

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
HL	Bunshah Award Honorary Lecture
PL	Plenary Lecture
SIT	Special Interest Talk
SIT2	Special Interest Talk 2
TS	Topical Symposia

Program Overview

Room /Time	California	Golden West	Grand Hall	Royal Palm 1-3	Royal Palm 4-6
MoPL					
MoM	D1-1: Surface Coatings and Surface Modifications in Biological Environments	B5-1: Hard and Multifunctional Nanostructured Coatings			E2-1: Mechanical Properties and Adhesion
MoA	D1-2: Surface Coatings and Surface Modifications in Biological Environments	B5-2: Hard and Multifunctional Nanostructured Coatings		TS5: Anti- and De-icing Surface Engineering	E2-2: Mechanical Properties and Adhesion
MoSIT					
TuM	B2-1: CVD Coatings and Technologies	B1-1: PVD Coatings and Technologies		D2: Bio-corrosion, Bio-tribology, and Bio-tribocorrosion D3: Medical Devices,	E1-1: Friction, Wear, Lubrication Effects, and Modeling
TuEx			EX: Exhibition Keynote Lecture		
TuA	B2-2: CVD Coatings and Technologies	B1-2: PVD Coatings and Technologies		D4: Biointerfaces: Improving the Cell Adhesion and Avoiding Bacteria Adhesion. What	E1-2: Friction, Wear, Lubrication Effects, and Modeling
WeM	B6: Coating Design and Architectures	B1-3: PVD Coatings and Technologies		A2: Thermal and Environmental Barrier Coatings	E1-3: Friction, Wear, Lubrication Effects, and Modeling
WeA	B3: Deposition Technologies and Applications for Diamond-like Coatings	B1-4: PVD Coatings and Technologies		A3: Materials and Coatings for Solar Power Concentration Plants	E3: Tribology of Coatings for Automotive and Aerospace Applications
WeHL					
ThM	A1-1: Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling	B4-1: Properties and Characterization of Hard Coatings and Surfaces		H1: Spatially-resolved Characterization of Thin Films and Engineered Surfaces	TS1: Thermal and Kinetic Spray Deposition
ThA	A1-2: Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling	B4-2: Properties and Characterization of Hard Coatings and Surfaces		H2: Advanced Mechanical Testing of Surfaces, Thin Films and Coatings	
ThP			Poster Sessions		
FrM	A1-3: Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling	B4-3: Properties and Characterization of Hard Coatings and Surfaces		H3: Characterization of Coatings in Harsh Environments	TS2: High Entropy and Other Multi-principal-element Materials

Program Overview

Room /Time	San Diego	Sunrise	Sunset	Town & Country
MoPL				PL: Plenary Lecture
MoM	F2-1: HiPIMS, Pulsed Plasmas and Energetic Deposition		G4: Pre-/Post-Treatment and Duplex Technology	
MoA	F2-2: HiPIMS, Pulsed Plasmas and Energetic Deposition	TS4: Materials Modeling and Simulation	G3: Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications	
MoSIT	SIT: Special Interest Talk			
TuM	F2-3: HiPIMS, Pulsed Plasmas and Energetic Deposition	TS3: Coating of Synthetic Materials – Engineering for the Future	G2: Component Coatings for Automotive, Aerospace, Medical, and Manufacturing Applications	
TuEx				
TuA	F1: Nanomaterials and Nanofabrication	C1: Optical Metrology in Design, Optimization, and Production of Multifunctional Materials	G6: Application-driven Cooperation Between industry and Research Institutions	
WeM	F4-1: Functional Oxide and Oxynitride Coatings	C3: Thin Films for Energy-related Applications	G1: Advances in Industrial PVD, CVD, and PCVD Processes and Equipment	
WeA	F4-2: Functional Oxide and Oxynitride Coatings	C4: Energetic Materials and Microstructures for Nanomanufacturing	G5: Hybrid Coatings and Hybrid System Processes	
WeHL				HL: Bunshah Award Honorary Lecture
ThM	F3: 2D Materials: Synthesis, Characterization, and Applications	C2-1: Novel Oxide Films for Active Devices		
ThA	SIT2: Special Interest Talk 2	C2-2: Novel Oxide Films for Active Devices		
ThP				
FrM		C2-3: Novel Oxide Films for Active Devices		

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/TBA
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 23, 2018

Plenary Lecture
Room Town & Country - Session PL
Plenary Lecture

8:00am **INVITED: PL-1** Predictive Synthesis and Characterization of Oxide Films with Metastable Structures, *Gregory Rohrer*, Carnegie Mellon University, USA

8:20am Invited talk continues.

Monday Morning, April 23, 2018

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B5-1 Hard and Multifunctional Nanostructured Coatings Moderators: Jiri Capek, University of West Bohemia, Helmut Riedl, TU Wien, Institute of Materials Science and Technology		Coatings for Biomedical and Healthcare Applications Room California - Session D1-1 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	
10:00am	B5-1-1 Effect of Boron on the Mechanical Properties, especially Fracture Toughness, of TiN, Rainer Hahn , CDL-AOS at TU Wien, Austria; M Bartosik, A Tymoszuk , TU Wien, Austria; P Polcik , Plansee Composite Materials GmbH, Germany; M Arndt , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; P Mayrhofer , TU Wien, Austria	10:00am	D1-1-1 Highly Porous Scaffolds on TNZT Alloys for Bone Implant Applications, Samir Aouadi, E Blackert, S Murguia, M Kramer, S Bakkar, M Young , University of North Texas, USA
10:20am	B5-1-2 Evolution of Structure, Residual Stresses and Wear Resistance of Multi-layered AlTiSiN-AlCrN Coatings upon Thermal Loading Revealed by Cross-sectional X-ray Diffraction and Tribological Testing, Stefan Klima, N Jäger, M Meindlhuber , Montanuniversität Leoben, Austria; H Hruby , eifeler-Vacotec GmbH, Germany; C Mitterer, J Keckes, R Daniel , Montanuniversität Leoben, Austria	10:20am	D1-1-2 Improving Cellular Proliferation on the Ti-6Al-4V Alloy by the Formation of Crystalline Nanotubes of Titanium Oxide, Itzel Pamela Torres-Avila , Instituto Politecnico Nacional-Upibi, Mexico; E Hernández-Sánchez, J Castrejón-Flores , Instituto politécnico Nacional-UPIBI, Mexico; J Velazquez , Instituto Politécnico Nacional-ESIQIE, Mexico; R Carrera-Espinoza , Universidad de las Américas Puebla, Mexico; U Figueroa-López , Tecnológico de Monterrey, Campus Estado de México, Mexico
10:40am	INVITED: B5-1-3 Plasma Tailoring for Controlled Compositional and Microstructural Evolution of TiB ₂ Coatings from Magnetron Sputtering Techniques and DC Vacuum Arc, Johanna Rosen , Linköping Univ., IFM, Thin Film Physics Div., Sweden; N Nedfors, I Zhirkov , Linköping University, IFM, Thin Film Physics Division, Sweden	10:40am	D1-1-3 Effects of Nb and Ti on the Corrosion and Biocompatibility Behavior of Zr-based and Fe-based Thin Film Metallic Glasses, Jhang-Bo Wang, Y Yang , National Taipei University of Technology, Taiwan; J Lee , Ming Chi University of Technology, Taiwan
11:00am	Invited talk continues.	11:00am	D1-1-4 Tribological Behavior of Nanotubes Grown on Ti-35Nb Alloy by Anodization, A Luz , UFPR, Brazil; Carlos Lepienski , Universidade Tecnológica Federal do Paraná, Brazil; C Siqueira , Universidade Federal do Paraná, Brazil; G Souza , Universidade Estadual de Ponta Grossa, Brazil; N Kuromoto , Universidade Federal do Paraná, Brazil
11:20am	B5-1-5 Development of Novel Gradient C-CrAlSiN Based Cathodic Arc PVD Coatings for High Speed/dry Machining Applications, Puneet Chandran, V Krishna , International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), India; A VenuGopal , NIT Warangal, India	11:20am	INVITED: D1-1-5 Designing Hydrogels to Enhance Biomedical Implant Performance, Stephanie Bryant , University of Colorado, Boulder, USA, United States of America
11:40am		11:40am	Invited talk continues.
12:00pm		12:00pm	D1-1-7 Fabrication and Properties of Ca, P Containing Coating on Magnesium Alloy by Micro-arc Oxidation, Hui Tang , University of Electronic Science and Technology of China, China

Monday Morning, April 23, 2018

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E2-1 Mechanical Properties and Adhesion Moderators: Gerhard Dehm , Max-Planck Institut für Eisenforschung, Megan Cordill , Erich Schmid Institute of Materials Science, Ming-Tzer Lin , National Chung Hsing University, Taiwan		New Horizons in Coatings and Thin Films Room San Diego - Session F2-1 HiPIMS, Pulsed Plasmas and Energetic Deposition Moderators: Tiberiu Minea , Université Paris-Sud, Jon Tomas Gudmundsson , University of Iceland	
10:00am	INVITED: E2-1-1 In-situ Mechanical Testing of Hierarchical and Gradient Nanostructures, <i>J Wardini, O Donaldson, Timothy Rupert</i> , University of California, Irvine, USA	F2-1-1 On Recycling in High Power Impulse Sputtering Magnetrons, <i>Jon Tomas Gudmundsson</i> , University of Iceland, Iceland; <i>N Brenning, M Raadu</i> , KTH-Royal Institute of Technology, Sweden; <i>T Petty, T Minea, D Lundin</i> , Université Paris-Sud, France	
10:20am	Invited talk continues.	F2-1-2 Electron Density at the Sheath Edge of a HiPIMS Plasma, <i>A Hecimovic, Julian Held, V Schulz-von der Gathen, W Breilmann, C Maszl, A von Keudell</i> , Ruhr-Universität Bochum, Germany	
10:40am	E2-1-3 Mechanical Properties of Molybdenum Incorporated β -Ga ₂ O ₃ Nanocrystalline Films for Extreme Environment Applications, <i>Anil Krishna Battu, S Manandhar, R Chintalapalle</i> , University of Texas at El Paso, USA	F2-1-3 Spatially Resolved Investigation of Transport and Redeposition Processes during HiPIMS by Means of Optical Diagnostics and In-vacuum XPS Analysis of Magnetron Targets, <i>Sascha Monje, V Layes, A von Keudell</i> , Ruhr-University Bochum, Germany; <i>T de los Arcos</i> , University Paderborn, Germany; <i>V Schulz-von der Gathen, C Corbella</i> , Ruhr-University Bochum, Germany	
11:00am	E2-1-4 Experimental Characterization and Finite Element Simulation of Damage in Thin Hard DLC Coatings, <i>A Chaleridis</i> , Ecole Nationale Supérieure des Mines de St-Etienne, France; <i>C Héau, M Leroy</i> , Institut de Recherche en Ingénierie des Surfaces, Groupe HEF, France; <i>S Sao-Joao, G Kermouche</i> , Ecole Nationale Supérieure des Mines de St-Etienne, France; <i>C Donnet</i> , Université de Lyon, Université Jean Monnet, France; <i>Helmut Klöcker</i> , Ecole Nationale Supérieure des Mines de St-Etienne, France	F2-1-4 Time-resolved Ion Energy and Charge Distributions in Pulsed Cathodic Arc Plasmas of Nb-Al Cathodes in High Vacuum., <i>Siegfried Zoehrer</i> , Montanuniversität Leoben, Austria; <i>A Anders</i> , Lawrence Berkeley National Laboratory, USA, and now at Leibniz Institute of Surface Engineering (IOM), Germany; <i>R Franz</i> , Montanuniversität Leoben, Austria	
11:20am		F2-1-5 Investigations on the Substrate Bias Influence on Reactive High Performance Plasmas, <i>K Bobzin, T Brögelmann, N Kruppe, Martin Engels</i> , Surface Engineering Institute - RWTH Aachen University, Germany	
11:40am		F2-1-6 The Impact of a Positive Pulse in HiPIMS Films, <i>Jason Hrebik</i> , Kurt J. Lesker Company, USA	

Monday Morning, April 23, 2018

<p>Surface Engineering - Applied Research and Industrial Applications Room Sunset - Session G4 Pre-/Post-Treatment and Duplex Technology Moderators: Hiroshi Tamagaki, NIRO (The New Industry Research Organization), Wan-Yu Wu, Da-Yeh University, Chris Stoessel, Eastman Chemical Company, Inc., USA</p>		
10:00am	<p>G4-1 Mechanical Pretreatment before Electroplating of Aluminium Alloy AISi12, <i>E Uhlmann</i>, Robert Jaczkowski, Technische Universität Berlin, Germany</p>	
10:20am	<p>G4-2 Microstructure Characterization and Mechanical Properties of Gradient AlCrSiN hard Coatings Using Ternary Alloy Targets, <i>Y Chang</i>, Liang-Chan Chao, National Formosa University, Taiwan</p>	
10:40am	<p>G4-3 Integrated Shot Peening, Plasma Nitriding and Gradient PVD TiAlSiN Coating on AISI H13 Molds for Al Die Casting, Venice Mascariñas, University of the Philippines, Philippines; <i>D Quinto</i>, Beta Nanocoating Philippines Inc., Philippines; <i>A Salvador</i>, University of the Philippines, Philippines</p>	
11:00am	<p>G4-4 Effect of Nano-penning Surface Texturing on Self-clean Function, Nicolas Coniglio, Arts et Métiers ParisTech d'Aix-en-Provence, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>S Mezghani</i>, Arts et Métiers ParisTech de Châlons-en-Champagne, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>M El Mansori</i>, Arts et Métiers ParisTech d'Aix en Provence, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>J Cabrero</i>, Saint Gobain, CREE, France</p>	
11:20am	<p>INVITED: G4-5 Hard Coating and Surface Modification Technologies for Piston Ring, Hideaki Kamiyama, Nippon Piston Ring Co., Ltd., Japan</p>	
11:40am	<p>Invited talk continues.</p>	

Monday Afternoon, April 23, 2018

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B5-2 Hard and Multifunctional Nanostructured Coatings Moderators: Jiri Capek, University of West Bohemia, Helmut Riedl, TU Wien, Institute of Materials Science and Technology		Coatings for Biomedical and Healthcare Applications Room California - Session D1-2 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	
1:30pm	B5-2-1 Mechanical and Optical Properties of Nanoscale Transparent Metal Oxide Multilayers, <i>Chelsea Appleget, A Hodge</i> , University of Southern California, USA	D1-2-1 Optimisation of Antimicrobial Silver Nanocomposite Coatings on Orthopaedic Grade Cobalt Chromium Alloys and the Related Simulator Analyses in Knee Surgery, <i>Liuquan Yang</i> , Wallwork Cambridge Ltd, UK; <i>L Richards</i> , MatOrtho Limited, UK; <i>J Shelton</i> , Queen Mary University of London, UK; <i>H Hothi</i> , University College London, UK; <i>S Collins</i> , MatOrtho Limited, UK; <i>J Housden</i> , Wallwork Cambridge Ltd, UK; <i>A Hart</i> , University College London, UK; <i>L Espalier</i> , Wallwork Cambridge Ltd, UK	
1:50pm	B5-2-2 Structure and Properties of Nanocluster Composite Arc Coatings for Hot Die Forging, <i>Marcus Morstein, T Schär, J Wehrs</i> , PLATIT AG Advanced Coating Systems, Switzerland; <i>M Colliander</i> , Chalmers University of Technology, Sweden; <i>J Best</i> , University of New South Wales, Australia; <i>M Polyakov, J Michler</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	D1-2-2 Structure and Properties of Novel Hydrophobic Cr-Ag Antibacterial Coatings Deposited by Closed-field Unbalanced Magnetron Sputtering, <i>MohammadSharear Kabir</i> , University of New South Wales, Australia; <i>A Karami</i> , University of Adelaide, Australia; <i>P Munroe</i> , University of New South Wales, Australia; <i>Z Zhou</i> , City University of Hong Kong, Hong Kong; <i>Z Xie</i> , University of Adelaide, Australia	
2:10pm	B5-2-3 New Insights in High Temperature Properties and Oxidation Behaviour of AlCrSiN Coatings, <i>Nikolaus Jäger, S Klima, M Meindlumer</i> , Montanuniversität Leoben, Austria; <i>H Hruby</i> , eifeler-Vacotec GmbH, Germany; <i>C Mitterer, J Keckes, R Daniel</i> , Montanuniversität Leoben, Austria	D1-2-3 Thin Film Metallic Glass : A Lubricated Coating on Medical Needle for Reducing Fracture Toughness and Damage of Phantom Materials, <i>Berhane Gebru, J Chu, C Yu</i> , National Taiwan University of Science and Technology (NTUST), Taiwan	
2:30pm	B5-2-4 Magnetron Sputtered High-temperature Hf-B-Si-X-C-N (X = Y, Ho, Mo) Films with Controlled Optical Transparency and Electrical Conductivity, <i>Michal Prochazka, V Simova, J Vlček, M Kotrlova, R Čerstvý, J Houska</i> , University of West Bohemia, Czech Republic	D1-2-4 Biocompatibility and Antimicrobial Performance of a Durable Super-hydrophobic Surface Modified Stainless Steel, <i>Cheng-Wei Lin</i> , Feng Chia University; Central Taiwan University of Science and Technology, Taiwan; <i>C Chou</i> , Taichung Veterans General Hospital; National Yang-Ming University, Taiwan; <i>C Chung</i> , Central Taiwan University of Science and Technology, Taiwan; <i>J He</i> , Feng Chia University, Taiwan	
2:50pm	INVITED: B5-2-5 Holistic Design of Multifunctional Nitrides, Oxides, and Oxynitrides, <i>Denis Music, J Schneider</i> , RWTH Aachen University, Germany	D1-2-5 Immobilization of Carboxylic Acid Groups on Polymeric Substrates by Plasma-enhanced Chemical Vapor or Atmospheric Pressure Plasma Deposition of Acetic Acid, <i>Wei-Yu Chen, A Matthews</i> , University of Manchester, UK; <i>F Jones</i> , University of Sheffield, UK; <i>K Chen</i> , Tatung University, Taiwan	
3:10pm	Invited talk continues.	D1-2-6 Coatings Deposition by RF Magnetron Sputtering of Loosely Packed Hydroxyapatite Powder Target, <i>Laurynas Lukosevicius</i> , The University of Manchester, UK; <i>S Mráz, J Schneider</i> , RWTH Aachen University, Germany; <i>A Matthews</i> , The University of Manchester, UK	
3:30pm	B5-2-7 Improved Mechanical Properties and Thermal Stability of Ti-Al-N through Alloying with La-borides, <i>Hidetoshi Asanuma</i> , Mitsubishi Materials Corporation, Austria; <i>P Polcik, S Koložvári</i> , Plansee Composite Materials GmbH, Germany; <i>F Klimashin, H Riedl, P Mayrhofer</i> , TU Wien, Institute of Materials Science and Technology, Austria	INVITED: D1-2-7 Advanced Medical Biosensing Systems with Soft/Stretchable Materials and Assemblies, <i>J Rogers, Roozbeh Ghaffari</i> , Northwestern University, USA	
3:50pm	B5-2-8 Thermal Evolution of Nanometallic Multilayers, <i>J. Sebastian Riano Z., A Hodge</i> , University of Southern California, USA	Invited talk continues.	
4:10pm	B5-2-9 Nanostructured TiAlN/TaN Multilayer Coatings Deposited by DC Magnetron Sputtering: Effect of Bilayer Period, <i>Elbert Contreras, M Gómez</i> , Universidad de Antioquia, Colombia	D1-2-9 Cyclic Voltammetry Study of Electrolytic Plasma Processing of Porous Ti, <i>M Shbeh</i> , University of Sheffield, UK; <i>Aleksey Yerokhin</i> , University of Manchester, UK; <i>R Goodall</i> , University of Sheffield, UK	
4:30pm	B5-2-10 The Relationship between Mechanical Property and Phase Composition of Cr-Al-C Coating, <i>Jingzhou Liu, P Ke, A Wang</i> , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	D1-2-10 Corrosion and Degradation Behavior of dahp pre-treated PCL Composite Coatings on Pure Magnesium, <i>Yuyun Yang</i> , Institute for Corrosion Science and Surface Technology, China; <i>K Zheng</i> , Institute of Biomaterials, Germany; <i>G Jin, X Cui</i> , Institute for Corrosion Science and Surface Technology, China; <i>S Virtanen</i> , Institute for Surface Science and Corrosion, Germany; <i>A Baccaccini</i> , Institute of Biomaterials, Germany	
4:50pm	B5-2-11 Microstructure and Mechanical Properties of Ta-Si-N Coatings Prepared by Reactive Magnetron Sputtering, <i>Anna Zaman, Y Shen, E Meletis</i> , University of Texas at Arlington, USA		
5:10pm	B5-2-12 Five Typical Mistakes during the Nanoindentation of Coatings, <i>Esteban Broitman</i> , SKF Engineering and Research Centre, Netherlands		

Monday Afternoon, April 23, 2018

	Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E2-2 Mechanical Properties and Adhesion Moderators: Gerhard Dehm, Max-Planck Institut für Eisenforschung, Megan Cordill, Erich Schmid Institute of Materials Science, Ming-Tzer Lin, National Chung Hsing University, Taiwan	New Horizons in Coatings and Thin Films Room San Diego - Session F2-2 HiPIMS, Pulsed Plasmas and Energetic Deposition Moderators: Tiberiu Minea, Université Paris-Sud, Jon Tomas Gudmundsson, University of Iceland
1:30pm	E2-2-1 Controlling the Chemomechanical Effects in Sapphire by Ion-implantation, Steve Bull , A Yadav, Newcastle University, UK	F2-2-1 Effect of Bias Voltage during Deposition by Deep Oscillation Magnetron Sputtering of AlN Films for Acoustic Biosensors, <i>L Melo-Máximo</i> , ITESM-CEM, Mexico; <i>J Lin</i> , Southwest Research Institute, USA; AbrilErendira Murillo , O Salas, J Oliva-Ramírez, J Oseguera, B Garcia-Farrera, ITESM-CEM, Mexico; <i>D Melo-Máximo</i> , Tecnológico de Monterrey-Campus Estado de México, Mexico
1:50pm	E2-2-2 Magnetron Sputtering of Refractory Metal Thin Films on NiTi Shape Memory Alloy Sheets, Fabian Seifried , Karlsruhe Institute of Technology (KIT), Germany; <i>H Riedl</i> , Technische Universität Wien, Austria; <i>S Baumgaertner, H Leiste, R Schwaiger, S Ulrich, H Seifert</i> , Karlsruhe Institute of Technology (KIT), Germany; <i>P Mayrhofer</i> , Technische Universität Wien, Austria; <i>M Stüber</i> , Karlsruhe Institute of Technology (KIT), Germany	F2-2-2 Modification of Niobium Surface Properties by High-temperature Nitrogen Plasma based Ion Implantation Aiming Aerospace Applications, Rogério Oliveira , O Aguiar, National Institute for Space Research - INPE, Brazil; <i>A Oliveira</i> , Federal University of São Paulo, Brazil; <i>L Hoshida</i> , Plasma Laboratory, Brazil; <i>M Araujo, M Silva, C Mello, E Ferreira</i> , National Institute for Space Research - INPE, Brazil; <i>V Liccardo</i> , Aeronautical Institute of Technology, Brazil
2:10pm	INVITED: E2-2-3 Quantitative <i>In Situ</i> SEM MEMS High Cycle Fatigue: the Critical Role of Oxygen on the Nanoscale-Void-Driven Nucleation and Propagation of Small Cracks in Ni Microbeams, <i>A Barrios Santos, S Gupta</i> , Georgia Institute of Technology, USA; <i>G Castelluccio</i> , Cranfield University, UK; Olivier Pierron , Georgia Institute of Technology, USA	F2-2-3 High-Power Impulse Magnetron Sputtering Coatings for Extreme Environments, Frédéric Schuster , CEA, France; <i>A Ferrec</i> , Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, France; <i>J Wang</i> , Nanyang Technological University, Singapore; <i>M Ougier</i> , CEA, France; <i>A Quenardel</i> , Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, France; <i>M Sall, M Schlegel, F Lomello, A Michau, H Maskrot, F Balbaud</i> , CEA, France
2:30pm	Invited talk continues.	F2-2-4 Reactive High-power Impulse Magnetron Sputtering of Al-O-N Films with Tunable Composition and Properties, Jaroslav Vlček , A Belosludtsev, J Houska, R Čerstvý, S Haviar, University of West Bohemia, Czech Republic
2:50pm	E2-2-5 Role of Microstructure on the Interface Stability of Copper Thin Films on Brittle Substrates, Alice Lassnig , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>V Terziyska</i> , Montanuniversität Leoben, Austria; <i>C Gammer</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>D Kiener, C Mitterer</i> , Montanuniversität Leoben, Austria; <i>M Cordill</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria	F2-2-5 Fabrication of Ti BC N Coatings using a Superimposed HiPIMS and MF Deposition System, Yu-Wen Su , J Lee, Ming Chi University of Technology, Taiwan
3:10pm	E2-2-6 Mechanical Reliability of Barrier Films for Flexible Electronics, Kyungjin Kim , H Luo, T Zhu, S Graham, O Pierron, Georgia Institute of Technology, USA	F2-2-6 Effect of Peak Current on the Ti-Cu Thin Film Deposition by High Power Impulse Magnetron Sputter Deposition, Ying-Chai Chen , Y Lin, National Changhua University of Education, Taiwan; <i>W Wu</i> , Da-Yeh University, Taiwan
3:30pm	E2-2-7 Molecularly Grafted, Structurally Integrated Multifunctional Polymer Thin Films with Improved Adhesion, <i>A Lassnig</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>P Smith</i> , Carnegie Mellon University, USA; <i>M Cordill</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; B.Reeja Jayan , Carnegie Mellon University, USA	F2-2-7 Deposition of Ag-Cu Thin Film on Flexible Substrate using High Power Impulse Magnetron Sputtering, Yu-Hsuan Hsu , W Wu, Da-Yeh University, Taiwan
3:50pm	E2-2-8 Thin-film Adhesion Characterization by Colored Picosecond Acoustics, Arnaud Devos , IEMN UMR CNRS 8520 / MENAPIC, France; <i>P Emery</i> , MENAPIC, 41 Bd Vauban, France	F2-2-8 Preparation of Anatase TiO ₂ Thin Films by Reactive HiPIMS, <i>F Cemin</i> , Université Paris-Sud, France; <i>J Keraudy</i> , Linköping University, Sweden; <i>T Minea</i> , Université Paris-Sud, France; Daniel Lundin , Université Paris-Sud/CNRS, France
4:10pm	E2-2-9 Imaging Thin Film Adhesion with Picosecond Ultrasonics, Allaoua Abbas , X Tridon, J Michelin, Neta, France	INVITED: F2-2-9 Vapor Phase Nanoparticle Synthesis, Guiding and Self-assembly, Ulf Helmersson , Linköping University, Sweden
4:30pm	E2-2-10 Mechanical Property Evaluation of Zr-Ti- Fe Thin Film Metallic Glasses, Yi-Jie Liao , Ming Chi University of Technology, Taiwan; <i>D Tseng, T Wu, M Lin</i> , National Chung Hsing University, Taiwan; <i>J Lee</i> , Ming Chi University of Technology, Taiwan	Invited talk continues.
4:50pm	E2-2-11 Mechanical Properties Measurement of Submicron Ti-Ni Shape Memory Alloys Thin Films, <i>T Wu</i> , Ming-Tzer Lin , National Chung Hsing University, Taiwan; <i>T Chen</i> , Chaoyang University of Technology, Taiwan; <i>T Lin</i> , National Chung Hsing University, Taiwan	

Monday Afternoon, April 23, 2018

<p>Surface Engineering - Applied Research and Industrial Applications Room Sunset - 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, Mirjam Arndt, OC Oerlikon Balzers AG, Liechtenstein</p>		<p>Topical Symposia Room Sunrise - Session TS4 Materials Modeling and Simulation Moderators: Thomas Mussenbrock, BTU Cottbus, David Holec, Montanuniversität Leoben, Austria</p>
1:30pm	<p>INVITED: G3-1 On the Synergies Between Coating and Tool Material Substrate: A Strategy to Optimize Coated Tools Performance in Cold Forming, <i>D Casellas</i>, Fundació CTM Centre Tecnològic, Spain; <i>A Mueller</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>Giselle Ramirez, M Vilaseca</i>, Fundació CTM Centre Tecnològic, Spain</p>	<p>INVITED: TS4-1 From the Atomic Interaction to Thermodynamic and Mechanical Properties of Materials, <i>Ralf Drautz</i>, Ruhr-Universität Bochum, Germany</p>
1:50pm	Invited talk continues.	Invited talk continues.
2:10pm	<p>G3-3 Deposition of ta-C Coating by Arc Ion Plating for Machining of Al Alloys, <i>Yoshiyuki Isomura, T Takahashi, S Kujime</i>, Kobe Steel, Ltd., Japan</p>	<p>TS4-3 Molecular Dynamics Study of Titanium Oxynitride Surface Properties, <i>Tobias Gergs, J Trieschmann</i>, Ruhr University Bochum, Germany; <i>T Mussenbrock</i>, BTU Cottbus, Germany</p>
2:30pm	<p>G3-4 Laser Structured High Performance PVD Coatings for Injection Molds, <i>K Bobzin, T Brögelmann, N Kruppe, Mona Naderi</i>, Surface Engineering Institute - RWTH Aachen University, Germany</p>	<p>TS4-4 Distribution of O Atoms on Partially Oxidized Metal Surfaces According to Ab-initio Calculations, and the Consequences for Sputtering of Individual Metal Oxides, <i>Jiri Houska, T Kozak</i>, University of West Bohemia, Czech Republic</p>
2:50pm	<p>G3-5 Effect of Layer Sequence on Wear Behavior of AlTiSiN Hard Coatings, <i>Joern Kohlscheen, C Bareiss</i>, Kennametal GmbH, Germany; <i>C Charlton, D Banerjee</i>, Kennametal Inc., USA</p>	<p>TS4-5 First-principles Study of Adsorption and Diffusion of Oxygen on the Surface of TiN, ZrN, HfN and the Effect of Al on Oxidation Resistance of TiN Coatings, <i>Fangyu Guo</i>, Central South University, China</p>
3:10pm	<p>G3-6 Structural, Mechanical, and Cutting Properties of AlCrN Coatings Deposited by Arc Ion Plating, <i>N Ohba, T Takahashi, Susumu Kujime</i>, Kobe Steel, Ltd., Japan</p>	<p>TS4-6 Metastable Phase Formation of Pt-X (X= Ir, Au) Thin Films, <i>Aparna Saksena, Y Chien, K Chang, P Kuemmerl, M Hans</i>, RWTH Aachen University, Germany; <i>B Völker</i>, Max-Planck-Institut für Eisenforschung GmbH, Austria; <i>J Schneider</i>, RWTH Aachen University, Germany</p>
3:30pm	<p>G3-7 Physical Properties and Cutting Performances Relation to Coating Conditions of AlCrN Coating Deposited by HIPIMS and Cathodic Arc, <i>Keizo Tanaka, S Imamura, M Setoyama, H Fukui</i>, Sumitomo Electric Hardmetal Corp., Japan</p>	<p>INVITED: TS4-7 From Plasmas Towards Surfaces: How Plasma Simulation Supports Materials Development, <i>Mark J. Kushner</i>, University of Michigan, USA</p>
3:50pm		Invited talk continues.
4:10pm		<p>TS4-9 Numerical Estimation of Intrinsic Stress in Physical Vapor Deposited Thin-Films, <i>Anurag Chakraborty, R Anderson, J Ash</i>, South Dakota School of Mines and Technology, USA; <i>F Kustas</i>, Arbegast Materials Processing and Joining Laboratory (AMP), USA; <i>S Ahrenkiel</i>, South Dakota School of Mines and Technology, USA</p>
4:30pm		<p>TS4-10 Modeling of UHMWPE Surface Texture for Reducing Wear on a Knee Prosthesis, <i>Tomas De la Mora Ramirez</i>, Universidad Autónoma Metropolitana, Mexico; <i>I Hilerio Cruz</i>, Universidad Autónoma Metropolitana-Azcapotzalco, Mexico; <i>M Doñu Ruiz</i>, Universidad Politécnica del Valle de Mexico, Mexico; <i>N Lopez Perrusquia</i>, Universidad Politécnica Del Valle De Mexico, Mexico; <i>E García Bustos</i>, Universidad de Guadalajara, CUCEI, Mexico, México; <i>D Maldonado Onofre</i>, Tecnológico de Estudios Superiores de Jocotitlán, Mexico</p>
4:50pm	<p>INVITED: G3-11 Nanoscale Multilayer PVD Coatings to Serve in Demanding Environments, <i>Papken Hovsepian, A Ehasarian</i>, Sheffield Hallam University, UK</p>	<p>TS4-11 Perturbation Analysis Of Glassy Alloy Film Formation, <i>Rahul Basu</i>, Adarsha Insitute of Technology, VTU, India</p>
5:10pm	Invited talk continues.	<p>TS4-12 First Principles Study of the Nb-Al Intermetallic System, <i>David Holec</i>, Montanuniversität Leoben, Austria; <i>N Koutna</i>, TU Wien, Institute of Materials Science and Technology, Austria; <i>K Preininger, S Zoehrer, R Franz</i>, Montanuniversität Leoben, Austria</p>

Monday Afternoon, April 23, 2018

<p>Topical Symposia Room Royal Palm 1-3 - Session TS5 Anti- and De-icing Surface Engineering Moderators: Alina Agüero Bruna, Instituto Nacional de Técnica Aeroespacial (INTA), Jolanta Klemberg-Sapieha, Polytechnique Montréal</p>	
1:30pm	<p>TS5-1 Multi-step Modification of Ti-Alloy and Stainless Steel Surfaces for Icephobic Applications, Stephen Brown, <i>J Lengaigne, A Riera, L Martinu, J Klemberg-Sapieha</i>, Polytechnique Montreal, Canada</p>
1:50pm	<p>TS5-2 Design and Characterization of Super-low Ice Adhesion Surfaces, Zhiliang Zhang, Norwegian University of Science and Technology (NTNU), Norway</p>
2:10pm	<p>TS5-3 Icephobic Nanocomposites for Aeronautics, <i>F Martín, Silvia Larumbe, M Monteserin, G García Fuentes</i>, Asociación de Industria Navarra, Spain; <i>J Mora Nogues, P García Gallego, A Agüero Bruna, R Atienza</i>, INTA, Spain</p>
2:30pm	<p>TS5-4 Development of Hydrophobic/icephobic Poly (Dimethylsiloxane) Based Composite Coating for Application in Ice Protection, Junpeng Liu, J Wang, University of Nottingham, UK; <i>H Memon</i>, University of nottingham, UK; <i>T Barman, B Turnbull, K Choi, X Hou</i>, University of Nottingham, UK</p>
2:50pm	<p>TS5-5 Correlation Between Room Temperature Characteristics and Ice Adhesion, Jianying He, Norwegian University of Science and Technology (NTNU), Norway</p>
3:10pm	<p>TS5-6 Impact Dynamics and Icing Behavior of Supercooled Water Microdroplets on Surfaces of Different Wettabilities Ranging from Superhydrophilic to Superhydrophobic, Jacques Lengaigne, Polytechnique Montreal, Canada; <i>E Bousser</i>, Polytechnique Montreal, UK; <i>A Riera</i>, Polytechnique Montreal, Canada; <i>D Batory</i>, Lodz University of Technology, Poland; <i>S Brown</i>, Polytechnique Montreal, Canada; <i>A Dolatabadi</i>, Concordia University, Canada; <i>L Martinu, J Klemberg-Sapieha</i>, Polytechnique Montreal, Canada</p>
3:30pm	<p>TS5-7 Quasicrystalline Coatings by HVOF to Improve the Ice Accretion and Durability in Aerostructures Components, <i>R Muelas Gamo, Julio Mora Nogues, P García Gallego, A Agüero Bruna</i>, Instituto Nacional de Técnica Aeroespacial (INTA), Spain</p>

Monday Afternoon, April 23, 2018

Special Interest Talk
Room San Diego - Session SIT
Special Interest Talk

5:45pm **SIT-1** Tracing the Recorded History of Thin-Film Sputter Deposition: from the 1800s to 2018, *Joe Greene*, University of Illinois at Urbana-Champaign, USA

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/TBA
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 24, 2018

Hard Coatings and Vapor Deposition Technologies Room California - Session B2-1 CVD Coatings and Technologies Moderators: Michel Pons, University Grenoble Alpes, SIMAP, CNRS, Makoto Kambara, The University of Tokyo		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-1 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Qi Yang, National Research Council of Canada, Jyh-Ming Ting, National Cheng Kung University	
8:00am	B2-1-1 Microstructure Investigation on CVD Ti _{1-x} Al _x N Hard Coatings, Ren Qiu, O Bäcke, M Hassine, M Halvarsson , Chalmers University of Technology, Sweden; D Stiens, T Manns, J Kümmel, V Janssen , Walter AG, Germany	INVITED: B1-1-1 Boon and Bane of Internal Interfaces and Microstructure Defects, David Rafaja , TU Bergakademie Freiberg, Germany	
8:20am	B2-1-2 Elaboration and Characterization of (Ti,Al)N Coatings Deposited by Thermal CVD for Protection in Severe In-service Conditions, Florent Uny, S Achache, S Lamri, G Raine , Nogent International Center for CVD Innovation, LRC CEA-ICD LASMIS UMR6281, UTT, Antenne de Nogent, France; Z Dong , Nanyang Technological University, Singapore; M Pons, E Blanquet , Université Grenoble Alpes, CNRS, Grenoble INP, SIMaP, France; F Schuster , Commissariat à l'Energie Atomique et aux énergies alternatives (CEA) Saclay - Nogent International Center for CVD Innovation, France; F Sanchette , Nogent International Center for CVD Innovation, LRC CEA-ICD LASMIS UMR6281, UTT, Antenne de Nogent, France	Invited talk continues.	
8:40am	INVITED: B2-1-3 Investigation of CVD-AlTiN Films with High Al Content, Kenichi Sato, S Tatsuoaka, K Yanagisawa, T Ishigaki, K Yamaguchi , Mitsubishi Materials Corporation, Japan	B1-1-3 The Material (in) Dependency of Impurity Affected Thin Film Growth, F Coughnon, D Altangerel, R Dedoncker, Diederik Depla , Ghent University, Belgium	
9:00am	Invited talk continues.	B1-1-4 Stress in Sputtered Metal Thin Films: Dependence on Growth Rate and Pressure, T Kaub , University of Alabama, USA; Z Rao , Brown University, USA; G Thompson , University of Alabama, USA; Eric Chason , Brown University, USA	
9:20am	B2-1-5 Microstructural Investigation of CVD Titanium Aluminium Nitride – Kappa Alumina Coatings, Olof Bäcke, M Halvarsson, H Petersson , Chalmers University of Technology, Sweden; D Stiens, T Manns, J Kümmel , Walter AG, Germany	B1-1-5 Improved Ionization Fraction and Film Quality Using a Serpentine Linear Magnetron and a Modified HiPIMS Waveform, Ian Haehnlein, B Wu, J Schelkanov , University of Illinois at Urbana-Champaign, USA; J McLain , Starfire Industries LLC, USA; D Patel , University of Illinois at Urbana-Champaign, USA; B Jurczyk , Starfire Industries LLC, USA; D Ruzic , University of Illinois at Urbana-Champaign, USA	
9:40am	B2-1-6 Deep Electron Microscopy Investigation of Ti _{1-x} Al _x N/TiCN Multilayer CVD Coatings, Mohamed Ben Hassine, O Bäcke , Chalmers University of Technology, Sweden; D Stiens, T Manns, J Kümmel, W Janssen , Walter AG, Germany; M Halvarsson , Chalmers University of Technology, Sweden	B1-1-6 Microstructural, Mechanical and Erosion Properties of Cylindrical Magnetrons Sputter Deposited TiSiCN, TiAlVN and TiAlVSICN Coatings on Inner Surface of Cylinder, Ronghua Wei, E Langa, J Lin , Southwest Research Institute, USA; W Zhao, L Li , Beijing Sanju Enviro. Protect. & New Matls., China	
10:00am	B2-1-7 Some Guidelines for the Determination of Texture Coefficients in CVD α -Al ₂ O ₃ Coatings, Rafael Stylianou, M Tkadletz , Montanuniversität Leoben, Austria; M Penoy , CERATIZIT Luxembourg S.à r.l., Luxembourg; C Czetti , CERATIZIT Austria GmbH, Austria; C Mitterer , Montanuniversität Leoben, Austria	B1-1-7 Template Effect on Texture Evolution of VN Thin Films Deposited by Unbalanced Magnetron Sputtering, Po-Chi Su, J Huang, G Yu , National Tsing Hua University, Taiwan	
10:20am	B2-1-8 Hot Filament CVD Diamond and HIPIMS-Diamond Coating Technology on Cemented Carbide Substrates for Cutting Tool Applications, Michael Woda, W Puetz, M Frank, S Bolz, W Koelker, O Lemmer, T Leyendecker , CemeCon AG, Germany	B1-1-8 <i>IN SITU</i> High Resolution Stress Measurement Coupled with Interrupted Deposition in Case of Völmer-Weber Thin Film Growth, Quentin Herault, S Grachev, J Wang, I Gozhyk , Saint-Gobain Recherche, France; R Lazzari , Université Pierre et Marie Curie, France	
10:40am		B1-1-9 High-Frequency Properties of Soft Ferromagnetic Films on Cemented Carbide Substrates an Approach for Sensor Applications, Stefan Beirle, K Seemann, H Leiste, S Ulrich , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany	

Tuesday Morning, April 24, 2018

Room Royal Palm 1-3		
8:00am	INVITED: D2-1 Magnetic Abrasive Finishing of Additively Manufactured Components for Biomedical Applications, <i>Hitomi Yamaguchi</i> , University of Florida, USA	Coatings for Biomedical and Healthcare Applications Session D2 Bio-corrosion, Bio-tribology, and Bio-tribocorrosion Moderators: Anna Igual Munoz , Universitat Politècnica de València UPV, Steve Bull , Newcastle University, Nuria Espallargas , Norwegian University of Science and Technology (NTNU)
8:20am	Invited talk continues.	
8:40am	D2-3 Investigating Some New Coatings to Improve the Modular Junction of Total Hip Prostheses, <i>S Ehsani-Majd</i> , Mines Saint-Etienne, France; <i>V Fridrici</i> , Ecole centrale de Lyon, LTDS, France; <i>C Desrayaud</i> , Mines Saint-Etienne, France; <i>P Kapsa</i> , Ecole centrale de Lyon, LTDS, France; <i>A Boyer</i> , Jean Geringer , Mines Saint-Etienne, France	
9:00am	D2-4 Tribological Coatings on Titanium Alloy (Ti6Al4V) for Orthopedic Applications., <i>Kai-yuan Cheng</i> , University of Illinois at Chicago, USA; <i>N Pagan</i> , Auburn High School, USA; <i>M McNallan</i> , University of Illinois at Chicago, USA; <i>D Bijukumar</i> , <i>M Mathew</i> , University of Illinois College of Medicine, USA	
9:20am	INVITED: D3-5 Osteochondral Tissue Regeneration into Porous PCL Scaffolds With and Without Chitosan Coatings of 98% or 80% Degree of Deacetylation, <i>Caroline Hoemann</i> , George Mason University, USA; <i>J Guzmán-Morales</i> , <i>G Chen</i> , <i>J Rodriguez-Gonzales</i> , <i>E Jalali Dil</i> , <i>B Favis</i> , Ecole Polytechnique de Montreal, Canada; <i>J Henderson</i> , McGill University, Canada	Coatings for Biomedical and Healthcare Applications Session D3 Medical Devices, Biosensors, and Biodegradation Moderators: Jessica Jennings , University of Memphis, USA, Robin Pourzal , Rush University Medical Center
9:40am	Invited talk continues.	
10:00am	D3-7 Vancomycin-Phosphatidylcholine Spray Coatings for Delivery of Antimicrobials from Implants, <i>Rukhsana Awais</i> , <i>B Barr</i> , <i>R Gopalakrishnan</i> , <i>J Jennings</i> , University of Memphis, USA	

Tuesday Morning, April 24, 2018

	Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E1-1 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro , University of Coimbra, Carsten Gachot , Vienna University of Technology, Nazlim Bagcivan , Schaeffler Technologies GmbH & Co. KG, Germany	New Horizons in Coatings and Thin Films Room San Diego - Session F2-3 HiPIMS, Pulsed Plasmas and Energetic Deposition Moderators: Tiberiu Minea , Université Paris-Sud, Jon Tomas Gudmundsson , University of Iceland
8:00am	E1-1-1 Tribologically Induced Oxidation of High-purity Copper as a Function of Sliding Distance, <i>C Greiner, S Becker, Christian Haug</i> , Karlsruhe Institute of Technology (KIT), Germany	F2-3-1 Ultra-thick CrN/AlN Superlattice Coatings Deposited by a Combination of Plasma Enhanced Magnetron Sputtering and High Power Impulse Magnetron Sputtering, <i>Jianliang Lin, R Wei</i> , Southwest Research Institute, USA
8:20am	E1-1-2 Investigation on the Reason for Low Friction between Diamond-like Carbon Coating and Ti-6Al-4V under Fretting Conditions, <i>Haohao Ding, V Fridrici, P Kapsa</i> , Ecole centrale de Lyon, LTDS, France	F2-3-2 Deposition of DLC Coatings by HIPIMS to Arc Mixed Mode, <i>Holger Gerdes, R Bandorf, J Rösler, M Vergöhl, G Braeuer</i> , Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany
8:40am	E1-1-3 Tribological and Wettability Evaluation of Magnetron Sputtered WS-C/F Coatings, <i>Simone Pereira Rodrigues</i> , University of Coimbra, Portugal; <i>S Carvalho</i> , University of Minho, Portugal; <i>A Cavaleiro</i> , University of Coimbra, Portugal	F2-3-3 Performance Improvements of Tungsten and Zinc Doped Indium Oxide Thin Film Transistor by Fluorine Based Mixing Plasma Treatment with a High-K Gate Dielectric, <i>Yu-Chuan Chiu, P Liu, D Ruan, M Yu, K Gan, T Chien, Y Chen, P Kuo, S Sze</i> , National Chiao Tung University, Taiwan
9:00am	E1-1-4 Tribological Properties and Oxidation Resistance of WN _x Thin Films at High Temperatures up to 500°C, <i>Daniel Javdošňák, J Musil, Z Soukup, R Čerstvý, S Haviar, J Houska</i> , University of West Bohemia, Czech Republic	F2-3-4 Effect Of Craters Formation On Deep Hardening Under Pulsed Electron Beam Treatment, <i>Thierry Grosdidier</i> , LABoratoied'ExcellenceDesign des Alliages Métalliques pour Allègement de Structures (Labex DAMAS), France; <i>Y Samih</i> , Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux (LEM3), France; <i>C Dong</i> , Key Laboratory of Materials Modification, Dalian University of Technology, China
9:20am	E1-1-5 Correlation between Evolution of Roughness Parameters and Micropitting of Carburized Steel Surfaces under Boundary Lubrication Condition, <i>Sougata Roy, D White, S Sundararajan</i> , Iowa State University, USA	F2-3-5 Mechanical Property Evaluation of ZrCN Films Deposited by a Hybrid Superimposed High Power Impulse- Middle Frequency Sputtering System, <i>Q Tang, Y Wu</i> , National Taipei University of Technology, Taiwan; <i>Jyh-Wei Lee</i> , Ming Chi University of Technology, Taiwan
9:40am	E1-1-6 The Influence of Temperature on the Wear Mechanisms of a Cobalt-based Alloy Contact Subjected to Fretting: from an Abrasive Tribo-oxydation Process to the Glaze Layer Response, <i>Alixé Dreano, S Fouvry, G Guillonneau</i> , LTDS - Ecole Centrale de Lyon, France	
10:00am	INVITED: E1-1-7 Coated Surface Wear Resistance Design by Computational Modelling, <i>Kenneth Holmberg, A Laukkanen, T Hakala</i> , VTT Technical Research Centre of Finland Ltd, Finland	
10:20am	Invited talk continues.	
10:40am	E1-1-9 Room and Elevated Temperature Sliding Wear Behavior and Mechanisms of a Cold Sprayed Ni-WC Composite Coating, <i>Tyler Torgerson, M Harris</i> , University of North Texas, USA; <i>S Alidokht</i> , McGill University, Canada; <i>T Scharf, S Aouadi</i> , University of North Texas, USA; <i>R Chromik</i> , McGill University, Canada; <i>J Zabinski</i> , Army Research Laboratory, USA; <i>A Voevodin</i> , University of North Texas, USA	

Tuesday Morning, April 24, 2018

Topical Symposia Room Sunrise - Session TS3 Coating of Synthetic Materials – Engineering for the Future Moderators: Klaus Böbel, Bosch GmbH, Fred Fietzke, Fraunhofer FEP		Surface Engineering - Applied Research and Industrial Applications Room Sunset - Session G2 Component Coatings for Automotive, Aerospace, Medical, and Manufacturing Applications Moderators: Osman Levent Eryilmaz, Argonne National Laboratory, USA, Jolanta Klemborg-Sapieha, Polytechnique Montréal	
8:00am	TS3-1 Development of PVD Coatings by R2R on Basis of Ti/AG, Ti/Zn on Textile Fabrics, Martin Fenker, H Kappl , FEM Forschungsinstitut Edelmetalle & Metallchemie, Germany	G2-1 The Effects of Temperature and Gas Mixture Composition on the Microstructure and Tribological Properties of the Plasma Nitrocarburized DIN 100 CR6 Steel, M Fontes , Federal University of Sao Carlos, Brazil; V Baggio-Scheid , Sao Jose dos Campos, Brazil; D Machado , Tecumseh Products Company, Brazil; L Casteletti , University of Sao Paulo, Brazil; Pedro Nascente , Federal University of Sao Carlos, Brazil	
8:20am	TS3-2 Coating of Plastic Components by Electron-beam Evaporation, Fred Fietzke, H Klostermann, J HeiB, Fraunhofer FEP , Germany	G2-2 Selected Aspects of Industrial Applications of Hydrogen Free DLC Coatings Deposited by CVAE, Joerg Vetter , Oerlikon Balzers Coating Germany GmbH, Germany; J Karner , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; J Becker, M Markus , Oerlikon Balzers Coating Germany GmbH, Germany; N Beganovic , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; E Billot , Oerlikon Balzers Coating Germany GmbH, Germany; H Rudigier , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Switzerland	
8:40am	INVITED: TS3-3 Aspects of Coatings on Plastic products for Decorative and automotive parts., Roel Tietema , IHI Hauzer Techno Coating BV, Netherlands; D Doerwald, C Trivedi, I Kolev, J Landsbergen , IHI Hauzer Techno Coating B.V., Netherlands	G2-3 Erosion Resistant PVD Coatings for Gas Turbine Compressor Blades, Lin Shang, C Acikgoz , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; S Moser, G Szyndelman , Oerlikon Metco AG, Switzerland; O Jarry , Oerlikon Balzers, Oerlikon Balzers Coating Germany GmbH, Germany; M Arndt , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein	
9:00am	Invited talk continues.	G2-4 Synthesis and Characterization of Ta-C, Hf-C and Ta-Hf-C Coatings Obtained by Cathodic Magnetron Sputtering in Reactive Conditions, Alexis de Monteynard , Nogent International Center for CVD Innovation, LRC CEA-ICD LASMIS UMR6281, UTT, Antenne de Nogent, France; A Billard , Institut FEMTO-ST, CNRS, UTBM, Univ. Bourgogne Franche-Comté, Site de Montbéliard, France; F Sanchette , Nogent International Center for CVD Innovation, LRC CEA-ICD LASMIS UMR6281, UTT, Antenne de Nogent, France	
9:20am	INVITED: TS3-5 Combined Impact and Sliding Testing for Evaluation of Surfaces on Different Materials, Claus Rebbholz , University of Cyprus, Cyprus	INVITED: G2-5 Thin and Thick Coatings and Applications in Aerospace Industry, Satish Dixit , Plasma Technology Inc., USA	
9:40am	Invited talk continues.	Invited talk continues.	
10:00am	TS3-7 Interfacial Stability of the Aluminium-Polyimide Interface Against Thermal Treatments, Barbara Putz , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; G Milassin, Y Butenko , European Space Research and Technology Centre, Netherlands; B Völker, C Gammer , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; C Semprimoschnig , European Space Research and Technology Centre, Netherlands; M Cordill , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Monanuniversität Leoben, Austria	G2-7 HNT-Containing Ceramic PEO Coatings for Active Corrosion Protection of Magnesium Alloys, B Mingo, Yue Guo, A Matthews, A Yerokhin , The University of Manchester, UK	

Tuesday Morning, April 24, 2018

Exhibitors Keynote Lecture
Room Grand Hall - Session EX
Exhibition Keynote Lecture

11:00am **INVITED: EX-1** Enabling Tomorrow's Transportation Mobility with Surface Technology, *Nazlim Bagcivan*, Schaeffler AG, Germany

11:20am Invited talk continues.

Tuesday Afternoon, April 24, 2018

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-2 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Qi Yang, National Research Council of Canada, Jyh-Ming Ting, National Cheng Kung University		Hard Coatings and Vapor Deposition Technologies Room California - Session B2-2 CVD Coatings and Technologies Moderators: Michel Pons, University Grenoble Alpes, SIMAP, CNRS, Makoto Kambara, The University of Tokyo	
1:30pm			
1:50pm		B2-2-2 Highly Efficient Light trapping by Fractal, MOCVD Processed CoO-based Surfaces on Polymers, <i>E Amin-Chalhoub, O Debieu, D Samelor, Thomas Duguet, C Vahlas</i> , CIRIMAT, CNRS - University of Toulouse, France	
2:10pm	B1-2-3 Impact Analysis of Power Source Operating Parameters on Hardness, Adhesion and Film Composition of TiN Functional Coatings, <i>K Ruda, W Gajewski, Jakub Świątnicki, A Oniszczyk</i> , TRUMPF Huettinger Sp. z o.o., Poland	B2-2-3 Deposition Kinetics, Gas Phase Analysis and Film Characterization of Silicon Carbide by Low Pressure Chemical Vapor Deposition using Vinyltrichlorosilane and Hydrogen, Anthony Desenfant , LCTS-University of Bordeaux, France; <i>G Laduye</i> , AIR LIQUIDE, Paris-Saclay Research & Development, France; <i>C Descamps</i> , Safran Ceramics, France; <i>G Vignoles, G Challon</i> , LCTS-University of Bordeaux, France	
2:30pm	B1-2-4 Substitution of Commercially Coated Tungsten Carbide Tools in Dry Cylindrical Turning Process by HiPIMS Coated Niobium Carbide Cutting Inserts, <i>E Uhlmann, Daniel Hinzmann, K Kropidowski</i> , Institute for Machine Tools and Factory Management - Technical University Berlin, Germany; <i>P Meier</i> , Institute for Machine Tools and Factory Management - Technical University Berlin; <i>L Prasol</i> , Institute for Machine Tools and Factory Management - Technical University Berlin, Germany; <i>M Woydt</i> , BAM Berlin, Germany	B2-2-4 Hydrothermal Corrosion Behaviors of CVD Silicon Carbides and Cr-based Alloy Coated CVI SiC _i /SiC Composites, Jung Ho Shin, D Kim, H Lee, J Park, J Park, W Kim , Korea Atomic Energy Research Institute, Republic of Korea	
2:50pm	INVITED: B1-2-5 Controlled Deposition of Alpha, Beta, and FCC Tantalum Thin Films by Magnetron Sputtering, Qiaoqin Yang, S Shiri , University of Saskatchewan, Canada	B2-2-5 Temperature Driven Microstructural Evolution of Nano-lamellar CVD fcc-Ti _{1-x} Al _x N, Michael Tkadletz, C Hofer , Montanuniversität Leoben, Austria; <i>C Wüstefeld</i> , Technische Universität Bergakademie Freiberg, Germany; <i>N Schalk</i> , Montanuniversität Leoben, Austria; <i>M Motylenko</i> , Technische Universität Bergakademie Freiberg, Germany; <i>D Rafaja</i> , Technische Universität Bergakademie Freiberg, Gustav-Zeuner-Straße 5, 09599 Freiberg, Germany; <i>C Giacobbe, C Dejoie</i> , ESRF, France; <i>H Holzschuh, W Bürgin</i> , SuCoTec AG, Switzerland; <i>B Sartory</i> , Materials Center Leoben Forschung GmbH (MCL), Austria; <i>C Mitterer</i> , Montanuniversität Leoben, Austria; <i>C Czettl</i> , CERATIZIT Austria GmbH, Austria	
3:10pm	Invited talk continues.	B2-2-6 Dense, Uniform, Transparent SiO ₂ /TiO ₂ Coatings Derived from a Single Precursor Source of Tetrabutyl Titanate Modified Perhydropolysilazane, Zongbo Zhang , Institute of Chemistry, Chinese Academy of Science, China; <i>D Wang</i> , University of Chinese Academy of Sciences, China; <i>Y Luo, C Xu</i> , Institute of Chemistry, Chinese Academy of Sciences, China	
3:30pm	B1-2-7 High Power Impulse Plasma Magnetron Sputtering: Review of Critical Parameters Ensuring Successful Industrialization, <i>W Gajewski, P Rózański, P Lesiuk, P Ozimek, AnnaWiktoria Oniszczyk</i> , TRUMPF Huettinger Sp. z o.o., Poland	B2-2-7 Emerging Photoluminescence in Chemical Vapor Deposition Grown MoSe ₂ /h-BN Van der Waals Heterostructure, Pramoda K. Nayak , Indian Institute of Technology Madras, India; <i>S Ahn, C Hyun, K Ma, H Shin</i> , Ulsan National Institute of Science and Technology (UNIST), Republic of Korea	
3:50pm	B1-2-8 Investigation of the Formation of Ni-Ti Intermetallic Layers Produced by Cathodic Arc Electron-metal Ion Treatment, Nagihan Sezgin, E Kacar, K Kazmanli, M Urgan , Istanbul Technical University, Turkey	B2-2-8 Innovative Concepts for Advanced CVD Carbide Coatings Grown by Direct Liquid Injection of Metalorganic Precursors, Francis Maury , CIRIMAT, CNRS - University of Toulouse, France; <i>A Michau</i> , CEA Saclay, France; <i>G Boisselier</i> , CIRIMAT, France; <i>F Schuster</i> , CEA Saclay, France	
4:10pm	B1-2-9 Exploring the High-temperature Stability of Nanocrystalline Cu-W Coatings, Yao Du , Northwestern University, USA; <i>L Li</i> , Northwestern Polytechnical University, China; <i>J Pureza</i> , Universidade do Estado de Santa Catarina, Brazil; <i>Y Chung</i> , Northwestern University, USA; <i>K Pradeep, S Sen, J Schneider</i> , RWTH Aachen University, Germany	B2-2-9 Computational Fluid Dynamics (CFD) Simulation of CVD Process for (Ti,Si) _x (C,N) _y Coating, Lianchang Qiu , Central South University, China; <i>S Wang</i> , Shijiazhuang Tiedao University, China; <i>Y Du, Z Zhong</i> , Central South University, China; <i>H Shi</i> , Ganzhou Achteck Tool Technology Co., Ltd., China; <i>L Albir</i> , Layyous Consulting Ltd., Israel	
4:30pm	B1-2-10 Governing the Wettability Properties of the Nanostructured Surfaces of Metallic Coatings Fabricated by Thermal Annealing, Feras Alzubi, A Alkandary , Kuwait Institute for Scientific Research, Kuwait	B2-2-10 Tribological Evaluation and Behavior of DLC Coatings on Steel in PE-CVD System with TiO ₂ Over Layer using ALD Technique, Marco A. Ramirez R. , Univap, Brazil; <i>E Saito</i> , Federal University of São Paulo, Brazil; <i>N Fukumasu</i> , University of São Paulo, Brazil	

Tuesday Afternoon, April 24, 2018

Fundamentals and Technology of Multifunctional Materials and Devices Room Sunrise - Session C1 Optical Metrology in Design, Optimization, and Production of Multifunctional Materials Moderators: Nikolas Podraza, University of Toledo, Juan Antonio Zapien, City University of Hong Kong		Coatings for Biomedical and Healthcare Applications Room Royal Palm 1-3 - Session D4 Biointerfaces: Improving the Cell Adhesion and Avoiding Bacteria Adhesion. What Kinds of Coatings Should be Used? Moderators: Marcela Bilek, The University of Sydney, Margaret Stack, University of Strathclyde, Vincent Fridrici, Ecole Centrale de Lyon - LTDS	
1:30pm			
1:50pm	C1-2 Design Principles for Binary and Multicomponent Conductive Nitrides for Applications in Electronics Plasmonics and Photonics, Panos Patsalas , Aristotle University of Thessaloniki, Greece; N Kalfagiannis , Nottingham Trent University, UK; S Kassavetis , Aristotle University of Thessaloniki, Greece; G Abadias , Université de Poitiers, France		
2:10pm	INVITED: C1-3 Tip Enhanced Optical Microscopy and Spectroscopy Based on Near Field Force Detection – a Review, H. Kumar Wickramasinghe , University of California, Irvine, USA	INVITED: D4-3 Titanium Oxide Coatings to Improve Cell Adhesion and Differentiation, V Garcia-Perez , A Almaguer-Flores , Universidad Nacional Autónoma de México, Mexico; R Olivares-Navarrete , Virginia Commonwealth University, USA; A Fonseca-Garcia , Sandra Rodil , Universidad Nacional Autónoma de México, Mexico	
2:30pm	Invited talk continues.	Invited talk continues.	
2:50pm	C1-5 Crystallite Grain Orientation Manipulation through Deposition Flux Angle and Composition in CdSe _{1-x} Te _x , Dipendra Adhikari , M Junda , C Grice , P Koirala , Y Yan , R Collins , N Podraza , University of Toledo, USA	D4-5 Antibacterial Thin Films with Controlled Antibiotics Release Based on Plasma Polymer, Vitezslav Stranek , J Kratochvil , D Kahoun , J Sterba , H Langansova , J Lieskovska , University of South Bohemia, Czech Republic; J Hanus , J Kousal , A Kuzminova , O Kylian , Charles University in Prague, Czech Republic	
3:10pm	C1-6 Durable Electrochromic Coating Systems for Advanced Smart Windows and Security Devices, F Blanchard , B Baloukas , S Loquai , J Klemberg-Sapieha , Ludvik Martinu , Polytechnique Montréal, Canada	D4-6 Development of a Microfluidic Based Multianalyte Biosensor Device for Medical Diagnostics, Emma MacHugh , Dublin Institute of Technology, Centre for Research in Engineering Surface Technology (CREST), Ireland; B Duffy , M Oubaha , Centre for Research in Engineering Surface Technology (CREST), Ireland	
3:30pm	C1-7 From “n” and “k” to Solar Cell Functionality: The Importance of Optical Property Characterization, Nikolas Podraza , M Junda , I Subedi , K Ghimire , University of Toledo, USA	D4-7 Bactericidal Activity and Cytotoxicity of a Zinc Doped PEO Titanium Coating, Luciane Santos , Pontificia Universidade Católica do Paraná, Brazil; K Popat , Colorado State University, USA; P Soares , Pontificia Universidade Católica do Paraná, Brazil	
3:50pm	C1-8 Bipolar Resistive Switching Performance of MoS ₂ Based ReRAM Devices using WN as Bottom Electrode for Non-volatile Memory Application, Ravi Prakash , S Sharma , D Kaur , Indian Institute of Technology Roorkee, India	D4-8 Antibacterial Effects of Titanium Embedded with Silver Nanoparticles Based on Electron-Transfer-Induced Reactive Oxygen Species, Guomin Wang , W Jin , A Qasim , A Gao , X Peng , W Li , H Feng , P Chu , City University of Hong Kong, Hong Kong	
4:10pm		D4-9 Tribocorrosion and Cytotoxicity of FeB-Fe ₂ B Layers on AISI 316 L Steel, I Campos-Silva , Instituto Politecnico Nacional, Surface Engineering Group, Mexico; M Palomar-Pardavé , Universidad Autonoma Metropolitana-A, Mexico; R Perez Pasten-Borja , Instituto Politecnico Nacional, ENCB Zacatenco, Mexico; O Kahvecioglu , Argonne National Laboratory, USA; D Bravo-Bárceñas , Universidad Autonoma Metropolitana-A, Mexico; C López-García , Rodolfo Yael Reyes-Helguera , Instituto Politecnico Nacional, Surface Engineering Group, Mexico	
4:30pm		D4-10 Optical Spectroscopic study for Atmospheric Pressure Plasma by Radio Frequency Power, Chuan Li , National Yang Ming University, Taiwan; J Hsieh , Ming Chi University of Technology, Taiwan; C Yu , National Yang Ming University, Taiwan	

Tuesday Afternoon, April 24, 2018

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E1-2 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro, University of Coimbra, Carsten Gachot, Vienna University of Technology, Nazlim Bagcivan, Schaeffler Technologies GmbH & Co. KG, Germany		New Horizons in Coatings and Thin Films Room San Diego - Session F1 Nanomaterials and Nanofabrication Moderators: Ulf Helmersson, Linköping University, Vitezslav Stranak, University of South Bohemia	
1:30pm			
1:50pm		F1-2 Kinetic Engineering of Crystal Phases in Core-shell Nanowires: Heteroepitaxial Radial Growth of Wurtzite and Zinblende Structured AlSb Shells on InAs Nanowires, <i>Hanna Kindlund, R Zamani, A Persson, S Lehmann, R Wallenberg, K Dick</i>, Lund University, Sweden	
2:10pm	E1-2-3 Physical Mechanisms for Nanoscale Friction of a-C:H/D Thin Films, <i>F Echeverrigaray, S de Mello</i>, UCS, Brazil; <i>F Alvarez, UNICAMP</i>, Brazil; <i>A Michels, Carlos Figueroa</i>, UCS, Brazil	F1-3 Understanding the Friction of Sub-nanometer Thick Ionic Liquids (ILs), <i>A Lertola, Lei Li</i>, University of Pittsburgh, USA	
2:30pm	E1-2-4 Relocation Profilometry of Micro-tribology Experiments of Uncoated and DLC Coated Steel, <i>M Gee, J Nunn, L Crocker</i>, National Physical Laboratory, UK; <i>K Holmberg</i>, VTT Technical Research Centre of Finland Ltd, Finland; <i>L Li</i>, City University of Hong Kong, Hong Kong; <i>G Stachowiak</i>, Curtin University, Australia; <i>C Gachot</i>, Vienna University of Technology, Austria; <i>Tony Fry</i>, National Physical Laboratory, UK	F1-4 Facile Synthesis of MoSe₂ Nanoplates on Black Phosphorus Nanosheets for Enhanced Hydrogen Evolution Reaction Performance, <i>Wan Li</i>, City University of Hong Kong, Hong Kong; <i>D Liu, J Wang</i>, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China; <i>M Huang</i>, City University of Hong Kong, Hong Kong; <i>N Yang</i>, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China; <i>L Liu</i>, Peking University Shenzhen Graduate School, China; <i>X Peng, G Wang</i>, City University of Hong Kong, Hong Kong; <i>X Yu</i>, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China; <i>P Chu</i>, City University of Hong Kong, Hong Kong	
2:50pm	E1-2-5 Microstructural Design of Self-lubricating Laser Claddings for use in High Temperature Sliding Applications, <i>Carsten Gachot</i>, TU Wien, Austria; <i>M Rodriguez Ripoll, H Torres</i>, AC²T Research GmbH, Austria; <i>B Prakash</i>, Lulea University of Technology, Sweden	F1-5 Synthesis and Magnetic Properties of Mn_xZn_yFe_{3-x-y}O₄ Nanoparticles Prepared using a Co-precipitation Method, <i>Kuan-Wei Chen, J Ting</i>, National Cheng Kung University, Taiwan	
3:10pm	E1-2-6 Fretting Wear Behavior of Duplex PEO-Chameleon Coating on an Al Alloy, <i>Andrey A. Voevodin</i>, University of North Texas, USA; <i>Y Liu</i>, University of Leeds, UK; <i>A Yerokhin</i>, University of Manchester, UK; <i>A Korenyi-Both</i>, Tribologix, Inc., USA; <i>M Lin</i>, University of Manchester, UK; <i>J Zabinski</i>, Army Research Laboratory, USA; <i>A Matthews</i>, University of Manchester, UK; <i>T Liskiewicz</i>, University of Leeds, UK	F1-6 Effects of Nano Particles on the Thermal Stability and Scratch Resistances of Epoxy Coatings, <i>Mourad Boumaza, K Rawaiz</i>, King Saud University, Saudi Arabia	
3:30pm	INVITED: E1-2-7 Lubricant/Coating Interactions and Their Effect on Tribological Performance: In-situ XAS Analysis of a Dynamic Lubricated Interface, <i>Ardian Morina</i>, University of Leeds, UK	F1-7 Corrosion Study of Silane-functionalized Graphene Oxide Coatings on Copper, <i>Mohsin Ali Raza, Z Rehman, F Ghauri</i>, University of the Punjab, Lahore, Pakistan	
3:50pm	Invited talk continues.	F1-8 Growth of MnO₂ on Carbon Materials for Electrochemical Capacitor, <i>Chia-Jung Tu, M Wu</i>, National Changhua University of Education, Taiwan; <i>W Wu</i>, Da-Yeh University, Taiwan	
4:10pm	E1-2-9 Friction and Wear Mechanism of MoS₂/C Composite Coatings under Atmospheric Environment, <i>Peiling Ke, S Cai, A Wang</i>, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	F1-9 Fabrication of a CMOS Compatible Ferroelectric Tunnel Junction Memory, <i>Fabian Ambriz-Vargas</i>, Énergie, Matériaux et Télécommunications, Canada; <i>G Kolhatkar</i>, Institut National De La Recherche Scientifique, Canada; <i>R Nouar, A Sarkissian</i>, PLASMIONIQUE Inc, Canada; <i>M Gauthier, A Ruediger</i>, Institut National De La Recherche Scientifique, Canada	
4:30pm	E1-2-10 Adhesion and Mechanical Properties of Ti Films Deposited by DC Magnetron Sputtering, <i>RobertoCarlos Vega-Morón, G Rodriguez-Castro</i>, Instituto Politecnico Nacional, Surface Engineering Group, Mexico; <i>D Melo-Máximo</i>, Tecnológico de Monterrey-Campus Estado de México, Mexico; <i>J Méndez-Méndez</i>, Instituto Politécnico Nacional, Mexico; <i>L Melo-Máximo</i>, Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico; <i>J Oseguera</i>, Tecnológico de Monterrey-Campus Estado de México, Mexico	F1-10 Polyacrylonitrile Nanofibers Prepared via Electrospinning for High-efficiency PM2.5 Capture Application, <i>Kuan-Nien (G.N.) Chen</i>, Unaffiliated; <i>J Ting</i>, National Cheng Kung University, Taiwan	
4:50pm	INVITED: E1-2-11 Tribology of New Surface Modifications for Cold Rolling Mill Rolls, <i>Henara Costa</i>, Universidade Federal do Rio Grande, Brazil; <i>J Gonçalves Jr., J de Mello</i>, Universidade Federal de Uberlandia, Brazil		
5:10pm	Invited talk continues.		

Tuesday Afternoon, April 24, 2018

<p>Surface Engineering - Applied Research and Industrial Applications Room Sunset - Session G6 Application-driven Cooperation Between industry and Research Institutions Moderators: Tobias Brögelmann, Surface Engineering Institute - RWTH Aachen University, Joern Kohlscheen, Kennametal GmbH, S.P. Kumar Yalamanchili, Oerlikon Balzers, Oerlikon Surface Solutions AG</p>		
1:30pm		
1:50pm	<p>G6-2 Performance Evaluation of Precious Metal Coatings in Precision Glass Molding, Marcel Friedrichs, <i>A Saksena</i>, <i>M Hans</i>, RWTH Aachen University, Germany; <i>O Dambon</i>, Fraunhofer Institute for Production Technology IPT, Germany; <i>J Schneider</i>, <i>F Klocke</i>, RWTH Aachen University, Germany</p>	
2:10pm	<p>G6-3 Plasma-dependent Phase Formation of TiAlN Coatings, Anders Eriksson, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>M Hans</i>, <i>S Mráz</i>, <i>J Schneider</i>, RWTH Aachen University, Germany; <i>M Arndt</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein</p>	
2:30pm	<p>G6-4 Reactive HiPIMS Deposition of Ti-Al-N: How to Adjust the Cubic to Wurtzite Transition, Helmut Riedl, <i>L Zauner</i>, <i>P Ertelthaler</i>, CDL-AOS at TU Wien, Austria; <i>T Wojcik</i>, TU Wien, Institute of Materials Science and Technology, Austria; <i>H Bolvardi</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>S Kolozsvári</i>, Plansee Composite Materials GmbH, Germany; <i>P Mayrhofer</i>, TU Wien, Institute of Materials Science and Technology, Austria</p>	
2:50pm	<p>G6-5 AlTiN Coatings deposited by HIPIMS: A Study of Mechanical Properties, Tribological and Wear Performance during Machining of Superduplex Stainless Steel, <i>J Paiva</i>, Edinei Locks, <i>Y Seid Ahmed</i>, <i>P Stolf</i>, <i>J Dosbaeva</i>, McMaster University, Canada; <i>C Bork</i>, IFSul - Federal Institute Sul-riograndense, Brazil; <i>G Fox-Rabinovich</i>, <i>S Veldhuis</i>, McMaster University, Canada</p>	
3:10pm	<p>G6-6 FunMat-II – an Industry-Academia Competence Center for Research on Coating Materials for Advanced Applications, Lina Rogström, <i>M Odén</i>, <i>I Abrikosov</i>, <i>G Greczynski</i>, <i>P Eklund</i>, <i>E Björk</i>, Linköping University, IFM, Sweden</p>	
3:30pm	<p>G6-7 Oxygen Diffusion Pathways in High Temperature Oxidation Resistant Ti-Al-N/Mo-Si-B Multilayer Coatings, Elias Aschauer, CDL-AOS at TU Wien, Austria; <i>P Felfer</i>, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; <i>M Arndt</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P Polcik</i>, Plansee Composite Materials GmbH, Germany; <i>H Riedl</i>, CDL-AOS at TU Wien, Austria; <i>P Mayrhofer</i>, Institute of Materials Science and Technology, TU Wien, Austria</p>	
3:50pm	<p>G6-8 Novel ta-C Coatings with Outstanding Tunable Properties Deposited by Industrially Scaled PLD, Martin Hess, Fritz Stepper GmbH & Co. KG, Germany; <i>S Weißmantel</i>, <i>R Bertram</i>, Hochschule Mittweida, Germany</p>	
4:10pm	<p>INVITED: G6-9 Application-driven Cooperation Between Industry and Research Institutions: Success Factors, Obstacles and Success Stories, Oliver Lemmer, <i>W Koelker</i>, CemeCon AG, Germany</p>	
4:30pm	Invited talk continues.	

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/TBA
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 25, 2018

Coatings for Use at High Temperatures Room Royal Palm 1-3 - Session A2 Thermal and Environmental Barrier Coatings Moderators: Kang Lee, NASA Glenn Research Center, USA, Lars-Gunnar Johansson, Chalmers University of Technology, Sweden, Pantcho Stoyanov, Pratt & Whitney, USA		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-3 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Qi Yang, National Research Council of Canada, Jyh-Ming Ting, National Cheng Kung University	
8:00am	INVITED: A2-1 Corrosion Degradation of High Temperature Coatings: Similarities and Differences for Marine and Aero-Turbine Applications, Daniel Mumm , University of California, Irvine, USA		
8:20am	Invited talk continues.		B1-3-2 High Quality Oxide Films Deposited at Room Temperature by Ion Beam Sputtering, Gerard Henein , National Institute of Standards and Technology, USA; J Topolancik , Roche Sequencing Solutions, USA
8:40am	A2-3 Evolution of Microstructures and Interfaces in Doped, Layered, and Composite Coatings Exposed to Sand Laden Flows in a Gas Turbine Engine, Andy Nieto , M Walock , A Ghoshal , M Murugan , US Army Research Laboratory, USA; D Zhu , NASA Glenn Research Center, USA; W Gamble , J Swab , B Barnett , M Pepi , US Army Research Laboratory, USA; R Pegg , C Rowe , US Navy Naval Air Systems Command, USA		INVITED: B1-3-3 van der Waals Oxide Heteroepitaxy, Ying-Hao Chu , National Chiao Tung University, Taiwan
9:00am	A2-4 The Effect of HVOF Bond Coating with APS Flash Coating on TBC Performance, Michael Lance , J Haynes , B Pint , Oak Ridge National Laboratory, USA		Invited talk continues.
9:20am	A2-5 Influence of Process Conditions and Ceramic Doping on the Performances of Advanced TBCs Based on Al Slurry, Germain Boissonnet , B Grégoire , J Balamain , G Bonnet , F Pedraza , University of La Rochelle, France		B1-3-5 Color Controllable TiO _x N _y Coatings Deposited by Magnetron Sputtering, Tun-Yi Chang , J Ting , National Cheng Kung University, Taiwan
9:40am	A2-6 Synthesis and Characterization of Combined Oxides and Ni Superalloy Coatings by Cathodic Arc Evaporation for Bond Coat Application, X Maeder , J Ast , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; M Döbeli , ETH Zurich, Switzerland; K von Allmen , A Neels , A Dommann , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; H Rudigier , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Switzerland; B Widrig , Jürgen Ramm , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein		B1-3-6 SiO ₂ /Sc _{0.31} Al _{0.69} N/LiNbO ₃ Multilayer Structure for SAW Device Applications, Chun-Ting Shen , National Cheng Kung University, Taiwan; S Wu , Tung-Fang Design University, Taiwan; J Huang , National Cheng Kung University, Taiwan
10:00am	A2-7 Steam Oxidation Behavior of Yb ₂ Si ₂ O ₇ -Based Environmental Barrier Coatings, Kang Lee , NASA Glenn Research Center, USA		B1-3-7 Self-lubricant CrO-Ag Coatings for Machining Tools, Filipe Fernandes , University of Minho, Portugal; A Cavaleiro , University of Coimbra, Portugal
10:20am	A2-8 The Fatigue Behavior of TiCrAlTaSiN Coated and Uncoated Titanium Alloys, B Lerch , Dongming Zhu , S Kalluri , NASA Glenn Research Center, USA		
10:40am	A2-9 Crack Propagation Behavior of Thermal Barrier Coatings with Cyclic Thermal Fatigue Tests, Dowon Song , T Song , Hanyang University, Republic of Korea; H Park , Y Jung , Changwon National University, Republic of Korea; J Zhang , Indiana University Purdue University Indianapolis, USA		

Wednesday Morning, April 25, 2018

	Hard Coatings and Vapor Deposition Technologies Room California - 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 Sunrise - Session C3 Thin Films for Energy-related Applications Moderator: Per Eklund, Linköpings Universitet
8:00am	B6-1 Ab Initio Inspired Design of Ternary Boride Thin Films, <i>Vincent Moraes, D Holec</i> , CDL-AOS at TU Wien, Austria; <i>H Bolvardi</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P Polcik</i> , Plansee Composite Materials GmbH, Germany; <i>H Riedl, P Mayrhofer</i> , CDL-AOS at TU Wien, Austria	C3-1 Synthesis and Optical Characterization of Cds Thin Film Obtained by Colloidal Technique, <i>Laura Reyes, C Villa, R Villa, B Valdez, D Mateos, M Curiel, S Romero</i> , Instituto de Ingeniería, Universidad Autónoma de Baja California, Mexico
8:20am	B6-2 Enthalpy/Entropy-driven Segregation of Solute Elements of Cu Alloy Films to Self-form < 2 nm Unitary V to Quinary V-Nb-Mo-Ta-W Diffusion Barrier Layers, <i>Yu-Ting Hsiao, S Chang</i> , National Tsing Hua University, Taiwan	C3-2 Electrochemical Characteristics of Ni _x N Thin Films Deposited by DC and HiPIMS Reactive Magnetron Sputtering, <i>J Keraudy, L Athouel, J Hamon</i> , IMN - Nantes, France; <i>B Girault, D Gloaguen</i> , GeM - Saint-Nazaire, France; <i>M Richard-Plouet</i> , IMN - Nantes, France; <i>Pierre-Yves Jouan</i> , Université de Nantes, CNRS, France
8:40am	B6-3 Mechanical Properties of V _{0.5} Mo _{0.5} N _{1-x} O _x Thin Films, <i>Daniel Edström, D Sangiovanni, L Landälv, L Hultman</i> , Linköpings Universitet, Sweden; <i>I Petrov, J Greene</i> , University of Illinois, USA; <i>P Eklund, V Chirita</i> , Linköpings Universitet, Sweden	C3-3 Photovoltaic Properties of Cu ₂ O-based Heterojunction Solar Cells using n-type Oxide Thin Films Prepared by Magnetron Sputtering System with Loading Chamber, <i>K Watanabe, H Tokunaga, Toshihiro Miyata, T Minami</i> , Kanazawa Institute of Technology, Japan
9:00am	B6-4 Hard Transparent Coatings in the Al-Si-O-N System, <i>Maria Fischer, M Trant, K Thorwarth</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>J Patscheider</i> , Ruebsteinstrasse 25, 8706 Meilen, Switzerland; <i>D Scopece, C Pignedoli, D Passerone, H Hug</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	C3-4 Synthesis of Tungsten Bronze by a Solution-based Chemical Route and the Near-Infrared Shielding Properties of Tungsten Bronze Thin Films, <i>Pin-Jhen Wu</i> , National Cheng Kung University, Taiwan; <i>H Lu</i> , National Chin-Yi University of Technology, Taiwan; <i>S Brahma, J Huang</i> , National Cheng Kung University, Taiwan
9:20am	INVITED: B6-5 Exploitation of Surface Modification and Architecture Control for Multi-Functional Coatings via Nano-Composite, Multilayer, Hybrid Organic/Inorganic and Bio-Inspired Approach, <i>J Lee, H Chen, J Lee, P Chen, Jenq-Gong Duh</i> , National Tsing Hua University, Taiwan	C3-5 ZnO Nano-structures Growth and Investigation, <i>Alexander Axelevitch, I Lapsker</i> , Holon Institute of Technology (HIT), Israel
9:40am	Invited talk continues.	C3-6 Nitrogen Doping of ZnO Films by Decomposition of NO Gas using Heated Ir Wire in Catalytic Reaction-assisted CVD, <i>Y Adachi, S Ono, A Kato</i> , Nagaoka University of Technology, Japan; <i>A Hashim</i> , MJIT, Universiti Teknologi Malaysia, Malaysia; <i>Kanji Yasui</i> , Nagaoka University of Technology, Japan
10:00am	B6-7 The Effect of Hybrid PVD Process on the Mechanical and Antistatic Properties of TiO ₂ Based Nanocomposite Thin Film, <i>Ding-Shiang Wang, M Leu, T Chen, H Lai, J Chang, J Shih</i> , Industrial Technology Research Institute, Taiwan	C3-7 Morphology-Controlled Growth of ZnO Nanorods by Chemical Bath Deposition and Seed Layer Dependence on Their Structural and Optical Properties, <i>Tomoaki Terasako, S Obara, S Sakaya, M Tanaka, R Fukuoka</i> , Ehime University, Japan; <i>M Yagi</i> , National Institute of Technology, Kagawa College, Japan; <i>J Nomoto, T Yamamoto</i> , Kochi University of Technology, Japan
10:20am	B6-8 Optical, Electrical and Structural Characteristics of Mg-doped CuCrO ₂ Transparent Conductive Thin Films, <i>Ruei-Sung Yu, C Chu</i> , Asia University, Taiwan	C3-8 Piezoelectric Coefficient and Morphology Investigation of the Wurtzite Ga-doped MgZnO Thin Films via RF Magnetron Sputtering, <i>Ping-Han Lee, C Liu, J Huang</i> , National Cheng Kung University, Taiwan
10:40am	B6-9 Brittle Film-induced Cracking of Ductile Substrates, <i>Xiaolu Pang</i> , University of Science and Technology Beijing, China	INVITED: C3-9 Growth of Al _{1-x} Sc _x N Thin Films for Pyroelectric and Piezoelectric Applications, <i>Agnė Žukauskaitė, Y Lu</i> , Fraunhofer Institute for Applied Solid State Physics IAF, Germany; <i>N Kurz</i> , IMTEK, University of Freiburg, Germany; <i>M Reusch, A Ding, L Kirste, V Lebedev, V Cimalla</i> , Fraunhofer Institute for Applied Solid State Physics IAF, Germany
11:00am	B6-10 Ultra-high Vacuum dc Magnetron Sputter-deposition and Microstructural Characterization of Zr and ZrC _x Thin Films, <i>Hicham Zaid, K Tanaka, J Fankhauser, A Aleman</i> , UCLA, USA; <i>M Mato</i> , Nagoya University, Japan; <i>D Yu, A Ebnonnasir, C Li</i> , UCLA, USA; <i>M Kobashi</i> , Nagoya University, Japan; <i>M Goorsky, S Kodambaka</i> , UCLA, USA	Invited talk continues.
11:20am		C3-11 A Simple Non-toxic Simultaneous Selenization/Sulfurization Process for the Cu(In,Ga)(S,Se) ₂ Thin Film Solar Cells, <i>H Wei, Yuan-Chun Liang, Y Lin</i> , National Changhua University of Education, Taiwan
11:40am		C3-12 Thin Films for Transparent Thermoelectric Modules, <i>F Correia, J Ribeiro, P Salvador</i> , University of Minho, Portugal; <i>A Mendes</i> , University of Porto, Portugal; <i>Carlos Tavares</i> , University of Minho, Portugal
12:00pm		C3-13 Efficiency Enhancement in Dye Sensitized Solar Cells using Silver Ion Embedded TiO ₂ Photoanodes, <i>Navdeep Kaur, A Mahajan</i> , Guru Nanak Dev University, Amritsar, India; <i>F Singh</i> , Inter University Accelerator Center, India; <i>S Kumar, D Singh</i> , Guru Nanak Dev University, Amritsar, India

Wednesday Morning, April 25, 2018

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E1-3 Friction, Wear, Lubrication Effects, and Modeling Moderators: Albano Cavaleiro , University of Coimbra, Carsten Gachot , Vienna University of Technology, Nazlim Bagcivan , Schaeffler Technologies GmbH & Co. KG, Germany		New Horizons in Coatings and Thin Films Room San Diego - Session F4-1 Functional Oxide and Oxynitride Coatings Moderators: Jörg Patscheider , Evatec AG, Anders Eriksson , Oerlikon Balzers, Oerlikon Surface Solutions AG, Marcus Hans , RWTH Aachen University	
8:00am	E1-3-1 A Study on the Tribological Behavior of the AISI 316L Steel Exposed to Boriding to Reduce its Friction Coefficient and Enhance its Wear Resistance, Enrique Hernández-Sánchez , Instituto politécnico Nacional-UPIBI, Mexico; J Velazquez , Instituto Politécnico Nacional-ESIQIE, Mexico; A Chino-Ulloa , Instituto politécnico Nacional-UPIBI, Mexico; I Torres-Avila , Instituto Politecnico Nacional-UPIBI, Mexico; J Castrejón-Flores , Instituto politécnico Nacional-UPIBI, Mexico; H Herrera-Hernández , Universidad Autónoma del Estado de Mexico, Mexico	INVITED: F4-1-1 Self-healing Thermal Barrier Coating System for Prolonged Lifetime, Willem Sloof , Delft University of Technology, Netherlands	
8:20am	E1-3-2 Immersion Time-affected Tribocorrosion Behavior of Cr/GLC Multilayer Coating in Artificial Seawater, Lei Li , L Liu , P Ke , A Wang , Chinese Academy of Sciences, China	Invited talk continues.	
8:40am	E1-3-3 A Comparison of the Galling Wear Behaviour of PVD Cr and Electroplated Hard Cr Thin Films, Jaimie Daure , P Shipway , G McCartney , The University of Nottingham, UK	F4-1-3 TiO ₂ Thin Films Deposited onto PET by High Power Impulse Magnetron Sputtering for Photocatalytic Degradation of Carbendazim, R Marcelino , Universidade Federal de Minas Gerais, UFMG, Brazil; M Ratova , B Delfour-Peyrethon , Manchester Metropolitan University, UK; C Amorim , Universidade Federal de Minas Gerais, UFMG, Brazil; Peter Kelly , Manchester Metropolitan University, UK	
9:00am	E1-3-4 Microstructural Evolution of Cold-sprayed Copper Coating during Reciprocating Sliding Wear, Yinyin Zhang , McGill University, Canada; C Greiner , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; D Chern , R Chromik , McGill University, Canada	F4-1-4 Thermal Stability of Structure and Enhanced Properties of Zr-Ta-O Films with Low and High Ta Content, Petr Zeman , S Suzjakova , J Vlček , J Rezek , R Čerstvý , J Houska , S Haviar , University of West Bohemia, Czech Republic	
9:20am	E1-3-5 Scratch Adhesion Resistance of Nickel Boride Layers on Inconel 718 Superalloy, I Campos-Silva , Alan Contla-Pacheco , A Ruiz-Rios , J Martinez-Trinidad , G Rodríguez-Castro , A Meneses-Amador , W Wong-Angel , Instituto Politecnico Nacional, Surface Engineering Group, Mexico	F4-1-5 Electrophysical Properties of Nanoparticle-Added PEO Coatings on Aluminium, Noratiqah Yaakop , B Mingo , L Qiang , Z Wang , A Yerokhin , A Matthews , University of Manchester, UK	
9:40am	E1-3-6 Comparison of Surface Treatments for Adhesive Force Measurements Between Magnetron Sputtered TiW Thin Films and Alumina Substrates, B Atabay , Elif Apaydin , Aselsan Inc., Turkey	F4-1-6 Titania Films Deposited by Constant Current High Power Impulse Magnetron Sputtering, Arutiun P. Ehasarian , D Loch , Sheffield Hallam University, UK; A Heisig , J Neidhardt , Von Ardenne Anlagen Technik, Germany	
10:00am	E1-3-7 Influence Of Microstructure on Wear of Boroaluminized-Hot-Work Tool Steels, Undrakh Mishigdorzhijn , N Ulakhanov , East Siberia State University of Technology and Management, Russian Federation; Y Chen , H Liang , Texas A&M University, USA	F4-1-7 Study on Silicon Carbide Based Metal Oxide Semiconductor Capacitor with Magnetron Sputtered ZrO ₂ High-k Gate Dielectric, S Mourya , J Jaiswal , G Mallik , B Kumar , Ramesh Chandra , Indian Institute Of Technology Roorkee, India	
10:20am		F4-1-8 On the Importance of the Energy of Negative Ions in Achieving Uniform and High-quality Magnetron Sputtered AZO Films, Fanping Meng , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
10:40am			
11:00am			
11:20am		INVITED: F4-1-11 Combinatorial Thin Film Materials Science: Limitations and Opportunities for Combining Experiments and DFT Based Theory, Jochen M. Schneider , RWTH Aachen University, Germany	
11:40am		Invited talk continues.	

Wednesday Morning, April 25, 2018

Surface Engineering - Applied Research and Industrial Applications Room Sunset - Session G1 Advances in Industrial PVD, CVD, and PCVD Processes and Equipment Moderators: Emmanuelle Göthelid, Sandvik Machining Solutions, Ladislav Bardos, Uppsala University, Sweden		
8:00am	G1-1 Enhanced PVD Process Control by Online Substrate Temperature Measurement, <i>K Bobzin, T Brögelmann, Nathan Kruppe</i> , RWTH Aachen University, Germany	
8:20am	G1-2 A Compact, Symmetrical and Efficient Filtered Cathodic Arc Source that uses Permanent Magnets, <i>Paul Sathrum</i> , Fluxion Inc., USA	
8:40am	G1-3 HiPIMS Meets Diamond, <i>T Leyendecker, O Lemmer, W Kölker, Christoph Schiffers</i> , CemeCon AG, Germany	
9:00am	G1-4 Functional DLC by HiPIMS and Pulsed DC-magnetron Sputtering in an Industrial Coating System, <i>I Fernandez Martinez, A Wennberg</i> , Nano4energy, Spain; <i>F Papa</i> , Gencoa, Ltd, USA, Spain; <i>J Santiago</i> , Nano4energy, Spain; <i>N Dams</i> , PVT GmbH, Germany; <i>Herbert Gabriel</i> , PVT Plasma und Vakuum technik GmbH, Germany	
9:20am	INVITED: G1-5 Microwave Assisted PVD and PECVD Systems for Carbon-Based Nano Composites, <i>Sven Ulrich, C Poltorak, M Rinke, H Leiste, M Stüber</i> , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany	
9:40am	Invited talk continues.	
10:00am	G1-7 Correlation Between Plasma Nitriding of Several Steels and Active Nitrogen Concentration Correlated through Optical Emission Spectroscopy and Atomic Nitrogen Partial Pressure, <i>F Papa</i> , Gencoa, Spain; <i>Joaquin Oseguera</i> , TRAMES S.A. de C.V., Mexico	
10:20am	G1-8 CVD Technology & Machinery – Tribological Applications and High Temperature Potential, <i>Hristo Strakov, V Papageorgiou, M Auger</i> , IHI Ionbond AG, Switzerland	
10:40am	G1-9 Vacuum Barrel Coating: An Opportunity to Performance Increase for Various Small Parts, <i>Heidrun Klostermann, B Kraetzschmar, F Fietzke</i> , Fraunhofer FEP, Germany	
11:00am	G1-10 Scaling Up Graphene-like Carbon Film: Insights into the Deposition Process in a Roll-to-roll rf Plasma CVD System, <i>Majed Alrefae, A Kumar, D Zemlyanov</i> , Purdue University, USA; <i>T Fisher</i> , UCLA, USA	
11:20am	G1-11 TAOS Based Cu/TiW/IGZO/Al ₂ O ₃ /Pt Bilayer CBRAM for Low-power Display Technology, <i>Kai-Jih Gan, P Liu, W Chang, D Ruan, T Chien, Y Chiu, S Sze</i> , National Chiao Tung University, Taiwan	

Wednesday Afternoon, April 25, 2018

Coatings for Use at High Temperatures Room Royal Palm 1-3 - Session A3 Materials and Coatings for Solar Power Concentration Plants Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Gustavo García-Martín, REP-Energy Solutions		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-4 PVD Coatings and Technologies Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Qi Yang, National Research Council of Canada, Jyh-Ming Ting, National Cheng Kung University	
1:30pm			
1:50pm			
2:10pm		B1-4-3 Particles in PVD-Coatings: Imperfection or Functional Add-on Feature?, Uwe Beck, J Baier, M Sahre, M Weise, G Hidde , BAM Berlin, Germany	
2:30pm	A3-4 Corrosion Impact Of Alkali Carbonate At 750°C On Nickel Base, Stainless Steel And Alumina Forming Ferritic Steels, Christine Geers , Chalmers University of Technology, Sweden	B1-4-4 Gradient Coating for NIF Double Shell Targets, Hongwei Xu , General Atomics, USA	
2:50pm	INVITED: A3-5 Challenges of New Materials and Coatings for Solar Receivers and Reflectors in Concentrated Solar Power Plants, Florian Sutter , German Aerospace Center (DLR), Spain; Y Binyamin , Brightsource Industries, Israel; A Agüero Bruna , Instituto Nacional de Técnica Aeroespacial (INTA), Spain; C Hildebrandt , Fraunhofer ISE, Germany; D Fähsing , DECHEMA Forschungsinstitut, Germany; A Morales, A Fernandez-García , CIEMAT, Spain; F Pérez-Trujillo , Universidad Complutense de Madrid, Spain	B1-4-5 Growth Morphology and Piezoelectric Properties of AlN Thin Films Deposited by Reactive DC Magnetron Sputtering, Mathis Trant, M Fischer, K Thorwarth, H Hug , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
3:10pm	Invited talk continues.	B1-4-6 Plasma Generation and Coating Composition from Ti-C, Ti-Al, and Ti-W Cathodes used in DC Vacuum Arc, Igor Zhirkov , Linköping University, Sweden; P Polcik, S Kolozsvári , Plansee Composite Materials GmbH, Germany; J Rosen , Linköping University, Sweden	
3:30pm	A3-7 Corrosion Testing of Diffusion-coated Steel in Molten Salt for Concentrated Solar Power Plants, Diana Fähsing, T Meissner, M Galetz , DECHEMA-Forschungsinstitut, Germany	B1-4-7 Improved Adhesion Strength of the Gradient Zn-Mg Coating on TRIP Steel, MyeonKyu Song, J La, H Kim, S Lee , Korea Aerospace University, Republic of Korea	
3:50pm	A3-8 High Temperature Molten Salt Corrosion Behavior of Aluminide and Nickel-aluminide Coatings for Heat Storage in Concentrated Solar Power Plants, Pauline Audigié, S Rodríguez, M Gutiérrez , Instituto Nacional de Técnica Aeroespacial (INTA), Spain; V Encinas-Sánchez, F Pérez-Trujillo , Complutense University of Madrid, Spain; A Agüero Bruna , Instituto Nacional de Técnica Aeroespacial (INTA), Spain		
4:10pm	A3-9 High-Temperature Coatings for Protection of Steels in Contact with a Novel Molten Salt under Static and Flow-Accelerated Conditions for CSP Technology, V Encinas-Sánchez, M Lasanta, M de Miguel, G García-Martín, Francisco Javier Pérez-Trujillo , Complutense University of Madrid, Spain		

Wednesday Afternoon, April 25, 2018

Hard Coatings and Vapor Deposition Technologies Room California - Session B3 Deposition Technologies and Applications for Diamond-like Coatings Moderators: Frank Papa, Gencoa, Konrad Fadenberger, Robert Bosch GmbH		Fundamentals and Technology of Multifunctional Materials and Devices Room Sunrise - Session C4 Energetic Materials and Microstructures for Nanomanufacturing Moderators: Karsten Woll, Karlsruhe Institute of Technology (KIT), Ibrahim Emre Gunduz, Purdue University, USA	
1:30pm	INVITED: B3-1 Tribology of Diamondlike Carbons in Various Application Environments, <i>Gary Doll</i> , University of Akron, USA		
1:50pm	Invited talk continues.		
2:10pm	B3-3 Synthesis and Comparison of Highly Tetrahedral Amorphous Carbon by Arc-mixed HiPIMS and Arc-free HiPIMS Modes, <i>H Hug, Rajesh Ganesan, K Thorwarth</i> , EMPA Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>M Tucker, N Marks</i> , Curtin University, Australia; <i>M Stüber, S Ulrich</i> , Karlsruhe Institute of Technology (KIT), Germany; <i>D McKenzie, M Bilek</i> , The University of Sydney, Australia; <i>S Guimond, M Arndt</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein	C4-3 High Surface Area Silicon Quantum Dots for Energetic Materials, <i>Philip M. Guerieri, N Piekiet, S Adams, M Ervin, C Morris</i> , U.S. Army Research Laboratory, USA	
2:30pm	B3-4 Evaluation of Superhard ta-C Coatings for the Machining of Synthetic Materials, <i>Frank Kaulfuss</i> , Fraunhofer Institute for Material and Beam Technology (IWS), Germany; <i>D Hoesel</i> , Fraunhofer Institute for Machine Tools and Forming Technology (IWU), Germany; <i>V Weihnacht, A Leson</i> , Fraunhofer Institute for Material and Beam Technology (IWS), Germany	C4-4 Investigating Transport Processes in Multilayer Films, <i>David Adams, M Abere, C Sobczak</i> , Sandia National Laboratories, USA	
2:50pm	B3-5 Selection of DLC Coatings for Application in Wrist-watch Mechanisms, <i>Steve Franklin</i> , Steve Franklin Consultancy, Netherlands	C4-5 Analytical Modelling of Propagation Velocity in Non-stoichiometric and Impact Compressed Nanolaminates, <i>Michael Abere, D Adams</i> , Sandia National Laboratories, USA	
3:10pm	B3-6 The Role of HIPIMS and Discharges with a Positive Voltage Reversal on Coating Properties in Industrial Applications such as Hard Coatings and DLC, <i>Ivan Fernandez, A Wennberg, F Papa</i> , Nano4energy SI, Spain; <i>G Eichenhofer</i> , HIP-V, Germany	C4-6 On the Fly Mixing and 3D Printing of Al/CuO Thermite for Controlling Reactivity, <i>Alexandra Golobic, M Durban</i> , Lawrence Livermore National Laboratory, USA; <i>E Duoss</i> , Lawrence Livermore National Laboratory, USA; <i>A Gash, K Sullivan</i> , Lawrence Livermore National Laboratory, USA	
3:30pm	INVITED: B3-7 Towards New Horizon for DLC Coating Technology for Automotive Components, <i>Tetsuya Takahashi</i> , Kobe Steel, Ltd., Japan	C4-7 Tin-based Composites Combined with Reduced Graphene Oxide via a Simple Chemical Treatment as Anode Material for Rechargeable Lithium Ion Batteries, <i>Yi-Zhu Wu</i> , National Cheng Kung University, Taiwan; <i>C Chang</i> , National University of Tainan, Taiwan; <i>S Brahma, J Huang</i> , National Cheng Kung University, Taiwan	
3:50pm	Invited talk continues.	C4-8 Additive Manufacturing of a Composite Solid Propellant with High Solids Loadings, <i>Monique McClain, I Gunduz, S Son</i> , Purdue University, USA	
4:10pm	B3-9 DC/Pulsed Cathodic Arc Discharge for Deposition of ta-C Coatings, <i>Xiubo Tian, P Wan, H Liu, C Gong</i> , State Key Laboratory of Advanced Welding and Joining, Harbin Institute of Technology, China	C4-9 Manufacturing and Characterization of Nanocomposite WC-based Powders, <i>Abdulsalam Alhazza, L Al-Hajji, S El-Eskandarani, A Al-Rowayyeh</i> , Kuwait Institute for Scientific Research, Kuwait	
4:30pm	B3-10 A General Engineering Applicable Superlubricity: Hydrogenated Amorphous Carbon Film Containing Nano Diamond Particles, <i>Junyan Zhang, Z Cao</i> , State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	INVITED: C4-10 Ternary Reactive Ru/Al/X Multilayers - The Effect of Stacking Sequence on Ignition, Propagation and Microstructure Evolution, <i>Christoph Pauly</i> , Saarland University, Germany; <i>K Woll</i> , Karlsruhe Institute of Technology (KIT), Germany; <i>I Gallina</i> , Saarland University, Germany; <i>M Stüber</i> , Karlsruhe Institute of Technology (KIT), Germany; <i>F Mücklich</i> , Saarland University, Germany	
4:50pm		Invited talk continues.	

Wednesday Afternoon, April 25, 2018

	<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room Royal Palm 4-6 - Session E3 Tribology of Coatings for Automotive and Aerospace Applications Moderators: Sebastien Guimond, Oerlikon Balzers, Oerlikon Surface Solutions AG, Nicolas Argibay, Sandia National Laboratories, Christian Greiner, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM)</p>	<p>New Horizons in Coatings and Thin Films Room San Diego - Session F4-2 Functional Oxide and Oxynitride Coatings Moderators: Jörg Patscheider, Evatec AG, Anders Eriksson, Oerlikon Balzers, Oerlikon Surface Solutions AG, Marcus Hans, RWTH Aachen University</p>
1:30pm		
1:50pm		<p>F4-2-2 On the Thermal Stability of Cathodic Arc Evaporated (Al_{1-x}Cr_x)₂O₃ Thin Films, Valentin Dalbauer, CDL-AOS at TU Wien, Austria; J Ramm, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; S Kolozsvári, Plansee Composite Materials GmbH, Germany; C Koller, CDL-AOS at TU Wien, Austria; P Mayrhofer, Institute of Materials Science and Technology, TU Wien, Austria</p>
2:10pm	<p>E3-3 Cladding Tribology T400 on Steel Substrates using a High Power Nd:YAG Laser, Wei Ya, B Pathiraj, D Matthews, University of Twente, Netherlands; M Bright, Tata Steel, Netherlands; S Melzer, Tata Steel Research & Development, Netherlands</p>	<p>F4-2-3 Phase Evolution of RF Magnetron Sputtered Cr-rich (Cr,Zr)₂O₃ Coatings Studied by <i>In-Situ</i> Synchrotron Experiments during Annealing in Air or Vacuum Conditions, 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; D Ostach, Zentrum für Material- und Küstenforschung GmbH, Germany; M Ahlgren, E Göthelid, Sandvik Coromant R&D, Sweden; B Alling, Linköping Univ., IFM, Theoretical Physics division and Zentrum für Material- und Küstenforschung GmbH, Sweden; L Hultman, Linköping Univ., IFM, Thin Film Physics Div., Sweden; M Stüber, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; J Birch, P Eklund, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>
2:30pm	<p>E3-4 Tribological Properties of HVOF-Sprayed WCCoCr Coatings for Applying to Sliding Rings of Mechanical Seals, Aleksander Iwaniak, Silesian University of Technology, Poland; G Wieclaw, Certech Sp. z o.o., Poland; L Norymberczyk, ANGA Sp. z o.o., Poland</p>	<p>F4-2-4 Thick HS-PVD γ-Al₂O₃ Coatings for Challenging Cutting and Die Casting Applications, K Bobzin, T Brögelmann, C Kalscheuer, Martin Welters, Surface Engineering Institute - RWTH Aachen University, Germany</p>
2:50pm	<p>E3-5 The Effects of Relative Humidity on Fretting Corrosion Behaviors of Silver-plated Electrical Contacts, Florent Pompanon, S Fouvry, LTDS, CNRS UMR 5513, Ecole Centrale de Lyon, Ecully, France; O Alquier, PSA, Vélizy – Villacoublay, France</p>	<p>F4-2-5 HiPIMS Deposition of Ta-O-N Coatings for Water Splitting Application, Jiří Čapek, Š Batková, J Houska, S Haviar, University of West Bohemia, Czech Republic; T Duchoň, Charles University, Czech Republic</p>
3:10pm	<p>E3-6 Evaluation of Solid Particle Erosion Resistant Coatings for Gas Turbine Engine Applications, Qi Yang, National Research Council of Canada, Canada</p>	<p>F4-2-6 Evolution of Microstructure and Mechanical Properties of Graded TiAlON Thin Films Investigated by Cross-sectional Characterization Techniques, Nina Schalk, M Tkadletz, V Terziyska, Montanuniversität Leoben, Austria; M Deluca, Materials Center Leoben Forschung GmbH, Austria; J Keckes, C Mitterer, Montanuniversität Leoben, Austria</p>
3:30pm	<p>E3-7 Influence of Sliding Induced Defects on the Frictional Properties of Molybdenum Disulfide (MoS₂) and Graphene, Zaixiu Yang, S Bhowmick, G Sun, University of Windsor, Canada; F Sen, Argonne National Laboratory, USA; A Alpas, University of Windsor, Canada</p>	<p>INVITED: F4-2-7 Hard Transition Metal Oxynitride Thin Films: From Synthesis to Applications, Filipe Vaz, J Borges, Minho University, Portugal</p>
3:50pm	<p>E3-8 Analysis of Tribo-mechanical Behavior of a Low Temperature Plasma Nitrided Austenitic 316L Stainless Steel, J Oseguera, ITESM-CEM, Mexico; R Meza, TEROMOINNOVA, Finland; Fernando Santiago, ITESM-CEM, Mexico</p>	<p>Invited talk continues.</p>
4:10pm	<p>INVITED: E3-9 Tribological Systems Solutions for Gas Turbine Engines, Pantcho Stoyanov, A Wusatowska-Sarnek, T Kasprow, Pratt & Whitney, USA</p>	
4:30pm	<p>Invited talk continues.</p>	
4:50pm	<p>E3-11 The Friction and Wear Performance of DLC Coatings Deposited on Plasma Nitrided AISI 4140 Steel by Magnetron Sputtering under Air and Vacuum Conditions, Halim Kovaci, Atatürk University, Turkey; O Baran, Erzincan University, Turkey; A Yetim, Erzurum Teknik University, Turkey; Y Bozkurt, L Kara, Erzincan University, Turkey; A Çelik, Atatürk University, Turkey</p>	

Wednesday Afternoon, April 25, 2018

<p>Surface Engineering - Applied Research and Industrial Applications Room Sunset - Session G5 Hybrid Coatings and Hybrid System Processes Moderators: Hana Barankova, Uppsala University, Sweden, Sang-Yul Lee, Korea Aerospace University</p>		
1:30pm		
1:50pm	<p>G5-2 Propagation of Electric Field Waves in a DC Magnetron Plasma, <i>Rachel Broughton, S Kirkpatrick, Rose-Hulman Institute of Technolgy, USA</i></p>	
2:10pm	<p>INVITED: G5-3 From Surface to Coating - Tools for Surface Engineering. <i>Frank Papa, Gencoa Ltd, USA, Spain; V Bellido-Gonzalez, Gencoa Ltd, UK; I Fernandez Martinez, Nano4energy SLNE, Spain; F Meyer, H Li, D Monaghan, T Sgrilli, Gencoa Ltd, UK</i></p>	
2:30pm	Invited talk continues.	
2:50pm	<p>G5-5 Nb – Doped TiO₂ Deposited by Hybrid HIPIMS – CVD Process, <i>Justyna Kulczyk-Malecka, Manchester Metropolitan University, UK; D Donaghy, University of Liverpool, UK; B Delfour-Peyrethon, Manchester Metropolitan University, UK; P Chalker, J Bradley, University of Liverpool, UK; P Kelly, Manchester Metropolitan University, UK</i></p>	
3:10pm	<p>G5-6 Potential of Sequent and Simultaneous PVD PeCVD Hybrid Technology Combination. Investigations Aside Well-known Technologies in Duplex DLC and Co-deposition by Simultaneous Arc, Sputtering Evaporation, <i>Pierre Collignon, R Scheibe, PD2i Europe GmbH, Germany</i></p>	
3:30pm	<p>G5-7 TiN Deposition using the Magnetized Hollow Cathode Activated Magnetron, <i>H Barankova, Ladislav Bardos, Uppsala University, Sweden</i></p>	
3:50pm	<p>G5-8 Structural and Tribological Properties of Mixed Iron-titanium Borides Produced with Cathodic Arc Assisted Alloying and Electrochemical Boriding, <i>Erkan Kacar, C Yelkarasi, S Timur, M Urgan, Istanbul Technical University, Turkey</i></p>	

Wednesday Afternoon, April 25, 2018

Bunshah Award Honorary Lecture
Room Town & Country - Session HL
Bunshah Award Honorary Lecture

5:45pm **INVITED: HL-1** A Retrospective View of Plasma-assisted PVD Innovations
Since the 1960's, *Allan Matthews*, University of Manchester, UK

6:05pm Invited talk continues.

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/TBA
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 26, 2018

Special Interest Talk Room California - Session A1-1 Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Shigenari Hayashi, Hokkaido University, Sebastien Dryepondt, Oak Ridge National Laboratory, USA		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B4-1 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May, Robert Bosch GmbH, Diesel Systems, Fan-Bean Wu, National United University, Taiwan, Farwah Nahif, eifeler-Vacotec GmbH	
8:00am	INVITED: A1-1-1 Degradation of Protective Coatings at High Temperatures, Michael Schütze , DECHEMA-Forschungsinstitut, Germany	B4-1-1 Contact Fatigue Performance of Cobalt Boride Coatings, A Meneses-Amador, D Sandoval-Juárez, G Rodríguez-Castro, D Fernández-Valdés, I Campos-Silva , IPN, Mexico; A Mouftiez , ICAM Lille, Matériaux, France; José Luis Arciniega-Martínez , IPN, Mexico	
8:20am	Invited talk continues.	B4-1-2 Revisiting the Nanocomposite Structure of Sputtered TiSiN Films, F Fernandes , University of Coimbra, Portugal; S Calderon, P Ferreira , International Iberian Nanotechnology Laboratory, Portugal; Albano Cavaleiro , University of Coimbra, Portugal	
8:40am	A1-1-3 Development of a New Slurry Coating Design for the Surface Protection of Gas Turbine Components, Benjamin Grégoire, G Bonnet, F Pedraza , University of La Rochelle, France	INVITED: B4-1-3 Nanostructured Functional Coatings – From Process Diagnostics in High Power Pulsed Plasmas to Coating Properties and Performance, Tobias Brögelmann, K Bobzin, N Kruppe, M Arghavani, M Engels , Surface Engineering Institute - RWTH Aachen University, Germany	
9:00am	A1-1-4 Slurry Formulation for Industrial Large Scale Aluminum Diffusion Coatings, M Kimmich , Fraunhofer ICT, Germany; Vladislav Kolarik , Fraunhofer Institute for Chemical Technology ICT, Germany; J Bermejo Sanz, M Juez Lorenzo , Fraunhofer ICT, Germany	Invited talk continues.	
9:20am	A1-1-5 Structural Properties of Hybrid Sol-gel Coatings for Corrosion Protection of Low-carbon Steel, Marie-Joëlle Menu , CIRIMAT, Université de Toulouse UPS INP CNRS, France; C Lavolle, R Noiville, M Gressier , CIRIMAT, France; J Garcia, J Sobrino , CETIM, France	B4-1-5 Mechanical and Tribological Properties of Gradient and Multilayered CrVN/CrMoN Coatings, Y Chang, Chih-Cheng Chuang , National Formosa University, Taiwan	
9:40am	A1-1-6 Diffusion Coatings for Corrosion Protection of Ferritic-martensitic Steels for Co-firing Combustion Plants, Tobias Meissner, D Fähsing, M Galetz , DECHEMA-Forschungsinstitut, Germany	B4-1-6 Synthesis and Characterization of Multilayered Coatings in the Ti-Al-N System by a Reactive Gas Pulsing Process, Ahmed El Moutassim, M Pac, P Henry , LPMT, France; C Rousselot , FEMTO-ST, France; C Tromas, F Pailloux, T Cabioc'h , SP2MI, France	
10:00am	A1-1-7 Biomass Corrosion Behavior of Steels and Coatings in Contact with KCl/K ₂ SO ₄ at 550°C: a Screening Laboratory Test, M Gutiérrez, Alina Agüero Bruna, I Baraibar , Instituto Nacional de Técnica Aeroespacial (INTA), Spain; M Hernández , Instituto Nacional de Técnica Aeroespacial (INTA), Spain; R Muelas Gamo, S Rodríguez , Instituto Nacional de Técnica Aeroespacial (INTA), Spain	B4-1-7 Tribological Behavior of Transition Metal Nitride Films with Crystalline and Noncrystalline Tailored Multilayer Structure, Z Lin, Fan-Bean Wu , National United University, Taiwan	
10:20am	A1-1-8 In-situ Post-Annealing of Si-Al Coatings for the Oxidation Protection of γ -TiAl, K Bobzin, T Brögelmann, C Kalscheuer, Tiancheng Liang , Surface Engineering Institute - RWTH Aachen University, Germany	B4-1-8 Investigation of Microstructure and Properties of Magnetron Sputtered Zr-Si-N Thin Films with Different Si Content, Daniel Fernandez , Universidade Federal de Sergipe, Brazil; F Freitas , Universidade Federal de Sergipe, Brazil, Brasil; L Félix, A Terto , Universidade Federal de Sergipe, Brazil; A Junior , Universidade Federal do Rio Grande do Sul, Brazil; F Mendes , Instituto Nacional de Tecnologia, Brazil; E Tentardini , Universidade Federal de Sergipe, Brazil, Brasil	
10:40am	A1-1-9 Fatigue Performance of Bare and Coated 31V Alloy, Sebastien Dryepondt, B Armstrong , Oak Ridge National Laboratory, USA; Y Zhang , Tennessee Technological University, USA; S Sampath , Stony Brook University, USA; J Haynes , Oak Ridge National Laboratory, USA	INVITED: B4-1-9 Low Temperature Surface Modification on Selected Thin Films Using HIPIMS for Antibacterial and Bio Applications, Wan-Yu Wu , Da-Yeh University, Taiwan	
11:00am		Invited talk continues.	
11:20am		B4-1-11 Using Nano-impact Method to Predict Erosion Performance of Advanced DLC Coating Systems, Samuel McMaster, T Liskiewicz, A Neville , University of Leeds, UK; B Beake , Micro Materials Ltd, UK	
11:40am		B4-1-12 A Novel Methodology for Damage Characterization in Thin Hard Coatings Submitted to Extreme Loadings, António Choleridis , Ecole Nationale Supérieure des Mines de St-Etienne, France; C Héau, M Leroy , Institut de Recherche en Ingénierie des Surfaces, Groupe HEF, France; S Sao-João, G Kermaucher , Ecole Nationale Supérieure des Mines de St-Etienne, France; C Donnet , Université de Lyon, Université Jean Monnet, France; H Klöcker , Ecole Nationale Supérieure des Mines de St-Etienne, France	

Thursday Morning, April 26, 2018

Fundamentals and Technology of Multifunctional Materials and Devices Room Sunrise - Session C2-1 Novel Oxide Films for Active Devices Moderators: Marko Tadjer, Naval Research Laboratory, USA, Vanya Darakchieva, Linköping University, Sweden		New Horizons in Coatings and Thin Films Room San Diego - Session F3 2D Materials: Synthesis, Characterization, and Applications Moderators: Eli Sutter, University of Nebraska-Lincoln, USA, Liping Wang, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences	
8:00am	C2-1-1 Characteristic of the bionic synapse on Lithium Aluminate Non-Volatile Resistive Random Access Memory, Wan-Ching Su, T Chang, Y Hung, B Yan, S Huang, Y Tsao, T Tsai , National Sun Yat-Sen University, Taiwan	F3-1 Crystallization Kinetics of Photonically Annealed Two Dimensional Materials and Heterostructures, R Vila , Stanford University, USA; R Rao, B Maruyama , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; E Bianco , Air Force Research Laboratory, Materials and Manufacturing Directorate/Rice University, USA; N Glavin , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; Chris Muratore , University of Dayton, USA	
8:20am	C2-1-2 Compared with the Different Thickness of Switch Layer on Resistive Random Access Memory, Chih-Cheng Yang, T Chang, W Chen, C Lin, H Zheng, Y Chien , National Sun Yat-Sen University, Taiwan	F3-2 The Application of Pulsed Laser Deposited a-BN for Temperature and Oxidation Resistance of 2D MoTe ₂ Semiconducting Devices, Benjamin Sirota , University of North Texas, USA, United States of America; N Glavin , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; C Muratore , University of Dayton, USA; S Krylyuk, A Davydov , National Institute of Standards and Technology, USA; A Voevodin , University of North Texas, USA	
8:40am	C2-1-3 Investigating Abnormal Hump Under Positive Bias Temperature Stress for Hydrogenated a-InGaZnO Thin Film Transistors, Yu-Chieh Chien, T Chang, T Tsai, H Chiang, Y Yang, Y Tsao, M Tai , National Sun Yat-Sen University, Taiwan	F3-3 A Predictive Thermokinetic Model of Friction in MoS ₂ , John Curry, A Hinkle , Sandia National Laboratories, USA; T Babuska, B Krick , Lehigh University, USA; M Dugger, N Argibay, M Chandross , Sandia National Laboratories, USA	
9:00am	C2-1-4 Optical and Electronic Properties of Monoclinic Ga ₂ O ₃ Unravalled, Mathias Schubert , Linköping University, Sweden, USA; A Mock, R Korlacki, S Knight , University of Nebraska-Lincoln, USA; V Darakchieva , Linköping University, Sweden; B Manemar , Linköping University, Sweden; Y Kumagai , Tokyo University of Agriculture and Technology, Japan; K Goto , Tamura Corp., Japan; M Higashiwaki , National Institute of Information and Communications Technology, Japan	F3-4 Supercritical Fluid Assisted Synthesis of V ₂ O ₅ /VS ₂ Nanocomposites for use in Supercapacitor, Yen-Chun Liu, J Ting , National Cheng Kung University, Taiwan	
9:20am	INVITED: C2-1-5 Ga ₂ O ₃ for Ultra-High Power Rectifiers and MOSFETs, Stephen Pearton, F Ren, J Yang, P Carey , University of Florida, USA; M Tadjer, M Mastro , Naval Research Laboratory, USA	INVITED: F3-5 2D and Layered Metal Chalcogenide Semiconductors: Growth, Electronic Structure, Light-Matter Interactions, Peter Sutter , University of Nebraska-Lincoln, USA	
9:40am	Invited talk continues.	Invited talk continues.	
10:00am	C2-1-7 Fabrication and Characterization of Pulsed-Laser Deposited Ba _{0.8} Ca _{0.2} Ce _x Ti _{1-x} O ₃ (BCCT) Thin Films, Cristian Grijalva , The University of Texas at El Paso, USA; J Jones , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; R Chintalapalle , The University of Texas at El Paso, USA	F3-7 Fabrication and Photocatalytic Application of Functional group Modification of Carbon Nitride Derivatives nanosheets, ChunHung Chen, K Chang , National Cheng Kung University (NCKU), Taiwan	
10:20am	C2-1-8 Thermo-Chemical Stability Evaluation of Titanium Doped β-Ga ₂ O ₃ Thin Films, S Manandhar, A Battu, Ramana Chintalapalle , University of Texas at El Paso, USA	F3-8 Enhanced Photocatalytic Performance for g-C ₃ N ₄ through the Addition of α-MoO ₃ Nanobelts and Mesoporous TiO ₂ Beads, Yen Duong, J Ting , National Cheng Kung University, Taiwan	
10:40am		F3-9 Fabrication of Nanostructured MoS ₂ Thin Films on Porous Silicon Substrate for Ammonia Gas Sensing Properties, S Sharma, A Kumar, Davinder Kaur , Indian Institute of Technology Roorkee, India	
11:00am		F3-10 Wettability, Structural and Optical Examination of Sputtered Zirconium Oxide Thin Films, Uttkarsh Patel , McMaster University, Canada; P Dave , Gujarat forensic science university, India; K Chauhan , Charotar University of Science and Technology (CHARUSAT), India; S Rawal , McMaster University, Canada	
11:20am		INVITED: F3-11 Synthesis and Characterization of Molybdenum-based Thin Films for Flexible Electronics, T Jörg , Montanuniversität Leoben, Austria; M Cordill , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; D Music , RWTH Aachen University, Germany; R Franz , Montanuniversität Leoben, Austria; H Köstenbauer, J Winkler , Plansee SE, Austria; J Schneider , RWTH Aachen University, Germany; Christian Mitterer , Montanuniversität Leoben, Austria	
11:40am		Invited talk continues.	

Thursday Morning, April 26, 2018

<p>Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 1-3 - Session H1 Spatially-resolved 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 Royal Palm 4-6 - Session TS1 Thermal and Kinetic Spray Deposition Moderators: Andrew Vackel, Sandia National Laboratories, USA, Charles Kay, ASB Industries, Inc., USA</p>
8:00am		<p>INVITED: TS1-1 Latest Developments for Turbomachinery Coatings, Kirsten Bobzin, L Zhao, F Linke, S Wiesner, B Yildirim, T Liang, M Welters, Surface Engineering Institute - RWTH Aachen University, Germany</p>
8:20am		Invited talk continues.
8:40am		<p>INVITED: TS1-3 Repair of Nickel Base Superalloys by Cold Spray, Robert Vaßen, R Singh, T Kalfhaus, G Mauer, O Guillon, Forschungszentrum Jülich GmbH, Germany; J Gibmeier, Karlsruhe Institute of Technology (KIT), Germany</p>
9:00am	<p>H1-4 Spatially Resolved Depth Profiling Of Residual Stress By Micro-Ring-Core Method, Marco Sebastiani, Roma TRE University, Italy</p>	Invited talk continues.
9:20am	<p>H1-5 Quantitative Depth Profiling from the First Nanometers Down to the Substrate within Minutes using RF GD-OES, Philippe Hunault, HORIBA Instruments, USA; M Chausseau, K Savadkouei, HORIBA Scientific, USA; P Chapon, S Gaiaschi, HORIBA Scientific, France</p>	<p>TS1-5 Multi-layer Metallization of Polymer Materials via Thermal Spray, Andrew Vackel, M Smith, A Miller, Sandia National Laboratories, USA; B Peter, B Post, Oak Ridge National Laboratories, USA</p>
9:40am	<p>H1-6 Analysis of Thin Film Surface Stress Distribution using Raman Spectroscopy near Cohesive Cracks During Bending Tests, Newton Fukumasu, G Francisco, R Souza, University of São Paulo, Brazil</p>	<p>TS1-6 Dielectric Ceramic Thick Films produced via Aerosol Deposition, Eric A. Patterson, ASEE Postdoc, US Naval Research Lab, USA; S Johnson, E Gorzkowski, U.S. Naval Research Laboratory, USA</p>
10:00am	<p>INVITED: H1-7 <i>In situ</i> Nanomechanical Characterization of Transition Metal Carbides, M Chen, ETH Zurich, Laboratory for Nanometallurgy, Switzerland; D Sangiovanni, Linköping University, IFM, Germany, Sweden; J Wheeler, ETH Zurich, Laboratory for Nanometallurgy, Switzerland; Suneel Kodambaka, G Po, University of California Los Angeles, USA</p>	<p>INVITED: TS1-7 Tribological Properties of Cold Sprayed Metal Matrix Composite Coatings, Richard Chromik, McGill University, Canada</p>
10:20am	Invited talk continues.	Invited talk continues.
10:40am		<p>TS1-9 Assessment of Magnetic Orientation of Barium Hexaferrite Thick Films Deposited by Aerosol Deposition with <i>in situ</i> Magnetic Field, Scooter D. Johnson, Naval Research Laboratory, USA; D Park, Korean Institute of Material Science, Korea; A Hauser, S Ranjit, K Law, University of Alabama, USA; H Newman, S Shin, S Qadri, E Gorzkowski, Naval Research Laboratory, USA</p>
11:00am		<p>TS1-10 Development of Repair Methods for Nickel Based Super Alloys using Cold Gas Spray, Tobias Kalfhaus, R Vaßen, Forschungszentrum Jülich GmbH, Germany</p>
11:20am		<p>TS1-11 Microstructure-scale Simulations of High-rate Loading of Porous, Thermally-sprayed Metal Coatings, Corbett Battaile, N Moore, S Owen, Sandia National Laboratories, USA</p>
11:40am		<p>TS1-12 Simulation and Visualization of the Aerosol Deposition Process, Edward P. Gorzkowski, S Johnson, T Martin, R Saunders, U.S. Naval Research Laboratory, USA; A Borgdorff, U.S. Naval Academy, USA; D Schwer, U.S. Naval Research Laboratory, USA; E Patterson, ASEE Postdoc, U.S. Naval Research Laboratory, USA</p>

Thursday Afternoon, April 26, 2018

<p>Coatings for Use at High Temperatures Room California - Session A1-2 Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Shigenari Hayashi, Hokkaido University, Sebastien Dryepondt, Oak Ridge National Laboratory, USA</p>	<p>Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B4-2 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May, Robert Bosch GmbH, Diesel Systems, Fan-Bean Wu, National United University, Taiwan, Farwah Nahif, eifeler-Vacotec GmbH</p>
<p>1:30pm INVITED: A1-2-1 Effect of Pre- and Post-Coat Processing on the Fatigue Life of Coated Disk Alloys, James Nesbitt, <i>T Gabb</i>, <i>B Puleo</i>, NASA Glenn Research Center, USA; <i>R Miller</i>, Vantage Partners, USA</p>	<p>B4-2-1 Target Race Track Chemistry is Different to What you Think: XPS Findings from Reactive dc and High Power Impulse Magnetron Sputtering Experiments, Grzegorz Greczynski, Linköping University, IFM, Thin Film Physics Division, Sweden; <i>S Mráz</i>, RWTH Aachen University, Germany; <i>L Hultman</i>, Linköping University, IFM, Thin Film Physics Division, Sweden; <i>J Schneider</i>, RWTH Aachen University, Germany</p>
<p>1:50pm Invited talk continues.</p>	<p>B4-2-2 Measurement of Residual Stress on TiN/Ti Bilayer Thin Films using Average X-ray Strain (AXS) Combined with Nanoindentation Methods, JiaHong Huang, <i>S Lei</i>, National Tsing Hua University, Taiwan; <i>H Chen</i>, National Chiao Tung University, Taiwan</p>
<p>2:10pm A1-2-3 High-temperature Oxidation Resistance of Chromium-based Coatings Deposited by DLI-MOCVD for Enhanced Protection of the Inner Surface of Long Tubes, Alexandre Michau, CEA, France; <i>F Maury</i>, CIRIMAT, France; <i>F Schuster</i>, <i>J Brachet</i>, <i>E Rouesne</i>, <i>M Le Saux</i>, CEA, France; <i>R Boichot</i>, <i>M Pons</i>, SIMaP, France</p>	<p>INVITED: B4-2-3 Challenges and Recent Progress in the Development of Arc Evaporated $(Al_{1-x}Cr_x)_2O_3$ Coatings, Christian Koller, <i>A Kirnbauer</i>, <i>V Dalbauer</i>, <i>R Raab</i>, CDL-AOS at TU Wien, Austria; <i>S Kolozsvári</i>, Plansee Composite Materials GmbH, Germany; <i>J Ramm</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P Mayrhofer</i>, TU Wien, Institute of Materials Science and Technology, Austria</p>
<p>2:30pm A1-2-4 A New Process to Produce Localized Chrome Coating and Platinum-Modified Chrome Coating for Protection against Type II Hot Corrosion, Zhihong Tang, <i>J McConnell</i>, <i>K Garing</i>, <i>S Sweeney</i>, Praxair Surface Technologies, Inc., USA</p>	<p>Invited talk continues.</p>
<p>2:50pm A1-2-5 Characterization of Films Fabricated on AZ31 Magnesium Alloy by Heat Treatment and Immersion Methods, Hyunju Jeong, Pohang Iron and Steel Company (POSCO), Republic of Korea</p>	<p>B4-2-5 Steel Doctor Blade Deposited by HIPIMS-CrN for Protection Purpose, Jia-Hong Zhou, <i>Y Liou</i>, <i>Y Chen</i>, <i>J He</i>, Feng Chia University, Taiwan</p>
<p>3:10pm A1-2-6 Degradation Processes of LSM Based Interconnector Coatings under the Conditions of Pressurized Steam Electrolysis, MariadelMar Juez Lorenzo, <i>V Kolarik</i>, <i>V Kuchenreuther-Hummel</i>, Fraunhofer ICT, Germany; <i>M Pötschke</i>, <i>D Schimanke</i>, Sunfire GmbH, Germany</p>	<p>B4-2-6 In-Line HIPIMS-TiNxOy to Produce Colorful Decorative Coatings, Yu-De Liou, <i>Y Chen</i>, <i>J He</i>, Feng Chia University, Taiwan</p>
<p>3:30pm A1-2-7 The Hot Corrosion Resistance of Hot-dip Aluminized Low Carbon Steel with Nickel Interlayer under Static Load, Huan-Chang Liang, <i>C Wang</i>, National Taiwan University of Science and Technology, Taiwan</p>	<p>B4-2-7 Property of AIP Deposited Thick TiAlN Coating and Application to Actual Steam Turbine for Solid Particle Erosion Protection, Kenji Yamamoto, <i>J Munemasa</i>, Kobe Steel Ltd., Japan; <i>Y Liang</i>, National Cheng Kung University, Taiwan; <i>T Abe</i>, Toshiba Corporation, Japan; <i>S Takada</i>, <i>T Takazawa</i>, <i>Y Iwai</i>, University of Fukui, Japan</p>
<p>3:50pm</p>	<p>B4-2-8 Stress Evolution during Cr₂AlC Film Growth, Andrius Subacius, <i>A Matthews</i>, University of Manchester, UK; <i>M Hans</i>, <i>S Mráz</i>, <i>J Schneider</i>, RWTH Aachen University, Germany</p>
<p>4:10pm</p>	<p>B4-2-9 Composition and Temperature Influence on ZrAlN/TiN Multilayer Structure: In-situ X-ray Scattering during Growth, and Transmission Electron Microscopy Studies, Naureen Ghafoor, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>H Wang</i>, Linköping Univ., IFM, Thin Film Physics Div. and Max-Planck-Institut für Eisenforschung GmbH, Sweden; <i>J Muhammad</i>, <i>L Rogström</i>, <i>J Schroeder</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>D Ostach</i>, <i>N Schell</i>, Helmholtz-Zentrum Geesthacht, Germany; <i>J Birch</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>
<p>4:30pm</p>	<p>B4-2-10 Self-toughening in the TiAlN System, Matthias Bartosik, TU Wien, Institute of Materials Science and Technology, Austria; <i>C Rumeau</i>, <i>R Hahn</i>, TU Wien, Austria; <i>Z Zhang</i>, Austrian Academy of Sciences, Austria; <i>P Mayrhofer</i>, TU Wien, Austria</p>
<p>4:50pm</p>	<p>B4-2-11 Load Sensing Characterization of Silicon Oxide Coatings, Tomasz Liskiewicz, Leeds University, UK; <i>I Kolev</i>, Hauzer Techno Coating, Netherlands; <i>E McNulty</i>, <i>A Neville</i>, Leeds University, UK</p>
<p>5:10pm</p>	<p>B4-2-12 The Mechanical and Tribological Properties of TiZrNbN and TiZrNbN-Cu Films, Ihsan Efeoglu, Atatürk University, Turkey; <i>H Aghdam</i>, <i>A Keles</i>, Atatürk University, Turkey; <i>O Baran</i>, Erzincan University, Turkey; <i>Y Totik</i>, Atatürk University, Turkey</p>

Thursday Afternoon, April 26, 2018

	Fundamentals and Technology of Multifunctional Materials and Devices Room Sunrise - Session C2-2 Novel Oxide Films for Active Devices Moderators: Marko Tadjer, Naval Research Laboratory, USA, Vanya Darakchieva, Linkoping University, Sweden	Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 1-3 - Session H2 Advanced Mechanical Testing of Surfaces, Thin Films and Coatings Moderators: Benoit Merle, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Marco Sebastiani, University of Rome "Roma Tre"
1:30pm	C2-2-1 Investigation of Negative Bias Temperature Instability under Illumination on P-type Low Temperature Poly-crystalline Silicon Thin Film Transistors, <i>Shin-Ping Huang, T Chang, A Chu, W Su, W Chen</i> , National Sun Yat-Sen University, Taiwan; <i>Y Chen, Y Shih</i> , National Taitung University, Taiwan; <i>Y Zheng, Y Wang</i> , National Sun Yat-Sen University, Taiwan	H2-1 In Situ Observation of Strain Transfer and Crack Formation in Evaporated and Printed Thin Films and Devices on Compliant Substrates, <i>Patric Gruber</i> , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WBM), Germany
1:50pm	C2-2-2 Mechanism of Reset Process with Varying Compliance Current in High-k Spacer Resistance Random Access Memory, <i>Yi-Ting Tseng, T Chang, W Huang, Y Guo, T Chang, W Chen</i> , National Sun Yat-Sen University, Taiwan	H2-2 Comparison of Different Methods for the Investigation of Thin Film Adhesion, <i>Felix Schiebel</i> , Fraunhofer Institute for Mechanics of Materials IWM, Germany; <i>C Eberl</i> , University of Freiburg, Germany
2:10pm	C2-2-3 Improve Reliability of Complementary Resistive Switching Induced by Carbon Dopant in Indium-Tin-Oxide as The Insulator in Resistive Random Access Memory, <i>Chun-Chu Lin, T Chang, W Chen, Y Tseng, S Huang, H Zheng</i> , National Sun Yat-Sen University, Taiwan	H2-3 Electro-Mechanical Characterization of Functional Thin Film Metallic Glasses, <i>M Mühlbacher</i> , Montanuniversität Leoben, Austria; <i>O Glushko, Christoph Gammer</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>C Mitterer, J Eckert</i> , Montanuniversität Leoben, Austria
2:30pm	C2-2-4 Study on the Characteristic of Cobalt Silicide Electrode Resistive Random Access Memory, <i>Wen-Chung Chen, T Chang, T Tsai, Y Zhang, S Huang, Y Lin, C Lin, H Zheng</i> , National Sun Yat-Sen University, Taiwan	H2-4 New Pull-off Tensile Tests for Adherence Assessment in Concrete-formwork Coated and Uncoated Contacts, <i>Nicolas Spitz</i> , Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>N Coniglio, M El Mansori</i> , Arts et Métiers ParisTech d'Aix-en-Provence, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>A Montagne</i> , Arts et Métiers ParisTech de Lille, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>S Mezghani</i> , Arts et Métiers ParisTech de Châlons-en-Champagne, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France
2:50pm	INVITED: C2-2-5 Material and Device Engineering for Gallium Oxide Electronics, <i>Siddharth Rajan</i> , The Ohio State University, USA	INVITED: H2-5 In-situ-squared: Combined Electro-mechanical Behavior of Thin Films with One Experiment, <i>Megan Cordill</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria
3:10pm	Invited talk continues.	Invited talk continues.
3:30pm	C2-2-7 The Ultra-violet Light Effect on the Off-state Current of InGaZnO Thin Film Transistor with the Different Structure, <i>Yu-Ching Tsao, T Chang, Y Tsai, W Su, S Huang, Y Chien</i> , National Sun Yat-Sen University, Taiwan	H2-7 Mechanical Behavior of Ductile/Brittle Multilayers Studied with In-situ Straining Methods, <i>Patrice Kreiml, M Rausch, V Terziyska</i> , Montanuniversität Leoben, Austria; <i>H Köstenbauer, J Winkler</i> , Plansee SE, Austria; <i>C Mitterer</i> , Montanuniversität Leoben, Austria; <i>M Cordill</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria
3:50pm	C2-2-8 Study on the Characteristics of Device in Copper Ion Movement during Operation Process in Conductive-Bridging Random Access Memory, <i>Ming-Hui Wang, T Chang, Y Tseng, H Zheng, C Wu, S Huang</i> , National Sun Yat-Sen University, Taiwan	H2-8 Fracture Behavior of Nanocrystalline BCC High-Entropy Alloys, <i>Y Xiao, H Ma, R Spolenak, Jeffrey M. Wheeler</i> , ETH Zurich, Laboratory for Nanometallurgy, Switzerland
4:10pm	C2-2-9 The Degradation Mechanism of Tungsten Electrode on HfO ₂ -based Resistance Random Access Memory (RRAM), <i>Hao-Xuan Zheng, T Chang, T Chu, M Wang, C Lin, C Yang</i> , National Sun Yat-Sen University, Taiwan	INVITED: H2-9 Recent Advances in Microcantilever Bending Experiments, <i>Karsten Durst</i> , Physical Metallurgy, TU Darmstadt, Germany; <i>M Göken</i> , University Erlangen-Nürnberg, Germany; <i>J Ast</i> , EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland
4:30pm		Invited talk continues.
4:50pm		H2-11 Temperature and Loading Rate Influence in Micro-Scale Fracture Experiments, <i>J Ast</i> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>J Schwiedrzik</i> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>J Wehrs</i> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>J Michler</i> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>Xavier Maeder</i> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
5:10pm		H2-12 Investigating the Local Fatigue Properties of Materials in Small Dimensions by Dynamic Micropillar Compression, <i>Benoit Merle</i> , Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany

Thursday Afternoon, April 26, 2018

Special Interest Talk 2
Room San Diego - Session SIT2
Special Interest Talk 2

1:30pm		
1:50pm		
2:10pm		
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3:10pm		
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4:10pm	SIT2-9 Materials Design Guidelines for Improved Strength, Ductility, and Stability, <i>Paul Heinz Mayrhofer</i> , TU Wien, Institute of Materials Science and Technology, Austria	

Coatings for Use at High Temperatures

Room Grand Hall - Session AP

Symposium A Poster Session

5:00pm

AP-1 Feasibility of using Rare-earth (La and Ce) Sulfates as Functional Embedding Agents for Thermal Barrier Coatings, *D Song, T Song*, Hanyang University, Republic of Korea; *HyeonMyeong Park, Y Jung*, Changwon National University, Republic of Korea; *J Zhang*, Indiana University Purdue University Indianapolis, USA

AP-2 Lifetime Performance of Yb-Gd-Y-based Thermal Barrier Coatings with Buffer Layer in Thermally Graded Mechanical Fatigue Environments, *Bong-Gu Kim*, School of Materials Science and Engineering, Changwon National University, Republic of Korea; *G Lyu, S Jung, H Park, Y Jung*, Changwon National University, Republic of Korea; *J Zhang*, Changwon National University, Republic of Korea, USA

AP-3 Thermal Durability of Thermal Barrier Coatings – Effect of Purity and Monoclinic Phase in Feedstock Powder, *Yeon-Gil Jung, H Park, S Jeon, G Lyu, S Jung*, Changwon National University, Republic of Korea; *K Park, I Kim, B Yang*, Doosan Heavy Industries and Construction, Republic of Korea; *J Zhang*, Indiana University, USA

AP-6 Integral vs. Local Chemical Composition of (coating) Materials: Is your Solid Solution a Solid Solution?, *Jochen M. Schneider*, RWTH Aachen University, Germany

AP-7 Coating Generation and Study for Materials Protection used in Extreme Atmosphere: Sustainability and Energy Efficiency, *A Illana*, Universidad Complutense de Madrid, Spain; *M Gutiérrez, I Baraibar*, Instituto Nacional de Técnica Aeroespacial (INTA), Spain; *S Mato*, Universidad Complutense de Madrid, Spain; *R Muelas Gamo*, Instituto Nacional de Técnica Aeroespacial (INTA), Spain; *M Benito, A Bahillo*, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), Spain; *Francisco Javier Pérez-Trujillo*, Universidad Complutense de Madrid, Spain; *A Agüero Bruna*, Instituto Nacional de Técnica Aeroespacial (INTA), Spain

AP-8 The Influence of Reactive Elements on Thermogravimetric Behaviour of New Co-Ni-Al-W Superalloys Dedicated to Bond-coat Deposition, *G Moskal, A Tomaszewska, Damian Migas*, Silesian University of Technology, Poland

AP-9 Study the Surface-aluminizing Coating to Enhance High-temperature Oxidation Resistance of T91 Boiler-used Steel, *Wu Kai, Y Chen, C Chung*, National Taiwan Ocean University, Taiwan

AP-10 New Insights into the Oxidation Behaviour of AlCrSiN Coatings and an Approach to Avoid Trans-interface Diffusion at Elevated Temperatures, *Nikolaus Jäger, S Klima, M Meindlumer*, Montanuniversität Leoben, Austria; *H Hruby*, eifeler-Vacotec GmbH, Germany; *J Keckes, R Daniel*, Montanuniversität Leoben, Austria

AP-12 Gradient SiBCN Ceramic Coating for High-temperature Anti-oxidation Protection of Carbon-carbon Composite, *Zongbo Zhang*, Institute of Chemistry, Chinese Academy of Science, China

Hard Coatings and Vapor Deposition Technologies

Room Grand Hall - Session BP

Symposium B Poster Session

5:00pm

BP-1 Electrical and Reliability Characteristics of Dielectric Stack with Low Dielectric Constant SiCOH and Capping SiCNH Films, *C Lee*, National Chi-Nan University, Taiwan; *W Hung, Yi-Lung Cheng*, National Chi Nan University, Taiwan

BP-3 Adhesion And Durability Of Multi-Interlayered Diamond-Like Carbon Film Deposited On An Aluminum Alloy, *Hideobu Maruno, A Nishimoto*, Kansai University, Japan

BP-4 The Effect of Cu on Fatigue Properties of TiZrNbN Coatings, *H Aghdam, A Keles*, Ataturk University, Turkey; *O Baran*, Erzincan University, Turkey; *Y Totik*, Ataturk University, Turkey; *Ihsan Efeoglu*, Ataturk University, Turkey

BP-5 Thermal Stability of Ni-B/ La₂O₃ Coatings by Electro-brush Plating Technique, *Dan Zhang, X Cui, G Jin, Z Cai, M Dong*, Harbin Engineering University, China

BP-6 Properties of CrN_x Thin Films Deposited in Plasma Activated Polymers by Reactive Magnetron Sputtering, *M Rodrigues, P Pedrosa*, Minho University, Portugal; *A Ferreira, L Godinho, M Amaral, PRIREV*, Portugal; *M Neto, F Oliveira, R Silva*, Universidade de Aveiro, Portugal; *J Borges, Filipe Vaz*, Minho University, Portugal

BP-9 Influence of Ti on the Phase Stability of Magnetron Sputtered Mo-Si-B Thin Films, *Elias Aschauer, H Riedl*, CDL-AOS at TU Wien, Austria; *H Bolvardi*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *P Polcik*, Plansee Composite Materials GmbH, Germany; *P Mayrhofer*, Institute of Materials Science and Technology, TU Wien, Austria

BP-10 Carbide Layer Coating on Titanium by Spark Plasma Sintering Technique, *Akio Nishimoto, C Nishi*, Kansai University, Japan

BP-13 Growth Kinetics of Boride Coatings on AISI W2 Steel, *MarcoAntonio Doñu Ruiz*, Universidad Politécnica del Valle de Mexico, Mexico; *N Lopez Perrusquia*, Universidad Politécnica Del Valle De Mexico, Mexico; *V Serna Lara, V Cortés Suárez*, Universidad Politécnica del Valle de Mexico, Mexico

BP-15 Study on Steels Boronizing Immersed in Diesel, *Noe Lopez Perrusquia, M Doñu Ruiz, G Perez Mendoza*, Universidad Politécnica Del Valle De Mexico, Mexico; *V Cortés Suárez*, Universidad Autónoma Metropolitana- Azcapotzalco, Mexico; *C Torres San Miguel*, Instituto Politécnico Nacional - ESIME, Mexico

BP-17 Deposition of Nanodiamond Coatings on Steel Implant Materials with CrN/Al Interlayer, *Y Li, F Ye, C Zhang, M Taheri, J Corona, Qiaoqin Yang*, University of Saskatchewan, Canada

BP-18 MoN/TaN Superlattices: from a Computer Design to a Realization, *N Koutna*, TU Wien, Institute of Materials Science and Technology, Austria; *R Hahn*, CDL-AOS at TU Wien, Austria; *J Zalesak*, Montanuniversität Leoben, Austria; *M Friak*, IPM, Academy of Science, Czech Republic; *M Bartosik*, TU Wien, Institute of Materials Science and Technology, Austria; *M Sob*, Masaryk University, Czech Republic; *J Keckes*, Montanuniversität Leoben, Austria; *P Mayrhofer*, TU Wien, Institute of Materials Science and Technology, Austria; *David Holec*, Montanuniversität Leoben, Austria

BP-20 Effect of Mo Concentration on Structure and Properties of Zr-Mo-N Thin Films Deposited by Reactive Magnetron Sputtering, *A Junior, Daniel Fernandez, L Félix*, Universidade Federal de Sergipe, Brazil; *R Hubler*, Pontificia Universidade Católica do Rio Grande do Sul, Brazil; *F Mendes*, Instituto Nacional de Tecnologia, Brazil; *G Brito*, Universidade Federal de Sergipe, Brazil; *E Tentardini*, Universidade Federal de Sergipe, Brazil, Brasil

BP-21 Anti-staining Coatings on PET Fabrics by Using a Spraying/ Plasma-Polymerization Duplex Technique, *Cheng-Wei Lin*, Feng Chia University; Central Taiwan University of Science and Technology, Taiwan; *J He*, Feng Chia University, Taiwan

BP-22 Fracture Resistance of Nanocomposite/Metal Nitride Multilayers: Role of Interfaces, *Naureen Ghafoor, P Persson*, Linköping Univ., IFM, Thin Film Physics Div., Sweden; *I Petrov*, Linköping University, IFM, Thin Film Physics Division, Sweden, USA; *J Barriero, F Mücklch*, Saarland University and Materials Engineering Center Saarland, Germany; *J Birch*, Linköping Univ., IFM, Thin Film Physics Div., Sweden; *W Clegg*, Cambridge University, UK

BP-23 Vacancies in Al-O-N Crystallites, *Maria Fischer, D Scopece, C Pignedoli, D Passerone, H Hug*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland

BP-26 Effects of Bias Voltage on Microstructure and Properties of Al-doped Hydrogenated Amorphous Carbon Films Prepared by a Hybrid Deposition Technique, *Songsheng Lin, W Xu, H Li, M Dai, Q Shi, C Wei, H Wang, K Zhou*, Guangdong Research Institution of New Materials, China

BP-27 Comparison of Chromium Carbide Thin Films Grown by Different Power Supply Systems, *Z Li, C Wang*, National Taiwan University of Science and Technology, Taiwan; *B Lou*, Chang Gung University, Taiwan; *Jyh-Wei Lee*, Ming Chi University of Technology, Taiwan

BP-28 Self-organized Formation of Different Nanostructure in Carbon-metal Films Prepared by Reactive Magnetron Sputtering, *Hongxuan Li, W Wang, L Ji*, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China

BP-29 Anticorrosive Properties of (Zr-Si-Ti-N)Ni Thin Films Deposited by Co-Sputtering, *EstrellaNatali Borja Goyeneche, J Olaya*, Universidad Nacional De Colombia, Colombia

BP-30 Corrosion Resistance of Stainless Steel Coatings With and Without Silver Deposited by Sputtering, *ClaudiaLiliana España, J Olaya*, Universidad Nacional De Colombia, Colombia; *A Candido Recco*, Universidade do Estado de Santa Catarina, Brazil

BP-31 Evolution of Structure and Mechanical Properties of Nanocrystalline Multi-layered Arc-evaporated AlCrN-AlTiN Coatings upon Thermal Loading Revealed by X-ray Nanodiffraction and Tribological Testing, *Stefan Klima, N Jäger, M Meindlumer*, Montanuniversität Leoben, Austria; *H Hruby*, eifeler-Vacotec GmbH, Germany; *J Keckes, R Daniel*, Montanuniversität Leoben, Austria

BP-32 Corrosive Resistance of Nanostructured ZrSiN-Ag Films Deposited by Reactive Sputtering, *H Vanegas Parra, JhonJairo Olaya, J Alfonso*, Universidad Nacional De Colombia, Colombia; *S Calderon*, International Iberian Nanotechnology Laboratory, Portugal; *S Carvalho*, University of Minho, Portugal

BP-33 Mechanical Properties of ZrSiN-Ag Thin Films Deposited by Reactive Magnetron Sputtering, *HenrySamir Vanegas Parra, J Alfonso, J Olaya*, Universidad Nacional De Colombia, Colombia; *S Calderon*, International Iberian Nanotechnology Laboratory, Portugal; *S Carvalho*, University of Minho, Portugal

Thursday Afternoon Poster Sessions, April 26, 2018

BP-34 Hardness and Adhesion of AlSiN Thin Films Deposited by the Simultaneous Laser Ablation of Two Targets, *Enrique Camps, L Rivera, I Campos-Silva*, Instituto Nacional de Investigaciones Nucleares, Mexico; *S Muhl*, Universidad Nacional Autonoma de Mexico, Mexico

BP-35 Plasma Enhanced Chemical Vapor Deposition of Carbon Film into a Small Hole 100 μm in Diameter with MVP and Source Gas Blowing, *R Ota*, Nagoya University, Japan; *Hiroyuki Kousaka*, Gifu University, Japan; *L Raja*, University of Texas at Austin, USA; *N Umehara, M Murashima, T Tokoroyama*, Nagoya University, Japan

BP-37 Effect of Silicon Content on Structure and Properties of AlCrSiN Coatings Prepared by Arc Ion Plating for Milling Tools, *Wangryeol Kim, S Heo*, Korea Institute of Industrial Technology (KITECH), Republic of Korea; *Y Kim, J Kim*, KORLOY, Republic of Korea; *I Park*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

BP-38 Coatings and Performance Evaluation of Ti–Al–Si–N–O Coated Cutting Tools, *Sungbo Heo, H Kim, U Jung*, Korea Institute of Industrial Technology (KITECH), Republic of Korea; *Y Kim, J Kim*, KORLOY, Republic of Korea; *I Park*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

BP-39 Transparent and Low Resistance Hard Amorphous Carbon Thin Films by HiPIMS for Electronic Applications, *Kerstin Thorwarth, R Ganesan, A Chacko*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *M Grein, R Bandorf*, Fraunhofer Institute for Surface Engineering and Thin Films, Germany; *D McKenzie, M Bilek*, The University of Sydney, Australia; *H Hug*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

BP-40 Reactive Magnetron Sputter Deposition of Bismuth Tungstate Coatings for Water Treatment Applications under Natural Sunlight, *M Ratova, Peter Kelly*, Manchester Metropolitan University, UK; *R Marcelino, C Amorim, P de Souza*, Federal University of Minas Gerais, Brazil

Fundamentals and Technology of Multifunctional Materials and Devices

Room Grand Hall - Session CP

Symposium C Poster Session

5:00pm

CP-2 Effect of Nitrogen Content on Structure and Properties of MoN_x Coatings, *Jian Wang*, University of New South Wales, Australia

CP-3 Stress Metrology for G6 and Larger Flat Panel Displays, *Wojtek Walecki*, Frontier Semiconductor, USA; *W Hung*, Frontier Semiconductor, USA, United States of America; *D Kim*, Sejong University, Korea

CP-4 Hydrogen Barrier Properties of Diamond-like Carbon Coatings, *Motonori Tamura*, University of Electro-Communications, Japan

CP-5 Effect of N₂ Flow Rate on the Properties of TiN film on Si Substrate for Thermal Detector Application, *Yi-Ching Huang, K Lin, Y Lai*, National Nano Device Laboratories, National Applied Research Laboratories, Taiwan

CP-6 Gradated Multilayer Thin Film of BaTiO₃/PVDF with High Energy Storage Density, *XiaoHui Wang*, Tsinghua University, China

CP-7 Synthesis of Bi₂O₃:TiO₂ Nano Structured Thin Films for Photocatalytic Applications, *M Calheiros, F Correia, J Marques, Carlos Tavares*, University of Minho, Portugal

CP-8 Improvement of Mechanical Properties in 3D Printed Ceramic Core, *Hye-Yeong Park, B Kim, G Cho, E Kim, Y Jung*, Changwon National University, Republic of Korea; *J Zhang*, Indiana University Purdue University Indianapolis, USA

CP-9 Enhanced Efficiency of Perovskite Solar Cells with Ferroelectricity, *T Nguyen, S Shin, S Kim, H Choi, ChungWung Bark*, Gachon University, Republic of Korea

CP-10 Improvement in Hygroscopicity of Inorganic Binder through Dual Coating Process, *Hyun-Hee Choi, H Lee, G Cho, E Kim, Y Jung*, Changwon National University, Republic of Korea; *J Zhang*, Indiana University-Purdue University Indianapolis, USA

CP-11 Synthetic Parameter Influence on Morphological and Electrochemical Properties of Porous NiO Thin Films Prepared by Chemical Bath Deposition, *Jung-Hoon Yu, H Yang, R Jeong, J Lee, D Kim, K Hwang, H Seo, S Nam, J Boo*, Sungkyunkwan University, Republic of Korea

CP-12 Characteristics of Perovskite Solar Cells Fabricated by using Lead Free Perovskite, *S Shin, C Bark, HyungWook Choi*, Gachon University, Republic of Korea

CP-14 The Influence of Disordered Grain Boundaries on Carrier Transport in Degenerated Polycrystalline AZO Thin Films Deposited by Magnetron Sputtering, *Hiroki Tokunaga, T Miyata, T Minami*, Kanazawa Institute of Technology, Japan

CP-15 Physical and Electrochromic Behavior of the ZnWO₄ Active Layer synthesized by Co-sputtering Technique for the Energy Harvesting Devices, *G Malik, S Mourya, J Jaiswal, Ramesh Chandra*, Indian Institute Of Technology Roorkee, India

CP-16 The Influence on Electrical Characteristics of Amorphous Indium Tungsten Oxide Thin Film Transistors with Multi-Stacked Active Layer Structure, *Kai-Jihh Gan, P Liu, D Ruan, Y Chiu, M Yu, T Chien, Y Chen, P Kuo, S Sze*, National Chiao Tung University, Taiwan

CP-17 Assessment of Structural and Magnetic Properties of Cobalt-Iron-Nickel Thick Films on Copper Formed by Electroforming, *Scotter D. Johnson, C Joye, H Newman, N Nepal, A Kozen, S Shin*, Naval Research Laboratory, USA

CP-18 Sputter-deposited Nanostructured Metal-Oxide Films for Hydrogen Gas Sensing, *S Haviar, Jiří Čapek, N Kumal, Š Batková, M Fialová, R Čerstvý*, University of West Bohemia, Czech Republic; *T Duchoň, F Dvořák*, Charles University, Czech Republic

CP-19 A Library of Broadband Reference Dielectric Functions, Valence Band Spectra and Raman Spectra of Epitaxial Conductive Nitride Films Grown on MgO, *S Kassavetis, T Zorba, J Arvanitidis, D Christofilos*, Aristotle University of Thessaloniki, Greece; *G Abadias*, Université de Poitiers, France; *D Gall*, Rensselaer Polytechnic Institute, USA; *Panos Patsalas*, Aristotle University of Thessaloniki, Greece

CP-21 Electrical Properties of Molybdenum Doped β -Ga₂O₃ Thin Films, *J Galindo, Anil Krishna Battu, R Chintalapalle*, University of Texas at El Paso, USA

INVITED: CP-22 Electron Beam Deposition and Characterization of Transparent WO₃/Al/WO₃ Multilayer Thin Films, *A Leyva, K Makeswaran, Ramana Chintalapalle*, University of Texas at El Paso, USA

CP-24 Numerical Ellipsometry: Extension of Concepts of n-k Plane Solutions from Isotropic to Anisotropic Films, *Frank Urban, D Barton*, Florida International University, USA

CP-25 Piezophotocatalytic and Piezoelectric Performance of Titanium Zinc Nitride Nanorod, *Hsin-Yi Lee, K Chang*, National Cheng Kung University (NCKU), Taiwan

CP-26 Well-alignment ZnSnO₃ by Epitaxially Oriented PVDF and Synergistic Piezo-related Performance of the ZnSnO₃/PVDF Nanocomposites, *Chen-Hui Chou, K Chang*, National Cheng Kung University (NCKU), Taiwan

CP-27 Challenges and Limitations for the Optical Characterization of Sub-micron Temperature Fields in Plasmonic Metamaterials, *Juan Antonio Zapien*, City University of Hong Kong, Hong Kong

CP-28 The Modification of Refractive Index by using Solid State Diffusion, *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; *W Chen*, Instrument Technology Research Center, Taiwan

CP-29 Effect of Silicon Content on the Structural, Optical and Electrical Characteristics of SiO_x Films Prepared by Sputtering, *Karim Monfil Leyva, A Salazar Valdez*, Benemérita Universidad Autónoma de Puebla, Mexico; *A Morales Sánchez*, Centro de Investigación en Materiales Avanzados SC, Mexico; *J Luna López, M Domínguez Jiménez, A Muñoz Zurita*, Benemérita Universidad Autónoma de Puebla, Mexico

CP-30 Optical Properties of the TiO₂ Films Grown by Atomic Layer Deposition using Tetrakis(Dimethylamino)Titanium and H₂O, *Wen-Hao Cho, P Huang, C Chen, Y Yu, C Yang, C Kei*, Instrument Technology Research Center, National Applied Research Laboratories, Taiwan

CP-31 Fractal Analysis of Titanium Nitride Films with Different Morphologies and Evaluation for the Direct Methanol Fuel Cell Applications, *Kai-Ling Chuang, M Tsai, Y Tsai, F Lu*, National Chung Hsing University, Taiwan

CP-32 Growth Kinetics Behavior and Morphology of Multicomponent Coating on Zirconium Hydride during Oxidizing Atmosphere, *G Yan, Jiandong Zhang, L Wang, S Bai*, GRINM company, China

Coatings for Biomedical and Healthcare Applications

Room Grand Hall - Session DP

Symposium D Poster Session

5:00pm

DP-2 Ti-Nb COATINGS Deposited on AISI 316L Stainless Steel by Magnetron Sputtering for Biomedical Applications, *E Gonzalez, D Tallarico*, Federal University of Sao Carlos, Brazil; *A Gobbi*, Brazilian Center for Research in Energy and Materials, Brazil; *C Afonso, Pedro Nascente*, Federal University of Sao Carlos, Brazil

DP-4 Investigation of High Performance Hydroxylapatite Coated PEEK Composite Materials for Biomedical Applications, *J Su*, Chang Gung Memorial Hospital, Taiwan; *C Chen, Gwomei Wu*, Chang Gung University, Taiwan

DP-5 Structural and Morphological Properties of PEO Films Grown on Ti-10Nb and Ti-20Nb and their Cellular Viability, *Carlos Lepienski*, Universidade Tecnológica Federal do Paraná, Brazil; *A Luz*, UFPR, Brazil; *N Kuromoto*, Universidade Federal do Paraná, Brazil; *G Lima*, Athlone Institute of Technology, Ireland; *B Pereira*, Universidade Federal do Paraná, Brazil; *M Sá, D Lima*, Universidade Federal de Campina Grande, Brazil

DP-6 Tribocorrosion Behavior of SiC Films with and without TiO₂ Nanoparticles on AISI 316L for Prosthesis Application, *A Vieira, T Santos*, Univap, Brazil; *P Radi*, ITA, Brazil; *S Silva*, IEAv, Brazil; *A da Silva*, Univap, Brazil; *G de Vasconcelos*, IEAv, Brazil; *Marco A. Ramirez R.*, Universidade do Vale do Paraíba (UNIVAP), Brazil; *L Vieira*, Univap, Brazil

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces

Room Grand Hall - Session EP

Symposium E Poster Session

5:00pm

EP-2 Effect of Power on Soft Magnetic and Tribological Properties of Fe-Co based Coating by Laser Cladding, *Xiaoshan Yang, X Cui, G Jin, J Liu*, Harbin Engineering University, China

EP-3 Tribological Behavior of the FeB Phase in Boron Coating Formed on an AISI L6 Steel using Ball On Disc with Dry Conditions, *Daniel Sanchez Huerta*, CBI, Universidad Autónoma Metropolitana unidad Azcapotzalco, Mexico; *I Hilerio Cruz*, Universidad Autónoma Metropolitana unidad Azcapotzalco, Mexico; *N Lopez Perrusquia*, Universidad Politécnica Del Valle De Mexico, Mexico; *E García Bustos*, Catedras CONACYT, Mexico, México; *M Doñu Ruiz*, Universidad Politécnica del Valle de Mexico, Mexico; *M Flores Martinez*, Universidad de Guadalajara, CUCEI, Mexico

EP-4 Tribocorrosion Behavior of Boronized AISI 4140 Steel, *Steffen Aichholz, R Torres, M Meruvia, P Soares*, PUCPR, Brazil

EP-5 Influence of Sputter Power Ratio on Microstructure, Mechanical and Tribological Properties of Ti-B-C Coatings Deposited onto AISI M2 Steel, *Elbert Contreras, M Gómez*, Universidad de Antioquia, Colombia

EP-6 Structural and Mechanical Properties of W-doped HfO₂ Thin Films, *A Uribe, M Garcia, R Chintalapalle, Cristian Orozco*, University of Texas at El Paso, USA

EP-7 Tribological Studies on Self-Lubricating (Cr,Al)N/MoS_x Coatings at Elevated Temperature, *K Bobzin, T Brägelmann, Nathan Kruppe, D Hoffmann*, Surface Engineering Institute - RWTH Aachen University, Germany; *F Klocke, P Mattfeld, D Trauth, R Hild*, Laboratory for Machine Tools and Production - RWTH Aachen University, Germany

EP-8 Role of Carbon Nanotubes in Reducing Friction between Steel/Steel Contacts, *Zaixiu Yang, S Bhowmick*, University of Windsor, Canada; *F Sen*, Argonne National Laboratory, USA; *A Alpas*, University of Windsor, Canada

EP-11 Microstructure Change, Element Diffusion and Tribological Properties of Chromium Oxide from RT to 1000 °C, *Huidi Zhou, N He, X Liu*, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China

EP-12 Sliding Wear Behaviour of Infiltrated Self-lubricating Polymer Matrix Composites Studied by in-situ Tribometry, *Yinyin Zhang*, McGill University, Canada; *R Schulz*, Hydro-Québec Research Institute (IREQ), Canada; *R Chromik*, McGill University, Canada

EP-13 Sputtered B-C-W-Coatings: Composition – Properties – Stability, *Heidrun Klostermann*, Fraunhofer FEP, Germany; *J Poetschke*, Fraunhofer IKTS, Germany; *O Zywitzki*, Fraunhofer FEP, Germany

EP-14 Comparison of Tribological and Electrochemical Properties of Titanium Oxided Films Produced on Cp-Ti by Sol-Gel and Silar Methods, *O Çomaklı*, Erzincan University, Turkey; *M Yazıcı*, Erzurum Technical University, Turkey; *Halim Kovacı*, Atatürk University, Turkey; *T Yetim*, Erzurum Technical University, Turkey; *A Yetim*, Erzurum Teknik University, Turkey; *A Çelik*, Atatürk University, Turkey

EP-18 Mechanical and Tribological Properties of W–C–N Films Using Unbalanced Magnetron Sputtering Assisted by Linear Ion Source, *Hyundong Kim, S Heo, E An, I Park*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

EP-19 The Influence of Feedstock Powders on Microstructure and Tribological Properties of WC-Co-Cr HVOF Coatings, *K Szymański, G Moskal, D Niemiec, Aleksander Iwaniak, J Wieczorek*, Silesian University of Technology, Poland

EP-20 Microstructure and Mechanical Properties of CuSn10 Alloy Coating Manufactured by Cold Spraying, *Weihuang Liu, J Cao, Z Yin, H Li, G Gao*, Shanghai Jiao Tong University, China

EP-22 Scratch Induced Thin Film Buckling for Quantitative Adhesion Measurements, *A Kleinbichler*, KAI – Kompetenzzentrum Automobil- und Industrielektronik GmbH, Austria; *J Zechner*, KAI - Kompetenzzentrum Automobil- und Industrielektronik GmbH, Austria; *Megan Cordill*, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria

EP-23 Study of the Mechanisms of Built-up Edge Formation during Machining of Super Duplex Stainless Steel, *Yassmin Seid Ahmed, G Fox-Rabinovich, B Bose, D Covelli, J Paiva, G Dosbaeva, S Veldhuis*, McMaster University, Canada

New Horizons in Coatings and Thin Films

Room Grand Hall - Session FP

Symposium F Poster Session

5:00pm

FP-2 Adjusting the Oxidation Behaviour of Arc Evaporated Al_{1-x}Cr_x Intermetallics and Substoichiometric Oxides, *Valentin Dalbauer*, CDL-AOS at TU Wien, Austria; *J Ramm*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *S Kolozvári*, Plansee Composite Materials GmbH, Germany; *C Koller*, CDL-AOS at TU Wien, Austria; *P Mayrhofer*, Institute of Materials Science and Technology, TU Wien, Austria

FP-3 Distribution of Dislocations in ZnO Thin Films Grown on a-plane Sapphire Substrates using a Reaction Between Dimethylzinc and High-temperature H₂O Generated by a Catalytic Reaction, *T Saito, R Ibe, A Kato*, Nagaoka University of Technology, Japan; *A Hashim*, MIIIT, Universiti Teknologi Malaysia, Malaysia; *Kanji Yasui*, Nagaoka University of Technology, Japan

FP-4 Structural and Optical Properties of ZnO Films Grown on Ion-Plated Ga-Doped-ZnO-Based Buffer Layers by Atmospheric-Pressure Chemical Vapor Deposition using Zn and H₂O as Source Materials, *Tomoaki Terasako, Y Ochi*, Ehime University, Japan; *M Yagi*, National Institute of Technology, Kagawa College, Japan; *J Nomoto, T Yamamoto*, Kochi University of Technology, Japan

FP-5 Synthesis and Optical Characterization of Nickel Oxide Thin Film obtained by SOL-GEL Method using Nickel Acetate and Citric Acid as Precursors, *Jhonathan Castillo, D Mateos, B Valdez, N Nedev, M Curiel, N Rosas, O Pérez*, Universidad Autónoma de Baja California, Mexico

FP-8 Exploring the Visible Light Photocatalytic Activity of the ZnO - RGO Hybrid - Nanostructures by Sol-gel Process, *Chih-Chiang Wang*, National Chung Hsing University, Taiwan; *H Shih*, Chinese Culture University, Taiwan

FP-9 Suppression of Moisture-induced Electrical Instabilities in High-mobility ZnON TFTs Fabricated from HiPIMS-made ZnON Films, *K Thorwarth, Rajesh Ganesan*, EMPA Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *M Trant*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *H Hug*, EMPA Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *M Bilek, D McKenzie*, The University of Sydney, Australia

FP-12 Tribo-mechanical Characterization of Ti/TiN/AlN Thin Film Produced by HiPIMS, *Joaquin Oseguera, D Melo-Máximo*, ITESM-CEM, Mexico; *L Melo*, TRAMES S.A. de C.V., Mexico

FP-13 Synthesis and Characterization of Bismuth Cuprate Thin Films Produced by Co-Sputtering, *D Franco-Pelaez, O Depablos-Rivera, Sandra Rodil*, Universidad Nacional Autónoma de Mexico, Mexico

FP-14 Synthesis of Zn /ZnO Nanoparticles using Atmospheric Plasma Discharge in Solution to Mitigate the Stress Corrosion Cracking in the Simulated Primary Water Environment, *Sang-Yul Lee, S Kim, M Song*, Korea Aerospace University, Republic of Korea; *S Kim*, Korea Institute of Industrial technology, Republic of Korea; *J Kim*, University of Incheon, Republic of Korea

FP-15 Vanadium Nitride Thin Films Grown by High Power Impulse Magnetron Sputtering, *H Hajihoseini, Jon Tomas Gudmundsson*, University of Iceland, Iceland

Thursday Afternoon Poster Sessions, April 26, 2018

Surface Engineering - Applied Research and Industrial Applications

Room Grand Hall - Session GP

Symposium G Poster Session

5:00pm

GP-2 Laser-clad Induced Reaction Synthesis of TiC/WC Reinforced Co-based Composite Coatings on Copper Alloy, *Hua Yan, P Zhang, Z Yu*, Shanghai University of Engineering Science, China

GP-5 The Study of Mechanical Strength on the Injection Molding Parameters of PMMA/TG Composite Bipolar Plates, *Ai-Huei Chiou*, National Formosa University, Taiwan

GP-6 Real-time Analysis of Neutral Species from Atmospheric Plasma, *Peter Hatton, A Rees, C Greenwood, S Bort*, Hiden Analytical Ltd, UK

GP-8 Correlation of HPPMS Plasma and Coating Properties using Artificial Neural Networks, *K Bobzin, T Brögelmann, N Kruppe, Martin Engels*, Surface Engineering Institute - RWTH Aachen University, Germany

GP-9 Linking Erosion and Sputter Performance of a Rotatable Target to Microstructure and Properties of Mo Thin Films, *A Hofer-Roblyek, K Pichler*, Montanuniversität Leoben, Austria; *C Linke*, Plansee SE, Austria; *R Franz*, Montanuniversität Leoben, Austria; *J Winkler*, Plansee SE, Austria; *Christian Mitterer*, Montanuniversität Leoben, Austria

GP-10 Surface Profile Analysis as an Investigative Tool for Electrolytic Plasma Polishing, *Nicolas Laugel, A Matthews, A Yerokhin*, University of Manchester, UK

GP-11 Evaluation of the Oxidation of Cr-W-N Coating on Ferritic Steel as Bipolar Plates for Solid Oxide Fuel Cell, *S Yang, Chi-Ju Tsan*, National University of Kaohsiung, Taiwan; *Y Chang*, National Formosa University, Taiwan; *Y Pan*, China Steel Corporation, Taiwan; *D Lin*, National University of Kaohsiung, Taiwan

Advanced Characterization Techniques for Coatings and Thin Films

Room Grand Hall - Session HP

Symposium H Poster Session

5:00pm

HP-1 Temperature Dependence of Nanocrystalline Aluminum Thin Film Elastic Constants by In-situ Brillouin Light Scattering and Picosecond Ultrasonics: Comparison to Molecular Dynamics, *Philippe Djemia*, LSPM-CNRS, France; *L Belliard*, INSP-UPMC, France; *H Zhang, Q Hu*, IMR-CAS, China; *F Challali, N Girodon-Boulandet, D Faurie*, LSPM-CNRS, France

HP-2 High Resolution Full-field Curvature Measurement, *S Grachev, Quentin Herault, J Wang, I Gozhyk*, Saint-Gobain Recherche, France; *R Lazzari*, INSP-UPMC, France

HP-4 In-situ High Temperature Characterization of DLC Films Using an Integrated Synchronized System, *M Rouhani*, National Chung Cheng University, Taiwan; *F Hong*, National Cheng Kung University, Taiwan; *Yeau-Ren Jeng*, National Chung Cheng University, Taiwan

HP-6 Novel Methodology for the Evaluation of Mechanical Properties of Specific Crystalline Phases Present in Alumina Layers Formed by Plasma Electrolytic Oxidation (PEO) of Aluminium Alloys, *Etienne Bousser, A Yerokhin, A Gholinia, P Withers, A Matthews*, University of Manchester, UK

HP-7 In situ High Temperature Fracture Toughness Evaluation of Hard Thin Ceramic Coatings by Means of a Micro-pillar Splitting Technique, *Juri Wehrs*, Platit AG, Switzerland; *J Best*, University of New South Wales, Australia; *M Polyakov, X Maeder*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *J Wheeler*, ETH Zürich, Switzerland; *M Morstein, B Torp*, Platit AG, Switzerland; *J Michler*, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

Topical Symposia

Room Grand Hall - Session TSP

Symposium TS Poster Session

5:00pm

TSP-1 Enhanced Hardening and Damage-tolerance Nanotwinned Medium Entropy Alloy CoCrNi Coatings Deposited by Magnetron Sputtering, *Fuyang Cao, P Munroe*, University of New South Wales, Australia; *Z Zhou*, City University of Hong Kong, China, Hong Kong; *Z Xie*, University of Adelaide, Australia

TSP-4 HVOF Coatings Modified With Polymers To Reduce Ice Accretion For Use In Aerostructures Components, *Raúl Muelas Gamo, A Agüero Bruna, J Mora Nogues, P Garcia Gallego*, Instituto Nacional de Técnica Aeroespacial (INTA), Spain

TSP-5 The Electro-Mechanical Properties of Cathodic Arc Deposited High Entropy Alloy Thin Films on Polymer Substrates, *A Xia*, Montanuniversität Leoben, Austria; *O Glushko, M Cordill*, Erich Schmid Institute of Materials Science, Austria; *Robert Franz*, Montanuniversität Leoben, Austria

TSP-6 Synthesis and Characterization of Multicomponent Nitrides in the Al-Cr-Nb-Y-Zr System, *Kristina Johansson*, Uppsala University, Sweden; *P Soucek*, Masaryk University, Czech Republic; *A Srinath, D Rehnlund, E Lewin*, Uppsala University, Sweden

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 27, 2018

	<p>Coatings for Use at High Temperatures Room California - Session A1-3 Coatings to Resist High Temperature Oxidation, Corrosion, and Fouling Moderators: Vladislav Kolarik, Fraunhofer Institute for Chemical Technology ICT, Shigenari Hayashi, Hokkaido University, Sebastien Dryepondt, Oak Ridge National Laboratory, USA</p>	<p>Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B4-3 Properties and Characterization of Hard Coatings and Surfaces Moderators: Ulrich May, Robert Bosch GmbH, Diesel Systems, Fan-Bean Wu, National United University, Taiwan, Farwah Nahif, eifeler-Vacotec GmbH</p>
<p>8:00am A1-3-1 A Framework for Modelling the Nanomechanical and Nanotribological Properties of High Temperature HfB_xC_y Coatings, Mohammad Humood, T Ozkan, Texas A&M University, USA; E Mohimi, J Abelson, University of Illinois at Urbana-Champaign, USA; A Polycarpou, Texas A&M University, USA</p>	<p>B4-3-1 Nano-Structural Ni Matrix Films Synthesized by Electrochemical/Chemical Composite Depositions, Zhixiang Zeng, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China</p>	
<p>8:20am A1-3-2 Characterization of Thermal Properties of Different Pyrochlore Ceramic Materials Dedicated for Application as an Insulation Layers in Thermal Barrier Systems, M Mikuskiewicz, Damian Migas, G Moskal, Silesian University of Technology, Poland</p>	<p>B4-3-2 NbC-Ni Coatings Deposited by DC Magnetron Sputtering: Effect of Ni Content on Mechanical Properties, Thermal Stability and Oxidation Resistance, Luis Varela, University of São Paulo, Brazil; F Fernandes, A Cavaleiro, University of Coimbra, Portugal; A Tschiptschin, University of São Paulo, Brazil</p>	
<p>8:40am A1-3-3 Development of High Performance Corrosion Resistant Coatings using Graphene, Anand Khanna, K Aneja, IIT Bombay, India</p>	<p>B4-3-3 Stress-Dependent Elasticity of TiAlN Coatings, Marcus Hans, RWTH Aachen University, Germany; U Hangen, Bruker Nano GmbH, Germany; L Patterer, D Holzapfel, D Music, S Evertz, RWTH Aachen University, Germany; V Schnabel, Laboratory for Nanometallurgy, ETH Zurich, Switzerland; A Eriksson, J Ramm, M Arndt, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; H Rudigier, Oerlikon Balzers, Oerlikon Surface Solutions AG, Switzerland; J Schneider, RWTH Aachen University, Germany</p>	
<p>9:00am A1-3-4 Wide-range and Enhanced Filtration of Polyacrylonitrile Membrane for Water Purification by Coating with Thin Film Metallic Glass, Shewaye Kassa, Y Liao, J Chu, J Chen, National Taiwan University of Science and Technology (NTUST), Taiwan</p>	<p>B4-3-4 Evaluation of the Open Porosity of PVD-Coatings through Electrochemical Iron Detection, Juan Vega, H Scheerer, G Andersohn, M Oechsner, Technische Universität Darmstadt, Germany</p>	
<p>9:20am A1-3-5 The Effect of Surface Aluminizing to Enhance High-temperature Air-oxidation Resistance of Equimolar FeCoNi and FeCoNiCr Alloy, Wu Kai, F Cheng, F Chien, R Huang, National Taiwan Ocean University, Taiwan; J Kai, National Tsing Hua University, Taiwan</p>	<p>B4-3-5 Structural and Optical Properties of Si-Nb-N Composite Thin Films, Cristian Orozco, University of Texas at El Paso, USA; N Murphy, L Sun, Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; R Chintalapalle, University of Texas at El Paso, USA</p>	
<p>9:40am A1-3-6 TEM Study of Hf-B-Si-C-N Coatings Microstructure at High Temperatures, Yi Shen, M Zhang, J Jiang, University of Texas at Arlington, USA; J Vlček, University of West Bohemia, Czech Republic; E Meletis, University of Texas at Arlington, USA</p>	<p>B4-3-6 HIPIMS Cr/CrN Multilayer Structure for Corrosion Resistant Decorative Coating, Yen-Chun Liu, S Hsiao, W Lo, Y Chen, J He, Feng Chia University, Taiwan</p>	
<p>10:00am</p>	<p>B4-3-7 Hardness-independent Extraordinary Wear Resistance in Magnetron Sputtered Cr-Si-N Coatings: The Importance of Fracture Toughness, Feng Huang, F Ge, C Jia, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China</p>	

Friday Morning, April 27, 2018

	Fundamentals and Technology of Multifunctional Materials and Devices Room Sunrise - Session C2-3 Novel Oxide Films for Active Devices Moderators: Marko Tadjer, Naval Research Laboratory, USA, Vanya Darakchieva, Linköping University, Sweden	Advanced Characterization Techniques for Coatings and Thin Films Room Royal Palm 1-3 - Session H3 Characterization of Coatings in Harsh Environments Moderators: JeffreyM. Wheeler, ETH Zürich, James Gibson, RWTH Aachen University
8:00am	C2-3-1 Improved the PI Transmittance and ITO Conductivity by Supercritical CO ₂ Fluid Treatment, <i>G Chen, ChienYu Lin, T Chang</i> , National Sun Yat-Sen University, Taiwan; <i>S Lin, M Yu, Y Chuang</i> , HannStar Display Corp, Taiwan	H3-1 Zr/Nb Nano-multilayers – Structural and Mechanical Response to Radiation Damage, <i>M Callisti</i> , University of Cambridge, UK; <i>Tomas Polcar</i> , University of Southampton, UK
8:20am	C2-3-2 Improving Performance by Inserting an In ₂ O ₃ Layer into HfO ₂ -Based Resistive Random Access Memory, <i>Cheng-Hsien Wu</i> , National Sun Yat-Sen University, Taiwan; <i>S Lin</i> , National Tsing Hua University, Taiwan; <i>T Chang, T Tsai, Y Lin, Y Tseng</i> , National Sun Yat-Sen University, Taiwan	H3-2 Nanoindentation of Commercial PVD Hard Coatings at Elevated Temperatures, <i>W Oliver</i> , Nanomechanics, Inc., USA; <i>M Romach</i> , Advanced Coating Service (ACS), USA; <i>R Anthony, Kurt Johanns</i> , Nanomechanics, Inc., USA
8:40am	INVITED: C2-3-3 Halide Vapor Phase Epitaxy of Ga ₂ O ₃ , <i>Ken Goto, Q Thieu, D Wakimoto, K Sasaki</i> , Novel Crystal Technology, Inc., Japan; <i>K Konishi, H Murakami, Y Kumagai</i> , Tokyo University of Agriculture and Technology, Japan; <i>A Kuramata</i> , Novel Crystal Technology, Inc., Japan; <i>S Yamakoshi</i> , Tamura Corporation, Inc., Japan	H3-3 Elevated Temperature Micro-impact Testing of TiAlSiN Coatings, <i>Ben Beake, A Bird</i> , Micro Materials Ltd, UK; <i>L Arrom</i> , Cranfield University, UK; <i>F Jiang</i> , Huaqiao University, China
9:00am	Invited talk continues.	H3-4 Fracture Testing of Transition Metal (Oxy)Nitride Coatings, <i>James Gibson, S Rezaei, H Rueß, M Hans, D Music, O Hunold, S Wulfinghoff, J Schneider, S Reese, S Korte-Kerzel</i> , RWTH Aachen University, Germany
9:20am	C2-3-5 Severe Positive Bias Temperature Instability in N-type MOS Device with Dipole Doped HfO ₂ Dielectric Layer, <i>FuYuan Jin, T Chang, H Liu, C Lin</i> , National Sun Yat-Sen University, Taiwan; <i>J Liao</i> , National Tsing Hua University, Taiwan; <i>F Ciau, W Hung</i> , National Sun Yat-Sen University, Taiwan	INVITED: H3-5 In-situ Study of Deformation and Fracture Processes in Nanostructured Metals at Elevated Temperatures, <i>Daniel Kiener</i> , Montanuniversität Leoben, Austria
9:40am	C2-3-6 Physical Mechanisms of Negative Bias Illumination Stress in InGaZnO Thin Film Transistors with Different Metal Gate Structure, <i>Chung-I Yang</i> , National Chiao Tung University, Taiwan; <i>T Chang</i> , National Sun Yat-Sen University, Taiwan; <i>W Chau</i> , National Chiao Tung University, Taiwan	Invited talk continues.
10:00am	C2-3-7 Fabrication of MSM UV Photodetector Based on ZnO/TFMG/UNCD Nanostructures, <i>Markos M. Yenesew, B Huang</i> , National Taiwan University of Science and Technology, Taiwan; <i>J Chu</i> , National Taiwan University of Science and Technology (NTUST), Taiwan	H3-7 Cryogenic Micropillar Compression Transient Tests at the Lower Limit of Crystallinity Case Study: Nanocrystalline Palladium-Gold, <i>Juri Wehrs</i> , Platit AG, Switzerland; <i>J Schwiedrzik</i> , EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>M Deckarm</i> , Universität des Saarlandes, Germany; <i>J Wheeler</i> , ETH Zürich, Switzerland; <i>X Maeder</i> , EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>R Birringer</i> , Universität des Saarlandes, Germany; <i>J Michler</i> , EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland
10:20am	C2-3-8 Effect of Cadmium Chloride Treatment on Poly-crystalline Thin Films of CdTe/Cd-Zn-Te/CdTe Structures, <i>Tushar Shimpi, C Reich, K Barth, W Sampath</i> , Colorado State University, USA	H3-8 Surface Roughness Effects of Hard Coatings under Three-body Abrasive Sliding Conditions, <i>Reza Gheisari, A Polycarpou</i> , Texas A&M University, USA

Friday Morning, April 27, 2018

Topical Symposia Room Royal Palm 4-6 - Session TS2 High Entropy and Other Multi-principal-element Materials Moderators: Ulf Jansson, Uppsala University, Angstrom Laboratory, Diederik Depla, Ghent University		
8:00am		
8:20am		
8:40am		
9:00am	TS2-4 Novel Properties and Nitriding Behavior of CoCrMnFeNi High-Entropy Alloy Prepared via Mechanical Alloying and Spark Plasma Sintering, <i>Akio Nishimoto, T Karimoto, C Nishi</i> , Kansai University, Japan	
9:20am	TS2-5 Structural, Phase Stability, Thermodynamic and Elastic Properties of CoCrCuFeNi-(Nb _x , Al _x) High-entropy and Other Thin Films: Experimental and Ab Initio Investigations, <i>C Li</i> , LSPM-CNRS, France; <i>B Braeckman, R Dedoncker</i> , Ghent University, Belgium; <i>Q Hu</i> , IMR-CAS, China; <i>L Belliard</i> , INSP-UPMC, France; <i>L Vitos</i> , KTH - Royal Institute of Technology, Sweden; <i>D Depla</i> , Ghent University, Belgium; <i>Philippe Djemia</i> , LSPM-CNRS, France	
9:40am	TS2-6 Carbon-containing High Entropy Alloys - A New Pathway to High-performance Materials?, <i>Stefan Fritze, P Malinovskis, L Riekehr, D Rehnlund, L Nyholm, E Lewin, U Jansson</i> , Uppsala University, Angstrom Laboratory, Sweden	
10:00am	TS2-7 Radiation Hardness Of FeCrMnNi High-Entropy Thin Films, <i>Vladimir Vishnyakov, M Tunes, G Greaves, S Donnelly</i> , University of Huddersfield, UK	
10:20am	TS2-8 Reactive Sputtering of High Entropy Alloys with Nitrogen – Tuning the Unit Cell, <i>Robin Dedoncker, D Depla</i> , Ghent University, Belgium; <i>G Radnóczy</i> , Centre for Energy Research, Hungarian Academy of Sciences, Hungary	
10:40am	TS2-9 Improved Resistance of Senary AlCrTaTiZrRu Under Bump Metallization to Interdiffusion and Reaction at Solder Joints, <i>Wen-Yu Chen</i> , National Tsing Hua University, Taiwan; <i>K Cheng</i> , National Chung Hsing University, Taiwan; <i>S Chang</i> , National Tsing Hua University, Taiwan	

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