., Czech Republic; <i>D Rafaja</i> , Institute of Materials Science, TU Bergakademie Freiberg, Germany	Invited talk continues.
8:40am	INVITED: B4-1-3 Strategies for Fracture Toughness Enhancement of Nanostructured Films by Microstructural and Grain-boundary Design: The Role of Microstructure, Stress and Property Heterogeneity, Rostislav Daniel , <i>C Mitterer</i> , <i>J Keckes</i> , Montanuniversität Leoben, Austria	C1-3 Use of FDTD Method for Data Analysis of Spectroscopic Ellipsometry Data of Non-periodic sub-wavelength Structures, Juan Antonio Zapien , City University of Hong Kong, Hong Kong; <i>Y Foo</i> , City University of Hong Kong, Hong Kong Special Administrative Region of China
9:00am	Invited talk continues.	C1-4 Analysis Procedures for Multiple Sets of Ellipsometric Spectra, Nikolas Podraza , <i>K Ghimire</i> , <i>P Uprety</i> , <i>M Junda</i> , University of Toledo, USA
9:20am	B4-1-5 Epitaxial Growth of HfN Films using Synchronized Pulsed Substrate Bias during HiPIMS Discharge, <i>M Villamayor</i> , Linköping University, (IFM), Sweden; <i>T Shimizu</i> , Tokyo Metropolitan University, Japan; Julien Keraudy , <i>R Boyd</i> , Linköping University, (IFM), Sweden; <i>D Lundin</i> , LPGP, France; <i>U Helmersson</i> , Linköping University, (IFM), Sweden	C1-5 High Precision Absorption Measurements in Optical Films using the TRACK Method: Comparison with the Laser-induced Deflection, <i>R Vernhes</i> , Polytechnique Montreal, Canada; <i>C Muhlig</i> , Leibniz-Institute of Photonic Technology (IPHT), Germany; Ludvik Martinu , Polytechnique Montreal, Canada
9:40am	B4-1-6 HiPIMS and Ni Doping Induced Structure Reinforcement and Phase Change in nc-TiC/a-C:H Coatings, Pavel Soucek , <i>J Daniel</i> , <i>J Hnilica</i> , <i>K Bernatova</i> , <i>L Zabransky</i> , Masaryk University, Czech Republic; <i>V Bursikova</i> , Masaryk University, Czech Republic; <i>M Stupavska</i> , <i>P Vašina</i> , Masaryk University, Czech Republic	C1-6 Durability and Wear Mechanisms of Easy-to-clean Coatings on Glass and Displays Assessed by <i>in situ</i> Tribometry, <i>J Qian</i> , <i>T Schmitt</i> , <i>B Baloukas</i> , Jolanta Ewa Klemberg-Sapieha , <i>L Martinu</i> , Polytechnique Montreal, Canada; <i>C Kosik-Williams</i> , <i>J Price</i> , <i>E Null</i> , Corning Incorporated, USA
10:00am	B4-1-7 Correlation of Plasma Parameters and Thin Film Properties of HiPIMS Al-Cr-N films using a Combinatorial Approach, Lars Banko , <i>D Grochla</i> , <i>S Ries</i> , <i>P Awakowicz</i> , <i>A Ludwig</i> , Ruhr-Universität Bochum, Germany	C1-7 In situ Metrology for Surface Topography and Stress Characterization, Wojtek Walecki , Frontier Semiconductor, USA
10:20am		C1-8 Scratch Failure vs Residual Stress: a Relationship Applied to Optical Coatings, <i>T Poirié</i> , Thomas Schmitt , Polytechnique Montreal, Canada; <i>E Bousser</i> , University of Manchester, UK; <i>L Martinu</i> , <i>J Klemberg-Sapieha</i> , Polytechnique Montreal, Canada
10:40am		C1-9 Fast Characterization of nm Thin to Thick Coatings using Pulsed-Rf Glow Discharge Optical Emission Spectrometry, Philippe Hunault , <i>M Chausseau</i> , <i>K Savadkouei</i> , HORIBA Scientific, USA; <i>P Chapon</i> , <i>S Gaiaschi</i> , HORIBA Scientific, France

Tuesday Morning, April 25, 2017

	Coatings for Biomedical and Healthcare Applications Room Sunrise - Session D3 Medical Devices, Biosensors, and Biodegradation Moderators: Jessica Jennings, University of Memphis, USA, Robin Pourzal, Rush University Medical Center, USA	New Horizons in Coatings and Thin Films Room Royal Palm 1-3 - Session F2-1 HiPIMS, Pulsed Plasmas and Energetic Deposition Moderators: Tiberiu Minea, Université Paris-Sud, Tomas Kubart, Uppsala University, Angstrom Laboratory, Sweden
8:00am	D3-1 Challenges for Polymeric Orthopedic Implants - Enhanced Surface Functionalities using coatings deposited by HiPIMS, <i>Kerstin Thorwarth</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>G Thorwarth</i> , IMT AG Greifensee, Switzerland; <i>J Patscheider</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	F2-1-1 An Ionization Region Model of the Reactive Ar/O ₂ High Power Impulse Magnetron Sputtering Discharge, <i>Jon Gudmundsson</i> , University of Iceland, Iceland; <i>D Lundin</i> , CNRS, Université Paris-Sud, France; <i>N Brenning</i> , <i>M Raadu</i> , <i>C Huo</i> , KTH - Royal Institute of Technology, Sweden; <i>T Minea</i> , CNRS, Université Paris-Sud, France
8:20am	D3-2 Alginate Coatings on Silver-decorated Calcium Phosphate nanospheres as an Antimicrobial coating component, <i>Jessica Jennings</i> , <i>C Nelson</i> , <i>S Mishra</i> , <i>M Ghimire</i> , <i>J Bumgardner</i> , University of Memphis, USA	F2-1-2 Residual Stress Control of Al-rich (Ti,Al)N Hard Coatings by Pulse Duration in High Power Impulse Magnetron Sputtering, <i>Tetsuhide Shimizu</i> , <i>S Takahashi</i> , <i>H Komiya</i> , Tokyo Metropolitan University, Japan; <i>Y Teranishi</i> , <i>K Morikawa</i> , Tokyo Metropolitan Industrial Technology Research Institute, Japan; <i>M Yang</i> , Tokyo Metropolitan University, Japan; <i>U Helmersson</i> , Linköping University, IFM, Sweden
8:40am	INVITED: D3-3 Manufacturing, Testing, and Regulatory Aspects of Implant Coatings, <i>Dirk Scholvin</i> , <i>J Moseley</i> , Wright Medical, USA	INVITED: F2-1-3 Energetic Deposition of Electronic Materials, <i>Jim Partridge</i> , <i>B Murdoch</i> , <i>N McDougall</i> , <i>D McCulloch</i> , RMIT University, Australia; <i>R Ganesan</i> , <i>M Bilek</i> , <i>D McKenzie</i> , The University of Sydney, Australia; <i>M Tucker</i> , <i>N Marks</i> , Curtin University, Australia
9:00am	Invited talk continues.	Invited talk continues.
9:20am	D3-5 Implant Alloy Microstructure can Enable Cell Induced Corrosion in Total Hip Replacements, <i>Robin Pourzal</i> , <i>D Hall</i> , <i>R Urban</i> , <i>S McCarthy</i> , Rush University Medical Center, USA; <i>J Ehrlich</i> , <i>A Fischer</i> , University of Duisburg-Essen, Germany; <i>J Jacobs</i> , Rush University Medical Center, USA	F2-1-5 Controlled Reactive HiPIMS of Thermo-chromic VO ₂ Films at a Low Deposition Temperature (300 °C), <i>David Kolenaty</i> , <i>J Vlcek</i> , <i>T Kozak</i> , <i>J Houška</i> , <i>R Čerstvý</i> , University of West Bohemia, Czech Republic
9:40am	D3-6 Characterization of Solid-supported Thin Films and Molecular Interactions using Multi-Parametric Surface Plasmon Resonance, <i>Annika Jokinen</i> , <i>N Granqvist</i> , <i>J Kuncova-Kallio</i> , <i>J Sadowski</i> , BioNavis Ltd., Finland	F2-1-6 High Power Impulse Plasma Magnetron Sputtering – Dawn of Industrialization, <i>W Gajewski</i> , <i>P Rozanski</i> , <i>P Lesiuk</i> , <i>P Ozimek</i> , <i>Rafal Bugyi</i> , TRUMPF Huettinger Sp. z o.o., Poland
10:00am	D3-7 Effect of Processing on the Structure and Biofunctionalization of AlN Thin Films Produced by r.f. Reactive Magnetron Sputtering, <i>A Murillo</i> , <i>Olimpia Salas</i> , <i>L Melo-Máximo</i> , <i>B García</i> , <i>D Melo-Maximo</i> , Tecnológico de Monterrey-CEM, Mexico; <i>K García</i> , Tecnológico de Monterrey-CCM, Mexico; <i>J Oseguera</i> , Tecnológico de Monterrey-CEM, Mexico	F2-1-7 Comparison of CrN from Planar and Rotating Target using Highly Ionized Processes, <i>Holger Gerdes</i> , <i>A Themelis</i> , <i>R Bandorf</i> , <i>M Vergöhl</i> , <i>G Braeuer</i> , Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany
10:20am	D3-8 Effect of Zn on the Improvement of Corrosion Performance of MAO Coated Biodegradable Mg-Sr-Zn Alloys, <i>Mehmet Yazici</i> , Ondokuz Mayıs University, Turkey; <i>Y Azakli</i> , <i>S Cengiz</i> , <i>Y Gencer</i> , <i>M Tarakci</i> , Gebze Technical University, Turkey	F2-1-8 Molybdenum Thin Films Deposited by High Power Impulse Magnetron Sputtering, <i>Arutiun P. Ehasarian</i> , <i>D Loch</i> , Sheffield Hallam University, UK
10:40am	D3-9 Antimicrobial Silver Oxide Films with Rapid Bacteria Contact Killing, <i>A Ogwu</i> , <i>Nathaniel Tsendzughul</i> , <i>G Mackay</i> , <i>C Williams</i> , University of the West of Scotland, UK	F2-1-9 Epitaxial Growth of Copper Thin Films on Si(001) by HiPIMS, <i>Felipe Cemin</i> , Université Paris Sud, France; <i>G Abadias</i> , Université de Poitiers, France; <i>D Lundin</i> , <i>T Minea</i> , Université Paris-Sud, France

Tuesday Morning, April 25, 2017

Exhibitors Keynote Lecture
Room Town & Country - Session EX
Exhibition Keynote Lecture

11:00am **INVITED: EX-1** Success and Failure in the Commercialization of CVD Diamond, *Chris Engdahl*, Crystallume, USA

11:20am Invited talk continues.

Tuesday Afternoon, April 25, 2017

Room California		Hard Coatings and Vapor Deposition Technologies Session B4-2 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May , Robert Bosch GmbH, Diesel Systems, Chau-Chang Chou , National Taiwan Ocean University, Taiwan, Farwah Nahif , eifeler-Vacotec GmbH
1:30pm		
1:50pm		
2:10pm	INVITED: B4-2-3 Measurement of Residual Stress on Transition Metal Nitride Hard Coatings by Combining Average X-ray Strain Method and Nanoindentation, <i>Jia-Hong Huang</i> , A Wang, G Yu, National Tsing Hua University, Taiwan	
2:30pm	Invited talk continues.	
2:50pm	B4-2-5 Investigation of the Tribocatalysis Mechanisms involved in the Extraction of Amorphous Carbon Boundary Films from Base Oils, <i>Giovanni Ramirez</i> , O Eryilmaz, B Narayanan, Y Liao, G Kamath, S Sankaranarayanan, A Erdemir, Argonne National Laboratory, USA	
3:10pm	B4-2-6 Phase Stability and Strain Evolution in TiZrAlN Coatings During Annealing, <i>Lina Rogström</i> , R Pilemalm, N Ghafoor, Nanostructured Materials, IFM, Linköping University, Sweden; L Johnson, Sandvik Coromant, Sweden; N Schell, Helmholtz-Zentrum Geesthacht, Germany; M Odén, Nanostructured Materials, IFM, Linköping University, Sweden	
3:30pm	B4-2-7 Gas Inlet and Input Power Modulated Sputtering Molybdenum Nitride Thin Films, <i>JianYing Xiang</i> , National United University, Taiwan	
3:50pm	B4-2-8 Transition Metal Nitrides Deposition by HiPIMS in DOMS Mode, <i>João Oliveira</i> , F Ferreira, R Serra, F Fernandes, A Cavaleiro, University of Coimbra, Portugal	
4:10pm	B4-2-9 Advanced HIPIMS Solution for R&D and Process Development, <i>Jason Hrebik</i> , Kurt J. Lesker Company, USA; R Bandorf, Fraunhofer IST, Germany	
4:30pm	B4-2-10 Determining of the Critical Loads of Transition Metal Nitrides on Steels, <i>Aysenur Keles</i> , Ataturk University Faculty of Engineering, Turkey; H Cicek, Erzurum Technical University, Turkey; O Baran, Erzincan University, Turkey; Y Totik, I Efeoglu, Ataturk University, Turkey	
4:50pm	B4-2-11 Tribocorrosion Behaviour of Nanocomposite TiSiCN Coatings Tested in PBS Solution, <i>Andre Hatem</i> , Pontifícia Universidade Católica do Paraná, Brazil; J Lin, R Wei, Southwest Research Institute, USA; R Torres, C Laurindo, P Soares, Pontifícia Universidade Católica do Paraná, Brazil	

Tuesday Afternoon, April 25, 2017

Room Golden West		
1:30pm		Hard Coatings and Vapor Deposition Technologies Session B1-4 PVD Coatings and Technologies Moderators: Joerg Vetter , Oerlikon Balzers Coating Germany GmbH, Jyh-Ming Ting , National Cheng Kung University
1:50pm	B1-4-2 Combinatorial Exploration of the High Entropy Alloy System Fe-Mn-Ni-Co-Cr, Alexander Kauffmann , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WK), Germany; M Stüber, H Leiste, S Ulrich , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-AWP), Germany; S Schlabach, D Szabó , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WK); B Gorr , University of Siegen, Germany; H Chen , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WK), Germany; H Seifert , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-AWP), Germany; M Heilmair , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WK), Germany	
2:10pm	B1-4-3 The Effect of Mo-Cu Cathode Composition on Thin Film Synthesis and DC Vacuum Arc Characteristics, Igor Zhirkov , Linköping University, IFM, Sweden; P Polcik, S Kolozsvári , Plansee Composite Materials GmbH, Germany; J Rosen , Linköping University, IFM, Sweden	
2:30pm	B1-4-4 Towards High-Rate Magnetron Sputter Deposition: Influence of Discharge Power on Deposition Process and Coating Properties, Christian Saringer, R Franz , Montanuniversität Leoben, Austria; K Zorn , MIBA High Tech Coatings, Austria; C Mitterer , Montanuniversität Leoben, Austria	
2:50pm	B1-4-5 High Temperature Solid PVD Lubricants Based on Vanadium, Vjaceslav Sochora, M Jilek, Jr., O Zindulka , SHM, s.r.o., Czech Republic	
3:10pm	B1-4-6 Grain Size-Dependent Metastable Phase Formation, Marcus Hans, D Music , RWTH Aachen University, Germany; D Kurapov, J Ramm, M Arndt , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; H Rudigier , Oerlikon Balzers, Oerlikon Surface Solutions AG, Switzerland, Liechtenstein; J Schneider , RWTH Aachen University, Germany	
3:30pm	B1-4-7 Nanoengineering Periodically Structured SiCu Thin Film Anodes for Rechargeable LIBs, Billur Deniz Polat Karahan, B Bilici , Istanbul Technical University, Turkey; O Eryilmaz , Argonne National Laboratory, USA; K Amine , Argonne National Laboratory, USA, United States of America; O Keles , Istanbul Technical University, Turkey	
3:50pm	B1-4-8 Thin Film Metallic Glass: Novel Coating Providing High Toughness and Low Friction, Chia-Chi Yu, J Chu , National Taiwan University of Science and Technology, Taiwan; Y Shen , University of New Mexico, USA	
4:10pm	INVITED: B2-1-9 Combined Effects of Supersaturation and Stress for the Control of AlN Film Quality, Raphael Boichot, D Chen , Grenoble-INP, France; F Mercier , CNRS, France; M Chubarov , Grenoble-INP, France; G Giusti , Sil'Tronix, France; M Pons , CNRS, France	
4:30pm	Invited talk continues.	
4:50pm	B2-1-11 Fabrication of Boron-doped Diamond Films on Cemented Tungsten Carbide, Kunio Saito , Japan Coating Center Co., Ltd., Chiba Institute of Technology, Japan; A Kawana , Japan Coating Center Co., Ltd., Japan; A Suzuki, Y Sakamoto , Chiba Institute of Technology, Japan	

Tuesday Afternoon, April 25, 2017

Room Royal Palm 1-3		
1:30pm		<p>New Horizons in Coatings and Thin Films Session F2-2 HiPIMS, Pulsed Plasmas and Energetic Deposition Moderators: Tiberiu Minea, Université Paris-Sud, Tomas Kubart, Uppsala University, Angstrom Laboratory, Sweden</p>
1:50pm	<p>F2-2-2 HPPMS Deposition from Composite Targets: Effect of Two Order of Magnitude Target Power Density Changes on the Composition of Sputtered Cr-Al-C Thin Films, <i>Holger Rueß</i>, RWTH Aachen University, Germany; <i>M to Baben</i>, GTT-Technologies, Germany; <i>L Shang</i>, RWTH Aachen University, Germany; <i>P Polcik</i>, S Kolozsvári, Plansee Composite Materials GmbH, Germany; <i>M Hans</i>, RWTH Aachen University, Germany; <i>D Primetzhofner</i>, Uppsala University, Sweden; <i>J Schneider</i>, RWTH Aachen University, Germany</p>	
2:10pm	<p>F2-2-3 Adherent and Hard DLC Coatings Deposited by HiPIMS in Deep Oscillations Magnetron Sputtering (DOMS) Mode, <i>Fábio Ferreira</i>, University of Coimbra, Portugal; <i>A Aijaz</i>, <i>T Kubart</i>, Uppsala University, Angstrom Laboratory, Sweden; <i>A Cavaleiro</i>, <i>J Oliveira</i>, University of Coimbra, Portugal</p>	
2:30pm	<p>F2-2-4 Variation of Local Chemical Compositions of (Ti, Al)N Films on Inner Wall of Small Hole deposited by High Power Impulse Magnetron Sputtering, <i>Hidetoshi Komiya</i>, <i>T Shimizu</i>, Tokyo Metropolitan Univeristy, Japan; <i>Y Teranishi</i>, <i>K Morikawa</i>, <i>M Yang</i>, Tokyo Metropolitan Industrial Technology Research Institute, Japan</p>	
2:50pm	<p>F2-2-5 A Feasibility Study on the Large-area Graphene Growth by using High Power Impulse Magnetron Sputtering (HIPIMS), <i>C Pandey</i>, <i>M Po</i>, <i>D Liou</i>, <i>M Chen</i>, <i>Y Chen</i>, <i>Ju-Liang He</i>, Feng Chia University, Taiwan</p>	
3:10pm		
3:30pm	<p>F5-7 3D-Painted Metals and Alloys: A New Approach to Metal and Alloy Advanced Manufacturing, <i>A Jakus</i>, <i>S Taylor</i>, <i>Nicholas Geisendorfer</i>, <i>D Dunand</i>, <i>R Shah</i>, Northwestern University, USA</p>	<p>New Horizons in Coatings and Thin Films Session F5 Additive-manufacturing-based Methods and Surface Engineering Moderators: Ramana Chintalapalle, University of Texas at El Paso, Sven Ulrich, Karlsruhe Institute of Technology (KIT)</p>
3:50pm	<p>F5-8 3D Printing of 2D Materials, <i>A Juhl</i>, Materials and Manufacturing Directorate, Air Force Research Laboratory, USA; <i>A Stroud</i>, Institute for Micromanufacturing/Physics Program, Louisiana Tech University, USA; <i>W Lai</i>, University of Dayton/Sensors Directorate, Air Force Research Laboratory, USA; <i>S Kim</i>, Human Effectiveness Directorate, Air Force Research Laboratory, USA; <i>N Glavin</i>, <i>R Berry</i>, <i>G Leuty</i>, Materials and Manufacturing Directorate, Air Force Research Laboratory, USA; <i>R Naik</i>, Human Effectiveness Directorate, Air Force Research Laboratory, USA; <i>M Durstock</i>, Materials and Manufacturing Directorate, Air Force Research Laboratory, USA; <i>P DeRosa</i>, Institute for Micromanufacturing/Physics Program, Louisiana Tech University, USA; <i>E Heckman</i>, Sensors Directorate, Air Force Research Laboratory, USA; <i>Christopher Muratore</i>, University of Dayton, USA</p>	
4:10pm	<p>F5-9 Direct Laser Deposition of High Entropy Alloy Coatings on High Temperature Alloys, <i>Daniel Fabijanic</i>, <i>Q Chao</i>, Deakin University, Australia; <i>T Jarvis</i>, <i>X Wu</i>, Monash University, Australia; <i>P Hodgson</i>, Deakin University, Australia</p>	
4:30pm	<p>F5-10 In-situ Impedance Spectroscopy Evaluation of Electrolytic Plasma Polishing Process for Stainless Steels, <i>V Mukaeva</i>, <i>E Parfenov</i>, <i>R Nevyantseva</i>, Ufa State Aviation Technical University, Russian Federation; <i>A Matthews</i>, <i>Aleksey Yerokhin</i>, University of Manchester, UK</p>	

Tuesday Afternoon, April 25, 2017

Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 4-6 - Session C2-3 Thin Films for Active Devices Moderators: Vanya Darakchieva Marco Cremona, Pontificia Universidade Católica do Rio de Janeiro, Junichi Nomoto , Kochi University of Technology, Japan,		Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E2-1 Mechanical Properties and Adhesion Moderators: Gerhard Dehm , Max-Planck Institut für Eisenforschung, Etienne Bousser , The University of Manchester, Fan-Bean Wu , National United University, Taiwan
1:30pm		
1:50pm		E2-1-2 Cross-sectional Investigation of Microstructure and Mechanical Properties of Graded Ti(N,B) Coatings, Michael Tkadletz , N Schalk, C Mitterer, C Hofer, J Keckes, Montanuniversität Leoben, Austria; M Deluca, Materials Center Leoben Forschung GmbH, Austria; M Pohler, C Czetti, CERATIZIT Austria GmbH, Austria
2:10pm		E2-1-3 Nanocrystalline Pt-Au MEMS Electrical Switches, Nicolas Argibay , M Dugger, D Adams, C Nordquist, A Grine, M Henry, P Lu, Sandia National Laboratories, USA
2:30pm	C2-3-4 High Dielectric Constant of Polymer-inorganic Nanocomposites as Gate Dielectrics for Organic Thin Film Transistor Applications, Cheng-Huai Yang , Y Yu, C Chiu, Ming Chi University of Technology, Taiwan	E2-1-4 Thin Film Metallic Glass: Novel Coating Providing High Toughness and Low Friction, Chia-Chi Yu , J Chu, National Taiwan University of Science and Technology, Taiwan; Y Shen, University of New Mexico, USA
2:50pm	C2-3-5 Different Nitridation Condition Influence NBTI in FinFETs, Hsi-Wen Liu , T Chang, National Sun Yat-Sen University, Taiwan	INVITED: E2-1-5 Driving Force for the Texture Transformation of Thin Metal Films, E Ellis, Cornell University, USA; M Chmielus, University of Pittsburgh, USA; S Baker, Cornell University, USA; Y Cheng, P Liu, Ming-Tzer Lin , National Chung Hsing University, Taiwan
3:10pm	C2-3-6 Analysis of Abnormal Transconductance in Body-tied PD SOI n-MOSFETs, Chien-Yu Lin , T Chang, National Sun Yat-sen University, Taiwan	Invited talk continues.
3:30pm	C2-3-7 Influence of the Ammonia Hardening on the Properties of Sol-Gel Thin Film Coatings, Christophe Boscher , J Avice, H Piombini, X Dieudonné, P Belleville, K Vallé, CEA, France	E2-1-7 Strength and Strain Hardening Behavior of Particle Strengthened Coherent Cu/Ni Multilayer Films, Rachel Schoeppner , M Polyakov, G Mohanty, J Michler, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
3:50pm	C2-3-8 Miniaturized Shape Memory (SMA) Bimorph Actuators with Polymer Layers, Cory Knick , G Smith, N Jankowski, C Morris, US Army Research Laboratory, USA	E2-1-8 Indentation Induced Deformation and Damage in Metal-Ceramic Multilayer Coatings, Yu-Lin Shen , R Jamison, University of New Mexico, USA
4:10pm	C2-3-9 Investigating Degradation Behaviors Induced by Hot Carriers in the ESL in Amorphous InGaZnO TFTs with Different Electrode Materials and Structure, Chung-I Yang , National Chiao Tung University, Taiwan; T Chang, National Sun Yat-Sen University, Taiwan	E2-1-9 Influence of Various Interlayers on Mechanical Properties of CrAlN Coatings on Tungsten Carbide Substrate, HoeKun Kim , J La, M Song, S Lee, Y Hong, Korea Aerospace University, Republic of Korea
4:30pm		E2-1-10 Numerical Investigation of Damage and Fracture in Hard Nano-coating Layers using Cohesive Zone Modeling, Shahed Rezaei , S Wulfinghoff, S Reese, RWTH Aachen University, Germany

Tuesday Afternoon, April 25, 2017

Room Sunrise		
1:30pm		Coatings for Use at High Temperatures Session A2-1 Thermal and Environmental Barrier Coatings Moderators: Lars-Gunnar Johansson , Chalmers University of Technology, Sweden, Kang Lee , NASA Glenn Research Center, USA
1:50pm		
2:10pm	A2-1-3 Property Comparisons of Air Plasma Sprayed and Dense Homogeneous Yttrium Disilicate, Cory Parker , R Golden, E Opila, University of Virginia, USA	
2:30pm	A2-1-4 Performance of Vacuum Plasma Spray Bond Coatings, Michael Lance , A Haynes, B Pint, Oak Ridge National Laboratory, USA	
2:50pm	INVITED: A2-1-5 Predicting Microstructural Evolution in Aluminide Coatings during Manufacturing and Degradation in Service, Rishi Pillai , A Chyrkin, T Galiullin, W Leng, D Grüner, D Naumenko, W Quadackers, Forschungszentrum Jülich GmbH, Germany	
3:10pm	Invited talk continues.	
3:30pm	A2-1-7 Engineered Architectures of Gadolinium Zirconate/YSZ based TBCs Subjected to Hot Corrosion Test, Satyapal Mahade , University West, Sweden; K Jonnalagadda , Linköping University, Sweden; N Curry , Treibacher Industrie AG, Austria; N Markocsan , P Nylén , University West, Sweden; R Peng , Linköping University, Sweden; X Li , Siemens Industrial Turbomachinery AB, Sweden	
3:50pm	A2-1-8 Thermal Barrier Coatings: The Next Generation, Maurice Gell , E Jordan, R Kumar, University of Connecticut, USA; C Jiang , J Wang , B Nair , HiFunda LLC, USA	
4:10pm	A2-1-9 Microstructure of Gas Flow Sputtered Thermal Barrier Coatings, Nils Rösemann , Institute for Materials, TU Braunschweig, Germany; K Ortner , Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany; M Bäker , Institute for Materials, TU Braunschweig, Germany; J Petersen , Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany; G Bräuer , Institute of Surface Technology, TU Braunschweig, Germany; J Rösler , Institute for Materials, TU Braunschweig, Germany	
4:30pm	A2-1-10 Current Environmental Barrier Coatings Research at NASA, Kang Lee , D Waters, NASA Glenn Research Center, USA	
4:50pm	A2-1-11 CMAS Infiltration Prediction for 7YSZ TBCs Deposited by EB-PVD, Juan Gomez , The University of Texas at El Paso, USA; R Naraparaju , U Schulz , German Aerospace Center (DLR), Germany; R Chintalapalle , University of Texas at El Paso, USA	
5:10pm	A2-1-12 Oxidation Behavior of CrN, AlCrN, and AlTiN Cathodic Arc PVD Coatings, Zuhair Gasem , A Adesina, King Fahd University of Petroleum and Minerals, Saudi Arabia	

Special Events Wednesday

Special Events Wednesday

7:30 AM	Conference Registration/Atlas Foyer
8:00 AM	Technical Sessions/See Room Matrix
8:30 AM	Short Courses/Devonshire
9:30 AM	Breakfast Forum: Exhibitors Only/Grand Hall
10:00 AM	Exhibition/Grand Hall
12:15 PM	Exhibition Light Luncheon Refreshments/Grand Hall
5:45 PM	Awards Convocation/Town & Country
7:30 PM	Awards Buffet Reception/Poolside near Tiki Pavilion

Wednesday Morning, April 26, 2017

	Coatings for Use at High Temperatures Room Sunrise - Session A2-2 Thermal and Environmental Barrier Coatings Moderators: Lars-Gunnar Johansson , Chalmers University of Technology, Sweden, Kang Lee , NASA Glenn Research Center, USA	Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B2-2 CVD Coatings and Technologies Moderators: Michel Pons , University Grenoble Alpes, SIMAP, CNRS, Makoto Kambara , The University of Tokyo
8:00am	A2-2-1 La-Sr-Mn Based Chromium Barrier Coatings for Interconnectors in Pressurized Steam Electrolysis on Exposure to Pure Oxygen and Water Vapor, Vladislav Kolarik , M Juez Lorenzo, V Kuchenreuther-Hummel, Fraunhofer Institute for Chemical Technology ICT, Germany; M Pötschke, D Schimanke, Sunfire GmbH, Germany	B2-2-1 Investigation of Ti-based Hard CVD Coatings on Various Metals Sintered as Alternate Binder Phase for WC-Co Cutting Tools, Linus von Feandt , Uppsala University, Angstrom Laboratory, Sweden; E Lindahl, Sandvik Coromant R&D Materials and Processes, Sweden; T Larsson, SECO Tools, Sweden; M Boman, Uppsala University, Angstrom Laboratory, Sweden
8:20am	A2-2-2 Investigation of the Adhesion of Glassified Sand/salt Deposits on Thermal Barrier Coatings Exposed to High-temperature Combusted Gas Flows, Michael Walock , B Barnett, A Nieto, W Gamble, A Ghoshal, M Murugan, US Army Research Laboratory, USA; D Zhu, National Aeronautics and Space Administration, USA; J Swab, M Pepi, US Army Research Laboratory, USA; R Pegg, C Rowe, US Navy Naval Air Systems Command, USA; K Kerner, US Army Aviation and Missile Research, Development, and Engineering Center, USA	B2-2-2 Hot Filament CVD Diamond Coatings on Cutting Tools for Hard to Machine Materials, Michael Woda , W Puetz, M Frank, B Mesic, W Koelker, C Schiffers, O Lemmer, CemeCon AG, Germany
8:40am	A2-2-3 Effect of Nanostructure and Composition on the Transient Oxidation Behavior of Nanograined Alloys, Pravav Shetty , J Krogstad, University of Illinois at Urbana-Champaign, USA	B2-2-3 Nanocluster Assisted Mesoplasma Epitaxial Bridging, R Yamada, The University of Tokyo, Japan; S Wu, Chinese Academy of Sciences, China; Makoto Kambara , The University of Tokyo, Japan
9:00am	A2-2-4 CrAlSiYN Coating with AlSiN Intermediate Layers for Enhanced Thermal Stability and Oxidation Resistance at Elevated Temperatures, S Liu, Singapore Institute of Manufacturing Technology, Singapore; Y Yang, Data Storage Institute, Singapore; F Ng, Singapore Institute of Manufacturing Technology, Singapore; R Ji, Data Storage Institute, Singapore; Xianting Zeng , Singapore Institute of Manufacturing Technology, Singapore	B2-2-4 Low Pressure Chemical Vapor Deposition of hex-BN: Relationship between Gas Phase Chemistry and Coating Microstructure, P Carminati, LCTS-CNRS, France; T Buffeteau, N Daugey, ISM-CNRS, France; G Chollon, LCTS-CNRS, France; F Rebillat, LCTS-University of Bordeaux, France; Sylvain Jacques , LCTS-CNRS, France
9:20am	A2-2-5 Metallic Coatings on Copper for High Heat Flux Application in Rocket Engines, Torben Fiedler , J Rösler, M Bäker, Technische Universität Braunschweig, Germany	INVITED: B2-2-5 High-speed Structural Control for Functionalization of Various Oxide Films, Akihiko Ito , Yokohama National University, Japan
9:40am	A2-2-6 Mechanical Properties of ZrO ₂ -Y ₂ O ₃ Thermal Barrier Coatings by Isothermal Heat Treatment, Byung-Koog Jang , National Institute for Materials Science, Japan; K Yasuda, Tokyo Institute of Technology, Japan; K Lee, Kookmin University, Republic of Korea; S Kim, Y Oh, H Kim, Korea Institute of Ceramic Engineering and Technology, Republic of Korea	Invited talk continues.
10:00am	A2-2-7 Estimation Of The Mechanical Properties Of Thermal Barrier Coatings With Porous And Dense Vertically Cracked Microstructures By Modified Small Punch Tests, Pierre Planques , Cirimat - Safran Helicopter Engines, France; V Vidal, P Lours, Mines Albi, ICA (Institut Clément Ader), France; V Proton, F Crabos, Safran Helicopter Engines, France; J Huez, B Viguier, CIRIMAT, France	B2-2-7 Protective Coatings Enabled by Atomic Layer Deposition Processing, Christopher Oldham , J Daubert, G Parsons, NC State University, USA
10:20am	A2-2-8 Comparison of Damage Evolution in High Purity Nano and a Conventional YSZ Thermal Barrier Coating during Thermal Cycling, Krishna Praveen Jonnalagadda , R Eriksson, Linköping University, Sweden; K Yuan, Beijing General Research Institute of Mining and Metallurgy, China; X Li, Siemens Industrial Turbomachinery, Sweden; X Ji, Y Yu, Beijing General Research Institute of Mining and Metallurgy, China; R Peng, Linköping University, Sweden	B2-2-8 Chromium Carbide Growth at Low Temperature by a High Efficient DLI-MOCVD Process in Effluent Recycling Mode, A Michau, Francis Maury , CIRIMAT, France; F Schuster, CEA Saclay, France; R Boichot, M Pons, SIMaP, University of Grenoble Alpes, CNRS, France; E Monsifrot, DEPHIS, France
10:40am	A2-2-9 Non-reactively Sputtered Ultra-High Temperature Hf-C and Ta-C Coatings, H Lasfargues, T Glechner, C Koller, TU Wien, Institute of Materials Science and Technology, Austria; V Paneta, D Primetzhofer, Uppsala University, Angstrom Laboratory, Sweden; S Kolozsvári, Plansee Composite Materials GmbH, Germany; D Holec, Montanuniversität Leoben, Austria; Helmut Riedl , P Mayrhofer, TU Wien, Institute of Materials Science and Technology, Austria	B2-2-9 Growth and Characterization of SiO _x Thin Film Deposited by Plasma Enhanced CVD on a Magnesium Alloy, Hyunju Jeong , J Cho, POSCO (Pohang Iron and Steel Company), Republic of Korea
11:00am	A2-2-10 Impact of Substrate Surface Morphology on APS Ceramic Coating Adhesion Measured by Laser Shock Test (LASAT), H Sapardanis, V Guipont, A Koster, Vincent Maurel , Mines ParisTech, France	B2-2-10 Electrochemical Behavior of Graphene Coatings Deposited on Copper Metal by Electrophoretic Deposition and Chemical Vapor Deposition, Mohsin Ali Raza , A Ali, F Ali Ghuari, A Aslam, K Yaqoob, A Wasay, University of the Punjab, Pakistan; M Raffi, National Institute of Lasers and Optonics, Pakistan
11:20am	A2-2-11 Influence of Pt Concentration on Structure of Aluminized Coatings on a Ni Base Superalloy, E Pauletti, AnaSofia D'Oliveira , Universidade Federal do Paraná, Brazil	B2-2-11 Characterization of Coated Silane Compounds on Aisi 304 Stainless Steel Using Plasma-Oxide Vapor as Adhesion, Damilare Baruwaa , University of Johannesburg, South Africa; P Oladijo, Botswana International University of Science and Technology, Botswana; J Chinn, Integrated Surface Technologies, Inc., USA; N Maledi, University of the Witwatersrand, South Africa; E Akinlabi, University of Johannesburg, South Africa

Wednesday Morning, April 26, 2017

Hard Coatings and Vapor Deposition Technologies Room California - Session B4-3 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May, Robert Bosch GmbH, Diesel Systems, Chau-Chang Chou, National Taiwan Ocean University, Taiwan, Farwah Nahif, eifeler-Vacotec GmbH		Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E2-2 Mechanical Properties and Adhesion Moderators: Gerhard Dehm, Max-Planck Institut für Eisenforschung, Etienne Bousser, The University of Manchester, Fan-Bean Wu, National United University, Taiwan	
8:00am	INVITED: B4-3-1 Aspects of Thermal Stability of TiAlN and ZrAlN, Magnus Odén , Linköping University, (IFM), Sweden	E2-2-1 Study of Bauschinger Effect in Ni Thin Metallic Films Submitted to Cyclic Deformation, Pierre-Olivier Renault, W He, P Godard, E Le Bourhis, P Goudeau , Université de Poitiers, France	
8:20am	Invited talk continues.	E2-2-2 Mo-Re Thin Films for Flexible Display Applications, F Hauser, T Jörg , Montanuniversität Leoben, Austria; M Cordill , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; R Franz , Montanuniversität Leoben, Austria; H Köstenbauer, J Winkler , Plansee SE, Austria; Christian Mitterer , Montanuniversität Leoben, Austria	
8:40am	B4-3-3 Effects of Treatment Temperature and Gas Blow Velocity of IH Nitriding on Microstructure of Titanium Alloy, Shogo Takesue , Keio University, Japan; S Kikuchi , Kobe University, Japan; H Akebono , Hiroshima University, Japan; K Fukazawa , Netsuren Co., Ltd., Japan; J Komotori , Keio University, Japan	INVITED: E2-2-3 Rate Sensitive and Creep Behavior of Thin Metallic and Oxide Films: on Chip Testing and Activation Volume Analysis, Thomas Pardoën, G Lemoine, H Idrissi , Université Catholique de Louvain, Belgium; D Schryvers , University of Antwerpen, Belgium; M Ghidelli , Université Catholique de Louvain, Belgium, Italy; M Coulombier, R Vayrette, L Delannay , Université Catholique de Louvain, Belgium; S Gravier , Grenoble INP, France; J Raskin , Université Catholique de Louvain, Belgium	
9:00am	B4-3-4 Oblique Angle Deposition of Nanostructured ZrC Thin Film by Reactive Magnetron Sputtering and its Effect on Structure and Mechanical Property, SathishKumar Shanmugam, A Sharma, M Gowravaram, S Suwas , Indian Institute of Science, India	Invited talk continues.	
9:20am	B4-3-5 The Influence of Al Content on Characteristics of CVD- Aluminum Titanium Nitride Films, Kenichi Sato, S Tatsuoaka, K Yanagisawa, T Ishigaki, K Yamaguchi, S Nishida , Mitsubishi Materials Corporation, Japan	E2-2-5 Intrinsic Stresses - New Methods to Evaluate Them Using Enhancing Indentation Methods and New Models to Optimize Them, Nick Bierwisch, N Schwarzer , SIO, Germany	
9:40am	B4-3-6 Wear Resistance Capabilities of B-C-W Coatings, Heidrun Klostermann, M Friedemann , Fraunhofer FEP, Germany; M Ottersbach, D Schraknepper , Fraunhofer IPT, Germany; J Poetschke, M Mayer , Fraunhofer IKTS, Germany; F Fietzke, O Zywitzki , Fraunhofer FEP, Germany	E2-2-6 Investigation of Buckling Driven Delamination of DLC Coatings for Evaluation of Adhesion Strength, Richard Braak, U May, L Onuseit, G Repphun , Robert Bosch GmbH, Diesel Systems, Germany; M Guenther, J Emmerlich , Robert Bosch GmbH, Germany; C Schmid, K Durst , Physical Metallurgy, TU Darmstadt, Germany	
10:00am	B4-3-7 Micromechanical Properties and Wear Resistance of Quaternary TiAl(X)N Alloys (X=Nb, Cr or V), Yu-Hsiang Chen, L Rogström , Nanostructured Materials, IFM, Linköping University, Sweden; J Roa , Universitat Politècnica de Catalunya, Spain; M Johansson-Jöesaar , SECO Tools, Sweden; M Anglada , Universitat Politècnica de Catalunya, Spain; M Odén , Nanostructured Materials, IFM, Linköping University, Sweden	E2-2-7 Characterization of Thin Films by Nanoindentation: Avoiding Mistakes during the Measurement and Data Analysis, Esteban Broitman , Engineering Consulting, Sweden	
10:20am	B4-3-8 High Resolution Lateral Force-displacement Measurements as a Tool for the Determination of Lateral Contact Stiffness and Poisson's Ratio, Thomas Chudoba , ASMEC GmbH, Germany	E2-2-8 Plasma Electrolytic Oxidation Coatings on AZ31 Magnesium Alloys with Si ₃ N ₄ Nanoparticle Additives, YYuan Lin, J Lee, C Tseng , Ming Chi University of Technology, Taiwan; B Lou , Chang Gung University, Taiwan	
10:40am	B4-3-9 Influence of a-Si:H Interlayer on the Adherence of a-C:H Coatings Deposited on Different Metallic Surfaces, G Capote , National University of Colombia, Colombia; D Lugo , Institute for Space Research, Brazil; J Gutiérrez , National University of Colombia, Colombia; VladimirJesus Trava-Airoldi , Institute for Space Research, Brazil	E2-2-9 Fractures, Wrinkles and Buckles in Brittle Multi-layers on Flexible Substrate, Davy Dalmas , Laboratoire de Tribologie et Dynamique des Système (LTDS), Ecole Centrale de Lyon, France; I Ben Cheikh, G Parry, R Estevez , SIMaP – Univ. Grenoble Alpes, CNRS, SIMaP, France	
11:00am	B4-3-10 Reactive Magnetron Sputtering of Transition Metal Nitrides for Electronic and Opto-Electronic Applications, Amber Reed , Air Force Research Laboratory, USA; H Smith , University of Dayton and Air Force Research Laboratory, USA; M McConney, D Look, D Abeysinghe, V Vasilyev, J Cetnar, B Howe , Air Force Research Laboratory, USA	E2-2-10 Combined XPS and Adhesion Studies of Metal - Polymer Interfaces for Space Applications, Barbara Putz , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Monanuniversität Leoben, Austria; G Milassin, Y Butenko, C Semprinoschnig , European Space Research and Technology Centre (ESTEC), The Netherlands; M Cordill , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Monanuniversität Leoben, Austria	
11:20am	B4-3-11 Comparative Investigation of Zr-B-(N), Zr-Si-B-(N), and Zr-Al-Si-B-(N) Hard Coatings, Philipp Kiryukhantsev-Korneev, M Lemeshova, I Yatsyuk, D Shtansky, E Levashov , National University of Science and Technology "MISIS", Russian Federation	E2-2-11 Mapping Adhesion Energy of Tungsten Based Barrier Layers with Scratch Induced Buckling, Andreas Kleinbichler, J Zechner , KAI - Kompetenzzentrum Automobil- und Industrieelektronik GmbH, Austria; M Cordill , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria	
11:40am	B4-3-12 Multiphysics Modelling and Experimental Investigation on the Characteristics of Laser Deposited Al-Sn-Si Coatings on Ti6Al4V Alloy, Olawale Fatoba , University of Johannesburg, South Africa; A Popoola , Tshwane University of Technology, South Africa; E Akinlabi , University of Johannesburg, South Africa		

Wednesday Morning, April 26, 2017

New Horizons in Coatings and Thin Films Room Royal Palm 1-3 - Session F4-1 Functional Oxide and Oxynitride Coatings Moderators: Michael Stueber, Karlsruhe Institute of Technology, Anders Eriksson, Oerlikon Balzers, Oerlikon Surface Solutions AG		Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 4-6 - Session H3-1 Characterization of Coatings in Harsh Environments Moderators: David Armstrong, University of Oxford, Jeff Wheeler, Laboratory for Nanometallurgy, ETH Zürich	
8:00am	F4-1-1 Development of Microstructure, Phase Composition and Residual Stresses during Plasma Electrolytic Oxidation (PEO) of Aluminium Alloys, <i>Etienne Bousser, A Yerokhin, The Univ. of Manchester, UK; T Schmitt, École Polytechnique de Montréal, Canada; A Gholinia, J Donoghue, The Univ. of Manchester, UK; D Asquith, Sheffield Hallam Univ., UK; A Jarvis, Univ. of Sheffield, UK; P Withers, A Matthews, The Univ. of Manchester, UK</i>	INVITED: H3-1-1 Small-Scale Mechanical Testing on Ion Beam Surface-Modified Engineering Materials, <i>Peter Hosemann, University of California at Berkeley, USA</i>	
8:20am	F4-1-2 Influence of Transition Metal Dopants on the Reactive Sputtering Process of Al ₂ O ₃ Thin Films and their Oxidation Resistance, <i>Bernhard Kohlhauser, H Riedl, C Koller, Institute of Materials Science and Tech., TU Wien, Austria; S Kolozsvári, Plansee Composite Materials GmbH, Germany; V Paneta, D Primetzhofer, Uppsala University, Sweden; H Hutter, Institute of Chemical Technologies and Analytics, TU Wien, Austria; P Mayrhofer, Institute of Materials Science and Tech., TU Wien, Austria</i>	Invited talk continues.	
8:40am	F4-1-3 On the Phase Evolution of Al-Cr-based Intermetallics and Oxides Formed by Cathodic Arc Evaporation, <i>V Dalbauer, Christian Koller, R Raab, CDL-AOS TU Wien, Austria; S Kolozsvári, Plansee Composite Materials GmbH, Germany; J Ramm, Oerlikon Surface Solutions AG, Liechtenstein; M Bartosik, P Mayrhofer, TU Wien, Austria</i>	H3-1-3 High Temperature Nanoindentation up to 800°C: Experimental Optimization, <i>N Randall, M Conte, Anton Paar TriTec, Switzerland; J Schwiedrzik, J Michler, EMPA, Switzerland; Pierre Morel, Anton Paar, USA</i>	
9:00am	F4-1-4 Synthesis of Local Epitaxial α -(Cr _{1-x} Al _x) ₂ O ₃ Thin Films (0.08 ≤ x ≤ 0.16) on α -Al ₂ O ₃ Substrates by R.F. Magnetron Sputtering, <i>Y Gao, H Leiste, M Stüber, Sven Ulrich, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-AWP), Germany</i>	H3-1-4 Size-dependent Nanoscale Plasticity in Oxidation-strengthened Zr/Nb Multilayers, <i>Mauro Callisti, University of Southampton, UK; M Monclus, IMDEA Materials Institute, Spain; J Llorca, Polytechnic University of Madrid, Spain; J Molina-Aldareguia, IMDEA Materials Institute, Madrid, Spain; T Polcar, University of Southampton, UK</i>	
9:20am	F4-1-5 Thermal Stability of Arc Evaporated Oxide, Nitride, Oxynitride, and Oxide/Nitride Coatings within the Systems Al-Cr-N and Al-Cr-O, <i>Robert Raab, CDL-AOS TU Wien, Austria; C Koller, TU Wien, Austria; S Kolozsvári, Plansee Composite Materials GmbH, Germany; J Ramm, Oerlikon Surface Solutions AG, Liechtenstein; P Mayrhofer, TU Wien, Austria</i>	H3-1-5 High Temperature Mechanical Properties Characterization of DLC Films, <i>M Rouhani, National Chung Cheng University, Taiwan; F Hong, National Cheng Kung University, Taiwan; Yeau-Ren Jeng, National Chung Cheng University, Taiwan</i>	
9:40am	F4-1-6 Structural Evolution in Reactive RF Magnetron Sputtered (Cr,Zr) ₂ O ₃ During Annealing, <i>Ludvig Landälv, Linköping Univ., IFM, Thin Film Physics Div. and Sandvik Coromant R&D, Sweden; J Lu, Linköping Univ., IFM, Thin Film Physics Div., Sweden; S Spitz, H Leiste, S Ulrich, Karlsruhe Institute of Technology (KIT), Inst. for Applied Mat. (IAM-AWP), Germany; M Johansson-Jöesaar, Linköping Univ., IFM, Nanostructured Mat. And SECO TOOLS, Sweden; M Ahlgren, E Göthelid, Sandvik Coromant R&D, Sweden; B Alling, Linköping Univ., IFM, Thin Film Physics Div. and Max-Planck-Institut für Eisenforschung GmbH, Sweden; L Hultman, Linköping Univ., IFM, Sweden; M Stüber, Karlsruhe Institute of Technology (KIT), Inst. for Applied Mat. (IAM-AWP), Germany; P Eklund, Linköping Univ., IFM, Thin Film Physics Div., Sweden</i>	H3-1-6 Aluminide Coatings on Thin-Walled Sheets – Mechanical Properties and Thermocyclic behaviour, <i>Johannes Bauer, DECHEMA-Forschungsinstitut, Germany; H Ackermann, Oel-Waerme-Institut, Germany; M Galetz, DECHEMA-Forschungsinstitut, Germany</i>	
10:00am	INVITED: F4-1-7 Ternary Oxide Coatings as High-temperature Solid Lubricants, <i>Samir Aouadi, J Gu, D Stone, University of North Texas, USA; Y Gao, A Martini, University of California Merced, USA</i>	H3-1-7 Variable Temperature Micropillar Compression Transient Tests on Nanocrystalline Palladium-Gold: Probing Activation Parameters at the Lower Limit of Crystallinity, <i>Juri Aljoscha Wehrs, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</i>	
10:20am	Invited talk continues.	H3-1-8 High Temperature Micro-Mechanical Testing of Aluminide Coatings, <i>James Gibson, H Reuß, J Schneider, S Korte-Kerzel, RWTH Aachen University, Germany</i>	
10:40am	F4-1-9 High-rate Reactive High-power Impulse Magnetron Sputtering of Hf-O-N Films with Tunable Composition and Properties, <i>Jaroslav Vlcek, A Belosludtsev, S Haviar, J Houška, R Čerstvý, J Rezek, University of West Bohemia, Czech Republic</i>	H3-1-9 Temperature-dependent Interfacial Layer Formation during Sputter-deposition of Zr Thin Films on Al ₂ O ₃ (0001), <i>Koichi Tanaka, J Fankhauser, University of California, Los Angeles, USA; M Sato, Nagoya University, Japan; D Yu, A Aleman, A Ebnonnasir, C Li, University of California, Los Angeles, USA; M Kobashi, Nagoya University, Japan; M Goorsky, S Kodambaka, University of California, Los Angeles, USA</i>	
11:00am	F4-1-10 Thin Films in the M-Si-O-N Systems, <i>Sharafat Ali, Linnæus University, Sweden; P Biplab, R Magnusson, G Greczynski, E Braitman, Linköping University, (IFM), Sweden; B Jonson, Linnæus University, Sweden; J Birch, P Eklund, Linköping University, (IFM), Sweden</i>		
11:20am	F4-1-11 Diffusion between Silica Thin Film Deposited by Reactive Magnetron Sputtering and Glass Substrate during Annealing at High Temperature, <i>Jean-Thomas Fonné, E Guillard, E Burov, H Montigaud, S Grachev, Joint unit CNRS/Saint-Gobain UMR 125 - Surface of Glass and Interfaces, France; D Vandembroucq, UMR 7636 CNRS/ESPCI/Paris 6 UPMC/Paris 7 Diderot - Physics and Mechanics of Heterogeneous Media Laboratory, France</i>		
11:40am	F4-1-12 Investigation of Sputtered Zirconium Oxide Thin Films Deposited at Different Oxygen Partial Pressure, <i>Nicky Patel, Sardar Patel College of Engineering, India; K Chauhan, Chandubhai S. Patel Institute of Technology (CSPIT), Charotar University of Science and Technology (CHARUSAT), India; S Rawal, McMaster University, Canada</i>		

Wednesday Afternoon, April 26, 2017

Hard Coatings and Vapor Deposition Technologies Room California - Session B4-4 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May, Robert Bosch GmbH, Diesel Systems, Chau-Chang Chou, National Taiwan Ocean University, Taiwan, Farwah Nahif, eifeler-Vacotec GmbH		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B3-1 Deposition Technologies and Applications for Diamond-like Coatings Moderators: Frank Papa, Gencoa Ltd., USA, Klaus Böbel, Bosch GmbH	
1:30pm			
1:50pm			
2:10pm	INVITED: B4-4-3 Coatings Selection Criteria for WC/Co Cutting Tools, Aharon Inspektor, P Salvador , Carnegie Mellon University, USA	B3-1-3 New Pathways for Improving Adhesion of DLC on Steel in Low Temperatures, L Leidens , UCS and CAPES, Brazil; Á Crespi , UCS, Brazil; F Alvarez , IFGW-UNICAMP, Brazil; Carlos Figueroa , UCS, Brazil	
2:30pm	Invited talk continues.	B3-1-4 Stress Evolution of Diamond-like Carbon Films via Controlled Metal Doping, Aiyang Wang, X Li, L Sun, P Guo , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
2:50pm	B4-4-5 Investigation of the Plasma Electrolytic Oxidation Mechanism of Titanium, Golsa Mortazavi, E Meletis , University of Texas at Arlington, USA	B3-1-5 Influence of Alloying Metals on Tribological Properties of Diamond-like Carbon Films Synthesized by Metal Plasma Activated Deposition Process, D Wang, Wei-Yu Ho, M Shih, W Chen , MingDao University, Taiwan; J Wang, J Hung , Aurora Scientific Corp, Canada	
3:10pm	B4-4-6 Lessons Learned from Sputtering Icosahedrally Bonded Borides, O Hunold, P Keuter, P Bliem, D Music, F Wittmers, A Ravensburg , RWTH Aachen University, Germany; D Primetzhofer , Uppsala University, Sweden; Jochen Schneider , RWTH Aachen University, Germany	B3-1-6 Thick Diamond Like Carbon Coatings Deposited by Deep Oscillation Magnetron Sputtering for Automotive Applications, Jianliang Lin, P Lee, R Wei, K Coulter , Southwest Research Institute, USA	
3:30pm	B4-4-7 Ductile Behavior of Hard MoBC and WBC Nanolaminates, Petr Vašina, P Soucek, S Mirzaei, L Zabransky , Masaryk University, Czech Republic; J Bursik , IPM, Academy of Science, Czech Republic; V Perina , NPI, Academy of Science, Czech Republic; V Bursikova , Masaryk University, Czech Republic	INVITED: B3-1-7 Deposition of ta-C by Filtered and Unfiltered Laser-arc Technique – Actual Status, Volker Weinhacht, G Englberger, A Leson , Fraunhofer IWS, Germany	
3:50pm	B4-4-8 Coating Characterization with Surface Acoustic Waves, Martin Zawischa, D Schneider, M Leonhardt, S Makowski, V Weinhacht , Fraunhofer IWS, Germany	Invited talk continues.	
4:10pm	B4-4-9 Anti-Corrosion Performance and Wear Behaviour of Laser Deposited Ni-Ti-Zn Coatings on UNS G10150 Steel., Ayanda Xulu , Tshwane University of Technology, South Africa; O Fatoba , University of Johannesburg, South Africa; A Popoola , Tshwane University of Technology, South Africa; S Pityana , Council for Scientific and Industrial Research (CSIR), South Africa	B3-1-9 Wear Behavior of CoCrMo Alloy Coated with Highly Adhesive N-Doped DLC by ICP-CVD, Jesus Corona Gomez, Q Yang , University of Saskatchewan, Canada	
4:30pm	B4-4-10 Effect of V Addition on the Thermal Stability, Oxidation Resistance and Tribological Performance of Self-lubricant TiSi(V)N Coatings Deposited by HiPIMS in DOMS Mode, Filipe Fernandes, R Serra, A Cavaleiro , SEG-CEMUC, University of Coimbra, Portugal	B3-1-10 Carbon-Based Coatings on Nanofabric by Using HIPIMS for Possible EAOPs Applications, Pi-Wei Wang, C Tsen, C Liu, J He , Feng Chia University, Taiwan	
4:50pm	B4-4-11 Wear Study of PVD AlTiN Coatings with High Al Content, Joern Kohlscheen, C Bareiss , Kennametal GmbH, Germany; C Charlton, D Banerjee , Kennametal Inc., USA		
5:10pm	B4-4-12 Tribological Behavior of MoBCN-MoSx Coating under Elevated Temperature, Xiaodong Zhu, Q Li, L Qiu, K Xu , Xi'an Jiaotong University, China		

Wednesday Afternoon, April 26, 2017

New Horizons in Coatings and Thin Films Room Royal Palm 1-3 - Session F4-2 Functional Oxide and Oxynitride Coatings Moderators: Michael Stueber , Karlsruhe Institute of Technology, Anders Eriksson , Oerlikon Balzers, Oerlikon Surface Solutions AG		Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 4-6 - Session H3-2 Characterization of Coatings in Harsh Environments Moderators: David Armstrong , University of Oxford, Jeff Wheeler , Laboratory for Nanometallurgy, ETH Zürich	
1:30pm			
1:50pm	F4-2-2 After-arc Plasma Technique to Modify Chemical States of Surface and Grain Boundaries of 50-nm-thick Conductive ZNO Films to Achieve a Fast-response Hydrogen Sensor, Tetsuya Yamamoto , <i>J Nomoto, H Makino</i> , Kochi University of Technology, Japan; <i>H Kitami, T Sakemi, Y Aoki</i> , Sumitomo Heavy Industries, Ltd., Japan; <i>K Kobayashi</i> , Kochi University of Technology, Japan; <i>S Kishimoto</i> , Kochi National College of Technology, Japan		
2:10pm	F4-2-3 Microstructure and Corrosion Resistance of PVD Hf-coated Mg Alloy after Thermal Oxidation Treatment, <i>D Zhang, Z Qi, B Wei, Zhoucheng Wang</i> , Xiamen University, China	INVITED: H3-2-3 Recent Advances in Nanomechanical Testing of Thin Films: Variable Temperature, Ultra-high Strain Rates, in-situ EBSD Experiments, <i>J Best</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>J Wheeler</i> , Laboratory for Nanometallurgy, Department of Materials Science, ETH Zürich, Switzerland; <i>J Wehrs, J Schwiedrzik, G Mohanty, J Ast, X Maeder, K Thomas</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>M Morstein</i> , Platit Ag, Switzerland; Johann Michler , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
2:30pm	F4-2-4 HIPIMS Deposition of Ta-O-N Coatings with Modified Surface by Cu Nanoclusters for Water Splitting Application, Jiří Čapek , <i>Š Batková, S Haviar, J Houška</i> , University of West Bohemia, Czech Republic	Invited talk continues.	
2:50pm	INVITED: F4-2-5 New Oxides and Oxynitrides for Thermoelectrics and Hard, Transparent Coatings, Per Eklund , Linköping University, IFM, Sweden	H3-2-5 Combined Size and Texture-dependent Deformation and Strengthening Mechanisms in Zr/Nb Nano-multilayers in Harsh Environments, Tomas Polcar , <i>M Callisti</i> , University of Southampton, UK	
3:10pm	Invited talk continues.	H3-2-6 The Oxidation Resistance of ZrO ₂ -Coated and Vacuum Annealed ZrN-Coated Zircaloy-4, I-Sheng Ting , <i>J Huang, G Yu</i> , National Tsing Hua University, Taiwan	
3:30pm	F4-2-7 Reactive Magnetron Sputter Deposition of NbO _x Thin Films, Roland Lorenz , Montanuniversität Leoben, Austria; <i>M O'Sullivan, D Sprenger, B Lang</i> , Plansee SE, Austria; <i>C Mitterer</i> , Montanuniversität Leoben, Austria	H3-2-7 Effect of Using Dissimilar Substrate Materials on Interfacial Properties of HVOF Deposited Inconel 718 Alloy, Sahar Abualigaledari , <i>M Salimijazi, F Azarmi, Y Huang</i> , North Dakota State University, USA	
3:50pm	F4-2-8 Electrical Properties of BiNbO Thin Films Deposited by Dual Co-sputtering, Osmar Depablos-Rivera , <i>J Pérez-Alvarez</i> , Instituto de Investigación en Materiales-UNAM, Mexico; <i>S Charvet, M Lejeune</i> , Université de Picardie Jules Verne, France; <i>S Rodil</i> , Instituto de Investigación en Materiales-UNAM, Mexico	H3-2-8 Sublimation and Self Freezing of Planar Surfaces in Rarefied Atmospheres, Rahul Basu , Adarsha Institute of Technology, India	
4:10pm	F4-2-9 Structure and Properties of Magnetron-sputtered Manganese Ferrite Films, Fred Fietzke , <i>O Zywitzki</i> , Fraunhofer FEP, Fraunhofer Institute for Organic Electronics, Germany		
4:30pm	F4-2-10 A Combined Optical and Electronic Structure Analysis of ZnO:Al Films: Bandgap Renormalization and the Burstein – Moss Effects, Neilo Trindade , Sao Paulo Federal Institute, Brazil; <i>N Marana, M Junior, J Sambrano, A Tabata, J Silva, J Bortoleto</i> , Sao Paulo State University, Brazil		

Wednesday Afternoon, April 26, 2017

Room San Diego		
1:30pm		Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Session E3 Tribology of Coatings for Automotive and Aerospace Applications Moderators: Sébastien Guimond , Oerlikon Balzers, Oerlikon Surface Solutions AG, Nicolas Argibay , Sandia National Laboratories, Pantcho Stoyanov , Pratt & Whitney, USA
1:50pm	E3-2 Bending Fatigue Property Enhancements of Metallic Substrates by Thin Film Metallic Glass Coatings, Chia-Hao Chang , <i>J Chu</i> , National Taiwan University of Science and Technology, Taiwan	
2:10pm	E3-3 Optimization of the Tribological Contact between Piston Ring and Cylinder Wall with Oxide Coatings, <i>C Bohnheio</i> , <i>P Ernst</i> , <i>P Luethy</i> , Oerlikon Metco AG, Switzerland; <i>J Ramm</i> , <i>H Rudigier</i> , Florian Seibert , <i>B Widrig</i> , Oerlikon Surface Solutions AG, Liechtenstein	
2:30pm	E3-4 Mechanical Characterization of the Glaze Layer formed by Fretting Wear in a Ceramic versus Metallic Alloy Contact, <i>A Viat</i> , Gaylord Guillonéau , <i>S Fouvry</i> , Ecole Centrale de Lyon, France; <i>G Kermouche</i> , Ecole des Mines de Saint-Etienne, France; <i>J Michler</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
2:50pm	INVITED: E3-5 Sequence of Stages in the Microstructure Evolution in Copper under Reciprocating Tribological Loading, Christian Greiner , Karlsruhe Institute of Technology (KIT), Germany	
3:10pm	Invited talk continues.	
3:30pm	E3-7 Effect of Test Atmosphere on the Tribological Behaviour of the Fluorinated Tetrahedral Amorphous Carbon (ta-C-F) Coatings against Steel, MuhammadZafarUllah Khan , <i>S Bhowmick</i> , <i>A Alpas</i> , University of Windsor, Canada	
3:50pm	E3-8 Laser-based Process for Polymeric Tribological Coatings on Lightweight Components, Hendrik Saendker , <i>J Stollenwerk</i> , Fraunhofer Institute for Laser Technology, Germany; <i>P Loosen</i> , Chair for Technology of Optical Systems TOS, Germany	
4:10pm	E3-9 Long-term Tests of Tribological Properties of HVOF-sprayed WCCoCr Carbide Coatings of Ultra-fine Powders with a View to Applying Them to Sliding Rings of Mechanical Seals, Aleksander Iwaniak , <i>R Swadzba</i> , Silesian University of Technology, Poland; <i>G Wieclaw</i> , Certech Sp. z o.o., Poland; <i>L Norymberczyk</i> , ANGA Uszczelnienia Mechaniczne Sp. z o.o., Poland	
4:30pm	E3-10 Role of Oxygen in High Temperature Sliding Behaviour of W Containing Diamond-like Carbon (W-DLC), <i>S Bhowmick</i> , <i>M Lou</i> , <i>A Alpas</i> , MuhammadZafarUllah Khan , University of Windsor, Canada	

Wednesday Afternoon, April 26, 2017

Room Sunrise		
1:30pm		Surface Engineering - Applied Research and Industrial Applications Session G2 Components Coatings Moderators: Kenji Yamamoto, Kobe Steel Ltd., OsmanL. Eryilmaz, Argonne National Laboratory, USA, Jolanta Ewa Klemberg-Sapieha, Polytechnique Montreal
1:50pm	G2-2 Advanced Metal/Ceramic Nano-multilayers for Joining Applications: Interplay between Nano-confinement, Stress Relaxation and Environmental Conditions, <i>Mirco Chiodi, C Cancellieri, F Moszner</i> , Empa, Laboratory for Joining Technologies & Corrosion, Switzerland; <i>M Andrzejczuk</i> , Warsaw University of Technology, Poland; <i>J Janczak-Rusch, L Jurgens</i> , Empa, Laboratory for Joining Technologies & Corrosion, Switzerland	
2:10pm	INVITED: G2-3 Coatings for the Aerospace Industry, <i>Jeffrey Lince</i> , The Aerospace Corporation, USA	
2:30pm	Invited talk continues.	
2:50pm	G2-5 Triboactive CrAlN+X Hybrid dcMS/HPPMS PVD Nitride Hard Coatings for Friction and Wear Reduction on Components, <i>K Bobzin, T Brögelmann, Christian Kalscheuer</i> , Surface Engineering Institute - RWTH Aachen University, Germany	
3:10pm	G2-6 Tribological Performance of PTFE Based Composite Seal Materials Against Diamond Like Carbon and Catalytically Active Nitride Based Nano-composite Coatings, <i>OsmanL. Eryilmaz, G Ramirez, A Erdemir</i> , Argonne National Laboratory, USA	
3:30pm	INVITED: G6-7 Research Behind a High Performance Metal Cutting Tool, <i>Jacob Sjölen</i> , SECO Tools, Sweden	Surface Engineering - Applied Research and Industrial Applications Session G6 Application-driven Cooperation between industry and Research Institutions Moderators: Hamid Bolvardi, Oerlikon Balzers, Oerlikon Surface Solutions AG, Kirsten Bobzin, Surface Engineering Institute - RWTH Aachen University, Germany
3:50pm	Invited talk continues.	
4:10pm	G6-9 Residual Stress Measurement Technique for Static and Dynamic Coating Processes using Micro-machined Stress Sensors for Scientific and Industrial Applications, <i>L Banko, Dario Grochla, A Ludwig</i> , Ruhr-Universität Bochum, Germany	
4:30pm	G6-10 Improvement of Thermal Stability and Oxidation Resistance of Molybdenum Nitride, <i>Fedor F. Klimashin</i> , CDL-AOS TU Wien, Austria; <i>M Arndt</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P Polcik</i> , Plansee Composite Materials GmbH, Germany; <i>H Euchner, N Koutná</i> , TU Wien, Austria; <i>D Holec</i> , Montanuniversität Leoben, Austria; <i>P Mayrhofer</i> , TU Wien, Austria	
4:50pm	G6-11 Empirical Alloys-by-design Theory Calculations to the Microstructure Evolution Mechanical Properties of Mo-doped Laser Cladding NiAl Composite Coatings on Medium Carbon Steel Substrates, <i>C Lin, Wei-Yu Kai</i> , National Taipei University of Technology, Taiwan	

Special Events Thursday

Special Events Thursday

7:30 AM	Conference Registration/Atlas Foyer
8:00 AM	Technical Sessions/See Room Matrix
8:30 AM	Short Course/Devonshire
12:15 PM	2018 ICMCTF Informational Meeting/California
12:15 PM	Elsevier Authors: Focused Topic Session "How to Get Published"/Golden West
5:00 PM	Poster Session/Grand Hall
6:00 PM	Poster Reception/Grand Hall

Thursday Morning, April 27, 2017

Topical Symposia Room California - Session TS2-1 Thermal, Cold, and Kinetic Sprayed Surface Coatings Moderators: Pylin Sarobol, Sandia National Laboratories, USA, Charles Kay, ASB Industries, Inc., USA		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B3-2 Deposition Technologies and Applications for Diamond-like Coatings Moderators: Frank Papa, Gencoa Ltd., USA, Klaus Böbel, Bosch GmbH	
8:00am			B3-2-1 Tribological Behavior of Unlubricated Sliding between Steel Ball and Si-DLC Deposited by Ultra-high-speed Coating Employing MVP Method, <i>T Nakano, K Yamaguchi, Ipppei Tanaka, H Kousaka</i> , Gifu University, Japan; <i>H Hashitomi, Cnk Co., Ltd., Japan</i>
8:20am			B3-2-2 Tribological Behavior of DLC Coatings on AISI 4340 Steel Deposited in PECVD DC-Pulsed Technique with Additional Cathode for Automotive Applications, <i>Marco A. Ramirez R., D Lugo</i> , National Institute for Spacial Research INPE, Brazil; <i>N Fukumasu, I Machado</i> , Surface Phenomena Laboratory - Polytechnic School - University of Sao Paulo - Brazil, Brazil; <i>E Mitma P., V Trava-Airoldi</i> , National Institute for Spacial Research INPE, Brazil
8:40am			B3-2-3 Structural Evolution and Temperature-sensitivity of W-containing Diamond-like Carbon Films Deposited by a Hybrid Linear Ion Beam Systems, <i>Peng Guo, L Sun, P Ke, A Wang</i> , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China
9:00am	TS2-1-4 Thermally Sprayed Alumina and Ceria-doped-Alumina Coatings on AZ91 Mg Alloy, <i>Sanjeet Kumar</i> , ITMMEC, Indian Institute of Technology Delhi, India; <i>D Kumar, J Jain</i> , Indian Institute of Technology Delhi, India		B3-2-4 Effects of Carbon Content and Argon Flow Rate on the Tribopformance of Self-lubricating WS ₂ /a-C Sputtered Coating, <i>Huatang Cao, J Th.M De Hosson, Y Pei</i> , University of Groningen, Netherlands
9:20am	TS2-1-5 Langmuir–Blodgett Colloidal Assembly: Challenges and Solutions, <i>H Nie</i> , Donghua University, China; <i>Jiaxing Huang</i> , Northwestern University, USA		INVITED: B3-2-5 Industrial Development of Carbon-based Coatings, <i>Ruud Jacobs, G Fransen, R Tietema, D Doerwald, J Landsbergen</i> , IHI Hauzer Techno Coating B.V., Netherlands
9:40am	TS2-1-6 Mechanical Properties of Thermal Spray Coatings on Carbon-fiber-reinforced Plastic, <i>Reinhard Kaindl</i> , Joanneum Research, Austria; <i>M Kräuter</i> , Graz University of Technology, Austria; <i>P Angerer</i> , Materials Center Leoben Forschung GmbH (MCL), Austria; <i>W Stöger</i> , SECAR Technology GmbH, Austria; <i>M Traxler</i> , BVT Beschichtungs- und Verschleißtechnik GmbH, Austria; <i>J Lackner, W Waldhauser</i> , Joanneum Research, Austria		Invited talk continues.
10:00am	INVITED: TS2-1-7 Developments in the Understanding of the Fundamental Growth Mechanisms of Aerosol Deposition, <i>Scooter Johnson</i> , Naval Research Laboratory, USA; <i>D Park</i> , Korean Institute of Material Science, Korea; <i>Y Park</i> , Pukong National University, Korea; <i>D Schwer, E Gorzkowski</i> , Naval Research Laboratory, USA		B3-2-7 Glow Discharge and Deposition of Thick DLC Film in Cage-shaped Hollow Cathode System with Adjustable Bias, <i>Xiubo Tian, M Wu, C Gong</i> , Harbin Institute of Technology, China; <i>R Wei</i> , Southwest Research Institute, USA
10:20am	Invited talk continues.		B3-2-8 Enhanced Adhesion Of Hard Dlc Coatings On Metallic And Insulating Substrates, <i>Ivan Fernandez</i> , Nano4energy SI, Spain
10:40am	TS2-1-9 Aerosol Deposition as a Method of Room Temperature Thick-Film Deposition, <i>Jesse Adamczyk, P Sarobol, A Vackel, T Holmes</i> , Sandia National Laboratories, USA; <i>P Fuierer</i> , New Mexico Institute of Mining and Technology, USA		B3-2-9 Low Friction of Graphene Nanocrystalline Embedded Carbon Nitride Coatings Prepared with MCECR Plasma Sputtering, <i>Pengfei Wang</i> , Institute of Nanosurface Science and Engineering, Shenzhen University, China; <i>W Zhang, Xi'an Jiaotong University</i> , China; <i>D Diao</i> , Shenzhen University, China
11:00am	TS2-1-10 Residual Stress Measurement of Aerosol Deposited Films, <i>Andrew Vackel, J Adamczyk, T Holmes, P Sarobol</i> , Sandia National Laboratories, USA		
11:20am	TS2-1-11 Microstructure and Properties of Room Temperature, Aerosol Deposited, Thick BaTiO ₃ Dielectric Films, <i>Pylin Sarobol, A Vackel, J Adamczyk, T Holmes, M Rodriguez, J Griego, H Brown-Shaklee</i> , Sandia National Laboratories, USA		
11:40am	TS2-1-12 Dielectrics Produced via Aerosol Deposition, <i>E Patterson</i> , ASEE, USA; <i>S Johnson, Edward Gorzkowski</i> , Naval Research Laboratory, USA		

Thursday Morning, April 27, 2017

<p>Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C3-1 Thin Films for Energy-related Applications Moderators: Jim Partridge, RMIT University, Martin Allen, University of Canterbury</p>		<p>Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 4-6 - Session H2-1 Advanced Mechanical Testing of Surfaces and Coatings Moderators: Benoit Merle, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Marco Sebastiani, University of Rome "Roma Tre"</p>	
8:00am		<p>INVITED: H2-1-1 Controlling Disorder in Vapor-deposited Metallic Thin Films and its Influence on Mechanical Behavior, <i>D Magagnosc</i>, University of Pennsylvania, USA; <i>G Balbus</i>, University of California Santa Barbara, USA; <i>G Feng</i>, Villanova University, USA; Daniel Gianola, University of California Santa Barbara, USA</p>	
8:20am		<p>Invited talk continues.</p>	
8:40am		<p>H2-1-3 Influence of Microstructure on the Cyclic Electro-mechanical Behavior of Ductile Films on Polymer Substrates, Megan Cordill, <i>O Glushko</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences and Monanuniversität Leoben, Austria; <i>D Többsen</i>, Helmholtz-Zentrum Berlin für Materialien und Energie, Germany; <i>C Kirchlechner</i>, Max-Planck-Institut für Eisenforschung GmbH, Germany</p>	
9:00am		<p>H2-1-4 Crystalline/Amorphous Metallic Multilayers – from Dislocations to Shear Bands, Marlene Mühlbacher, Montanuniversität Leoben, Austria; <i>C Gammer</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>F Spieckermann</i>, <i>C Mitterer</i>, <i>J Eckert</i>, Montanuniversität Leoben, Austria</p>	
9:20am	<p>INVITED: C3-1-5 Solar Photovoltaic Energy Generation in Thermal Insulation Glazing, David McKenzie, The University of Sydney, Australia</p>	<p>H2-1-5 A Novel Method for the Preparation of Tensile Thin Film Specimens for In-situ Mechanical Testing in the TEM, Benoit Merle, <i>J Liebig</i>, <i>M Göken</i>, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany</p>	
9:40am	<p>Invited talk continues.</p>	<p>H2-1-6 Liquid Metal Embrittlement at the Micro-scale: Gallium FIB vs. Xenon FIB, <i>Y Xiao</i>, Laboratory for Nanometallurgy, ETH Zurich, Switzerland; Jeff Wheeler, Laboratory for Nanometallurgy, ETH Zürich, Switzerland</p>	
10:00am	<p>C3-1-7 Effects of Annealing on Thermo-chromic Properties of W-doped Vanadium Dioxide Thin Films Deposited by Electron Beam Evaporation, Shao-En Chen, National Cheng Kung University, Taiwan; <i>H Lu</i>, National Chin-Yi University of Technology, Taiwan; <i>S Brahma</i>, <i>J Huang</i>, National Cheng Kung University, Taiwan</p>	<p>H2-1-7 Quantum Contact Mechanics for Tribology, Wear and Erosion, Norbert Schwarzer, SIO, Germany</p>	
10:20am	<p>C3-1-8 Fabrication and Characterization of Titanium Doped β-Ga₂O₃ Thin Films for Application in Oxygen Sensors, Sandeep Manandhar, <i>E Rubio</i>, <i>R Chintalapalle</i>, The University of Texas at El Paso, USA</p>	<p>H2-1-8 Textile Nanocharacterization: Topography, Phase Imaging, and Nanomechanical Property Investigation of Polyester Yarn Interaction with Silicon Matrix, <i>B Kim</i>, Gerald Pascual, <i>K Lee</i>, Park Systems Corporation, USA</p>	
10:40am	<p>C3-1-9 Bombardment of Tungsten Oxide Thin Layers by Low Energy of He and D Ions, Hussein Hijazi, <i>Y Addab</i>, Aix-Marseille Université, France; <i>A Maan</i>, <i>J Duran</i>, <i>D Donovan</i>, University of Tennessee-Knoxville, USA; <i>C Pardanaud</i>, <i>M Cabié</i>, Aix-Marseille Université, France; <i>F Meyer</i>, <i>M Bannister</i>, Oak Ridge National Laboratory, USA; <i>R Pascal</i>, <i>C Martin</i>, Aix-Marseille Université, France</p>	<p>H2-1-9 A Nanoindentation System with Equivalent Capabilities in Both Normal to and Parallel to the Sample Surface, Warren Oliver, Nanomechanics, Inc., USA; <i>P Phani</i>, International Advanced Research Centre for Powder Metallurgy & New Materials, India; <i>K Johanss</i>, Nanomechanics, Inc., USA; <i>J Pethica</i>, CRANN, Trinity College Dublin, Ireland; <i>K Parks</i>, Nanomechanics, Inc., USA</p>	
11:00am		<p>H2-1-10 The Effects of TIP Sharpness and Substrate Properties on Nanohardness Measurement in Thin Hard Coatings by FEM, Frantisek Lofaj, <i>D Nemeth</i>, Institute of Materials Research of SAS, Slovakia</p>	
11:20am		<p>H2-1-11 Small Punch Testing for Mechanical Characterisation of a Free-standing CoNiCrAlY Coating, Hao Chen, University of Nottingham, China</p>	

Thursday Morning, April 27, 2017

Room San Diego		Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Session E1-1 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro, University of Coimbra, Carsten Gachot, Vienna University of Technology, Giovanni Ramirez, Argonne National Laboratory, USA
8:00am	E1-1-1 Stress and Friction Modelling for Improved Nano-scratch Testing of Hard Coatings, Ben Beake , Micro Materials Ltd, UK; V Vishnyakov , University of Huddersfield, UK; T Liskiewicz , University of Leeds, UK	
8:20am	E1-1-2 Wear Resistance and Solid Lubricity of Nanolayered Molybdenum Containing Nitride Coatings Deposited using Cathodic Arc Technique, Qi Yang , National Research Council of Canada, Canada	
8:40am	INVITED: E1-1-3 Exploring Tribological Interactions – from Molecules to Engineering Applications, Daniele Dini , Imperial College London, UK	
9:00am	Invited talk continues.	
9:20am	E1-1-5 Mechanical Stability under Sliding Contact of Thin Multilayer with Weak Adhesion, Aymar Quarré de Boiry , Joint unit CNRS/Saint-Gobain UMR 125 - Surface of Glass and Interfaces, France; D Dalmas , École Centrale de Lyon – Laboratoire de Tribologie et Dynamique des Systèmes, France; J Faou , J Teisseire , Saint-Gobain Recherche, France	
9:40am		
10:00am	E1-1-7 Tribochemical Investigation of Hydrogenated DLC Films of Different Roughness by Means of Vacuumtribology Accompanied by Mass Spectrometry, Matthias Kachel , Fraunhofer Institute for Mechanics of Materials IWM, Germany	
10:20am	E1-1-8 Plasma-Assisted Lubrication for the Sliding between Polymer and Diamond-Like Carbon, S Okumura , Nagoya University, Japan; T Hibino , Hiroyuki Kousaka , Gifu University, Japan; N Umehara , Nagoya University, Japan	
10:40am	E1-1-9 Integrated Multiscale Material Modelling of Topographical Effects on Wear and Friction in Sliding DLC Contacts, K Holmberg , A Laukkanen , VTT Technical Research Centre, Finland; Timo Hakala , VTT Technical Research Centre of Finland Ltd, Finland; H Ronkainen , VTT Technical Research Centre, Finland; G Stachowiak , P Podsiadlo , M Wolski , Curtin University, Australia; M Gee , NPL National Physical Laboratory, UK; C Gachot , Vienna University of Technology, Austria; L Li , Hong Kong City University, Hong Kong	
11:00am	E1-1-10 A Comparative Study of Fatigue Properties of TiVN and TiNbN Thin Films Deposited On Different Substrates, Hikmet Cicek , Erzurum Technical University, Turkey; O Baran , Erzincan University, Turkey; A Keles , Y Totik , I Efeoglu , Ataturk University, Turkey	
11:20am	E1-1-11 The Mechanical and Tribological Properties of Nanocomposite CrMoSixN Coatings, Yu-Chu Lu , J Duh , National Tsing Hua University, Taiwan	
11:40am	E1-1-12 Comparative Studies on Tribological Behaviors of a Magnetron Sputtered CrSiN Coating Under the Environments of Air and Water, Fangfang Ge , J Congcong , S Tao , L Peng , H Feng , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
12:00pm	E1-1-13 The Mechanical and Tribological Properties of Ti [Nb, V] N Films on the 2024 Al-alloy, Ozlem Baran , Erzincan University, Turkey; A Keles , Ataturk University, Turkey; H Cicek , Erzurum Technical University, Turkey; Y Totik , I Efeoglu , Ataturk University, Turkey	

Thursday Morning, April 27, 2017

Room Sunrise	
8:00am	<p>INVITED: G5-1 Radiofrequency Cold Plasma Jets Generated at Atmospheric Pressure: from Principles to Applications, <i>Gheorghe Dinescu, E Ionita, M Ionita, M Teodorescu, V Marascu, A Lazea-Stoyanova</i>, National Institute for Lasers, Plasma and Radiation Physics, Romania</p>
8:20am	Invited talk continues.
8:40am	<p>G4-3 Nitriding and DLC Coating of Aluminum Alloy Using High Current Pressure-Gradient-Type Plasma Source, <i>Akio Nishimoto</i>, Kansai University, Japan; <i>E Furuya, K Kousaka</i>, Chugai Ro Co., Ltd., Japan</p>
9:00am	<p>G4-4 Towards Hard yet Tough Ceramic Coatings, <i>Sam Zhang</i>, Nanyang Technical University, Singapore</p>
9:20am	<p>INVITED: G4-5 Flash Lamp Annealing (FLA) for Post-deposition Treatment at High Throughput, <i>Thoralf Gebel</i>, University of Applied Sciences Mittweida, Germany; <i>M Neubert</i>, ROVAK GmbH, Germany; <i>W Skorupa</i>, Helmholtz Zentrum Dresden-Rossendorf, Germany</p>
9:40am	Invited talk continues.
10:00am	<p>G4-7 Evaluating the Effect of Titanium-Based PVD Metallic Thin Films on Nitrogen Diffusion Efficiency in Duplex Plasma Diffusion/Coating Systems, <i>Gorkem Yumusak, A Leyland</i>, University of Sheffield, UK; <i>A Matthews</i>, University of Manchester, UK</p>
10:20am	<p>G4-8 Properties of Surface Passivation at Si/Al₂O₃ Interface Annealed in Different Gas Ambient, <i>C Yang</i>, National Chung-Hsing University, Taiwan; <i>Chun-Wei Huang, C Hsu</i>, Da-Yeh University, Taiwan; <i>C Kung</i>, National Chung-Hsing University, Taiwan; <i>S Lien</i>, Da-Yeh University, Taiwan; <i>W Zhu, X Meng, X Zhang</i>, Xiamen University of Technology, China</p>
10:40am	<p>G4-9 High Performance Solar Selective Coatings based on TiN_xO_y, <i>Cho-Yen Lee, J Ting</i>, National Cheng Kung University, Taiwan</p>
11:00am	<p>G4-10 Diagnostics of Surface Roughness during Electrolytic Plasma Polishing Pre-treatment for Stainless Steels, <i>V Mukaeva, E Parfenov, R Farrakhov, M Gromova</i>, Ufa State Aviation Technical University, Russian Federation; <i>Aleksey Yerokhin</i>, The University of Manchester, UK</p>
<p>Surface Engineering - Applied Research and Industrial Applications Session G5 Atmospheric Plasma Applications Moderators: <i>Hana Barankova</i>, Uppsala University, Sweden, <i>Sang-Yul Lee</i>, Korea Aerospace University</p>	
<p>Surface Engineering - Applied Research and Industrial Applications Session G4 Pre-/Post-Treatment and Duplex Technology Moderators: <i>Hiroshi Tamagaki</i>, NIRO (The New Industry Research Organization), <i>Wan-Yu Wu</i>, Da-Yeh University, <i>Chris Stoessel</i>, Eastman Chemical Company, Inc., USA</p>	

Thursday Afternoon, April 27, 2017

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B6 Coating Design and Architectures Moderators: Nina Schalk, Montanuniversität Leoben, Shou-Yi Chang, National Tsing Hua University		Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C3-2 Thin Films for Energy-related Applications Moderators: Jim Partridge, RMIT University, Martin Allen, University of Canterbury	
1:30pm	B6-1 Radial Symmetry of the Compound Layer Growth in Plasma Nitriding of Pure Iron, <i>F Castillo, Joaquin Oseguera, E Hernández, J Otero, D Melo-Maximo, A Jimenez</i> , Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico	C3-2-1 P-type Cu ₂ O Modified by NiO _x as a Photocathode for Efficient Hydrogen Production in Photoelectrochemical Water Splitting, <i>Ching Lin, J Ting</i> , National Cheng Kung University, Taiwan	
1:50pm	B6-2 Self-assembled Nano-lamellar Ti _{1-x} Al _x N LP-CVD Coatings: Development and Analysis, <i>Jakub Zalesak, J Tadt</i> , Montanuniversität Leoben, Austria; <i>I Matko</i> , Institute of Physics, Slovak Academy of Sciences, Slovakia; <i>M Petrenc</i> , Tescan Brno s.r.o, Brno, Czech Republic; <i>B Sartory</i> , Materials Center Leoben Forschung GmbH (MCL), Austria; <i>R Pitonak</i> , Böhlerit GmbH & Co KG, Austria; <i>R Daniel, J Keckes</i> , Montanuniversität Leoben, Austria	C3-2-2 High Temperature Resistant Molybdenum Thin Film Metal Mesh Electrode as Replacement for ITO, <i>Niklas Bönninghoff</i> , National Taiwan University of Science and Technology, Taiwan	
2:10pm	INVITED: B6-3 Fundamental Properties of TM Nitrides: Materials Design Strategies for Extreme Properties, <i>Joe Greene</i> , University of Illinois at Urbana-Champaign, USA	INVITED: C3-2-3 Piezoelectric and Pyroelectric Materials and Systems for Energy Harvesting, <i>Chris Bowen, M Xie, Y Zhang, D Zabeck, J Roscow</i> , University of Bath, UK	
2:30pm	Invited talk continues.	Invited talk continues.	
2:50pm	B6-5 Stabilisation of Cubic MoN and TaN Systems: the Role Point Defects, <i>David Holec</i> , Montanuniversität Leoben, Austria; <i>N Koutná, F Klimashin, P Mayrhofer</i> , TU Wien, Austria	C3-2-5 Ion-assisted Growth of Compound Thin Films for Energy-related Applications, <i>Tomas Kubart, A Aijaz</i> , Uppsala University, Sweden	
3:10pm	B6-6 Vacancy Induced Mechanical Stabilization of Cubic Tungsten Nitride, <i>Karthik Balasubramanian</i> , Rensselaer Polytechnic Institute, USA	C3-2-6 Growth and Characterization of Thin Film CaMnO ₃ and CaMn _x Nb _{1-x} O ₃ Thermoelectrics, <i>Erik Ekström, B Paul, F Eriksson, P Eklund</i> , Linköping University, IFM, Sweden	
3:30pm	B6-7 Nitrides and the Impact of Entropy on their Phase Stability, <i>Paul H. Mayrhofer</i> , TU Wien, Austria; <i>D Holec</i> , Montanuniversität Leoben, Austria; <i>F Klimashin, N Koutná</i> , TU Wien, Austria	C3-2-7 3D-Printed Solid Oxide Fuel Cells: A New Approach to Functional Multi-Ceramic Construct Fabrication, <i>Nicholas Geisendorfer, A Jakus, H Wang, Z Gao, S Barnett, R Shah</i> , Northwestern University, USA	
3:50pm	B6-8 Molecular Dynamics Simulations of TiN/TiN(001) Growth, <i>D Edström, D Sangiovanni, L Hultman</i> , Linköping University, IFM, Sweden; <i>I Petrov, J Greene</i> , University of Illinois at Urbana-Champaign, USA; <i>Valeriu Chirita</i> , Linköping University, IFM, Sweden	C3-2-8 Nanoengineering Periodically Structured SiCu Thin Film Anodes for Rechargeable LIBs, <i>Billur Deniz Polat Karahan, B Bilici</i> , Istanbul Technical University, Turkey; <i>O Eryilmaz</i> , Argonne National Laboratory, USA; <i>K Amine</i> , Argonne National Laboratory, USA, United States of America; <i>O Keles</i> , Istanbul Technical University, Turkey	
4:10pm	B6-9 Development of Reliable Interaction Potential for and Results of Molecular Dynamics Simulations of ZrO ₂ Film Growth, <i>Jiří Houška</i> , University of West Bohemia, Czech Republic	C3-2-9 A Mesoporous CuAlO ₂ Hole Transport Layer for Perovskite Solar Cell, <i>Wei-Jie Sun, J Ting, P Chen</i> , National Cheng Kung University, Taiwan	
4:30pm	B6-10 Experimental Validation of Metal-on-insulator Thin Film Growth Theory, <i>B Lü, L Souqui, V Elofsson, Kostas Sarakinas</i> , Linköping University, Sweden	C3-2-10 Fabrication of Hybrid Perovskite Solar Cells based on Low Temperature Solution Process, <i>Tzung-Wei Tsai, Y Yu, C Teng</i> , Ming Chi University of Technology, Taiwan	

Thursday Afternoon, April 27, 2017

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-2 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro, University of Coimbra, Carsten Gachot, Vienna University of Technology, Giovanni Ramirez, Argonne National Laboratory, USA		Surface Engineering - Applied Research and Industrial Applications Room Sunrise - Session G3 Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications Moderators: Heidrun Klostermann, Fraunhofer FEP, Holger Gerdes, Fraunhofer Institute for Surface Engineering and Thin Films IST, Ali Khatibi, Oerlikon Balzers, Oerlikon Surface Solutions AG	
1:30pm	INVITED: E1-2-1 Surface Engineering for Increasing Performance of Injection Molding Tools, Lars Pleth Nielsen , Danish Technological Institute, Denmark; S Hengsberger , Institute of Applied Plastics Research at Engineering College Fribourg, Switzerland; K Pagh Almtoft, B Hold Christensen , Danish Technological Institute, Denmark		G3-1 Degradation Mechanisms of Protective Coatings in Precision Glass Molding, Marcel Friedrichs, O Dambon, F Klocke , Fraunhofer Institute for Production Technology, Germany
1:50pm	Invited talk continues.		G3-2 Nanolayered Coatings for Advanced Fine Blanking Applications, Marcus Morstein, T Schär , Platit Ag, Switzerland; B Torp , PLATIT, Inc., USA, Switzerland; T Klünsner , Materials Center Leoben Forschung GmbH (MCL), Austria
2:10pm	E1-2-3 Increasing the Lifespan of High Pressure Die Cast Molds Subjected to Severe Wear, F Silva, Vitor Nunes, M Andrade , ISEP - School of Engineering, Polytechnic of Porto, Portugal; R Alexandre , TeandM - Technology, Engineering and Materials, S.A., Portugal; A Baptista , INEGI - Instituto de Ciência e Inovação em Eng. Mecânica e Eng. Industrial, Portugal		INVITED: G3-3 Growth of Low-defect-density Ti _{1-x} Al _x N Thin Films by Cathodic Arc Evaporation under Industrial Conditions, Marta Saraiva, L Johnson , Sandvik Coromant R&D, Sweden
2:30pm	E1-2-4 Effect of Cr Additions on the Structure, Oxidation, Tribological and Machining Performance of Multilayered TiAlN/CrAlN Films Deposited by Sputtering, F Fernandes , Instituto Pedro Nunes, Portugal; M Danek , Czech Technical University, Czech Republic; T Polcar , University of Southampton, UK; Albano Cavaleiro , University of Coimbra, Portugal		Invited talk continues.
2:50pm	E1-2-5 Investigation on Tribological Behaviour of Boron Doped Diamond Coated Cemented Tungsten Carbide for Cutting Tool Applications, Ramasubramanian Kannan, A Narayanaperumal, R Rao , Indian Institute of Technology Madras, India		G3-5 A Contribution to Explain the Mechanisms of Adhesive Wear in the Plastics Processing by the Example of Polycarbonate, K Bobzin, T Brögelmann , Surface Engineering Institute - RWTH Aachen University, Germany; G Grundmeier, T de los Arcos, M Wiesing , University Paderborn, Germany; NathanChristopher Kruppe , Surface Engineering Institute - RWTH Aachen University, Germany
3:10pm	E1-2-6 Influence of Self-lubricating Non-metal Phase on the Erosion and Wear Behavior of Ni-based Abradable Coatings, Pantcho Stoyanov, A Wusatowska-Sarnek , Pratt & Whitney, USA		G3-6 Enhanced Replication Ratio of Injection Molded Plastics Parts by using an Innovative Combination of Laser-Structuring and PVD Coating, K Bobzin , Surface Engineering Institute - RWTH Aachen University, Germany; C Hopmann , Institute of Plastics Processing, RWTH Aachen University, Germany; A Gillner , Chair for Laser Technology, Aachen, Germany; T Brögelmann, N Kruppe, Mona Naderi , Surface Engineering Institute - RWTH Aachen University, Germany; M Orth , Institute of Plastics Processing, RWTH Aachen University, Germany; M Steger , Chair for Laser Technology, Aachen, Germany
3:30pm	E1-2-7 Tuning Run-in Friction Behavior of Carbon Film with Graphene Nanocrystallite Structure, Cheng Chen, S Qiu, D Diao , Shenzhen University, China		G3-7 Sophisticated Wear Resistant Coatings used in Cold Sheet Metal Forming of AHSS Sheet Metals, Ali Khatibi, M Arndt , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein
3:50pm	E1-2-8 Study of the Wear Mechanisms and Solutions Regarding Inserts used on Cork Grinders, F Silva, Thiago Oliveira , ISEP - School of Engineering, Polytechnic of Porto, Portugal; R Alexandre , TeandM - Technology, Engineering and Materials, S.A., Portugal; A Baptista , INEGI - Instituto de Ciência e Inovação em Eng. Mecânica e Eng. Industrial, Portugal; A Alves , Amorim Cork Composites, S.A., Portugal		G3-8 Performance Evaluation of HSS Cutting Tool Coated with Hafnium and Vanadium Nitride Multilayers, by Temperature Measurement and Surface Inspection, on Machining AISI 1020 Steel, John H. Navarro-Devia, W Aperador , Universidad Militar Nueva Granada, Colombia; C Amaya , CDT- ASTIN SENA, Colombia; J Caicedo , Universidad del Valle, Colombia
4:10pm			G3-9 High Temperature Oxidation and Cutting Performance of AlCrN, TiVN and Multilayered AlCrN/TiVN Hard Coatings, Shi-Yao Weng, Y Chang , National Formosa University, Taiwan

Thursday Afternoon, April 27, 2017

Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 4-6 - Session H2-2 Advanced Mechanical Testing of Surfaces and Coatings Moderators: Benoit Merle, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Marco Sebastiani, University of Rome "Roma Tre"		Topical Symposia Room California - Session TS2-2 Thermal, Cold, and Kinetic Sprayed Surface Coatings Moderators: Pylin Sarobol, Sandia National Laboratories, USA, Charles Kay, ASB Industries, Inc., USA	
1:30pm	INVITED: H2-2-1 Mechanical Properties of High-strength Low-weight Truss Structures Fabricated by 3D Direct Laser Writing, Ruth Schwaiger , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WBM), Germany	TS2-2-1 Influence of Bondcoat and Substrate Chemistry on Lifetime in Suspension Plasma Sprayed Thermal Barrier Coatings, Mohit Gupta, N Markocsan , University West, Sweden; X Li , Siemens Industrial Turbomachinery AB, Sweden	
1:50pm	Invited talk continues.	TS2-2-2 α -Oxide-Induced Grain Growth in Ligand-Free CZTS Nanoparticle Coatings, Stephen Exarhos, E Palmes, R Xu, L Mangolini , University of California, Riverside, USA	
2:10pm	H2-2-3 An improved Nanoindentation Method to Measure Residual Stress and Elastic Moduli of Freestanding Multilayer Thin Films, Marco Sebastiani, M Ghidelli , Roma TRE University, Italy	TS2-2-3 CaviTec HVOF Coatings for Protection against Cavitation Erosion, Sébastien Lavigne , Polytechnique Montreal, Canada	
2:30pm	H2-2-4 <i>In Situ</i> FIB-SEM DIC and Synchrotron XRD Analysis of the Mechanical Degradation of a Uniaxially Loaded Copper-Tungsten Nano-Multilayer, León Romano Brandt, E Salvati, C Papadaki, H Zhang, S Ying, T Sui, A Korsunsky , University of Oxford, UK	TS2-2-4 Experimental and Numerical Investigation on Fracture Toughness of Plasma-sprayed TBCs using a Modified Three-point Bending Method, Jianguo Zhu , Jiangsu University, China	
2:50pm	H2-2-5 Synchrotron Nano-diffraction Studies of Ex-situ and In-situ Indented Thin Films: Microstructure and Stress Analysis, Juraj Todt , Montanuniversität Leoben, Austria; C Krywka , Helmholtz-Zentrum Geesthacht, Germany; M Burghammer , European Synchrotron Radiation Facility, France; J Keckes , Montanuniversität Leoben, Austria	INVITED: TS2-2-5 Process Induced Real-time Residual Stress Measurement of Thermal Spray Coatings, W Choi, C Jensen, S Sampath , ReliaCoat Technologies, LLC, USA; Andrew Vackel , Sandia National Laboratories, USA	
3:10pm	H2-2-6 Cross-sectional Microstructure and Mechanical Behaviour of As-deposited and Oxidised CVD TiB ₂ Hard Coatings Determined by X-ray Nanodiffraction and Micro-mechanical Tests, David Gruber, M Tkadletz, N Schalk , Montanuniversität Leoben, Austria; B Sartory , Materials Center Leoben Forschung GmbH (MCL), Austria; C Mitterer, J Keckes , Montanuniversität Leoben, Austria	Invited talk continues.	
3:30pm	H2-2-7 Fundamental Mechanical Properties of Simple- and Pt/Ir-modified-Aluminide Diffusion Coatings after Thermocyclic Exposure, Ceyhun Oskay, M Galetz , DECHEMA-Forschungsinstitut, Germany; H Murakami , National Institute for Materials Science, Japan	TS2-2-7 Metallization and Selective Metallization of Silver by Spraying, Koen Staelens , Jet Metal Technologies, France	
3:50pm	H2-2-8 Fast Nano-mechanical Property Mapping using XPM on Nano-crystalline Structures, Anqi Qiu, D Vodnick , Hysitron, Inc., USA		

Coatings for Use at High Temperatures

Room Grand Exhibit Hall - Session AP

Symposium A Poster Session

5:00pm

AP-2 Fracture Behavior and Thermal Durability of Lanthanum Zirconate Based Thermal Barrier Coatings with Buffer Layer in Thermally Graded Mechanical Fatigue Environments, **BongGu Kim**, *G Lyu, S Jung, S Lee, Y Jung*, Changwon National University, Republic of Korea; *J Zhang*, Purdue University, USA

AP-3 Correlation of Thermal Characteristics and Microstructure of 7YSZ/La₂Zr₂O₇ and 7YSZ/Gd₂Zr₂O₇ Quadruple Layer EB-PVD Thermal Barrier Coatings, **K Bobzin**, *T Brögelmann, C Kalscheuer, Tiancheng Liang, M Welters*, Surface Engineering Institute - RWTH Aachen University, Germany

AP-5 Oxidation Behavior of Nb-Si-N Coatings, **Yung-I Chen**, *Y Gao*, National Taiwan Ocean University, Taiwan; *L Chang*, Ming Chi University of Technology, Taiwan

AP-6 Corrosion Behavior of Amorphous and Crystalline Zn-Mg Coating in NaCl Solution, **JaungHyun La**, *K Bae, S Kim, S Lee, Y Hong*, Korea Aerospace University, Republic of Korea

AP-7 Nanocomposite Multilayered Coatings with High Thermal Stability and Oxidation Resistance, **Dmitry Shtansky**, *K Kuptsov, M Golizadeh, P Kiryukhantsev-Korneev*, National University of Science and Technology "MISIS", Russian Federation

AP-10 Structure, Mechanical, Tribological, And Chemical Properties Of Mo-Si-B And Mo-Al-Si-B Coatings, **Philipp Kiryukhantsev-Korneev**, *A Shevko, A Bondarev*, National University of Science and Technology "MISIS", Russian Federation; *K Kuptsov*, National University of Science and Technology "MISIS", Russian Federation; *E Levashov, D Shtansky*, National University of Science and Technology "MISIS", Russian Federation

AP-11 Oxidation Resistance of Ta-Si-N Coatings, **Y Chen**, *Yu-Xiang Gao*, National Taiwan Ocean University, Taiwan; *L Chang*, Ming Chi University of Technology, Taiwan

AP-12 Effect of Hot-dip Aluminum Coating on Dissimilar Weldment between Low Carbon Steel and 304 Stainless Steel in NaCl/Na₂SO₄ Mixture Salts Induced Hot Corrosion, **Huan-Chang Liang**, *K Tsai, C Wnag*, National Taiwan University of Science and Technology, Taiwan

AP-13 Influence of Arc Power and Spray Distance on Mechanical Properties of ZrO₂-10%Y₂O₃-18%TiO₂ Coatings Produced by Plasma Spray, **Sugehis Liscano**, *L Gil*, Universidad Nacional Politecnica UNEXPO, Venezuela (Bolivarian Republic of); *A Portales*, Universidad Politecnica de Madrid, Spain; *K Silva*, Universidad Nacional Central de Venezuela, Venezuela (Bolivarian Republic of)

AP-14 A Parametric Study for Minimizing Thermal Stress of a Thermal Barrier Coating System, **JangGyun Lim**, *M Kim*, Sungkyunkwan University, Republic of Korea

AP-15 Investigation of the Influence of Subcoating on Thermal Shock and Corrosion Resistance in the Liquid Zinc of APS ZrO₂ Coating Doped with MgO, **Aleksander Iwaniak**, Silesian University of Technology, Poland; *A Moscicki*, Jolanta Mzyk Silesian University of Technology, Poland; *G Wieclaw*, Krzysztof Rosner Certech, Poland

Hard Coatings and Vapor Deposition Technologies

Room Grand Exhibit Hall - Session BP

Symposium B Poster Session

5:00pm

BP-8 Large Lattice Strain-caused Change in Nanoscale Plastic Deformation Behavior of Multi-component (AlCrTaTiZr)_NC_xSi_z Nanocomposite Coatings, **Y Lai**, *Y Hsiao*, National Tsing Hua University, Taiwan; **Shao-Yi Lin**, National Chung Hsing University, Taiwan; *S Chang*, National Tsing Hua University, Taiwan

BP-9 Advanced Deposition of Hard a-C:Me Coatings by HPPMS using Ne as Process Gas, **K Bobzin**, *T Brögelmann, N Kruppe, Martin Engels*, Surface Engineering Institute - RWTH Aachen University, Germany

BP-10 Plastic Deformation Behavior of Nanostructured CrN/AlN Multilayer Coatings Deposited by Hybrid dcMS/HPPMS, **K Bobzin**, *T Brögelmann, NathanChristopher Kruppe*, *M Arghavani*, Surface Engineering Institute - RWTH Aachen University, Germany

BP-13 Control and Characterization of Texture in CVD α-Al₂O₃ Coatings, **Chen Chen**, *P Leicht, R Cooper, Z Liu, D Banerjee*, Kennametal Inc., USA

BP-14 New Tools and Models for Industrial Surface and Coating Optimization of Composite Structures, **Nick Bierwisch**, *N Schwarzer*, SIO, Germany

BP-15 Selection of a Reactive Magnetron Sputtering Method to Produce Films for Biosensors, **Brenda Garcia**, *L Melo-Máximo, O Salas, D Melo-Maximo, A Murillo*, Tecnológico de Monterrey-CEM, Mexico; *J Lin*, Southwest Research Institute, USA; *J Oseguera*, Tecnológico de Monterrey-CEM, Mexico

BP-20 Preparation of Carbon based Multilayered Coatings by means of Pulsed Laser Deposition: Outstanding Mechanical Properties and Enhanced Film Toughness, **René Bertram**, University of Applied Sciences Mittweida, Germany; *M Hess*, Fritz Stepper GmbH & Co.KG, Germany; *H Gruettner, D Haldan, S Weißmantel*, University of Applied Sciences Mittweida, Germany

BP-22 Elastic Constants of Epitaxial Cubic Tantalum Nitride: Thin Film Growth and *ab initio* Calculations, **Gregory Abadias**, Institut P', Université de Poitiers-UPR 3346 CNRS-ENSMA, France; *P Djemia, C Li*, Laboratoire des Sciences des Procédés et des Matériaux (LSPM), France; *Q Hu*, Shenyang National Laboratory for Materials Science, China; *L Belliard*, Université Pierre et Marie Curie-INSP, France; *F Tasnadi*, Linköping University, (IFM), Sweden

BP-24 Mechanical and Structural Properties of CrN/AlN Superlattices, **David Holec**, Montanuniversität Leoben, Austria; *M Friak*, Institute of Physics of Materials, Academy of Sciences of the Czech Republic; *Z Zhang*, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; *M Bartosik, P Mayrhofer*, TU Wien, Austria

BP-25 Characterization of the Hard Coating on Gray Cast Iron Under Hydrogen Charging, **Noe Lopez Ferrusquia**, *M Doñu Ruiz, M Reyes Cortes*, Universidad Politecnica Del Valle De Mexico, Mexico; *C Torres San Miguel*, Instituto Politécnico Nacional - ESIME, Mexico; *V Cortes Suarez*, Universidad Autónoma Metropolitana, Mexico

BP-27 Characterization and Growth of B-doped Diamond Grown on HPHT Diamond Substrates using Mode Conversion Type Microwave Plasma CVD, **Tomoya Sakuma**, Chiba Institute of Technology, Ogura Jewell Industry Co., Ltd., Japan; *A Suzuki, Y Sakamoto*, Chiba Institute of Technology, Japan

BP-28 Effects of the Reaction Gas Flow Rates on the Plasma State during Boron-doped Diamond Synthesis, **Asuka Suzuki**, *Y Sakamoto*, Chiba Institute of Technology, Japan

BP-29 Effects of Pulse Frequency and Duty Cycle on Synthesis of Carbon Nitride using Pulse Microwave Plasma CVD, **Koudai Yarita**, Chiba Institute of Technology, Japan; *I Tanaka*, Gifu University, Japan; *Y Sakamoto*, Chiba Institute of Technology, Japan

BP-30 Duplex Coating of DLC on High Speed Tool Steel Substrates, **Y Kikuchi**, **Ryohei Fujita**, *Y Sakamoto*, Chiba Institute of Technology, Japan

BP-33 The Stability of Diamond-Like Coatings under Thermo-Mechanical Conditions, **Q Liu**, **Xiaoying Li**, *H Dong*, The University of Birmingham, UK

BP-38 Growth of DLC Films on the Internal Surface of a Long Metallic Tube Using the PECVD Technique, **E Mitma Pillaca**, *M Ramirez Ramos, D Lugo González, VladimirJesus Trava-Airoldi*, National Institute for Spacial Research INPE, Brazil

BP-39 Characterization and Tribologic Study in High Vacuum of Hydrogenated DLC Films Deposited using Pulsed DC PECVD System for Space Applications, **D Lugo González**, **Marco Antonio Ramirez Ramos**, *V Trava-Airoldi, P Santana da Silva, E Mitma P., E Corat*, National Institute for Space Research - INPE, Brazil; *C Rodriguez, N Fukumasu*, University of São Paulo, Brazil

BP-40 Numerical Analysis on Gas-Pressure and Input-Power Dependence of Substrate-Incident Hydrocarbon Species in Tetramethylsilane Plasmas for Silicon-Containing Diamond-Like Carbon Thin-Films Coatings, **Akinori Oda**, *K Ohki*, Chiba Institute of Technology, Japan; *S Kawaguchi, K Satoh*, Muroan Institute of Technology, Japan; *H Kausaka*, Gifu University, Japan; *T Ohta*, Meijo University, Japan

BP-41 The Effect of Substrate Bias on the Structure and Mechanical Properties of the a-C:N Films by a 90°-Bend Filtered Cathodic Arc Plasma (FCAP) System, **Chih-Chiang Wang**, National Chung Hsing University, Taiwan; *H Shih*, Chinese Culture University, Taiwan

BP-42 Stress Optimized Hard Nitride Coatings for High-performance Gear Hobbing, **Martin Beutner**, Otto von Guericke University, Germany; *A Lümckemann, M Morstein*, PLATIT AG – Advanced Coating Systems, Switzerland; *B Karpuschewski*, Otto von Guericke University, Germany; *M Jilek, Jr.*, PLATIT AG., Czech Republic; *T Cselce*, PLATIT AG – Advanced Coating Systems, Switzerland

BP-43 Growth of B-Doped Diamond using Hot Filament CVD, **Mai Imamiya**, *Y Sakamoto*, Chiba Institute of Technology, Japan; *Y Takahashi, K Sugiura*, Material Processing Studio Co.,Ltd., Japan

BP-44 Formation Of Anti-Reflection Double Layers For Si Lens By Atomic Layer Deposition, **Jaeyeong Heo**, *K Kim*, Chonnam National University, Republic of Korea

BP-45 Texture, Mechanical and Electrochemical Properties of Magnetron Sputtered $\text{Cr}_{1-x}\text{W}_x\text{N}/\text{Si}_3\text{N}_4$ Super Hard Nanocomposite Thin Films for Protective Coatings, **Ravi Prakash, D Kaur**, Indian Institute Of Technology Roorkee, India

BP-46 Internal Stress on Adhesion of Hard Coatings Synthesized by Multi-arc Ion Plating, **L Qiu, Xiaodong Zhu, K Xu**, Xi'an Jiaotong University, China

BP-47 Diamond-like Coatings using High Power Impulse Magnetron Sputtering, **Tomas Kubart, A Aijaz**, Uppsala University, Sweden

BP-48 Synergistic Effect of Cu/Cr Co-doping on the Wettability and Mechanical Properties of Diamond-like Carbon Films, **Lili Sun, P Guo, X Li, A Wang**, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

BP-49 Novel Technology for ta-C Coatings Deposition, **Jan Kluson, M Jilek, Jr.**, PLATIT a.s., Czech Republic

BP-53 Evaluation of Plant-Extract-Based Metallic Nanoparticles for Corrosion Inhibition of Metallic Component, **Omotayo Sanni, A Popoola, O Fatoba**, Tshwane University of Technology, South Africa

BP-55 Deposition of Crystalline Cr_2O_3 Coatings by Reactive Radio-frequency Magnetron Sputtering, **M Mohammad Taheri, Q Yang, Jesus Corona Gomez**, University of Saskatchewan, Canada

BP-56 Cerium Doping of Ti-Al-N Coatings for Excellent Thermal Stability and Oxidation Resistance, **H Asanuma**, Mitsubishi Materials Corporation, Japan; **P Polcik, S Kolozsvári**, Plansee Composite Materials GmbH, Germany; **F Klimashin, H Riedl, Paul H. Mayrhofer**, Institute of Materials Science and Technology, TU Wien, Austria

BP-57 Arc Evaporated W-alloyed Ti-Al-N Coatings for Improved Thermal Stability, Mechanical, and Tribological Properties, **S Glatz**, Institute of Materials Science and Technology, TU Wien, Austria; **H Bolvardi**, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; **S Kolozsvári**, Plansee Composite Materials GmbH, Germany; **C Koller, Helmut Riedl**, Institute of Materials Science and Technology, TU Wien, Austria; **P Mayrhofer**, Christian Doppler Laboratory for Application Oriented Coating Development at the Institute of Materials Science and Technology, TU Wien, Austria

Fundamentals and Technology of Multifunctional Materials and Devices

Room Grand Exhibit Hall - Session CP

Symposium C Poster Session

5:00pm

CP-1 Reversible Photo-Induced Deformation of Amorphous Carbon Nitride Films and their Potential Application to Light Driven Actuators, **T Harata, M Aono, K Ishii, N Kitazawa, Yoshihisa Watanabe**, National Defense Academy, Japan

CP-2 Mechanisms of Grain Growth Enhancement in Sintered-CZTS Nanoparticle Thin Films, **Edgar Palmes, S Exarhos, R Xu, L Mangolini**, University of California, Riverside, USA

CP-3 Development of Dual Coating Process for Effective Combination of Sand Mold Process and 3D Printing Technique, **Hyun-Hee Choi, H Park, E Tumenbayar, G Cho, E Kim, Y Jung**, Changwon National University, Republic of Korea; **J Zhang**, Purdue University, USA

CP-4 New Converting Process for Fabrication of Ceramic Core through 3D Printing Technique, **Hye-Yeong Park, H Choi, E Tumenbayar, G Cho, E Kim, Y Jung**, Changwon National University, Republic of Korea; **J Zhang**, Purdue University, USA

CP-7 Bias-photo Stability of Hafnium-aluminum-zinc-oxide Thin Film Transistors, **Ju-Hee Park, S Lee, H Jun, J Park**, Hanyang University, Republic of Korea

CP-11 Electrical and Magnetic Properties of (Al, Co) co-doped ZnO Films Deposited by RF Magnetron Sputtering, **Yu-Wei Lin, S Chen**, Ming Chi University of Technology, Taiwan; **H Sun**, Ocean University of China, China; **C Wang**, Ming Chi University of Technology, Taiwan; **C Wen, T Chuang**, National Taiwan University, Taiwan; **X Wang**, Ocean University of China, China

CP-13 Development of Low Temperature TiO_2 Mesoporous Scaffold for Perovskite Solar Cells, **Gwomei Wu**, Chang Gung University, Taiwan

CP-15 Atmospheric Plasma Deposition of Oxide Semiconductors, **Blake Emad**, University of Dayton, USA; **J Ferguson**, Materials and Manufacturing Directorate, Air Force Research Laboratory, USA; **C Muratore**, University of Dayton, USA

CP-18 Structural and Magnetic Properties of Perovskite SrMnO_3 Thin Films Grown by Molecular Beam Epitaxy, **Jiawei Bai**, East China Normal University, China

CP-19 Yb-doped Zinc-Tin-Oxide Thin Film and its Application to Solar Cell, **Yungsang Park, W Kim**, Yeungnam University, Republic of Korea; **G Ferblantier, A Slaoui, A Dinia**, CNRS-Université de Strasbourg, France; **H Jung, S Alhammedi, S Kwon**, Yeungnam University, Republic of Korea

CP-20 Mo-patterning on Graphene-coated Glass Substrate for a Bifacial $\text{Cu}(\text{InGa})\text{Se}_2$ Thin Film Solar Cell, **Dohyun Park, W Kim**, Yeungnam University, Republic of Korea

CP-21 Enhanced Stability of Plasmonic Metal-dielectric Thin Films by CVD Grown Graphene Transfer, **T Del Rosso, Q Zaman, E Cardona Romani, F Lazaro Freire Jr., O Pandoli, R Queiroz Aucélio, Marco Cremona**, Pontificia Universidade Católica do Rio de Janeiro, Brazil

CP-23 Optical Characterization and Structural of ZnO Thin Film Prepared by Reactive Electron Beam Evaporation with Ion-Assisted Deposition from Metal Zinc, **Hung-Pin Chen, W Cho**, Instrument Technology Research Center, National Applied Research Laboratories, Taiwan; **C Lee**, National Central University, Taiwan; **Y Lin**, National Tsing Hua University, Taiwan; **C Hsiao**, Instrument Technology Research Center, National Applied Research Laboratories, Taiwan

CP-24 Opto-electrical Properties of Few-layer ReSe_2 FETS for Phototransistors, **Dongjin Lee, M Yoo, N Kim, G Cho, P Ko**, Chosun University, Republic of Korea

CP-28 UV Photosensitivity in Metal-Oxide-Semiconductor Structures based on SiO_x Films containing Si Nanoparticles, **M Curiel, Oscar Perez, N Nedev**, Universidad Autónoma de Baja California, Mexico; **D Nesheva**, Institute of Solid State Physics, Mexico; **B Valdez**, Universidad Autónoma de Baja California, Mexico; **E Manolov**, Institute of Solid State Physics, Mexico; **A Arias, D Mateos**, Universidad Autónoma de Baja California, Mexico; **O Contreras**, Universidad Nacional Autónoma de México, Mexico; **V Dzhurkov**, Institute of Solid State Physics, Mexico; **R Nedev**, Universidad Politécnica de Baja California, Mexico; **J Paz**, Universidad Autónoma de Baja California, Mexico

CP-29 Photoresponse and Electrical Properties for Photodiodes from Graphene Oxide (GO), **Asmaa Hendi**, King Abdulaziz University, Saudi Arabia

Coatings for Biomedical and Healthcare Applications

Room Grand Exhibit Hall - Session DP

Symposium D Poster Session

5:00pm

DP-2 Bone-like Nano-hydroxyapatite Coating on Low-modulus Ti-5Nb-5Mo Alloy Using Hydrothermal and Post-heat Treatments, **H Hsu, S Wu, S Hsu**, Central Taiwan University of Science and Technology, Taiwan; **C Hsu**, Da-Yeh University, Taiwan; **Wen-Fu Ho**, National University of Kaohsiung, Taiwan

DP-3 Niobium Oxide Scaffolds on Nb and on TNZT for use in Bone Implants, **Madelyn Kramer**, University of North Texas, USA; **E Leveque**, University of Rouen, France; **J Barclay, S Aouadi, M Young**, University of North Texas, USA

DP-6 Multi-functional Porous TaOxNy Film Deposited on Ta/TaN-Ag Layers Prepared by Co-sputtering and De-alloying Approach, **J Hsieh, ChungChieh Hsu, Y Lin**, Ming Chi University of Technology, Taiwan

DP-7 Increased Ag^+ Dissolution Rate of TaN-Ag Nanocomposite Thin Films by Air Atmospheric Pressure Plasma Jet, **J Hsieh, Yi-Zheng Yang, C Lin**, Ming Chi University of Technology, Taiwan

DP-8 Tribocorrosion Behaviour of DLC-Coated Ti-6Al-4V Alloy Deposited by PIID and PEMS+PIID Techniques for Biomedical Applications, **Andre Hatem**, Pontificia Universidade Católica do Paraná, Brazil; **J Lin, R Wei**, Southwest Research Institute, USA; **R Torres, C Laurindo, P Soares**, Pontificia Universidade Católica do Paraná, Brazil

DP-9 Fluorine-Incorporated Hydrogen-free Amorphous Carbon Thin Film for Artificial Heart (Ventricular Assist Device), **Shunto Maegawa**, Keio University, Japan; **T Hasebe**, Tokai university, Japan; **M Nakayama, K Bito, Y Yamato**, Keio University, Japan; **T Mine, T Matsumoto**, Tokai university, Japan; **A Hotta, T Suzuki**, Keio University, Japan

DP-10 A Sustainability Investigation on the Hemocompatibility of Heparin/Dopamine and Heparin/Collagen Self-Assembled Multilayers Coated on a Titanium Substrate, **W Cherng**, Chang Gung Memorial Hospital, Taiwan; **Chau-Chang Chou, Y Pan**, National Taiwan Ocean University, Taiwan; **C Yeh**, Chang Gung Memorial Hospital, Taiwan; **T Wu, Z Dong, J Ho**, National Taiwan Ocean University, Taiwan

DP-11 Wear Characteristics of Total Ankle Joint Prosthesis with Their Surface Roughness, **Y Jeong, Jae-Woong Yang, K Park, S Lee, T Jung**, Osong Medical Innovation Foundation, Republic of Korea

DP-12 2D Materials for Bioelectronic Sensing, *W Lai*, University of Dayton/Sensors Directorate, Air Force Research Laboratory, USA; *A Stroud*, Institute for Micromanufacturing/Physics Program, Louisiana Tech University, USA; *R Berry*, Materials and Manufacturing Directorate, Air Force Research Laboratory, USA; *P DeRosa*, Institute for Micromanufacturing/Physics Program, Louisiana Tech University, USA; *R Naik*, Human Effectiveness Directorate, Air Force Research Laboratory, USA; *Christopher Muratore*, University of Dayton, USA

DP-13 Study of TiO₂-MgO Composites to Improve the Corrosion Resistance of Mg for Development of Biodegradable Orthopedic Implants, *EricNoé Hernández-Rodríguez*, *C Vicencia-Acosta*, *C Íñiguez-Contreras*, *A Balvanti-García*, *J Diosdado-de la Peña*, DICIS, University of Guanajuato, Mexico; *R Mis-Fernández*, *J Peña-Chapa*, CINVESTAV-IPN Mérida, Mexico; *M Zapata-Torres*, CICATA-IPN Legaria, Mexico; *A Márquez-Herrera*, DICIVA, University of Guanajuato, Mexico

DP-15 Fabrication and Characterization of Magnesium Incorporated Hydroxyapatite on the Titanium Substrates via Electrochemical Deposition, *Y Chor*, National Taipei University of Technology, Taiwan; *Chien-Ming Lei*, Chinese Culture University, Taiwan; *S Chen*, *K Huang*, *P Chen*, National Taipei University of Technology, Taiwan

DP-16 Electrochemical Characteristics of RF-sputtered Zn and Si Coatings on HA Coated Ti-6Al-4V by PEO Treatment, *Injo Hwang*, *H Choe*, Chosun University, Republic of Korea

DP-18 Nucleation and Growth of Bone-like Apatite Formation on Ti-6Al-4V in Solution Containing Mn, Mg, and Si Ions after Plasma Electrolytic Oxidation, *SangGyu Lim*, *H Choe*, Chosun University, Republic of Korea

DP-19 Ion Release of Zn, Si, Mn-doped Hydroxyapatite Films Formed on the Ti-6Al-4V Alloy by Plasma Electrolytic Oxidation, *MinGyu Park*, *H Choe*, Chosun University, Republic of Korea

DP-20 Nanotube Shape Changes on Ti-30Nb-xTa Alloys with Continuously Changed Potentials, *Han-Cheol Choe*, Chosun University, Republic of Korea

DP-21 Shapes of Bone-like Apatite Formation on Sr and Si-doped Hydroxyapatite Surface of Ti-6Al-4V Alloy after Plasma Electrolytic Oxidation, *Ji-Min Yu*, *H Choe*, Chosun University, Republic of Korea

DP-22 Chemical Bonding Characteristics of Biocompatible TiO₂ Oxide Multilayer by the XPS Depth Analysis, *Jae-Myung Jang*, Gwangju Nambu University, Republic of Korea; *T Park*, Eco-Tech Korea, Republic of Korea; *H Choe*, Chosun University, Republic of Korea

DP-25 Corrosion and Antibacterial Properties of Micro-Arc Oxidized Biodegradable Mg-Sr Alloys for Biomedical Applications, *Mehmet Yazici*, Ondokuz Mayıs University, Turkey; *E Gulec*, Gebze Technical University, Turkey; *M Gurbuz*, Ondokuz Mayıs University, Turkey; *Y Gencer*, *M Tarakci*, Gebze Technical University, Turkey

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces

Room Grand Exhibit Hall - Session EP

Symposium E Poster Session

5:00pm

EP-2 Clarification of the Relationship between Friction Behavior and Tribo-electrical Performance of Triboelectric Nanogenerator, *W Zhang*, Key Laboratory of Education Ministry for Modern Design and Rotor-Bearing System, Xi'an Jiaotong University, China; *Pengfei Wang*, *D Diao*, Institute of Nanosurface Science and Engineering, Shenzhen University, China

EP-4 Effect of Cr Content and Various Interlayers on Mechanical Properties of CrAlN Coatings Synthesized by UBMS, *HoeKun Kim*, *J La*, *M Song*, *S Lee*, *Y Hong*, Korea Aerospace University, Republic of Korea

EP-5 Effect of Boride Coating on Hydrogen Embrittlement of AISI 8620 Steels, *MarcoAntonio Doñu Ruiz*, *N Lopez Perrusquia*, Universidad Politécnica Del Valle De Mexico, Mexico; *V Cortes Suarez*, *J Romero Serrano*, Universidad Autónoma Metropolitana, Mexico; *M Reyes Cortes*, Universidad Politécnica Del Valle De Mexico, Mexico

EP-6 Characterization and Wear of Co-Cr-Mo-Si Alloy Coatings at High Temperatures, *L Amaral*, Universidade Federal do Paraná, Brazil; *E Nascimento*, Universidade Tecnológica Federal do Paraná, Brazil; *AnaSofia D'Oliveira*, Universidade Federal do Paraná, Brazil

EP-7 Influence of Nitrogen Content on the Properties of CNx Coatings Deposited onto AISI H13 Steel by DC Magnetron Sputtering, *Elbert Contreras*, *F Bolívar*, *M Gómez*, Universidad de Antioquia, Colombia

EP-9 Modelling of IN 738 LC Alloy Mechanical Properties based on Microstructural Evolution Simulations for Different Heat Treatment Conditions, *M Boyraz*, *Biçe Imer*, Middle East Technical University, Turkey

EP-10 Influence of EP Additive Containing Lubricants on the in-situ Formation of Low Friction Tribofilms on Tungsten Based Coatings, *Bernhard Kohlhauser*, *H Riedl*, Institute of Materials Science and Technology, TU Wien, Austria; *M Ripoll*, AC2T Research GmbH, Austria; *P Mayrhofer*, Institute of Materials Science and Technology, TU Wien, Austria

EP-13 Laser Cladding Ni-based Alloy/nano-Ni Encapsulated h-BN Self-lubricating Composite Coatings, *Hua Yan*, *P Zhang*, *Q Gao*, *Y Qin*, Shanghai University of Engineering Science, China; *R Li*, Central South University, China

EP-14 Leather Treated with Ag/TiO₂ Nanoparticles for Footwear Industry: Tribological and Antimicrobial Activity, *I Carvalho*, University of Coimbra, Portugal; *S Ferdov*, *CristianaFilipa Almeida Alves*, University of Minho, Portugal; *M Cerqueira*, INL-International Iberian Nanotechnology Laboratory, Portugal; *R Franz*, Montanuniversität Leoben, Austria; *C Gaidau*, INCDEP-Leather and Footwear Research Institute Division, Romania; *S Carvalho*, University of Minho, Portugal

EP-17 An Oliver&Pharr Method for Lateral-Force Nanoindenters, *Norbert Schwarzer*, SIO, Germany

EP-18 Investigation of Tribological Properties of Aluminium-Titanium Diboride (Al/TiB₂) MMC under Dry Sliding Condition, *A Sheelwant*, *S Narala*, BITS Pilani Hyderabad Campus, India; *Palaparty Shailesh*, Methodist College of Engineering and Technology, India

EP-20 Tribological Characterization of Thin Films based on Residual Stress, Volume of Wear, Micro-abrasive Wear Modes and Coefficient of Friction, *Ronaldo Cozza*, *J Wilcken*, *S Delijaicov*, *G Donato*, University Center of FEI – Educational Foundation of Ignatius “Padre Sabóia de Medeiros”, Brazil

EP-22 Frictional Behavior of Bismuth-based Soft Coatings, *B Pilotti*, *G Prieto*, Universidad Nacional del Sur, Argentina; *Esteban Braitman*, Esteban Braitman Engineering Consulting, Sweden; *W Tuckart*, Universidad Nacional del Sur, Argentina

EP-24 Compositional and Mechanical Characterization of Ti-Ta Coatings Prepared by Confocal Dual Magnetron Co-Sputtering, *A Bahrami*, Universidad Nacional Autónoma de México, Universidad Nacional Autónoma de México, Mexico; *J Pérez Alvarez*, *R Mirabal-Rojas*, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico; *Osmar Depablos-Rivera*, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Ciudad Universitaria, Mexico; *A Ruiz-Ramirez*, *A Valencia-Velazco*, Universidad Nacional Autónoma de México, Ciudad Universitaria, Mexico; *S Rodil*, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico

New Horizons in Coatings and Thin Films

Room Grand Exhibit Hall - Session FP

Symposium F Poster Session

5:00pm

FP-3 Monolayer Controlled Deposition of ZnO Thin Films by Catalytic Reaction-assisted Chemical Vapor Deposition, *S Ono*, *T Saitou*, *R Tajima*, *Y Tamayama*, *Kanji Yasui*, Nagaoka University of Technology, Japan

FP-6 Optical and Electronic Properties of MoS₂: Joint Theoretical/Experimental Study, *Miller Eaton*, *H Sirikumara*, *H Samassekou*, *D Mazumdar*, Southern Illinois University, USA; *L Liyanage*, *M Nardelli*, University of North Texas, USA; *T Jayasekera*, Southern Illinois University, USA

FP-7 Possibility of Selective and Morphology-Controlled Growth of CuO and Cu₂O Films, *Tomoaki Terasako*, *K Ohnishi*, *H Okada*, *S Obara*, Ehime University, Japan; *M Yagi*, National Institute of Technology, Kagawa College, Japan

FP-8 Thermal Stability of Arc Evaporated Oxide, Nitride, Oxinitride, and Oxide/Nitride Coatings within the Systems Al-Cr-N and Al-Cr-O, *Robert Raab*, CDL-AOS TU Wien, Austria; *C Koller*, TU Wien, Austria; *S Kolozsvári*, Plansee Composite Materials GmbH, Germany; *J Ramm*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *P Mayrhofer*, TU Wien, Austria

FP-9 Parametric Study of TiN Thin Films Deposited on 316 L Substrates by HiPIMS, *L Melo-Máximo*, ITESM-CEM, Mexico; *F Estrada-Martinez*, Termoinnova S.A. de C.V., Mexico; *D Melo-Maximo*, TRAMES S.A. de C.V., Mexico; *Joaquin Oseguera*, ITESM-CEM, Mexico

FP-11 Transition Metal Dichalcogenides for Next Generation Semiconductor Devices, *B Sirota*, University of North Texas, USA, U; *A Waite*, *N Glavin*, Air Force Research Laboratory, USA; *C Muratore*, University of Dayton, USA; *S Krylyuk*, *A Davydov*, National Institute of Standards and Technology, USA; *Andrey Voevodin*, University of North Texas, USA

FP-13 Microscopic Barrier Mechanisms and Interface Damage Behavior of Two-dimensional Nanomaterials, **Pu Jibin**, *L Wang, J Xue*, Key Laboratory of Marine New Materials and Related Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, China

FP-14 Corrosion Performance of Waterborne Epoxy Coating using Non-covalent Dispersion of Graphene as Inhibitor, **Shuan Liu**, *H Zhao*, Key Laboratory of Marine Materials and Related Technologies, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China; **P Jibin**, Key Laboratory of Marine Materials and Related Technologies, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, P. R. China, China; **L Wang**, Key Laboratory of Marine Materials and Related Technologies, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

FP-16 Production and Testing of Enhanced Photocatalytic Coatings onto Nanoparticles by Magnetron Sputtering, **P Kelly**, **Marina Ratova**, *G West*, Manchester Metropolitan University, UK

FP-17 3D Printing of Metal Oxide Semiconductor?, **Chuong Nguyen**, University of Auckland, New Zealand; *J Leveneur*, GNS Science, New Zealand; *M Taylor, J Metson*, University of Auckland, New Zealand

FP-18 A Proposal for Laser Annealing Process with Continuous Wave Nd:YAG Laser ($\lambda_0 = 532$ nm) for Photovoltaic CIGS Thin Films: Effect of Laser Annealing Time on Optical and Electrical Properties, **MyoungHan Yoo**, *D Lee*, Chosun University, Republic of Korea; *Y Jun*, Hyobjin Jeongbo Co., Inc., Republic of Korea; *P Ko, N Kim*, Chosun University, Republic of Korea

FP-20 Production of Ag Clusters by Plasma Gas Condensation and their Incorporation in an a:C Sputtered Matrix, **I Carvalho**, University of Coimbra, Portugal; **Sandra Carvalho**, University of Minho, Portugal; **A Cavaleiro**, University of Coimbra, Portugal

FP-22 Biocompatible Thin Film Intermetallic $Ti_{3-x}AuO_x$, **Vladimir Vishnyakov**, University of Huddersfield, UK; *B Beake*, Micro Materials Ltd, UK; *J Devitt*, University of Huddersfield, UK

FP-24 Features of Incident Particle Flux determining Growth Rates and Electrical Properties of Indium Tin Oxide Films Deposited by Ion-plating with dc Arc Discharge, **Hisashi Kitami**, *T Sakemi, Y Aoki*, Sumitomo Heavy Industries, Ltd., Japan

FP-25 Development and Microstructure Characterization of Single and Duplex Nitriding of UNS S31803 Duplex Stainless Steel, **L Varela**, University of São Paulo, Brazil; *C Pinedo*, Heat Tech & University of Mogi das Cruzes, Brazil; *H Dong, X Li*, University of Birmingham, UK; **André Tschiptschin**, University of São Paulo, Brazil

Surface Engineering - Applied Research and Industrial Applications

Room Grand Exhibit Hall - Session GP

Symposium G Poster Session

5:00pm

GP-2 Oxidation Resistance of Cr_2N and Cr_2WN Coatings Deposited on Ferritic Stainless Steel, **S Yang**, **Yung-Ting Huang**, National University of Kaohsiung, Taiwan; *Y Chang*, National Formosa University, Taiwan; *D Lin*, National University of Kaohsiung, Taiwan

GP-4 Synergetic Effect Improved Deposition of Titanium Nitride Films, **C Chang**, Ming Chi University of Technology, Taiwan; *C Ho*, MingDao University, Taiwan; *P Chen*, Da-Yeh University, Taiwan; *W Chen, D Wang*, MingDao University, Taiwan; **Wan-Yu Wu**, Da-Yeh University, Taiwan

GP-5 Fuel Cell Hot Runner-layer Composite Carbon Bipolar Plates, **S Wu**, MingDao University, Taiwan; **Ai-Huei Chiou**, National Formosa University, Taiwan; *Y Huang*, Fujian University Of Technology, China

GP-6 Oxinitride Coatings for Milling Tools, **Joern Kohlscheen**, Kennametal GmbH, Germany; *V Derflinger*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein

GP-8 Phase Composition, Microstructure Evolution and Wear Behavior of Ni-Mn-Si Coatings on Copper by Laser Cladding, **Peilei Zhang**, *X Liu, H Yan*, Shanghai University of Engineering Science, China

GP-9 Assessment of Surface Integrity During Machining of Superduplex Stainless Steel Obtained With Three Different PVD Hard Coatings, **Edinei Locks Junior**, Católica SC, Brazil; *P Stolf, M Martins*, Centro Universitário Católica de Santa Catarina - CATÓLICA -SC, Brazil; *F Amorim, R Diego Torres*, Pontifícia Universidade Católica do Paraná - PUCPR, Brazil; *J Paiva*, Centro Universitário Católica de Santa Catarina - CATÓLICA -SC, Brazil

GP-11 Surface and Interface Characteristics of CeO_2 doped Al_2O_3 Coating on Solution Treated and Peak Aged AZ91 Mg Alloy, **Sanjeet Kumar**, *D Kumar, J Jain*, Indian Institute of Technology Delhi, India

GP-14 Vacancies in MONTAN – a Mechanism for Tuning the Hardness–toughness Relationship, **Fedor F. Klimashin**, CDL-AOS TU Wien, Austria; *M Arndt*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *P Polcik*, Plansee Composite Materials GmbH, Germany; *L Lobmaier, N Koutná*, TU Wien, Austria; *D Holec*, Montanuniversität Leoben, Austria; *P Mayrhofer*, TU Wien, Austria

GP-15 Effects of Solidification Behaviour on the Microstructure, Hardness and Corrosion Resistance Properties of Laser Alloyed Al-Fe-Si Coatings, **E Akinlabi**, **Olawale Fatoba**, *E Makhatha*, University of Johannesburg, South Africa

Advanced Characterization Techniques for Coatings and Thin Films

Room Grand Exhibit Hall - Session HP

Symposium H Poster Session

5:00pm

HP-2 How Can the Icephobicity of an Engineered Surface be Screened by Means of Simple Laboratory Testing and Characterization?, **G de la Fuente**, *L Angurel*, CSIC-Universidad de Zaragoza, Spain; *C López-Santos, V Rico, A Borrás, A González-Elipe*, Instituto de Ciencia de Materiales de Sevilla (CSIC), Spain; *J Mora, P García, Alina Agüero*, Instituto Nacional de Técnica Aeroespacial (INTA), Spain

HP-3 Pushing the Envelope in Variable Temperature Nanoindentation: High and Cryogenic Temperature Measurements, **N Randall**, *M Conte*, Anton Paar TriTec, Switzerland; *J Schwiedrzik, J Michler*, EMPA, Switzerland; **Pierre Morel**, Anton Paar, USA

HP-4 Surface and Sub-Surface Damage in Si and Ge Crystals after Nano-Machining, **Jozef Keckes**, Montanuniversität Leoben, Austria; *Z Zaprazny, D Korytar, M Jergel, Y Halahovets, P Siffalovic*, Slovak Academy of Sciences, Slovakia; *C Ferrari, C Frigeri*, CNR-IMEM Institute Parma, Italy; *I Matko, J Drga*, Slovak Academy of Sciences, Slovakia; *P Vagovič*, DESY, Center for Free-Electron Laser Science, Germany

HP-6 Influence of Post-deposition Annealing on the Electrical Properties of Thin $SiO_2/a-Si:H/SiO_2$ Structures Obtained by Electron Cyclotron Resonance, **David Mateos**, Universidad Autónoma de Baja California, Mexico; *J Diniz*, University of Campinas, Brazil; *N Nedev, B Valdez, M Curiel*, Universidad Autónoma de Baja California, Mexico; *M Mederos*, Renato Archer Center for Information Technology, Brazil; *O Pérez, A Arias*, Universidad Autónoma de Baja California, Mexico

HP-7 Comparison of Three Methods for Ellipsometry Characterization of Thin Absorbing Films, **Frank Urban**, Florida International University, USA; *D Barton*, Retired, USA

Topical Symposia

Room Grand Exhibit Hall - Session TSP

Symposium TS Poster Session

5:00pm

TSP-1 Improved Electron Field Emission Characteristics of Amorphous Carbon Film Embedded with Graphene Nanocrystallites, **K Sun**, *L Yang*, Xi'an Jiaotong University, China; **Dongfeng Diao**, Shenzhen University, China

TSP-2 Zirconium Carbide Based Self-Healing Ceramics, **Angela Yang**, University of North Texas, USA; *P Petry*, University of Rouen, France; *I Hammood, R Reidy, S Aouadi*, University of North Texas, USA

Special Events Friday

Special Events Friday

7:30 AM Conference Registration/Atlas Foyer
8:00 AM Technical Sessions/See Room Matrix
12:00 PM Thank You, See You in 2017 Party/Trellis Courtyard, near Pool

Friday Morning, April 28, 2017

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B7 Plasma Diagnostics and Growth Processes Moderators: Ante Hecimovic, Ruhr-Universität Bochum, Peter Bruggeman, University of Minnesota, USA		Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C4 Energetic Materials and Microstructures for Nanomanufacturing Moderators: Karsten Woll, Karlsruhe Institute of Technology (KIT), Ibrahim Gunduz, Purdue University, USA	
8:00am	B7-1 Plasma Surface Interaction Model for Titanium Nitride Thin Film Growth, Tobias Gergs, J Trieschmann , Ruhr University Bochum, Germany; M Hans, D Music, J Schneider , RWTH Aachen University, Germany; T Mussenbrock , Ruhr University Bochum, Germany	INVITED: C4-1 Investigation of Dynamic Processes in Energetic Materials by Ultrafast Transmission Electron Microscopy at the Nanoscale, Volkmar Ortalan , Purdue University, USA	
8:20am	B7-2 Correlation of the Debye Sheath Thickness and (Cr,Al)N Coating Properties for HPPMS, dcMS and PCAE Processes, K Bobzin, T Brögelmann, N Kruppe, M Arghavani, Martin Engels , Surface Engineering Institute - RWTH Aachen University, Germany	Invited talk continues.	
8:40am	B7-3 The Study of Spoke Merging and Splitting in HiPIMS Plasma, Jaroslav Hnilica, P Klein , Masaryk University, Czech Republic; F Lockwood-Estrin , University of Liverpool, UK; P Vašina , Masaryk University, Czech Republic; J Bradley , University of Liverpool, UK	C4-3 A Closer Look at Determining Flame Speeds with Imaging Diagnostics, R Bratton, M Pantoya, Connor Woodruff , Texas Tech University, USA	
9:00am	B7-4 Al ₂ O ₃ - ZrO ₂ Composite Coatings on Aluminum through a Hybrid Plasma Electrolytic- Electrophoretic Process, Nastaran Barati, E Meletis , University of Texas at Arlington, USA	C4-4 Modeling and Experimental Study of Propagating Exothermic Reactions in Al/Pt Multilayers, David Adams, M Abere , Sandia National Laboratories, USA; R Reeves , Sandia National Laboratories, USA, US; C Sobczak , Sandia National Laboratories, USA	
9:20am	INVITED: B7-5 Low-temperature Atmospheric Pressure Plasma Processing and its Diagnostics for a Healthcare Device, Masaru Hori , Institute of Innovation for Future Society, Nagoya University, Japan	C4-5 Sub-critical Hotspots to Quench Reactions in Ni-Al Nanofolds, I Gunduz, Matthew Beason , Purdue University, USA	
9:40am	Invited talk continues.	C4-6 Laser Pulse Duration Dependence on Ignition of Al/Pt Reactive Multilayers, Michael Abere, C Yarrington, D Adams , Sandia National Laboratories, USA	
10:00am	B7-7 Effects of Incident Particle Fluxes on the Growth and Properties of Ga-doped ZnO Films Deposited by Ion-plating with dc Arc Discharge, Hisashi Kitami , Sumitomo Heavy Industries, Ltd., Japan; J Nomoto , Kochi University of Technology, Japan; T Sakemi , Sumitomo Heavy Industries, Ltd., Japan; H Makino , Kochi University of Technology, Japan; Y Aoki , Sumitomo Heavy Industries, Ltd., Japan; T Yamamoto , Kochi University of Technology, Japan	C4-7 Microstructural Evolution during Thermal Ignition of Self-Propagating Reactions in Ru/Al Multilayers, Karsten Woll , Karlsruhe Institute of Technology (KIT), (IAM-WBM), Germany; C Pauly, F Muecklich , Saarland University, Germany	
10:20am	B7-8 Mapping Potential of an Ionization Zone in Magnetron Plasma, Matjaz Panjan , Jozef Stefan Institute, Slovenia; A Anders , Lawrence Berkeley National Laboratory, USA	C4-8 Waves of Crystallization in Amorphous Metallic Glass Films obtained by Spinning of Melts, Alexander Rogachev , National University of Science and Technology "MISIS", Russian Federation; S Vadchenko, A Aronin , Russian Academy of Sciences, Russian Federation; A Mukasyan , University of Notre Dame, USA	

Friday Morning, April 28, 2017

	Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-3 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro, University of Coimbra, Carsten Gachot, Vienna University of Technology, Giovanni Ramirez, Argonne National Laboratory, USA	Surface Engineering - Applied Research and Industrial Applications Room Sunrise - Session G1 Advances in Industrial PVD, CVD and PCVD Processes and Equipment Moderators: Emmanuelle Gothelid, Sandvik Coromant R&D Materials and Processes, Ladislav Bardos, Uppsala University, Sweden
8:00am	E1-3-1 Comparing of Adhesion Properties of TiNbVN Coatings Deposited on Different Substrates, <i>Ihsan Efeoglu, Y Totik</i> , Ataturk University, Turkey; <i>O Baran</i> , Erzincan University, Turkey; <i>H Cicek</i> , Erzurum Technical University, Turkey; <i>A Keles</i> , Ataturk University, Turkey	INVITED: G1-1 Industrialized HiPIMS, <i>Siegfried Krassnitzer, D Kurapov, M Arndt, W Kalss, H Rudigier</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein
8:20am	E1-3-2 Buckling of Ductile Thin Films on Rigid Substrate, <i>Nadia Ben Dahmane, G Parry, R Estevez</i> , SIMaP, University of Grenoble Alpes, CNRS, France; <i>C Coupeau</i> , Institut P', Université de Poitiers-UPR 3346 CNRS-ENSMA, France	
8:40am	E1-3-3 Study of Multi-cracking of Brittle Thin Films and Brittle/ductile Multilayers on Compliant Substrate, <i>Ilhem Ben Cheikh</i> , CNRS, Université de Grenoble-Alpes, France; <i>G Parry</i> , Laboratoire de Science et Ingénierie des Matériaux et Procédés (SIMaP), Université de Grenoble-Alpes, France; <i>D Dalmas</i> , CNRS, Laboratoire de Tribologie et Dynamique des Systèmes (LTDS), Ecole centrale de Lyon, France; <i>R Estevez</i> , Laboratoire de Science et Ingénierie des Matériaux et Procédés (SIMaP), Université de Grenoble Alpes, France	G1-3 Pure HiPIMS Coatings with 2 µm/hour for Cutting Tool Coatings, <i>Christoph Schiffers, T Leyendecker, O Lemmer, W Kölker</i> , CemeCon AG, Germany
9:00am	E1-3-4 Tribological Behaviors of UHMWPE Composites with Different Counter Surface Morphologies, <i>Yanzhen Wang, Z Yin, H Li, G Gao</i> , Shanghai Jiaotong University, China	G1-4 Deposition of Acrylic Acid on Argon or Air Atmospheric Pressure Plasma Treated Silicon using a Novel Chamber Design, <i>Wei-Yu Chen</i> , University of Sheffield, UK; <i>A Matthews</i> , University of Manchester, UK; <i>F Jones</i> , University of Sheffield, UK
9:20am	E1-3-5 Evaluation of Friction and Wear Characteristics of Electrostatic Solid Lubricant at Different Sliding Conditions, <i>Rakesh Kumar Gunda</i> , BITS Pilani Hyderabad campus, India; <i>S Narala</i> , BITS Pilani Hyderabad Campus, India	G1-5 Reactive Deposition in the Magnetized Hollow Cathode Activated Magnetron, <i>Hana Barankova, L Bardos</i> , Uppsala University, Angstrom Laboratory, Sweden
9:40am	E1-3-6 Evaluation of Friction and Wear Properties of Al-TiC _p Metal Matrix Composite under Cryogenic Condition, <i>Sravan Josyula</i> , BITS-Pilani, Hyderabad Campus, India; <i>S Narala</i> , BITS Pilani Hyderabad Campus, India	G1-6 Ionisation Enhancement Control for Magnetron Sputtering Processes, <i>V Bellido-Gonzalez, F Meyer, T Sgrilli, H Li, Frank Papa</i> , Gencoa Ltd., USA; <i>J Housden, L Espitalier, S Banfield</i> , Wallwork Cambridge Ltd, UK
10:00am	E1-3-7 Wear Mechanisms and Tribological Characterisation of Novel Nanocomposite Coated Cutting Tool Material for High Temperature Applications, <i>Pavandatta Jadhav, S Narala</i> , BITS Pilani Hyderabad campus, India	G1-7 Bipolar Sputtering - Waveform Adaptability in Plasma Applications, <i>Wojciech Gajewski, K Ruda, J Swiatnicki, P Ozimek</i> , TRUMPF Huettinger Sp. z o.o., Poland
10:20am		G1-8 New Hauerz CARC ⁺ Technology Dedicated to Nitriding, Etching and Coating Process, <i>J Zhu, G Negrea, M Eerden, D Doerwald, Roel Tietema</i> , IHI Hauerz Techno Coating, Netherlands
10:40am		G1-9 Characterization of Advanced Coating Architectures Deposited by the HI3 Process, <i>Joerg Vetter</i> , Oerlikon Balzers Coating Germany GmbH, Germany; <i>K Kubota, M Isaka</i> , Mitsubishi Hitachi Tool Engineering, Japan; <i>J Mueller, T Krienke</i> , Oerlikon Balzers Coating Germany GmbH, Germany; <i>H Rudigier</i> , Oerlikon Surface Solutions AG, Liechtenstein
11:00am		G1-10 Mechanical Property and Thermal Stability of Multicomponent AlTiSiN and AlTiBN Hard Coatings using Ternary Alloy Arc Sources, <i>Meng-Chun Cai, Y Chang</i> , National Formosa University, Taiwan

Friday Morning, April 28, 2017

	<p>Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 4-6 - Session H1 Advanced Microstructural Characterization of Thin Films and Engineered Surfaces Moderators: Xavier Maeder, Empa, Swiss Federal Laboratories for Materials Science and Technology, Michael Tkadletz, Montanuniversität Leoben</p>	<p>Topical Symposia Room California - Session TS1 Biointerfaces Moderators: Jinju Chen, Newcastle University, Tianyu Zhang, Montana State University, USA</p>
8:00am	<p>INVITED: H1-1 Imaging Cross-sectional Structure-property Relationship in Thin Films, Jozef Keckes, Montanuniversität Leoben, Austria</p>	<p>TS1-1 The Investigation of Mechanisms about Bacteria-Hydrogels Interactions, Nehir Kandemir, <i>W Vollmer, N Jakubovics, J Chen</i>, Newcastle University, UK</p>
8:20am	<p>Invited talk continues.</p>	<p>TS1-2 How Nanostructure on Ti Alloy Surface would Affect Bacterial Adhesion and Biofilm Formation?, Yunyi Cao, Newcastle University, UK; <i>B Su</i>, University of Bristol, UK; <i>S Chinnaraj, N Jakubovics, J Chen</i>, Newcastle University, UK</p>
8:40am	<p>H1-3 Synchrotron and Transmission Kikuchi Diffraction Characterization of Deformed Multilayer Thin Films on Polyimide, Mikhail Polyakov, <i>X Maeder</i>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>P Gruber</i>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-AWP), Germany; <i>J Michler</i>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>	<p>INVITED: TS1-3 First Contact: Surface Sensing, Motility Appendages, and Hydrodynamics in Bacterial Interactions with Surfaces, Gerard Wong, California NanoSystems Institute, UCLA, USA</p>
9:00am	<p>H1-4 Advanced EBSD and <i>in-situ</i> EBSD Techniques for Microstructure, Crack, Fatigue, and Plastic Deformation Characterization in Metals and Thin Films, <i>J Ast, Y Guo, M Polyakov, J Schwiedrzik, G Mohanty, J Michler</i>, Xavier Maeder, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>	<p>Invited talk continues.</p>
9:20am	<p>H1-5 Characterization of the Porosity of Silicon Nitride Thin Layers, Thomas Barrès, <i>H Montigaud</i>, Saint-Gobain Recherche, France; <i>O Stephan</i>, Université Paris-Sud, France; <i>B Tribollet</i>, Université Pierre et Marie Curie, France; <i>Y Cohin</i>, Saint-Gobain Recherche, France; <i>M Boinet</i>, Saint-Gobain, USA</p>	<p>TS1-5 How Surface Physical Properties of Polymer Carrier Materials would Affect Wastewater Biofilm Formation?, Sam Charlton, <i>M Brown, R Davenport, J Chen</i>, Newcastle University, UK</p>
9:40am	<p>H1-6 Microsecond-Scale Chemical Reactions at Interfaces in Thermal Spray Coatings, Anh Tran, <i>M Hyland</i>, The University of Auckland, New Zealand</p>	<p>TS1-6 Evaluating the Electrochemical Corrosion and Immune Cell Activation Behaviour of Nano-crystalline Thin Films of Chromium Nitride Prepared by Reactive Magnetron Sputtering, SaeedUr Rahman, <i>A Ogwu, A Crilly</i>, University of the West of Scotland, UK</p>
10:00am	<p>H1-7 Thermal Stability of Expanded Austenite formed on a DC Plasma Nitrided 316L Austenitic Stainless Steel, André Tschiptschin, <i>A Nishikawa, L Varela</i>, University of São Paulo, Brazil; <i>C Pinedo</i>, Heat Tech & University of Mogi das Cruzes, Brazil</p>	<p>TS1-7 The Graphene Oxide Biopolymers (Polystyrene Sulfonate, PSS and Heparin), and PEDOT were Electrochemically Polymerized in the SUS316L Stainless Steel, HuiMing Tsou, <i>T Liu</i>, Ming Chi University of Technology, Taiwan</p>

Bold page numbers indicate presenter

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