

Program Overview

Room /Time	California	Golden West	Grand Hall & Foyer	Pacific Salon 1	Pacific Salon 2	Pacific Salon 3	Pacific Salon 6-7	Royal Palm 1-3	San Diego	Town & Country
MoPL										PL-MoPL: Plenary Lecture
MoM	B6-1-MoM: Interplay Between Computation	B2-1-MoM: CVD Coatings and Technologies		A1-1-MoM: Coatings to Resist High-temperature	G4-MoM: Pre-/Post-Treatment and Duplex	TS5-1-MoM: Thin Films on Polymer Substrates:	H1-1-MoM: Spatially-resolved and In-Situ	D1-1-MoM: Surface Coating and Surface		
MoSIT										SIT1-MoSIT: Special Interest Session
MoA	B6-2-MoA: Interplay Between Computation	B2-2-MoA: CVD Coatings and Technologies		A1-2-MoA: Coatings to Resist High-temperature		TS5-2-MoA: Thin Films on Polymer Substrates:	H1-2-MoA: Spatially-resolved and In-Situ	D1-2-MoA: Surface Coating and Surface		
TuM	B8-1-TuM: HiPIMS, Pulsed Plas & Energ.	B5-1-TuM: Hard & Multi Nanostruct Coatings I		TS4-TuM: Photocat & Superhydro Surfaces	G2-TuM: Surf Mod of Comp in Auto, Aero & Mfg	TS2-1-TuM: New Hor in Boron-Cont Coatings:	H2-1-TuM: Adv Mech Test of Surf, TF, Coatings	D2-TuM: Biocorr, Bio-trib & Bio-tribocorr Additive	E1-1-TuM: Friction, Wear, Lubrication	
TuEx										EX-TuM: Exhibition Keynote Lecture
TuA	B8-2-TuA: HiPIMS, Pulsed Plasmas and	B5-2-TuA: Hard & Multi Nano Coatings II		A2-1-TuA: Thermal and Environmental Barrier	G3-TuA: Innovative Surface Engineering	TS2-2-TuA: New Hor in Boron-Cont Coat:	H3-TuA: Char of Coat & Small Vol in Harsh Env	D3-TuA: Bioint: Improving the Cell	E1-2-TuA: Friction, Wear, Lubrication	
TuSIT										SIT2-TuSIT: Special Interest Session
WeM	B7-WeM: Plasma Surface Interactions,	B3-WeM: Deposition Tech & Applications		A2-2-WeM: Thermal and Environmental Barrier	G5-WeM: Hybrid Systems, Processes	TS2-3-WeM: New Horizons in Boron-Containing		C3-WeM: TF for Energy Ap: Sol, Ther, & Photo	E1-3-WeM: Friction, Wear, Lubrication	
WeSIT										SIT3-WeSIT: Special Interest Session
WeA	B4-1-WeA: Prop & Char of Hard Coat & Surfaces I			A3-WeA: Materials and Coatings for Solar Power	G6-WeA: Application-Driven Cooperations	TS3-1-WeA: In-Silicio Design of Novel	F1-WeA: Nanomaterials and Nanofabricati	C2-1-WeA: Func Coatings & TF for Elect Devices I	E1-4-WeA: Friction, Wear, Lubrication	
WeHL										HL-WeHL: Bunshah Award Honorary
ThM	B4-2-ThM: Prop & Char of Hard Coat & Surfaces II	B1-1-ThM: PVD Coatings and Technologies				TS3-2-ThM: In-Silicio Design of Novel	F2-ThM: High Entropy and Other Multi-principal-	C1-ThM: Opt Matls Design, Syn, Char, & Applications	E2-1-ThM: Mechanical Prop and Adhesion I	
ThA	B4-3-ThA: Prop & Char of Hard Coat & Surfaces III	B1-2-ThA: PVD Coatings and Technologies				TS1-ThA: Anti- and Decicing Surface Engineering I	F3-ThA: 2D Materials: Synthesis, Characterizati	C2-2-ThA: Functional Coatings and Thin Films for	E2-2-ThA: Mechanical Prop and Adhesion II	
ThP			Poster Sessions							
FrM	B4-4-FrM: Prop & Char of Hard Coat & Surfaces IV	B1-3-FrM: PVD Coatings and Technologies			G1-FrM: Advances in Industrial PVD, CVD				E3-FrM: Tribology of Coatings for Automotive	

Monday Morning, April 27, 2020

Plenary Lecture Room Town & Country - Session PL-MoPL Plenary Lecture Moderator: Grzegorz (Greg) Greczynski , Linköping University, Sweden		
8:00am	INVITED: PL-MoPL1 Organic Bioelectronics – Nature Connected, <i>M. Berggren</i> , Linköping University, Norrköping, Sweden	
8:20am	Invited talk continues.	
8:40am		
9:00am		
9:20am		
9:40am		

Monday Morning, April 27, 2020

Coatings for Use at High Temperatures Room Pacific Salon 1 - Session A1-1-MoM Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling I Moderators: Sebastien Dryepondt , Oak Ridge National Lab, USA, Shigenari Hayashi , Hokkaido University, Japan, Justyna Kulczyk-Malecka , Manchester Metropolitan Univ., UK		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B2-1-MoM CVD Coatings and Technologies I Moderators: Raphaël Boichot , Université Grenoble Alpes, CNRS, France, Kazunori Koga , Kyushu University, Japan	
10:00am	A1-1-MoM1 Oxidation Kinetics of γ -TiAl Based Coating Materials, S. Kagerer , <i>O. Hudak</i> , <i>H. Riedl</i> , <i>P.H. Mayrhofer</i> , TU Wien, Institute of Materials Science and Technology, Austria	INVITED: B2-1-MoM1 Atomic Layer Deposition for Complex-Shape and Temperature Sensitive Objects: Towards New Functions and Products, F. Mercier , Univ. Grenoble Alpes, CNRS, France	
10:20am	A1-1-MoM2 Effects of Temperature and the KCl + K ₂ SO ₄ Load on the Behavior of Several Aluminide Coatings on Ferritic Steels Tested under a Biomass Combustion Atmosphere, A.A. Agüero , <i>M. Gutiérrez</i> , Instituto Nacional de Técnica Aeroespacial (INTA), Spain	Invited talk continues.	
10:40am	INVITED: A1-1-MoM3 PGM based Diffusion Coatings for Ni-based Superalloys by a Paste Method, H. Murakami , <i>D.C. Tue</i> , <i>A. Ishira</i> , <i>L.C. Honglien</i> , National Institute for Materials Science (NIMS), Japan	B2-1-MoM3 Ald-Pvd Multilayers: Deposition, Thermal Stability And Mechanical Properties, T.E.J. Edwards , <i>T. Xie</i> , <i>L. Petho</i> , <i>S. Büchel</i> , <i>X. Maeder</i> , <i>B. Putz</i> , <i>J. Michler</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland	
11:00am	Invited talk continues.	B2-1-MoM4 High Throughput Deposition of Hydrogenated Amorphous Carbon Films using High-Pressure Ar+CH ₄ Plasmas, K. Koga , <i>S.H. Hwang</i> , <i>K. Kamataki</i> , <i>N. Itagaki</i> , <i>M. Shiratani</i> , Kyushu University, Japan	
11:20am	A1-1-MoM5 High-Temperature Corrosion Resistance of TiCrAlSiN Thin Deposited by Cosputtering, G. Yomayaza , Universidad Nacional de Colombia, Colombia; O. Piamba , Universidad Nacional e Colombia, Colombia; <i>J.J. Olaya</i> , Universidad Nacional de Colombia, Colombia	B2-1-MoM5 CVD Alumina-based Nanocomposite Coatings, Z.Y. Liu , Kennametal Inc., USA	
11:40am	A1-1-MoM6 Ti ₂ AlC MAX Phase Coating Deposited by Kerosene-fuelled High Velocity Oxy-fuel (HVOF) Spray, J.S. Pan , <i>Z. Zhang</i> , <i>S.H. Lim</i> , <i>D.M.Y. Lai</i> , Institute of Materials Research and Engineering, Agency for Science, Technology and Research (A*STAR), Singapore	B2-1-MoM6 Metallization of Composite Waveguides for Satellites through the Co-Deposition of Cu and Co by DLI-MOCVD, T. Duguet , CNRS - University of Toulouse, France; <i>F. Addou</i> , CEA Saclay, France; <i>C. Vahlas</i> , CNRS - University of Toulouse, France	

Monday Morning, April 27, 2020

Hard Coatings and Vapor Deposition Technologies Room California - Session B6-1-MoM Interplay Between Computational and Experimental Design of Coatings and Processes I Moderators: Yin-Yu Chang , National Formosa University, Taiwan, Paul Heinz Mayrhofer , TU Wien, Institute of Materials Science and Technology, Austria		Coatings for Biomedical and Healthcare Applications Room Royal Palm 1-3 - Session D1-1-MoM Surface Coating and Surface Modification in Biological Environments I Moderators: Mathew T. Mathew , University of Illinois at Chicago, Rockford, USA, Phaedra Silva-Bermudez , Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico	
10:00am	B6-1-MoM1 Superlattice Design for Superior Thin Films, N. Koutná¹ , R. Hahn , J. Buchinger , TU Wien, Institute of Materials Science and Technology, Austria; D.G. Sangiovanni , Linköping University, Sweden; M. Bartosik , TU Wien, Institute of Materials Science and Technology, Austria; D. Holec , Montanuniversität Leoben, Austria; P.H. Mayrhofer , TU Wien, Institute of Materials Science and Technology, Austria	INVITED: D1-1-MoM1 Biomimetic Extracellular Matrix Coating for Titanium Implant Surfaces to Improve Osteointegration, S. Ravindran , P. Gajendrareddy , J. Hassan , C.-C. Huang , University of Illinois at Chicago, USA	
10:20am	B6-1-MoM2 Fracture Toughness Trends in Modulus-matched TiN/(Cr,Al)N Thin Film Superlattices, J. Buchinger , A. Wagner , TU Wien, Austria; L. Löfler , Montanuniversität Leoben, Austria; Z.L. Zhang , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; P.H. Mayrhofer , TU Wien, Austria; D. Holec , Montanuniversität Leoben, Austria; M. Bartosik , TU Wien, Austria	Invited talk continues.	
10:40am	INVITED: B6-1-MoM3 Weakest Links in Superlattices: Insights from Ab Initio Modelling, D. Holec , Montanuniversität Leoben, Austria; N. Koutná , TU Wien, Austria; L. Löfler , L. Hantzenbichler , Montanuniversität Leoben, Austria; P. Řehák , Central European Institute of Technology (CEITEC), Brno University of Technology, Czech Republic; M. Bartosik , TU Wien, Austria; M. Friák , Institute of Physics, Academy of Sciences of the Czech Republic, Czech Republic; M. Černý , Central European Institute of Technology (CEITEC), Brno University of Technology, Czech Republic; P.H. Mayrhofer , TU Wien, Institute of Materials Science and Technology, Austria	D1-1-MoM3 Physical Vapor Deposition for Growth of Large Area Molecular Sensor Arrays, N.R. Glavin , D.R. Austin , D.C. Moore , M.J. Matala , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; C. Muratore , University of Dayton, USA	
11:00am	Invited talk continues.	D1-1-MoM4 Very Thin Gold Films Deposited on Collagen Fabric in Skin Cell Experiments, S.Y. Huang , Feng Chia University, Taichung Veterans General Hospital, Taiwan; P.-Y. Hsieh , Institute of Plasma, Feng Chia University, Taiwan; C.M. Chou , Taichung Veterans General Hospital, National Yang-Ming University, Taiwan; C.J. Chung , Central Taiwan University of Science and Technology, Taiwan; J.L. He , Feng Chia University, Taiwan	
11:20am	B6-1-MoM5 Fracture Toughness of Superlattice Thin Films: A Multiscale Modeling Approach, A. Wagner , TU Wien, Institute of Materials Science and Technology, Austria; L. Löfler , Montanuniversität Leoben, Austria; M. Todt , TU Wien, Institute of Lightweight Design and Structural Biomechanics, Austria; P.H. Mayrhofer , TU Wien, Institute of Materials Science and Technology, Austria; D. Holec , Montanuniversität Leoben, Austria; M. Bartosik , TU Wien, Institute of Materials Science and Technology, Austria	D1-1-MoM5 Biocompatible and Mechanical Properties of TiNbZr(N) Coatings Synthesized by Cathodic Arc Deposition, Y.J. Yang , Y.Y. Chang , National Formosa University, Taiwan; H.L. Huang , China Medical University, Taiwan; M.T. Tsai , Hungkuang University, Taiwan	
11:40am	B6-1-MoM6 Tribological and Mechanical Properties of CrNbTiVZr(N) High Entropy Alloy Nitride Coatings, Y.Y. Chang , C.H. Chung , National Formosa University, Taiwan	D1-1-MoM6 Mesenchymal Stem Cells Response to Metal Oxide Thin Films, P. Silva-Bermudez , Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico; M. Fernández-Lizárraga , Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional, Mexico; S.E. Rodil , Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico; J. Garcia-Lopez , R. Sanchez-Sanchez , Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico	

Monday Morning, April 27, 2020

	<p>Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G4-MoM Pre-/Post-Treatment and Duplex Technology Moderators: Heidrun Klostermann, Fraunhofer FEP, Germany, Hiroyuki Kousaka, Gifu University, Japan</p>	<p>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes Room Pacific Salon 6-7 - Session H1-1-MoM Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces I Moderators: Grégory Abadias, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France, Xavier Maeder, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>
10:00am		<p>H1-1-MoM1 Cross-sectional Nanodiffraction and TEM Reveal In-situ Indentation Response of AlN-CrN Superlattice Multilayer, J. Todt, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; C. Krywka, Helmholtz-Zentrum Geesthacht, Germany; Z.L. Zhang, Erich Schmid Institute for Material Science, Austrian Academy of Sciences, Austria; J. Keckes, Montanuniversität Leoben, Austria; M. Bartosik, TU Wien, Institute of Materials Science and Technology, Austria</p>
10:20am	<p>G4-MoM2 Notable Difference between Rapid-Thermal and Microwave Annealing on Ge pMOSFETs, Y.-H. Chien, K.-S. Chang-Liao, D.-B. Ruan, S.-H. Yi, F.-Y. Chu, National Tsing Hua University</p>	<p>H1-1-MoM2 Nano-scale Residual Stress Profiling in Ultra-thin Si₃N₄/ZnO Multilayer Stacks using FIB-DIC Method, M. Sebastiani, Roma TRE University, Italy</p>
10:40am	<p>G4-MoM3 Effect of Annealing Environment on Performance of InWZnO CBRAM, C.-C. Hsu, P.-T. Liu, K.-J. Gan, D.-B. Ruan, Y.-C. Chiu, S.M. Sze, National Chiao Tung University, Taiwan</p>	<p>H1-1-MoM3 EBSD and TKD Techniques for Stress, Defect and Nano-structural Analyses of Thin Films and Coatings, X. Maeder, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; A. Sharma, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; J. Michler, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>
11:00am	<p>G4-MoM4 Plasma Pretreatment of Small Parts in Bulk Vacuum Coating, H. Klostermann, B.G. Kraetzschmar, F. Fietzke, Fraunhofer FEP, Germany</p>	<p>H1-1-MoM4 Deformation Mechanisms in Nanocrystalline-Amorphous Cu/Ta Coatings, T.H. Huminiuc, University of Southampton, UK; A. Bahrami, Universidad Autónoma de Ciudad de México, Mexico, México; S.E. Rodil, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico; T. Polcar, University of Southampton, UK</p>
11:20am	<p>INVITED: G4-MoM5 Comprehensive Characterization of Surface Modification Mechanisms in Boron Nitride Films Prepared by a Reactive Plasma-assisted Coating Technique, K. Eriguchi, Kyoto University, Japan; M. Noma, SHINKO SEIKI CO., LTD, Japan; M. Yamashita, Hyogo Prefectural Institute of Technology, Japan; K. Urabe, Kyoto University, Japan; S. Hasegawa, Osaka University, Japan</p>	<p>INVITED: H1-1-MoM5 Multimodal and <i>in situ</i> Electron Microscopy to Understand Local Deformation Mechanics, J. Kacher, Georgia Institute of Technology, USA</p>
11:40am	Invited talk continues.	Invited talk continues.

Monday Morning, April 27, 2020

Topical Symposia Room Pacific Salon 3 - Session TS5-1-MoM Thin Films on Polymer Substrates: Flexible Electronics and Beyond I Moderator: Barbara Putz , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland	
10:00am	INVITED: TS5-1-MoM1 Flexible Printed Sensors for Biomechanical Measurements, <i>T.N. Ng</i> , University of California San Diego, USA
10:20am	Invited talk continues.
10:40am	TS5-1-MoM3 Atomic Layer Deposited Al ₂ O ₃ /ZnO Nanolaminate Thin Films on PET Substrates: Fracture Mechanics and Oxygen Gas Permeation Properties, <i>V. Chawla, M. Ruoho, J.-P. Niemelä, B. Putz</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>M. Weber, A.A. Chaaya</i> , Institut Européen des Membranes, IEM, France; <i>A.A. Taylor</i> , University of California Santa Barbara, USA; <i>C. Charmette</i> , Institut Européen des Membranes, IEM, France; <i>P. Miele</i> , Institut Européen des Membranes, IE, France; <i>M. Bechelany</i> , Institut Européen des Membranes, IEM, France; <i>J. Michler, I. Utke</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland
11:00am	TS5-1-MoM4 Low-temperature Plasma enhanced Atomic Layer Deposition of Al ₂ O ₃ Thin Films for Applications in Flexible Electronic Devices, <i>J.R. Castillo, D. Mateos, B. Valdez, M. Curiel, O.M. Perez, N. Nedev</i> , Universidad Autónoma de Baja California, Mexico
11:20am	TS5-1-MoM5 Conversion of Aluminium Oxide Coated Films for Food Packaging Applications – From a Single Layer Material to the Finished Pouch, <i>C. Struller</i> , Bobst Manchester Ltd., UK; <i>P.J. Kelly</i> , Manchester Metropolitan University, UK; <i>N. Copeland</i> , Bobst Manchester Ltd, UK
11:40am	TS5-1-MoM6 Optically Transparent Bacterial Nanocellulose Composites and Fibroin Substrates for Flexible Organic Devices, <i>M. Cremona</i> , Pontificia Universidade Católica do Rio de Janeiro, Brazil; <i>H.S. Barud</i> , Universidade de Araraquara, Brazil; <i>R. dos S. Carvalho</i> , Pontificia Universidade Católica do Rio de Janeiro, Brazil; <i>A.V.S. Cebrian</i> , UNESP, Brazil; <i>A.R.J. Barreto</i> , PUC-Rio, Brazil; <i>F.E. Maturi</i> , UNESP, Brazil; <i>R.R. Silva</i> , Chalmers University Technology, Sweden; <i>C. Legnani</i> , Universidade Federal de Juiz de Fora, Brazil; <i>S.J.L. Ribeiro</i> , UNESP, Brazil

Monday Afternoon, April 27, 2020

Special Interest Talks
Room Town & Country - Session SIT1-MoSIT
Special Interest Session
Moderator:
Grzegorz (Greg) Greczynski, Linköping University, Sweden

1:00pm	INVITED: SIT1-MoSIT1 Plasma Aspects in the Deposition of Advanced Coatings, A. Anders , Leibniz Institute of Surface Engineering (IOM), Germany, USA	
1:20pm	Invited talk continues.	
1:40pm		

Monday Afternoon, April 27, 2020

Coatings for Use at High Temperatures Room Pacific Salon 1 - Session A1-2-MoA Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling II Moderators: Sebastien Dryepondt , Oak Ridge National Lab, USA, Shigenari Hayashi , Hokkaido University, Japan, Justyna Kulczyk-Malecka , Manchester Metropolitan Univ., UK		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B2-2-MoA CVD Coatings and Technologies II Moderators: Raphaël Boichot , Université Grenoble Alpes, CNRS, France, Kazunori Koga , Kyushu University, Japan	
2:00pm	A1-2-MoA1 Advanced Coatings for Clearance Control in Turbine Components, Z. Tang , A. Athans, K. Garing, W. Jarosinski, Praxair Surface Technologies Inc., USA	B2-2-MoA1 Silicon Carbide Coatings for High Temperature Receiver of Concentrated Solar Power Plants, M. Pons , D. Chen, University of Grenoble Alpes, France; J. Colas, PROMES-CNRS, France; F. Mercier, University Grenoble-Alpes, France; L. Charpentier, M. Balat-Michelin, PROMES-CNRS, France	
2:20pm	A1-2-MoA2 Intrinsic and Extrinsic Size Effects on the High Temperature Oxidation of APS and HVOF MCrAlY Coatings, D. Texier , M. Ecochard, ICA, France; T. Gheno, ONERA, France; M. Salem, P. Lours, ICA, France	B2-2-MoA2 In-situ Investigation of the Oxidation Behaviour of Chemical Vapour Deposited Zr(C,N) Hard Coatings Using Synchrotron X-ray Diffraction, F. Frank , M. Tkadletz, C. Saringer, Montanuniversität Leoben, Austria; A. Stark, N. Schell, Helmholtz-Zentrum Geesthacht, Germany; C. Czettl, CERATIZIT Austria GmbH, Austria; N. Schalk, Montanuniversität Leoben, Austria	
2:40pm	A1-2-MoA3 Active Corrosion Protection of PEO Coatings on Magnesium Alloys, B. Mingo , Y. Guo, R. Garcia-Leiva, B. Connolly, A. Matthews, A. Yerokhin, The University of Manchester, UK	INVITED: B2-2-MoA3 Plasma-assisted Deposition using Microdroplets, T. Ito , K. Nitta, K. Terashima, The University of Tokyo, Japan	
3:00pm	A1-2-MoA4 Early Detection and in-situ Monitoring of the Oxidation of an MCrAlY Coating by Thermoreflectometry, M. Ecochard , B. Javaudin, R. Gilblas, D. Texier, T. Sentenac, ICA, France	Invited talk continues.	
3:20pm	A1-2-MoA5 High-Temperature Tribology and Oxidation Behavior of Laser-Deposited High-Entropy Alloy Claddings, P. Lordat , Q. Chao, J. Joseph, D. Fabijanic, Deakin University, Australia	B2-2-MoA5 Fundamental Study of (100) Oriented cubic AlTiN Coating with High Al content by Chemical Vapor Deposition, T. Ishigaki , K. Yanagisawa, H. Nakamura, H. Homma, Mitsubishi Materials Corporation, Japan	
3:40pm	A1-2-MoA6 The Effect of Cr-addition on Hot Corrosion Resistance of Hot-dip Aluminized Low Carbon Steel under Static Load, H.C. Liang , C.-J. Wang, National Taiwan University of Science and Technology, Taiwan	B2-2-MoA6 Chemical Quantifications of LPCVD Nanolamellae $Ti_{1-x}Al_xN_{1-y}$ Coatings by Analytical Electron Microscopy and Atom Probe Tomography, R. Qiu , O. Bäcke, H. Aboulfadl, Chalmers Tekniska Högskola, Sweden; T. Manns, J. Kümmerl, W. Janssen, D. Stiens, Walter AG, Germany; M. Thuvander, H.-O. Andrén, Chalmers Tekniska Högskola, Sweden; M. Halvarsson, Chalmers tekniska högskola, Sweden	
4:00pm	INVITED: A1-2-MoA7 Hot Corrosion in Aero Gas Turbine Engines: Current Understanding and Future Research Directions, E. Zaleski , M. Task , Pratt & Whitney, USA	B2-2-MoA7 Hot Filament CVD Diamond Coatings for Hard-to-machine Materials, M. Woda , W. Puetz, M. Frank, W. Koelker, C. Schiffers, O. Lemmer, CemeCon AG, Germany	
4:20pm	Invited talk continues.	B2-2-MoA8 Protective Amorphous CrC _x Coatings Grown at Very Low Temperature by Direct Liquid Injection MOCVD, I. Iliescu , Y. Gazal, CIRIMAT, CNRS - University of Toulouse, France; A. Michau, F. Addou, CEA Saclay, France; T. Duquet, CIRIMAT, CNRS - University of Toulouse, France; E. Monsifrot, DEPHIS, France; F. Schuster, CEA, Université Paris-Saclay, France; F. Maury, CIRIMAT, CNRS - University of Toulouse, France	
4:40pm	A1-2-MoA9 Effect of Nickel Percentage on the Morphology, Wear and Corrosion Resistance of Zn-Ni Alloy Coating, A. Farooq , University of the Punjab, Pakistan		
5:00pm	A1-2-MoA10 Vacuum Annealing of ZrO ₂ -Coated Zircaloy-4 with ZrN Interlayer, I.-S. Ting , National Tsing Hua University, Taiwan; H.-M. Tung, Institute of Nuclear Energy Research, Taiwan; J.-H. Huang, National Tsing Hua University, Taiwan		
5:20pm	A1-2-MoA11 Corrosion Behavior and Durability of Microstructure of Stainless Steel Rebars in Simulated Concrete Pore Solution Containing Chloride with Different PH, D.B. Subedi , Chinese Academy of Sciences, China		

Monday Afternoon, April 27, 2020

Hard Coatings and Vapor Deposition Technologies Room California - Session B6-2-MoA Interplay Between Computational and Experimental Design of Coatings and Processes II Moderators: Yin-Yu Chang , National Formosa University, Taiwan, Paul Heinz Mayrhofer , TU Wien, Institute of Materials Science and Technology, Austria		Coatings for Biomedical and Healthcare Applications Room Royal Palm 1-3 - Session D1-2-MoA Surface Coating and Surface Modification in Biological Environments II Moderators: Mathew T. Mathew , University of Illinois at Chicago, Rockford, USA, Phaedra Silva-Bermudez , Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico	
2:00pm	INVITED: B6-2-MoA1 Controlling Phase and Microstructure of Ti-Cr-Al-N System Deposited by Arc Ion Plating, K. Yamamoto , Kobe Steel Ltd., Japan	D1-2-MoA1	The Correlation and Machine Learning of O and OH Radical Generation with Process Parameters in an Atmospheric Pressure Plasma Jet and its Use in the Enhancement of Biocompatibility, J.H. Hsieh, Y.W. Liu , Ming Chi University of Technology, Taiwan; C. Li , National Yang Ming University, Taiwan
2:20pm	Invited talk continues.	D1-2-MoA2	Enhanced Osseointegration with PVD Coatings on Structured PEEK, A. Martin, J. Wellstein, H. Scheerer, T.C. Engler, M.J. Saul, M. Oechsner , TU Darmstadt, Germany
2:40pm	B6-2-MoA3 Maximum N Content in a-CN _x and other Amorphous Nitrides, J. Houska , University of West Bohemia, Czech Republic	D1-2-MoA3	Biocompatibility Evaluation of TiZrNbTaFe High-entropy Alloy Thin Film Deposited by High Power Impulse Magnetron Sputtering, H.C. Chao, Y.-C. Yang , National Taipei University of Technology, Taiwan; B.-S. Lou , Chang Gung University & Memorial Hospital, Taiwan; J.-W. Lee , Ming Chi University of Technology, Chang Gung University & Memorial Hospital, Taiwan
3:00pm	B6-2-MoA4 Transition Metal Carbonitride based Thin Films: A Critical Review on Thermal and Elastic Properties of Group IV to VI TMC _{1-x} N _x , T. Glechner , TU Wien, CDL-SEC, Austria; P.H. Mayrhofer , TU Wien, Austria; S. Kodambaka , University of California Los Angeles, USA; R. Hahn , TU Wien, CDL-SEC, Austria; D. Holec , Montanuniversität Leoben, Austria; T. Wojcik , TU Wien, Institute of Materials Science and Technology, Austria; M. Arndt , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; S. Kolozsvári , Plansee Composite Materials GmbH, Germany; H. Riedl , TU Wien, CDL-SEC, Austria	D1-2-MoA4	Behavior of fs-laser Micro-Patterend HDLC in Hyaluronic Acid, A.S. Dornier-Reisel , Schmalkalden University of Applied Sciences, Germany; S. Svoboda , Schmalkalden University of Applied Sciences, Germany; A. Engel , University of Applied Sciences Mittweida; C. Schürer , Consultant Chemnitz; S. Weißmantel , University of Applied Sciences Mittweida, Germany
3:20pm	B6-2-MoA5 Kinetic Monte Carlo Simulations of Residual Stress Evolution, E. Chason , Brown University, USA; A. Bower , Brown University, USA, United States of America	INVITED: D1-2-MoA5	Embroidery of Conductive E-Threads: Opportunities and Challenges in Healthcare, Z. Dalisky, S. Alharbi, V. Mishra, A. Kiourti , The Ohio State University, USA
3:40pm	B6-2-MoA6 Simulation for Compositional Variation in Reactive Magnetron Sputtered NiTi Films, I. Banerjee , Central University of Gujarat, India; S.V. Haldar , Harish-Chandra Research Institute, India; S.K. Mahapatra , Central University of Punjab, India		Invited talk continues.
4:00pm	B6-2-MoA7 Electronic Structure based Design of Thin Film Metallic Glasses with Superior Fracture Toughness, S. Evertz ¹ , RWTH Aachen University, Germany; I. Kirchlechner, R. Soler, C.K. Kirchlechner, P. Kontis , Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany; J. Bednarcik , P. J. Safarik University, Kosice, Slovakia; B. Gault, G. Dehm, D. Raabe , Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany; J.M. Schneider , RWTH Aachen University, Germany		
4:20pm			
4:40pm			
5:00pm			
5:20pm			

¹ Student Award Nominee

Monday Afternoon, April 27, 2020

<p>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes Room Pacific Salon 6-7 - Session H1-2-MoA Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces II Moderators: Grégory Abadias, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France, Xavier Maeder, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>		<p>Topical Symposia Room Pacific Salon 3 - Session TS5-2-MoA Thin Films on Polymer Substrates: Flexible Electronics and Beyond II Moderators: Oleksandr Glushko, Montanuniversität Leoben, Leoben, Austria, Barbara Putz, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>
2:00pm		<p>INVITED: TS5-2-MoA1 Flexible Electronics: From Interactive Smart Skins to In vivo Applications, D. Makarov, Helmholtz-Zentrum Dresden-Rossendorf e. V. (HZDR), Institute of Ion Beam Physics and Materials Research, Germany</p>
2:20pm		<p>Invited talk continues.</p>
2:40pm	<p>INVITED: H1-2-MoA3 Multicracking of Thin Films and Nanostructures on Stretchable Substrates; Impact on Magnetic Properties, D. Faurie, F. Zighem, S. Merabtine, LSPM-CNRS, Université Paris13, France; P. Lupo, A. Adeyeye, National University of Singapore, Singapore</p>	<p>TS5-2-MoA3 Electromechanical Behavior of Evaporated and Printed Thin Films and Devices on Compliant Substrates, P.A. Gruber, N. Mishra, S.-M. Yi, T. Haas, B.-Y. Kim, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WBM), Germany</p>
3:00pm	<p>Invited talk continues.</p>	<p>TS5-2-MoA4 Fragmentation of ALD-PVD Multilayers on Flexible Substrates in Uniaxial and Biaxial Tension: Insights from in situ SEM and Synchrotron Diffraction Experiments, B. Putz, T.E.J. Edwards, T. Xie, E. Huszar, L. Pethö, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; P. Kreiml, Montanuniversität Leoben, Department of Material Physics, Austria; M.J. Cordill, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; D. Thiaudiere, Synchrotron SOLEIL, France; D. Faurie, LSPM-CNRS, Université Paris13, France; P.O. Renault, Université de Poitiers, France; J. Michler, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>
3:20pm	<p>H1-2-MoA5 Tailoring Stress Evolution During Silver Thin Film Growth on Weakly-interacting Substrates by Addition of Nitrogen, A. Jamnig, Linköping University, IFM, Nanoscale Engineering Division, Sweden; K. Sarakinos, Linköping University, Sweden; G. Abadias, Institut P', Université de Poitiers, France</p>	<p>TS5-2-MoA5 HiPIMS Metallization of Polymers: Titanium on PEEK, A.R. Chacko, K. Thorwarth, R. Crockett, U. Müller, H.J. Hug, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>
3:40pm		<p>TS5-2-MoA6 Carbon Containing Multicomponent Alloys with High Hardness, Ductility and Corrosion Resistance, L. Zendejas Medina, Uppsala University, Sverige; G. Lindwall, KTH - Royal Institute of Technology, Sweden; E.M. Pascalidou, Uppsala University, Sweden; L. Riekehr, Uppsala University, Angstrom Laboratory, Sweden; M. Tavares da Costa, Uppsala University, Sweden; S. Fritze, Uppsala University, Angstrom Laboratory, Sweden; K. Gamstedt, Uppsala University, Sweden; L. Nyholm, U. Jansson, Uppsala University, Angstrom Laboratory, Sweden</p>
4:00pm		
4:20pm		
4:40pm		
5:00pm		
5:20pm		

Tuesday Morning, April 28, 2020

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B5-1-TuM Hard and Multifunctional Nanostructured Coatings I Moderators: Tomas Kozak, University of West Bohemia, Czech Republic, Vincent Moraes, TU Wien, Institute of Materials Science and Technology, Austria		Hard Coatings and Vapor Deposition Technologies Room California - Session B8-1-TuM HiPIMS, Pulsed Plasmas and Energetic Deposition I Moderators: Jon Tomas Gudmundsson, University of Iceland, Iceland, Tiberiu M. Minea, LPGP, Universite Paris-Sud, France	
8:00am	B5-1-TuM1 HPPMS (Ti,Al,Cr,Si)N - Influence of Substrate Bias and Puls Frequency on Cutting Performance, <i>K. Bobzin, T. Brögelmann, N.C. Kruppe, M. Carlet</i> , Surface Engineering Institute - RWTH Aachen University, Germany	B8-1-TuM1 Fabrication of AlTiSiN Nanocomposite Coatings with High Hardness and Low Internal Stress, <i>Z.T. Wu, Q.M. Wang</i> , Guangdong University of Technology, China; <i>G. Greczynski</i> , Linköping University, Sweden	
8:20am	B5-1-TuM2 Improved Ti-Al-Ta-N Coatings by Doping with LaB ₆ and CeSi ₂ , <i>A. Kirnbauer, S. Kagerer</i> , TU Wien, Institute of Materials Science and Technology, Austria; <i>P. Polcik</i> , Plansee Composite Materials GmbH, Germany; <i>P.H. Mayrhofer</i> , TU Wien, Institute of Materials Science and Technology, Austria	B8-1-TuM2 Measurements and Modeling of Residual Stress in Sputtered Nitride Films: Dependence on Growth Rate and Gas Pressure, <i>Z. Rao</i> , Brown University, USA, United States of America; <i>E. Chason</i> , Brown University, USA	
8:40am	INVITED: B5-1-TuM3 Impact of Nitrogen Deficiency on the Phase Transformation of (Ti,Al)N Thin Films at Elevated Temperatures, <i>I.C. Schramm</i> , Sandvik Coromant R&D, Sweden	B8-1-TuM3 Plasma Chemistry, Crystal Growth and Mechanical Properties of CrAlYN / CrN Nanoscale Multilayer Coatings Deposited by High Power Impulse Magnetron Sputtering, <i>A.P. Ehasarian, A.A. Sugumaran, P.Eh. Hovsepian</i> , Sheffield Hallam University, UK	
9:00am	Invited talk continues.	B8-1-TuM4 Fabrication of TiN Coatings using Superimposed HiPIMS and MF: Effect of MF Power and Synchronized Substrate Bias, <i>W.S. Yang, J.-W. Lee</i> , Ming Chi University of Technology, Taiwan	
9:20am	B5-1-TuM5 Thermal Stability of Nanostructured TiAl(Si,B)N Coatings Deposited by HiPIMS with Positive Pulses, <i>Á. Méndez Fernández, J.A. Santiago, I. Fernández-Martínez, A. Wennberg</i> , Nano4Energy SL, Spain; <i>M. Panizo-Laiz</i> , Universidad Politecnica de Madrid, Spain; <i>M.A. Monclús, J.M. Molina-Aldareguia</i> , IMDEA Materials Institute, Spain		
9:40am	B5-1-TuM6 Development and Evaluation of Ultra-thick CrAlAgN Coatings for High Temperature Wear Resistance, <i>J. Lin</i> , Southwest Research Institute, USA; <i>X.H. Zhang</i> , Southeast University, China; <i>R. Wei</i> , Southwest Research Institute, USA		
10:00am	B5-1-TuM7 On the Structure and Mechanical Properties of X ₂ BC Coatings Prepared by High Power Impulse Magnetron Sputtering at Different Temperatures, <i>P. Soucek, M. Polacek, L. Zabransky, M. Stupavska, P. Vasina</i> , Masaryk University, Brno, Czech Republic		
10:20am	B5-1-TuM8 Molecular Dynamics Simulations of Dislocation Confinement Effects in Core-Shell Nanostructures, <i>D.R.A. Fleming</i> , Arkansas State University, USA		
10:40am	B5-1-TuM9 A Microstructural and Corrosion Resistance Study of TiCrAlN-Ni Coatings Produced Through Co-sputtering, <i>J.J. Olaya, J.E. Alfonso</i> , Universidad Nacional de Colombia, Colombia; <i>L. Ramos</i> , Universidad Nacional de Colombia		

Tuesday Morning, April 28, 2020

<p>Coatings for Biomedical and Healthcare Applications Room Royal Palm 1-3 - Session D2-TuM Bio-corrosion, Bio-tribology and Bio-Tribocorrosion-Additive Manufacturing Impact Moderators: Steve Bull, Newcastle University, UK, United Kingdom of Great Britain and Northern Ireland, Hamdy Ibrahim, University of Tennessee at Chattanooga, USA, Jessica Amber Jennings, University of Memphis, USA</p>		<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-1-TuM Friction, Wear, Lubrication Effects, and Modeling I Moderators: Nazlim Bagcivan, Schaeffler AG, Germany, Tomáš Polcar, University of Southampton, UK, Manel Rodriguez Ripoll, AC2T Research GmbH, Austria</p>	
8:00am		<p>INVITED: E1-1-TuM1 Efficiency Improvement Along the Stribeck Curve through Pvd Coatings - From Minimum Quantity Lubrication to Full Fluid Lubrication, T. Brögelmann, K. Bobzin, C. Kalscheuer, M. Welters, M. Thiex, Surface Engineering Institute - RWTH Aachen University, Germany</p>	
8:20am		<p>Invited talk continues.</p>	
8:40am	<p>INVITED: D2-TuM3 Crevice Tribocorrosion of Additively Manufactured Stainless Steels in Ringers Solution, Mobin Salasi, E Hornus, Curtin University, Western Australia, Australia; C Schulz, University of South Australia; M Salem, Ecole de Mines Albi, France; Z Quadir, W Rickard, Curtin University, Western Australia; P Lours, Ecole de Mines Albi, France; M Iannuzzi, Curtin University, Western Australia</p>	<p>E1-1-TuM3 From Surface to Sub-surface Contributions to Friction at the Nanoscale, C Menezes, UFSC, Brazil; V Pavinato, L Leidens, UCS - Caxias do Sul University, Brazil; F Echeverrigaray, F Alvarez, UNICAMP, Brazil; A Michels, C Figueroa, UCS - Caxias do Sul University, Brazil</p>	
9:00am	<p>Invited talk continues.</p>	<p>E1-1-TuM4 Computer Simulations of FCC Alloys Subjected to Dry Sliding as Basis for a Near-Surface Deformation Mechanism Map, S.J. Eder, M. Rodriguez Ripoll, U. Cihak-Bayr, AC2T Research GmbH, Austria; D. Dini, Imperial College London, United Kingdom of Great Britain and Northern Ireland; C. Gachot, TU Wien, Austria</p>	
9:20am	<p>D2-TuM5 In Vitro Degradation of ZrO₂ Coated Magnesium Alloys, B. Millan, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México; O. Depablos-Rivera, Universidad Nacional Autónoma de México, México; P. Silva-Bermudez, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra, Mexico; S.E. Rodil, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico</p>	<p>E1-1-TuM5 Multi-sensing Nano-wear with Electrical Contact Resistance and Friction Measurement, B.D. Beake, Micro Materials Ltd, UK; T.W. Liskiewicz, Manchester Metropolitan University, UK; A.J. Harris, Micro Materials Ltd.; S.J. McMaster, A. Neville, University of Leeds, UK</p>	
9:40am	<p>D2-TuM6 Prognosis of Hip Implant Tribocorrosion Processes: Acoustic Emission Technique, C. Lee, L. Zhang, University of Illinois at Chicago, USA; D. Morris, University of Illinois at Chicago, Rockford, USA; KY. Cheng, University of Illinois at Chicago, USA; M. Barba, OrthoIllinois, Rockford, USA; D. Bijukumar, University of Illinois at Chicago, Rockford, USA; D. Ozevin, University of Illinois at Chicago, USA; M.T. Mathew, University of Illinois at Chicago, Rockford, USA</p>	<p>E1-1-TuM6 PTFE Coating on Nanoscale Polymer Structures: Role in Tribological Characteristics, P. Pendyala, Hanyang University, Republic of Korea; H.N. Kim, E.S. Yoon, Korea Institute of Science and Technology, Republic of Korea</p>	
10:00am	<p>D2-TuM7 A Bio-Tribocorrosion Appraisal of a Dual Layer PVD Coated CoCrMo Alloy Tribopair, A. Mazzonello, R. Chetcuti, University of Malta, Malta; P.A. Dearnley, Boride Services Ltd, UK; J. Buhagiar, B.M. Mallia, University of Malta, Malta</p>		
10:20am	<p>D2-TuM8 In Solution, A New Representation to Link the Corrosion Degradation Consistent with Wear: Smooth and Hard Coatings are Well Discriminated., J. Geringer, A. Boyer, Mines Saint-Etienne, France; H. Ding, V. Fridrici, P. Kapsa, Ecole Centrale de Lyon, Ecully, France; T. Tayler, L. Semetse, P.A. Olubambi, University of Johannesburg, South Africa</p>		
10:40am	<p>D2-TuM9 Anodizing on 3D Printed Mesh Structure for Bone Reconstruction, Y.H. Jeong, T.G. Jung, J.W. Yang, K.M. Park, Osong Medical Innovation Foundation, Republic of Korea; S.H. Woo, T.H. Park, Medyssey Co. Ltd.</p>		

Tuesday Morning, April 28, 2020

	<p>Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G2-TuM Surface Modification of Components in Automotive, Aerospace and Manufacturing Applications Moderators: Etienne Bousser, École Polytechnique de Montréal, Canada, Satish Dixit, Plasma Technology Inc., USA, Tetsuya Takahashi, Kobe Steel, Ltd., Japan</p>	<p>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes Room Pacific Salon 6-7 - Session H2-1-TuM Advanced Mechanical Testing of Surfaces, Thin Films, Coatings and Small Volumes I Moderators: Olivier Pierron, Georgia Institute of Technology, USA, Timothy Rupert, University of California, Irvine, USA</p>
8:00am	<p>INVITED: G2-TuM1 Enhancing TiAl Oxidation Resistance at High Temperature: A Challenge for the Aerospace Industry, <i>M. Cavarroc</i>, Safran Tech, France</p>	<p>H2-1-TuM1 Characterization of the Onset of Delamination in Thin Films Coatings using Advanced Nanoindentation Techniques, <i>M. Moradi, B. Faulkner, K. Johanns</i>, KLA-Tencor, USA</p>
8:20am	<p>Invited talk continues.</p>	<p>H2-1-TuM2 Development and Application of a Multifunctional Nanoindenter: Coupling to Electrical Measurements and Integration in-situ in a Scanning Electron Microscope, <i>F.E. Volpi, S. Comby-Dassonneville, C. Boujrouf, M. Verdier</i>, SIMaP – Univ. Grenoble Alpes, CNRS, SIMaP, France; <i>D. Pellerin</i>, CSI/Scientec, France</p>
8:40am	<p>G2-TuM3 Mechanical and Optical Properties of Si doped ta-C Anti-reflective Coatings for Satellite Solar Cell Applications, <i>H.K. Kim, S.Y. Lee</i>, Korea Aerospace University, Republic of Korea</p>	<p>INVITED: H2-1-TuM3 Characterization of Defects and their Dynamics using Transmission Scanning Electron Microscopy, <i>D.S. Gianola</i>, University of California Santa Barbara, USA</p>
9:00am	<p>G2-TuM4 Laser Cladding NiTi on the Mgnesium Alloy Substrate with the Intermediated Aluminum Layer, <i>C. Zhang, Y. Yang, X. Cui, G. Jin, W. Zheng</i>, Institute of Surface/Interface Science And Technology, China</p>	<p>Invited talk continues.</p>
9:20am	<p>G2-TuM5 Laser-clad Induced Reaction Synthesis of TiC/WC Reinforced Co-based Composite Coatings on Copper Alloy, <i>H. Yan</i>, Shanghai University of Engineering Science, China</p>	<p>H2-1-TuM5 Measurement of hardness and elastic modulus by depth sensing indentation: Further advances in understanding and refinements in methodology, <i>Phani Pardhasaradhi</i>, ARCI, India; <i>W.C. Oliver</i>, KLA Corporation, USA; <i>G.M. Pharr</i>, Texas A&M University, USA, United States of America</p>
9:40am	<p>INVITED: G2-TuM6 The Benefits of Using Functional Coatings to Improve Performance of Components in Conventional Mobility and E-Mobility, <i>M. Amiriyani, R. Farahati</i>, Surface Technology, Schaeffler Group USA, Inc., USA</p>	<p>INVITED: H2-1-TuM6 Strength and Fracture Toughness at Elevated Temperature of Monolithic and Multilayered Hard Coatings, <i>J. Molina-Aldareguia</i>, IMDEA Materials Institute, Spain</p>
10:00am	<p>Invited talk continues.</p>	<p>Invited talk continues.</p>
10:20am	<p>G2-TuM8 Cobalt-based Thin Films as Electrocatalysts for Water Recombination Applications, <i>C. Linder</i>, Linköping University, IFM, Nanostructured Materials, Sweden; <i>S. Gangaprasad Rao, A. Le Febvrier</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>S. Munktefl</i>, Swerim AB, Sweden; <i>P. Eklund</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>E. Björk</i>, Linköping University, IFM, Nanostructured Materials, Sweden</p>	<p>H2-1-TuM8 Influence of the Bonding Nature on the Fatigue Resistance of Cr-based Thin Films, <i>L. Zauner, R. Hahn</i>, TU Wien, CDL-SEC, Austria; <i>M. Alfreider</i>, Montanuniversität Leoben, Department of Materials Science, Austria; <i>O. Hunold</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P. Polcik</i>, Plansee Composite Materials GmbH, Germany; <i>D. Kiener</i>, Montanuniversität Leoben, Department of Materials Science, Austria; <i>H. Riedl</i>, TU Wien, CDL-SEC, Austria</p>
10:40am	<p>G2-TuM9 Data-driven Colliding Surface Enhancement using Coated Ceramic in Shot Peening, <i>B. Levy</i>, Arts et Métiers ParisTech d'Aix-en-Provence, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>M. El Mansori</i>, Arts et Métiers ParisTech d'Aix-en-Provence, France, Texas A&M University, USA, France; <i>S. Mezghani, M. EL HADROUZ</i>, Arts et Métiers ParisTech de Châlons-en-Champagne, France; <i>A.-L. BEAUDONNET</i>, Saint-Gobain Research Provence, France</p>	<p>H2-1-TuM9 New Models and Advancement in Measuring the Elastic Behaviour of Thin Films using Impulse Excitation Technique, <i>A.A. Alhussein</i>, University of Technology of Troyes (UTT), France; <i>E. Zgheib</i>, University of Technology of Troyes (UTT) and Lebanese University (UL), France; <i>M.F. Slim, M. François</i>, University of Technology of Troyes (UTT), France</p>

Tuesday Morning, April 28, 2020

Topical Symposia Room Pacific Salon 3 - Session TS2-1-TuM New Horizons in Boron-Containing Coatings: Modeling, Synthesis and Applications I Moderators: Marcus Hans , RWTH Aachen University, Germany, Helmut Riedl , TU Wien, Institute of Materials Science and Technology, Austria, Johanna Rosen , Linköping Univ., IFM, Thin Film Physics Div., Sweden		Topical Symposia Room Pacific Salon 1 - Session TS4-TuM Photocatalytic and Superhydrophilic Surfaces Moderators: Peter Kelly , Manchester Metropolitan University, UK, Carlos Jose Tavares , University of Minho, Portugal, Glen West , Manchester Metropolitan University, UK	
8:00am		INVITED: TS4-TuM1 Applications of Photocatalytic and Superhydrophilic Materials, <i>S. Pillai</i> , Institute of Technology Sligo, Ireland	
8:20am	TS2-1-TuM2 Design of Under/Overstoichiometric Superhard TaB _{2+x} Films, <i>V. Šroba</i> , <i>T. Fiantok</i> , <i>M. Truchlý</i> , Comenius University in Bratislava, Slovakia; <i>P. Švec, Jr.</i> , Slovak Academy of Sciences, Slovakia; <i>T. Roch</i> , <i>L. Satrapinsky</i> , <i>M. Zahoran</i> , <i>B. Grančič</i> , <i>P. Kúš</i> , <i>M. Mikula</i> , Comenius University in Bratislava, Slovakia	Invited talk continues.	
8:40am	TS2-1-TuM3 Thermomechanical Properties and Oxidation Resistance of Ternary W _{1-x} Ta _x B _{2+z} Coatings, <i>C. Fuger</i> , TU Wien, CDL-SEC, Austria; <i>V. Moraes</i> , Institute of Materials Science and Technology, TU Wien, Austria; <i>R. Hahn</i> , TU Wien, CDL-SEC, Austria; <i>H. Bolvardi</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P. Polcik</i> , Plansee Composite Materials GmbH, Germany; <i>P.H. Mayrhofer</i> , Institute of Materials Science and Technology, TU Wien, Austria; <i>H. Riedl</i> , TU Wien, CDL-SEC, Austria	TS4-TuM3 Photocatalytic Activity of a ZnO/Bi ₂ O ₃ Thin Film Heterojunction, <i>S.E. Rodil</i> , Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico; <i>A. Hernandez-Gordillo</i> , <i>M. Bizarro</i> , Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México; <i>J.C. Medina</i> , Instituto de Ciencias Aplicadas y Tecnologías, Universidad Nacional Autónoma de México, Mexico	
9:00am	TS2-1-TuM4 Configurational and Vibrational Thermodynamics of Metastable Ternary Ti _{1-x} Al _x B ₂ Alloys with Age-Hardening Potential, and their Constituent Binaries, <i>E. Johansson</i> , Linköping Univ., IFM, Theoretical Physics Div., Sweden; <i>N. Nedfors</i> , Linköping University, IFM, Thin Film Physics Division, Sweden; <i>F. Eriksson</i> , Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>A. Ektarawong</i> , Linköping Univ., IFM, Theoretical Physics Div., Sweden; <i>J. Rosen</i> , Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>B. Alling</i> , Linköping Univ., IFM, Theoretical Physics Div., Sweden	TS4-TuM4 Photocatalytic Bismuth Oxide Coatings and their Potential for Water Treatment Applications, <i>M. Ratova</i> , <i>J. Redfern</i> , Manchester Metropolitan University, UK; <i>C.C. Amorim</i> , Universidade Federal de Minas Gerais, Brazil; <i>P.J. Kelly</i> , Manchester Metropolitan University, UK	
9:20am	TS2-1-TuM5 Stoichiometry, Structure and Mechanical Properties of Co-Sputtered Ti _{1-x} Ta _x B _{2+z} Coatings, <i>B. Grancic</i> , <i>K. Viskupova</i> , <i>M. Mikula</i> , Comenius University in Bratislava, Slovakia; <i>M. Caplovicova</i> , Slovak University of Technology in Bratislava, Slovakia; <i>L. Satrapinsky</i> , <i>T. Roch</i> , <i>M. Truchly</i> , Comenius University in Bratislava, Slovakia; <i>M. Sahul</i> , Slovak University of Technology in Bratislava, Slovakia, Slovak Republic; <i>M. Gregor</i> , Comenius University in Bratislava, Slovakia; <i>P. Svec Sr.</i> , Slovak Academy of Sciences, Slovakia; <i>M. Zahoran</i> , <i>P. Kus</i> , Comenius University in Bratislava, Slovakia	TS4-TuM5 Preparation of Bismuth Titanate Thin Films by Co-sputtering for Photocatalytic Water Treatment Application, <i>M. Grao</i> , <i>M. Ratova</i> , <i>P.J. Kelly</i> , Manchester Metropolitan University, UK	
9:40am	TS2-1-TuM6 Fracture-Microstructure Relations of W-diboride Thin Films, <i>R. Hahn</i> , <i>C. Fuger</i> , TU Wien, CDL-SEC, Austria; <i>G. Habler</i> , University of Vienna, Austria; <i>H. Bolvardi</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>P. Polcik</i> , Plansee Composite Materials GmbH, Germany; <i>P.H. Mayrhofer</i> , Institute of Materials Science and Technology, TU Wien, Austria; <i>H. Riedl</i> , TU Wien, CDL-SEC, Austria	INVITED: TS4-TuM6 Hematite and Titania Thin Films: Energy and Environmental Applications, <i>J. Krysa</i> , University of Chemistry and Technology, Prague, Czech Republic	
10:00am	TS2-1-TuM7 Design of Novel Boride-based Hard and Tough Coatings for Engineering Applications, <i>M. Stueber</i> , Karlsruhe Institute of Technology (KIT), Inst. for Applied Mat. (IAM-AWP), Germany; <i>H. Riedl</i> , TU Wien, Institute of Materials Science and Technology, Austria; <i>S. Özbilen</i> , Gazi University, Ankara, Turkey; <i>S. Ulrich</i> , Karlsruhe Institute of Technology (KIT), Inst. for Applied Mat. (IAM-AWP), Germany; <i>P.H. Mayrhofer</i> , TU Wien, Institute of Materials Science and Technology, Austria	Invited talk continues.	
10:20am	INVITED: TS2-1-TuM8 A Progress Report on Bulk MAB Phases, <i>M.W. Barsoum</i> , Drexel University, USA, United States of America; <i>J. Kota</i> , Drexel University, USA	TS4-TuM8 Ultrasonic-assisted Supercritical Fluid Exfoliated and Modified by Chlorine Intercalation Synthesis of P3HT/ g-C ₃ N ₄ Composite for Photocatalyst, <i>H.S. Chen</i> , <i>J.-M. Ting</i> , National Cheng Kung University, Taiwan	
10:40am	Invited talk continues.	TS4-TuM9 Bixbyite-based Ta-N-O film: A Promising Candidate for Water Splitting?, <i>J. Capek</i> , <i>S. Batkova</i> , <i>S. Haviar</i> , <i>M. Matas</i> , <i>J. Houska</i> , University of West Bohemia, Czech Republic; <i>F. Dvorak</i> , University of Pardubice, Czech Republic	

Tuesday Morning, April 28, 2020

Exhibition Keynote Lecture
Room Town & Country - Session EX-TuM
Exhibition Keynote Lecture
Moderator: Christopher Muratore, University of Dayton and Air Force Research Laboratory, USA

11:00am	INVITED: EX-TuM1 Carbon based Coatings in Industrial Scale for Sustainable Surface Solutions, J. Vetter , Oerlikon Balzers Coating Germany GmbH, Bergisch Gladbach, Germany	
11:20am	Invited talk continues.	
11:40am		

Tuesday Afternoon, April 28, 2020

Coatings for Use at High Temperatures Room Pacific Salon 1 - Session A2-1-TuA Thermal and Environmental Barrier Coatings I Moderators: Sabine Faulhaber, University of California, San Diego, USA, Kang N. Lee, NASA Glenn Research Center, USA, Pantcho Stoyanov, Pratt & Whitney, USA		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B5-2-TuA Hard and Multifunctional Nanostructured Coatings II Moderator: Vincent Moraes, TU Wien, Institute of Materials Science and Technology, Austria	
1:40pm	INVITED: A2-1-TuA1 Influence of the Microstructural Evolution of YSZ TBCs on their Thermal Insulation Potential, <i>G. Boissonnet, G. Bonnet, F. Pedraza</i> , Université de La Rochelle, France	INVITED: B5-2-TuA1 PVD of Hard Nanocomposite Coatings Using Multiphase SHS Cathodes - Evolution and New Horizons, <i>P.V. Kiryukhantsev-Korneev</i> , National University of Science and Technology "MISIS", Russian Federation, Russia; <i>E. Levashov</i> , National University of Science and Technology "MISIS", Russian Federation	
2:00pm	Invited talk continues.	Invited talk continues.	
2:20pm	A2-1-TuA3 Effect of Varying APS Flash Bond Coating Thickness on Furnace Cycle Lifetime, <i>Michael Lance, K Kane, A Haynes, B Pint</i> , Oak Ridge National Laboratory, USA, United States of America; <i>E Gildersleeve, E Sampath</i> , Stony Brook University, USA, United States of America	B5-2-TuA3 Ti-Si-B-C-N PECVD Nanocomposite Coatings for Tribological Applications at Elevated Temperatures, <i>A. Nienhaus</i> , Technical University of Braunschweig, Germany; <i>H. Paschke</i> , Fraunhofer Institute for Surface Engineering and Thin Films, Germany	
2:40pm	A2-1-TuA4 Volcanic Ash Infiltration of Plasma Sprayed Lanthanum Zirconate based Thermal Barrier Coatings at 1250 °C, <i>P. Kandasamy, S. Govindarajan</i> , International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI); <i>S. Gurusamy</i> , Bharathiar University	B5-2-TuA4 Erosion Properties of TiAlVSiCN Coatings Prepared by Plasma Enhanced Magnetron Sputtering, <i>X. Huang</i> , Beijing Sanju Enviro. Protect. & New Matls., China; <i>R. Wei, J. Lin</i> , Southwest Research Institute, USA	
3:00pm	A2-1-TuA5 Electrodeposited Thin La ₂ O ₃ Based Chromium Barrier Coating for Interconnectors in Solid Oxide Electrolysis, <i>V. Kolarik, M. Juez Lorenzo, E. Walschburger</i> , Fraunhofer Institute for Chemical Technology ICT, Germany	B5-2-TuA5 Tribocorrosion Behaviors in Seawater of TiSiCN Coatings Deposited by High Power Impulse Magnetron Sputtering: In-situ Electrochemical Response, <i>Y.X. Ou</i> , Beijing Radiation Center, China; <i>H.Q. Wang</i> , Beijing Normal University, China; <i>J. Luo</i> , Beijing Radiation Center, China; <i>B. Liao, X. Zhang</i> , Beijing Normal University, China; <i>W. Wang</i> , Beijing Radiation Center, China; <i>X.P. Ouyang</i> , Northwest Nuclear Technology Institute	
3:20pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
3:40pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
4:00pm	INVITED: A2-1-TuA8 Avoiding Amorphous Phases with Solution Precursor Plasma Spray in YAG TBC s and Yb Silicate EBCs, <i>E. Jordan, C. Jiang, R. Kumar, M. Gell</i> , University of Connecticut, USA	B5-2-TuA8 Synthesis and Thermomechanical Properties of Hf-C-N Coatings, <i>T. Glechner, S. Lang</i> , TU Wien, CDL-SEC, Austria; <i>V. Moraes</i> , TU Wien, Institute of Materials Science and Technology, Austria; <i>D. Primetzhofer</i> , Uppsala University, Sweden; <i>J. Ramm</i> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>S. Kolozsvári</i> , Plansee Composite Materials GmbH, Germany; <i>H. Riedl</i> , TU Wien, CDL-SEC, Austria	
4:20pm	Invited talk continues.	B5-2-TuA9 Optimization of TiSiCN Coating Properties Obtained by RF Magnetron Sputtering and High Power Impulse Magnetron Sputtering, <i>J. Matthey</i> , Haute Ecole Arc Ingenierie HES-SO, Switzerland Ecole Arc Ingenierie, Switzerland; <i>O. Banakh, R. Constantin, F. Bisoffi, M. Erard</i> , Haute Ecole Arc Ingenierie HES-SO, Switzerland	
4:40pm	A2-1-TuA10 Laser Processing of Freeze Casted Yttria Stabilized Zirconia / Gadolinia Thermal Barrier Coatings to Mitigate CMAS Attack, <i>S. Bakkar, M. Pantawane</i> , University of North Texas, USA; <i>A. Ghoshal, M. Walock, M. Murugan</i> , Civ Usarmy Rdecom Arl, USA; <i>M.L. Young, D. Berman, N.B. Dahotre, S.M. Aouadi</i> , University of North Texas, USA	B5-2-TuA10 Ammonium Thiosulfate Precursor for Coating Molybdenum Disulfide onto the Surface of Porous Metal for High Anti-Wearing Application in the Machinery Industry, <i>LH. Hu</i> , National Sun Yat-Sen University, Taiwan; <i>PC. Chen</i> , Southern Taiwan University of Science and Technology, Taiwan	
5:00pm	A2-1-TuA11 A Parametric Study on Optimal Design of Double-ceramic Thermal Barrier Coating, <i>J.G. Lim, M.K. Kim</i> , Sungkyunkwan University, Republic of Korea		
5:20pm			

Tuesday Afternoon, April 28, 2020

<p>Hard Coatings and Vapor Deposition Technologies Room California - Session B8-2-TuA HiPIMS, Pulsed Plasmas and Energetic Deposition II Moderators: Jon Tomas Gudmundsson, University of Iceland, Iceland, Tiberiu M. Minea, LPGP, Universite Paris-Sud, France</p>		<p>Coatings for Biomedical and Healthcare Applications Room Royal Palm 1-3 - Session D3-TuA Biointerfaces: Improving the Cell Adhesion and Avoiding Bacteria. What Kinds of Coatings/Surfaces Should be Used? Moderators: Vincent Fridrici, Ecole Centrale de Lyon, LTDS - Université de Lyon, France, Sandra E. Rodil, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico, Danieli B.C. Rodrigues, University of Texas at Dallas, USA</p>
1:40pm	<p>INVITED: B8-2-TuA1 Optimizing Ionization and Deposition Rate in High Power Impulse Magnetron Sputtering, D. Lundin, Linköping University, Sweden</p>	
2:00pm	Invited talk continues.	
2:20pm	<p>B8-2-TuA3 Dynamics of the Titanium Ground State Atoms and Ions in HiPIMS Discharge, J. Hnilica, P. Klein, P. Vasina, Masaryk University, Brno, Czech Republic; R. Snyders, N. Britun, University of Mons, Belgium</p>	<p>INVITED: D3-TuA3 Advanced Materials for Implant Applications, C.L. Sajti, J. Horky, M. Krystian, B. Mingler, M. Bammer, AIT Austrian Institute of Technology GmbH, Austria</p>
2:40pm	<p>B8-2-TuA4 Self-Organization of Plasma in RF and DC Magnetron Sputtering Discharges, M. Panjan, Jozef Stefan Institute, Slovenia</p>	Invited talk continues.
3:00pm	<p>B8-2-TuA5 Understanding and Influencing the Energy Delivered to the Film in Bipolar HiPIMS, T. Kozak, A.D. Pajdarova, J. Capek, University of West Bohemia, Czech Republic; M. Cada, Z. Hubicka, Institute of Physics, Academy of Sciences of the Czech Republic, Czech Republic; P. Mares, HVM Plasma, s.r.o., Czech Republic</p>	<p>D3-TuA5 Antimicrobial Properties of Ag/Cu Doped Amorphous Carbon Coatings for Application in Aerospace, S. Field, G. Sanzone, P. Navabpour, J. Yin, H. Sun, Teer Coatings Ltd, UK; D. Lee, Birmingham City University, UK; J. Liu, P. Ju, Shanghai Aerospace Equipments Manufacturer, China</p>
3:20pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL
3:40pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL
4:00pm	<p>B8-2-TuA8 The Use of HiPIMS with Positive Pulses to Tailor Film Ion Assistance and the Resulting Microstructural Properties, I. Fernandez, J.A. Santiago, A. Wennberg, A. Mendez, Nano4Energy SL, Spain; F. Papa, GP Plasma, USA</p>	<p>D3-TuA8 Targeting Biofilm Superhydrophobic Coating to Reduce Microbial Accumulation on Titanium Surface, B. Nagay, J.G. Souza, R. Costa, J. Cordeiro, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil; M. Bertolini, University of Connecticut, USA, Brazil; A. Almeida, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil; B. Retamal-Valdes, University of Guarulhos, Brazil; F. Nociti-Junior, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil; M. Feres, University of Guarulhos, Brazil; E. Rangel, São Paulo State University, Brazil; V. Barão, University of Campinas (UNICAMP), Piracicaba Dental School, Brazil</p>
4:20pm	<p>B8-2-TuA9 Reversed Voltage as Deposition Rate Buster, W. Gajewski, A.W. Oniszczyk, P. Rózański, TRUMPF Huettinger sp. z o.o., Poland; R. Mroczynski, Warsaw University of Technology, Poland; M. Puźniak, M. Żelechowski, TRUMPF Huettinger sp. z o.o., Poland</p>	<p>D3-TuA9 Transferred Plasma Induced and Generated Inside a Tube by a Flexible Atmospheric Plasma Jet and its Application in Tube Inner Wall Activation, J.H. Hsieh, Y.J. Wei, Ming Chi University of Technology, Taiwan; C. Li, National Yang Ming University, Taiwan</p>
4:40pm	<p>INVITED: B8-2-TuA10 Evolution of Ionization Fraction of Sputtered Species in Standard, Multi-pulse and Reactive HiPIMS, M. Fekete, K. Bernatova, P. Klein, J. Hnilica, P. Vasina, Masaryk University, Brno, Czech Republic</p>	<p>D3-TuA10 Multi-functional Ta-Ga-O Thin Films Prepared by Codeposition of Gallium Oxide and Tantalum, J.H. Hsieh, Y.H. Hsiao, Ming Chi University of Technology, Taiwan</p>
5:00pm	Invited talk continues.	
5:20pm		

Tuesday Afternoon, April 28, 2020

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-2-TuA Friction, Wear, Lubrication Effects, and Modeling II Moderators: Nazlim Bagcivan, Schaeffler AG, Germany, Manel Rodríguez Ripoll, AC2T Research GmbH, Austria		Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G3-TuA Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications Moderators: Stepan Kyrsta, Oerlikon Balzers Coating, Luxembourg, Christoph Schiffers, CemeCon AG, Germany	
1:40pm	E1-2-TuA1 The Synergistic Effect of Surface Texturing with TMD Coatings for Improving Friction in Lubricated Contacts, <i>F. Rosa</i> , Instituto Pedro Nunes, Portugal; <i>V. Richhariya, F.S. Silva</i> , University of Minho, Portugal; <i>P. Amoroso, A. Ramalho</i> , University of Coimbra, Portugal; <i>A. Cavaleiro</i> , SEG-CEMMPRE - University of Coimbra, Portugal	G3-TuA1 Characterization of Different AlCrN PVD Coatings Deposited into H13 Steel for Lube-free Aluminum Die Casting Application, N. Delfino de Campos Neto , <i>A.L. Korenyi-Both, S.P. Midson, M.J. Kaufman</i> , Colorado School of Mines, USA	
2:00pm	E1-2-TuA2 Tribological Properties of Vanadium-doped Coatings via Reactive Molecular Dynamic Simulations, I. Ponomarev , <i>T. Polcar, P. Nicolini</i> , Czech Technical University in Prague, Czech Republic	G3-TuA2 12 µm in PVD with HiPIMS, C. Schiffers , <i>T. Leyendecker, W. Kölker</i> , CemeCon AG, Germany	
2:20pm	E1-2-TuA3 Influence of Laser Texturing Treatments on the Tribological Performance Of Tmd-C Coatings, A. Manaia , <i>T. Vuchkov</i> , Instituto Pedro Nunes, Portugal; <i>M. Shamshiri</i> , University of Coimbra, Portugal; <i>A. Cavaleiro</i> , SEG-CEMMPRE - University of Coimbra, Portugal	G3-TuA3 Smart PVD Hard Coatings with Temperature Sensor Function, K. Bobzin , <i>T. Brögelmann, N.C. Kruppe, J. Janowitz</i> , Surface Engineering Institute - RWTH Aachen University, Germany	
2:40pm	INVITED: E1-2-TuA4 The Thinnest of The Thin: Friction and Adhesion Behavior of Graphene and other Two-Dimensional Materials, R.W. Carpick , University of Pennsylvania, USA	INVITED: G3-TuA4 Silicon in Cutting Tools, A. Layyous , Layyous Consulting, Israel; <i>L. Qiu</i> , Central South University, China	
3:00pm	Invited talk continues.	Invited talk continues.	
3:20pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
3:40pm	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
4:00pm	E1-2-TuA8 Electrical Tuning of Vibrational Modes in Transition Metal Dichalcogenides, F. Belviso , <i>A. Cammarata</i> , Czech Technical University in Prague, Czech Republic	G3-TuA8 Improving AlTiN Coatings by Multi-layering with ZrN/ZrON, J. Kahlscheen , Kennametal GmbH, Germany; <i>B. Macshane, D. Banerjee</i> , Kennametal Inc., USA	
4:20pm	E1-2-TuA9 Improvement of Adhesion of Sputtered Mo-S-N Coatings using a DC Magnetron Sputtering for Low Friction Applications, K. Hebbar Kannur , IREIS/HEF Group & University of Coimbra, France; <i>C. Pupier, C. Heau</i> , IREIS/HEF Group, France; <i>A. Cavaleiro</i> , SEG-CEMMPRE, University of Coimbra, Portugal	G3-TuA9 PVD Coated Tools and Surface-structured Workpieces in Dry Cold Forming of Steel, K. Bobzin , <i>T. Brögelmann, N.C. Kruppe</i> , Surface Engineering Institute - RWTH Aachen University, Germany; <i>T. Bergs, P. Mattfeld, D. Trauth, R. Hild</i> , Laboratory for Machine Tools and Production Engineering - RWTH Aachen University, Germany; D.C. Hoffmann , Surface Engineering Institute - RWTH Aachen University, Germany	
4:40pm	E1-2-TuA10 Use of Digital Tribology to Evaluate the Combined Effect of Surface Texture and DLC Coatings during Ball-on-disk Reciprocating Tests, V. Seriacopi , University of São Paulo, Brazil; <i>E.F. Prados, L.F.G. Ambrosi</i> , Federal University of ABC, Brazil; <i>I.F. Machado, R.M. Souza, N.K. Fukumasu</i> , University of São Paulo, Brazil	INVITED: G3-TuA10 Coating Design for Components for Extreme Applications, R.J.D. Alexandre , TeandM - Technology, Engineering and Materials, S.A., Portugal	
5:00pm	E1-2-TuA11 Up-scale of the Deposition Process for Self-Lubricating Mo-Se-C Coatings Deposited by Magnetron Sputtering, T. Vuchkov , Instituto Pedro Nunes, Portugal; <i>M. Evaristo</i> , SEG-CEMMPRE - University of Coimbra, Portugal; <i>T. Bin Yaqub</i> , Instituto Pedro Nunes, Portugal; <i>A. Cavaleiro</i> , SEG-CEMMPRE - University of Coimbra, Portugal	Invited talk continues.	
5:20pm		G3-TuA12 Development of Piezo and Thermo-Responsive Coatings for Smart Cutting Tool Applications, J.L. Endrino , <i>E. Fernandez, E.D.V. Niño</i> , BCMaterials, Spain; <i>J. Ferreira, F. Vaz</i> , University of Minho, Portugal; <i>S. Lanceros-Mendez</i> , BCMaterials, Spain; <i>M. Saez de Buruaga, I. Mirena</i> , Mondragon University; <i>D. Herrero</i> , Sidenor Investigacion y Desarrollo S.A; <i>P. Arrazola</i> , Mondragon University, Spain	

Tuesday Afternoon, April 28, 2020

	<p>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes Room Pacific Salon 6-7 - Session H3-TuA Characterization of Coatings and Small Volumes in Harsh Environments I Moderators: Thomas Edwards, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland, James Gibson, RWTH Aachen University, Germany, Peter Hosemann, University of California at Berkeley, USA</p>	<p>Topical Symposia Room Pacific Salon 3 - Session TS2-2-TuA New Horizons in Boron-Containing Coatings: Modeling, Synthesis and Applications II Moderators: Marcus Hans, RWTH Aachen University, Germany, Helmut Riedl, TU Wien, Institute of Materials Science and Technology, Austria, Johanna Rosen, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>
1:40pm	<p>INVITED: H3-TuA1 Investigating Plasticity Effects on Failure and Fracture at the Microscale, N.A. Mara, K. Schmalbach, University of Minnesota, USA; R. Ramachandramoorthy, J. Michler, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; W. Gerberich, University of Minnesota, USA</p>	<p>TS2-2-TuA1 Superior High-temperature Behavior of Amorphous Coatings from Quinary Hf-B-Si-C-N System, P. Zeman, S. Zuzjakova, R. Cerstvy, University of West Bohemia, Czech Republic; E.I. Meletis, University of Texas at Arlington, USA; J. Vlcek, University of West Bohemia, Czech Republic</p>
2:00pm	<p>Invited talk continues.</p>	<p>TS2-2-TuA2 Mechanical Property Evaluation of VNbMoTaWCrB Refractory High-entropy Alloy Thin Films by Micropillar Compression and Nanoindentation, Y.-Y. Chen Chen, Chinese Culture University, Taiwan; S.-Y. Chang Chang, National Tsing Hua University, Taiwan; S.-B Hung Hung, C.-J. Wang Wang, National Taiwan University of Science and Technology, Taiwan; J.-G Duh Duh, National Tsing Hua University, Taiwan; J.-W. Lee Lee, Ming Chi University of Technology, Taiwan</p>
2:20pm	<p>H3-TuA3 High Strain-Rate Mechanical Characterization of Small Volumes and Coatings by Nanoindentation, B. Merle, Materials Science & Engineering 1, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany</p>	<p>TS2-2-TuA3 Thick Nitrogen-Doped Boron Carbide Coatings on Planar and Spherical Substrates by Magnetron Sputtering, P.B. Mirkarimi, A Engwall, L. Bayu Aji, J. Bae, S. Shin, M Bagge-Hanson, C Walters, A Nikroo, S Kucheyev, Lawrence Livermore National Laboratory, USA, United States of America</p>
2:40pm	<p>INVITED: H3-TuA4 Local Deformation Mechanisms under Ambient and Non-ambient Conditions Tested via Advanced Nanoindentation, V. Maier-Kiener, Montanuniversität Leoben, Austria</p>	<p>INVITED: TS2-2-TuA4 Boron-containing Metallic-glass Coating: Unique Properties and Various Applications, J.P. Chu, National Taiwan University of Science and Technology (NTUST), Taiwan</p>
3:00pm	<p>Invited talk continues.</p>	<p>Invited talk continues.</p>
3:20pm	<p>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</p>	<p>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</p>
3:40pm	<p>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</p>	<p>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</p>
4:00pm	<p>H3-TuA8 W-based Nanocrystalline Binary Alloys: Thermal Stability at High Temperatures, T. Polcar, T.H. Huminiuc, A. Alasqalani, University of Southampton, UK</p>	<p>INVITED: TS2-2-TuA8 Boron Carbide Thin Films for State-of-the-Art Neutron Detectors at the ESS, J. Birch, Linköping University, IFM, Thin Film Physics Division, Sweden</p>
4:20pm	<p>H3-TuA9 High Temperature Erosion Performance Evaluation of Advanced Materials, D. Patro, S. Josyula, H. Prasanna, Ducom Instruments, India; F. Alemano, D. Veeregowda, Ducom Instruments, Europe</p>	<p>Invited talk continues.</p>
4:40pm		<p>TS2-2-TuA10 Effects of Thermal Annealing on Structure and Mechanical Properties of MgAlB₁₄ Thin Films Deposited by DC Magnetron Sputtering, S.K. Shanmugham, Linköping University, IFM, Thin Film Physics Division, Sweden; A. Petruhins, J. Rosen, P. Eklund, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>
5:00pm		<p>TS2-2-TuA11 Recent Process Development of Magnetron Sputtering Deposited Boron Carbide Thin Films for Neutron Detection at the European Spallation Source, C.-C. Lai, C. Höglund, P.-O. Svensson, Detector Group, European Spallation Source ERIC, Sweden; L. Robinson, Detector Group, European Spallation Source ERIC, Sweden; J. Birch, L. Hultman, Thin Film Physics Division, IFM, Linköping University, Sweden; R. Hall-Wilton, Detector Group, European Spallation Source ERIC, Sweden</p>
5:20pm		<p>TS2-2-TuA12 Fe-based Thin Film Metallic Glass Coated on Porous Substrates as an Alternative Photocatalysts for Decolorization of Dye in Industrial Wastewater, B. Hubert, National Taiwan University of Science and Technology, Taiwan; J.P. Chu, National Taiwan University of Science and Technology (NTUST), Taiwan; P.M. Yiu, National Taiwan University of Science and Technology, Taiwan</p>

Tuesday Evening, April 28, 2020

Special Interest Talks
Room Town & Country - Session SIT2-TuSIT
Special Interest Session
Moderator:
Grzegorz (Greg) Greczynski, Linköping University, Sweden

7:00pm	INVITED: SIT2-TuSIT1 Design, Metallurgy and Manufacturing Technologies of Targets for Hard Coating and Tribological Applications, <i>P. Polcik</i> , Plansee Composite Materials GmbH, Germany	
7:20pm	Invited talk continues.	
7:40pm		

Wednesday Morning, April 29, 2020

Coatings for Use at High Temperatures Room Pacific Salon 1 - Session A2-2-WeM Thermal and Environmental Barrier Coatings II Moderators: Sabine Faulhaber, University of California, San Diego, USA, Kang N. Lee, NASA Glenn Research Center, USA, Pantcho Stoyanov, Pratt & Whitney, USA		Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B3-WeM Deposition Technologies and Applications for Diamond-like Coatings I Moderators: Chris Engdahl, Crystallume, USA, Jyh-Wei Lee, Ming Chi University of Technology, Taiwan	
8:00am	INVITED: A2-2-WeM1 Advances in the Development of Highly Crystalline EBCs by Advanced Plasma Spray Processes, M.M. Gentleman O'Connor , Praxair Surface Technologies Inc., USA; M. Sweet , Praxair Surface Technologies, Inc., USA	B3-WeM1	Tribological Characterizations of Si-doped Diamond-like carbon (DLC) Deposited by FCVA with TMS Gas Against to AISI 52100 Ball, J. Kim, J. Kim, Y.-J. Jang, Y.-J. Kang, J. Kim , Korea Institute of Materials Science (KIMS), Korea, Republic of Korea
8:20am	Invited talk continues.	B3-WeM2	DLC Coatings Deposited by Novel Doping Strategies with HiPIMS, J.A. Santiago Varela , Nano4Energy SL, España; I. Fernández-Martínez, A. Wennberg , Nano4Energy SL, Spain; M.A. Monclús, J.M. Molina-Aldareguia , IMDEA Materials Institute, Spain; V. Bellido-Gonzalez , Genco Ltd, UK; M. Panizo-Laiz , Universidad Politecnica de Madrid, Spain; J.C. Sánchez-Lopez, T.C. Rojas , CSIC, Spain; S. Goel , Cranfield University, UK; J.L. Endrino , IKERBASQUE, Spain
8:40am	A2-2-WeM3 Characterization and Performance Testing of Highly Crystalline as-sprayed EBCs, K.A. Kane , Oak Ridge National Laboratory, USA; M.L. Sweet , Praxair Surface Technologies Inc., USA; M. O'Connor , Praxair Surface Technologies, Inc., USA; B.A. Pint , Oak Ridge National Laboratory, USA	INVITED: B3-WeM3	Lab Grown Diamond and Its Applications, B.R. Huang , National Taiwan University of Science and Technology, Taiwan
9:00am	A2-2-WeM4 Thermal-Corrosive Properties of Y ₂ SiO ₅ Environmental Barrier Coatings under Isothermal Heat Treatment, B.K. Jang , Kyushu University, Japan; S.W. Kim, Y.S. Oh, S.M. Lee, H.T. Kim , Korea Institute of Ceramic Engineering and Technology, Republic of Korea	Invited talk continues.	
9:20am	A2-2-WeM5 Studies on Microstructure and Properties of Thick Mo Coatings obtained via Molten Salt Electrolysis, S.K. Ghosh, J. Varshney, C. Srivastava, V. Kain , Bhabha Atomic Research Centre, India	B3-WeM5	Effects of Target Poisoning on the Microstructure and Mechanical Properties of WC _x Coatings Fabricated by Superimposed HiPIMS and MF System, I. Moirangthem, J.-W. Lee , Ming Chi University of Technology, Taiwan
9:40am	A2-2-WeM6 Development of Hydrogen Barrier Coatings based on Tungsten Alloys, I. Lakdhar, A.A. Alhussein , Université de Technologie de Troyes (UTT), France; J. Creus , LASIE, CNRS-Université de La Rochelle, France	B3-WeM6	Preparation of Hybrid ta-C/MoS ₂ -Films by using Laser Arc Technology, F. Kaulfuss, F. Hofmann, Y. Han, F. Schaller , Fraunhofer IWS, Germany; T. Kruelle , Fraunhofer IWS, Germany; S. Makowski, V. Weihnacht, A. Leson, L. Lorenz, M. Zawischa , Fraunhofer IWS, Germany
10:00am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:20am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:40am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
11:00am	A2-2-WeM10 Different Additions of Fluoride to the Image of the Wear Behavior of the tc ₄ Alloy as a Hard and Lubricated Phase at High Temperatures, Z. Xie, X.F. Cui, G. Jin, E. Liu, W. Su , Harbin Engineering University, China	B3-WeM10	Effect of Mechanical and Thermochemical Steel Substrate Pre-treatment on DLC Coating Durability, D. Tobola , Institute of Advanced Manufacturing Technology; T.W. Liskiewicz , Manchester Metropolitan University, UK; L. Yang , Leeds University, UK
11:20am	A2-2-WeM11 Modeling of Coating Thickness in Electrostatic Spray Deposition using Response Surface Methodology and Artificial Neural Network, U.M.R. Paturi , CVR College of Engineering, Hyderabad, India; N.S. Reddy , Gyeongsang National University, South Korea; R.K. Gunda, S.K.R. Narala , BITS Pilani Hyderabad Campus, India	B3-WeM11	Effect of Long Carbon Bombardment Step on the Adhesion of Thick H-free DLC Coating Deposited by Cathodic Arc Evaporation, F.S. Mazuco , University of Sao Paulo, Brazil; J.A. Araujo , MAHLE Metal Leve - Tech Center, Brazil; R.M. de Souza , University of Sao Paulo, Brazil
11:40am			
12:00pm			

Wednesday Morning, April 29, 2020

Hard Coatings and Vapor Deposition Technologies Room California - Session B7-WeM Plasma Surface Interactions, Diagnostics and Growth Processes Moderator: Yolanda Aranda Gonzalvo, University of Minnesota, USA		Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C3-WeM Thin Films for Energy Applications: Solar, Thermal, and Photochemical Moderators: Tushar Shimpi, Colorado State University, USA, Clio Azina, Linköping Univ., IFM, Thin Film Physics Div., Sweden	
8:00am	INVITED: B7-WeM1 Energy and Momentum Fluxes at Plasma Processing of Materials, H. Kersten, T. Trottenberg, M. Klette, L.H. Hansen, A. Spethmann, F. Schlichting , IEAP, U Kiel, Germany		
8:20am	Invited talk continues.		C3-WeM2 Transparent Thermoelectric TiO ₂ :Nb Thin Films, J.M. Ribeiro, F.C. Correia, C.J. Tavares , University of Minho, Portugal
8:40am	B7-WeM3 Utilizing Visible Spectroscopy to Determine Ionization Behavior of Tungsten Atoms Sputtered by Argon Ions, A.L. Neff , Oak Ridge Institute for Science and Education, USA; E.A. Unterberg, M. Zach , Oak Ridge National Laboratory, USA		C3-WeM3 Thermoelectric Study of ZnO-based Thin Films: The Effect of Bi Dopant Content, F.C. Correia, J.M. Ribeiro , University of Minho, Portugal; A.M.M. Mendes , LEPABE, University of Porto, Portugal; J.S. Reparaz, L.A. Pérez, A.R. Goñi , Instituto de Ciencia de Materiales de Barcelona, Consejo Superior de Investigaciones, Spain; C.J. Tavares , University of Minho, Portugal
9:00am	B7-WeM4 Erosion and Cathodic Arc Plasma of Nb–Al Cathodes: Composite vs. Intermetallic, S. Zöhner, M. Golizadeh , Montanuniversität Leoben, Austria; N. Koutná , TU Wien, Austria; D. Holec , Montanuniversität Leoben, Austria; A. Anders , Lawrence Berkeley National Laboratory, USA; R. Franz , Montanuniversität Leoben, Austria		C3-WeM4 Hydrothermal Fabrication, Characterization and Piezoelectrically Enhanced Photocatalysis of BiFeO ₃ Thin Films on FTO Substrate, Ngghi Nhan Nguyen Thi , National Cheng Kung University, Taiwan
9:20am	B7-WeM5 A Force Probe as a Tool to obtain Directionally Resolved Momentum Characteristics during Sputter Processes, M. Klette, T. Trottenberg, M. Maas, H. Kersten , Kiel University, Kiel, Germany		C3-WeM5 Mo-SnO ₂ /rGO Composite by Chemical Reduction as Anode Material for Lithium Ion Batteries, Y.C. Huang, S.B. Brahma , National Cheng Kung University (NCKU), Taiwan; C.C. Chang , National University of Tainan, Taiwan; J.L. Huang , National Cheng Kung University (NCKU), Taiwan
9:40am	B7-WeM6 The Plasma Effect on Electrical Performance of Stannic Oxide P-type Thin Film Transistors, Y.-C. Chiu, P.-T. Liu, D.-B. Ruan, K.-J. Gan, C.-C. Hsu, S.M. Sze , National Chiao Tung University, Taiwan		C3-WeM6 Rh-Mo ₂ C-RGO and Mo ₂ C-RGO as an Electrocatalyst by Wet Chemical Method for Hydrogen Evolution Reaction, Y.H. Lee, P.C. Huang, S.B. Brahma , National Cheng Kung University (NCKU), Taiwan; S.C. Wang , Southern Taiwan University of Science and Technology, Taiwan; J.L. Huang , National Cheng Kung University (NCKU), Taiwan
10:00am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL		COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL
10:20am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL		COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL
10:40am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL		COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL
11:00am	B7-WeM10 Improved Electrical Characteristics of Ge nMOSFET with Post Interfacial Layer Plasma Treatment, F.-Y. Chu, K.-S. Chang-Liao, D.-B. Ruan, H.-I. Yeh, S.-H. Yi, Y.-H. Chien , National Tsing Hua University, Taiwan		C3-WeM10 Synthesis of Si/rGO Composite as Anode Material by Chemical Method, H.Y. Chang , National Cheng Kung University, Taiwan; S.B. Brahma , National Cheng Kung University (NCKU), Taiwan; C.C. Chang , National University of Tainan, Taiwan; J.L. Huang , National Cheng Kung University (NCKU), Taiwan
11:20am	B7-WeM11 Optical Emission Spectroscopy of Glow Discharged Plasma Pulsed Nitriding of Pure Iron, F. Santiago, J. Oseguera , ITESM Estado de México, Mexico		C3-WeM11 LiPO ₂ F ₂ as an Additive to Improve SEI Performance of Graphite Electrodes in Lithium Ion Batteries, Y.J. Liao, S.B. Brahma , National Cheng Kung University (NCKU), Taiwan; C.C. Chang , National University of Tainan, Taiwan; J.L. Huang , National Cheng Kung University (NCKU), Taiwan
11:40am	B7-WeM12 Variation of Deposition Rate and Plasma Parameters vs Positions in DC Magnetron Sputtering System, G. Sabavath , CMR Engineering College, India; A.B. Panda , C.V. Raman College of Engineering, India; I. Banerjee , Central University of Gujarat, India; J. Singh , Akal University, India; K.V. Reddy , CMR Engineering College, India; S.K. Mahapatra , Central University of Punjab, India		INVITED: C3-WeM12 Advanced Nanomaterials for Energy-Related Applications, E. Schubert, C. Briley, U. Kilic, M. Hilfiker , University of Nebraska-Lincoln, USA; D. Sekora , Honeywell Inc.; M. Schubert , University of Nebraska-Lincoln, USA
12:00pm			Invited talk continues.

Wednesday Morning, April 29, 2020

<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-3-WeM Friction, Wear, Lubrication Effects, and Modeling III Moderators: Nazlim Bagcivan, Schaeffler AG, Germany, Tomáš Polcar, University of Southampton, UK, Manel Rodriguez Ripoll, AC2T Research GmbH, Austria</p>		<p>Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G5-WeM Hybrid Systems, Processes and Coatings Moderators: Hana Barankova, Uppsala University, Sweden, SangYul Lee, Korea Aerospace University, Republic of Korea</p>	
8:00am	<p>INVITED: E1-3-WeM1 PVD Coatings Interaction with the Environment and Influence of Substrate on Coating Performance, B. Podgornik, Institute of Metals and Technologies, Slovenia</p>		
8:20am	Invited talk continues.		
8:40am	<p>E1-3-WeM3 Tribologically Enhanced Self-healing of Niobium Oxide Surfaces, S.M. Aouadi, A. Shirani, J.J. Gu, B. Wei, D. Berman, University of North Texas, USA</p>	<p>INVITED: G5-WeM3 Frontiers of Surface Engineering for Ultra-low Friction and Wear, A. Erdemir, Argonne National Laboratory, USA</p>	
9:00am	<p>E1-3-WeM4 Ni-based Self-Lubricating Laser Claddings for Hot Forming and High Temperature Vacuum Applications, H. Torres, AC2T Research GmbH, Austria; B. Prakash, Lulea University of Technology, Sweden; M. Rodriguez Ripoll, AC2T Research GmbH, Austria</p>	Invited talk continues.	
9:20am	<p>E1-3-WeM5 Silver as the Component of Tribological Nanocomposite Coatings: Benefits, Drawbacks, and Principles, A. Bondarev, Czech Technical University in Prague, Czech Republic; D.V. Shtansky, National University of Science and Technology "MISIS", Russia; T. Polcar, Czech Technical University in Prague, Czech Republic</p>	<p>G5-WeM5 Hybrid Technologies for Multifunctional Coatings Properties, C Collignon, PD2i SAS</p>	
9:40am	<p>E1-3-WeM6 Tribological Properties of Duplex PEO/Chameleon Coating on Aluminum Alloys, A.A. Voevodin, J. Shittu, A. Shirani, University of North Texas, USA; A. Yerokhin, University of Manchester; A. Korenyi-Both, Colorado School of Mines, USA; J.-E. Mogyonye, Army Research Laboratories, USA; D. Berman, S.M. Aouadi, University of North Texas, USA</p>	<p>G5-WeM6 From <i>On-line</i> Sensor Validation to <i>in-situ</i> Monitoring of Layer Growth: Coatings around Fiber-Bragg-Gratings, U. Beck, A. Mitzkus, M. Sahre, T. Lange, M. Weise, M. Bartholmai, V. Schukar, F. Basedau, D. Hofmann, E. Köppe, BAM Berlin, Germany</p>	
10:00am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:20am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:40am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
11:00am	<p>E1-3-WeM10 Development of Wear Maps on Borided AISI 316L Stainless Steel Under Ball-On-Flat Dry Sliding Conditions, R.A. García-León, J. Martínez-Trinidad, I.E. Campos-Silva, Instituto Politécnico Nacional, Grupo Ingeniería de Superficies, Mexico; U. Figueroa-López, Tecnológico de Monterrey, Campus Estado de México, Mexico, México; H. Martínez-Gutiérrez, Instituto Politécnico Nacional, Mexico</p>	<p>INVITED: G5-WeM10 Stabilization of FCVAS Based Hybrid System for Deposition of Thick Tetrahedral Amorphous Carbon Films and its Applications, J. Kim, Y.-J. Jang, Korea Institute of Materials Science (KIMS), Korea, Republic of Korea; D.H. Kim, Y. Kang, Korea Institute of Materials Science (KIMS), Korea; J. Kim, Korea Institute of Materials Science (KIMS), Korea, Republic of Korea</p>	
11:20am	<p>E1-3-WeM11 DC vs RF Sputtered C based MoSe₂ Lubricant Coatings - Routes for Optimization of Stoichiometry, Microstructure and Hardness, T.B. Yaqub, T. Vuchkov, P. Sanguino, University of Coimbra, Portugal; T. Polcar, Czech Technical University in Prague, Czech Republic; A. Cavaleiro, SEG-CEMMPRE - University of Coimbra, Portugal</p>	Invited talk continues.	
11:40am	<p>E1-3-WeM12 Doping Effect on the Running-in Behaviour of the DLC Coatings, K. Simonovic, T. Vitu, Czech Technical University in Prague, Czech Republic; M. Daneš, Advamat Ltd., Czech Republic; J. Jankovec, T. Polcar, Czech Technical University in Prague, Czech Republic</p>	<p>G5-WeM12 Fabrication of Hf_{0.5}Zr_{0.5}O₂ Ferroelectric Tunnel Junctions by Hybrid Pulsed Laser and RF Magnetron Sputtering Technique, R. Katoch, Y. Gonzalez, A. Ruediger, Institut National De La Recherche Scientifique, Canada; S. Asadollahi, M. Patterson, A. Sarkissian, PLASMIONIQUE Inc, Canada</p>	
12:00pm		<p>G5-WeM13 Characterization of the Combination of Microwave and Laser Ablation Plasmas, E. Camps, E. Campos-Gonzalez, Instituto Nacional de Investigaciones Nucleares, Mexico</p>	

Wednesday Morning, April 29, 2020

<p>Topical Symposia Room Pacific Salon 3 - Session TS2-3-WeM New Horizons in Boron-Containing Coatings: Modeling, Synthesis and Applications III Moderators: Marcus Hans, RWTH Aachen University, Germany, Helmut Riedl, TU Wien, Institute of Materials Science and Technology, Austria, Johanna Rosen, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>		
8:00am	<p>TS2-3-WeM1 Thermo-physical Properties of CVD Ti(B,N) Coatings, C. Kainz, <i>N. Schalk</i>, <i>M. Tkadletz</i>, <i>C. Saringer</i>, Montanuniversität Leoben, Austria; <i>M. Winkler</i>, Fraunhofer Institute for Physical Measurement Techniques IPM, Germany; <i>A. Stark</i>, <i>N. Schell</i>, Helmholtz-Zentrum Geesthacht, Germany; <i>J. Julin</i>, Helmholtz-Zentrum Dresden-Rossendorf, Germany; <i>C. Czettl</i>, CERATIZIT Austria GmbH, Austria</p>	
8:20am	<p>TS2-3-WeM2 Effect of MB₂ (M = Zr, Ta, Nb, Hf, Ti, V, Cr) and W₂B₅ Target Composition on Plasma Properties and Thin-Film Stoichiometry During Magnetron Sputtering, I. Zhirkov, Linköping University, IFM, Thin Film Physics Division, Sweden; <i>F.F. Klimashin</i>, Linköping University, Sweden, Austria; <i>G. Greczynski</i>, Linköping University, Sweden; <i>P. Polcik</i>, <i>S. Kolozsvári</i>, Plansee Composite Materials GmbH, Germany; <i>J.E. Greene</i>, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan, USA; <i>I. Petrov</i>, University of Illinois, USA, Linköping University, Sweden, USA; <i>J. Rosen</i>, Linköping University, Sweden</p>	
8:40am	<p>TS2-3-WeM3 Influence of Sputtering-Parameters on Stoichiometry and Mechanical Properties of Selected Binary and Ternary Transition Metal Diborides, V. Moraes, <i>H. Riedl</i>, <i>P.H. Mayrhofer</i>, TU Wien, Institute of Materials Science and Technology, Austria</p>	
9:00am	<p>TS2-3-WeM4 Challenges in Determining the Composition of TiB_x Thin Films, N. Hellgren, Messiah College, USA; <i>M.A. Sortica</i>, Linköping University, Sweden; <i>J. Rosen</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>V. Vishnyakov</i>, Institute for Materials Research, University of Huddersfield, UK</p>	
9:20am	<p>INVITED: TS2-3-WeM5 Metal Diborides Everywhere: Conformal Coating, Infilling, and Alloying by Low Temperature CVD, J.R. Abelson, University of Illinois at Urbana-Champaign, USA</p>	
9:40am	Invited talk continues.	
10:00am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:20am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
10:40am	COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL	
11:00am	<p>INVITED: TS2-3-WeM10 Insights in the Structure, Defects and Stability of Mo₂BC Thin Films by Advanced Characterization Methods, <i>S. Gleich</i>, <i>R. Soler</i>, <i>B. Breitbach</i>, Max-Planck-Institut für Eisenforschung GmbH, Germany; <i>H. Bolvardi</i>, <i>J.O. Achenbach</i>, <i>J.M. Schneider</i>, RWTH Aachen University, Germany; <i>G. Scheu</i>, C.S. Scheu, Max-Planck-Institut für Eisenforschung GmbH, Germany</p>	
11:20am	Invited talk continues.	
11:40am	<p>TS2-3-WeM12 Microstructure and Materials Properties of Understoichiometric TiB_x Thin Films Grown by HiPIMS, J. Thörnberg, Thin Film Physics Division, IFM, Linköping University, Sweden; <i>N. Hellgren</i>, Messiah College, USA; <i>N. Ghafoor</i>, <i>J. Palisaitis</i>, <i>I. Zhirkov</i>, <i>C. Azina</i>, <i>P.O.Á. Persson</i>, Thin Film Physics Division, IFM, Linköping University, Sweden; <i>I. Petrov</i>, University of Illinois, USA, Linköping University, Sweden, USA; <i>J.E. Greene</i>, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan, USA; <i>J. Rosen</i>, Thin Film Physics Division, IFM, Linköping University, Sweden</p>	
12:00pm		

Wednesday Afternoon, April 29, 2020

Special Interest Talks
Room Town & Country - Session SIT3-WeSIT
Special Interest Session
Moderator:
Grzegorz (Greg) Greczynski, Linköping University, Sweden

1:00pm	INVITED: SIT3-WeSIT1 Materials Discoveries at Extreme Conditions: A Path Towards New Advanced Materials, <i>I.A. Abrikosov</i> , Linköping University, Sweden and NUST "MISIS", Russia, Sweden	
1:20pm	Invited talk continues.	
1:40pm		

Wednesday Afternoon, April 29, 2020

	Coatings for Use at High Temperatures Room Pacific Salon 1 - Session A3-WeA Materials and Coatings for Solar Power Concentration Plants Moderators: Gustavo García Martín , REP-Energy Solutions, Spain, Vladislav Kolarik , Fraunhofer Institute for Chemical Technology ICT, Germany	Hard Coatings and Vapor Deposition Technologies Room California - Session B4-1-WeA Properties and Characterization of Hard Coatings and Surfaces I Moderators: Naureen Ghafoor , Thin Film Physics Division, IFM, Linköping University, Sweden, Marcus Günther , Robert Bosch GmbH, Germany, Fan-Bean Wu , National United University, Taiwan
2:00pm	INVITED: A3-WeA1 The Essential Role of STE/CSP Plants in the Energy Transition. Challenges on Materials to Enhance Competitiveness, <i>L. Crespo</i> , Protermosolar, Spain	B4-1-WeA1 Thin Film Characterization by Picosecond Ultrasonics on High Curvature Surfaces, <i>F. Faese, J. Michelon, X. Tridon</i> , Neta, France
2:20pm	Invited talk continues.	B4-1-WeA2 Effect of Functionally Graded Layers on Tribological Behavior of TiZrN Coatings on AISI D2 Steel, <i>J.-H. Huang, B.-S. Tsai</i> , National Tsing Hua University, Taiwan
2:40pm	A3-WeA3 High-Temperature Protective Coatings against Molten Nitrate Salts for CSP Technology, <i>G García Martín</i> , REP-Energy Solutions, Spain; <i>V Encinas Sánchez, I Lasanta Carrasco, T De Miguel Gamo, F Pérez Trujillo</i> , Universidad Complutense de Madrid, Spain	B4-1-WeA3 Comparative Study of Adhesion Strength of TiC Films Deposited by Sputtering, RF or DC Plasma CVD on Chemically Treated WC-Co Substrate, <i>K.F. Fuji, H.M. Matsushima, D.K. Kiyokawa, C.T. Tanaka, N.O. Okamoto, T.S. Saito</i> , Osaka Prefecture University, Japan; <i>A.K. Kitajima</i> , Osaka University, Japan
3:00pm	A3-WeA4 Corrosion Monitoring of Protective Sol-Gel Coatings in Contact with Molten Carbonates for the Next Generation of Concentrated Solar Power Plants, <i>F Pérez Trujillo, G García Martín</i> , Universidad Complutense de Madrid; <i>V Encinas Sánchez, I Lasanta Carrasco, T De Miguel Gamo</i> , Universidad Complutense de Madrid, Spain	B4-1-WeA4 Properties Of Thin Film Metallic Glass Produced By High Power Impulse Magnetron Sputtering, <i>N. Boenninghoff</i> , National Taiwan University of Science and Technology, Taiwan; <i>J.P Chu, W. Diyatmika</i> , National Taiwan University of Science and Technology (NTUST), Taiwan; <i>G. Greczynski</i> , Linköping Univ., IFM, Thin Film Physics Div., Sweden
3:20pm	A3-WeA5 Magnetron Sputter-deposited TiC-W Multilayered Solar Selective Coatings, <i>Y.H. Zhuo</i> , National Cheng Kung University, Taiwan	B4-1-WeA5 High Temperature Tribology of Hf Doped c-Al _{0.67} Ti _{0.33} N Cathodic Arc PVD Coatings Deposited on M2 Tool Steel, <i>G.C. Mondragón Rodríguez, A.E. Gómez Ovalle, J.M. Alvarado Orozco, J.M. González Carmona, C. Ortega Portilla, J.L. Hernández Mendoza</i> , CIDESI, Mexico
3:40pm	A3-WeA6 Biodegradable Polyurethane Antifouling Coating, <i>M.M. Rahman</i> , King Fahd University of Petroleum and Minerals, Saudi Arabia	B4-1-WeA6 Mechanical and Tribological Properties of AlCrN Coating Deposited in a Plasma Nitrided Substrate, <i>O. Ramírez-Reyna</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>G.A. Rodríguez-Castro</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>U. Figueroa-López</i> , Tecnológico de Monterrey, Campus Estado de México, México; <i>R.C. Vega-Morón, A. Meneses-Amador</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>I. Arzate-Vázquez</i> , Centro de Nanociencias y Micro y Nanotecnologías, Instituto Politécnico Nacional, México
4:00pm		B4-1-WeA7 Numerical Evaluation of the Contact Fatigue Resistance of AlCrN, N and AlCrN/N Coatings on AISI 4140 Steel, <i>A. Ballesteros-Arguello</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; <i>A. Meneses-Amador, G.A. Rodríguez-Castro</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico, México; <i>D. Fernández-Valdés</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; <i>A. López-Liévano</i> , Grupo SSC Unidad de Simulación e Ingeniería Mecánica, Mexico; <i>A. Ocampo-Ramírez</i> , Grupo SSC Unidad de Simulación e Ingeniería Mecánica, Mexico
4:20pm		B4-1-WeA8 The Effect of Heat Treatment on Microstructure and Mechanical properties of Sputtering MoSiN Coatings, <i>Y.C. Liu, F.B. Wu</i> , National United University, Taiwan
4:40pm		B4-1-WeA9 Cross-sectional X-ray Nanodiffraction Characterization of Radiation Damage, Stresses, and Microstructure in Tungsten Coatings, <i>K. Hlushko</i> , Montanuniversität Leoben, Austria; <i>A. Mackova</i> , Nuclear Physics Institute of the Czech Academy of Sciences; <i>J. Todt</i> , Erich Schmid Institute for Material Science, Austrian Academy of Sciences, Austria; <i>R. Daniel</i> , Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben, Leoben, Austria; <i>J. Keckes</i> , Montanuniversität Leoben, Austria
5:00pm		INVITED: B4-1-WeA10 Modern Analytical Methods for Characterizing the Tribological Material Properties of Coatings, <i>D. Schorr</i> , Cooperate State University in Karlsruhe, Germany
5:20pm		Invited talk continues.

Wednesday Afternoon, April 29, 2020

	Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C2-1-WeA Functional Coatings & Thin Films for Electronic Devices I Moderators: Julien Keraudy, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Jörg Patscheider, Evatec AG, Switzerland	Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E1-4-WeA Friction, Wear, Lubrication Effects, and Modeling IV Moderators: Nazlim Bagcivan, Schaeffler AG, Germany, Tomáš Polcar, University of Southampton, UK, Manel Rodriguez Ripoll, AC2T Research GmbH, Austria
2:00pm	C2-1-WeA1 Printed Polymer Heat Sinks for High-Power, Flexible Electronics, <i>K.M. Burzynski</i> ¹ , University of Dayton and Air Force Research Laboratory, USA; <i>N.R. Glavin</i> , Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; <i>E.M. Heckman</i> , Air Force Research Laboratory, Sensors Directorate, USA; <i>C. Muratore</i> , University of Dayton, USA	E1-4-WeA1 A low-speed Controlled Cycling Impact Test Method for Characterization of Failure Behavior of Films and Coatings, <i>Z. Cai</i> , Southwest Jiaotong University, China
2:20pm	C2-1-WeA2 Ionic Conductivity and Thermal Stability of Nb-Stabilized Fluorite-structure Bi ₂ O ₃ Films, <i>O. Depablos-Rivera</i> , Universidad Nacional Autónoma de México, México; <i>S.E. Rodil</i> , Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico	E1-4-WeA2 Micro-scratch Test of Plasma Nitrided Hadfield Austenitic Manganese Steel, <i>L. B. Varela</i> , University of São Paulo, Brazil, Brasil; <i>G. Tressia</i> , University of São Paulo, Brazil; <i>E.M. Bortoleto</i> , Vale Institute of Technology; <i>C.E. Pinedo</i> , Heat Tech Technology for Heat Treatment and Surface Engineering Ltd.; <i>A. Sinatora</i> , Vale Institute of Technology; <i>A.P. Tschiptschin</i> , University of São Paulo, Brazil
2:40pm	C2-1-WeA3 Nanostructured CuO/WO ₃ Thin Films for Hydrogen Gas Sensing Prepared by Advanced Magnetron Sputtering Techniques, <i>N. Kumar, S. Haviar, J. Čapek, Š. Batková, P. Zeman, P. Baroch</i> , University of West Bohemia, Czech Republic	E1-4-WeA3 Use of Digital Tribology to Design a-C Coated Systems to Achieve Ultra-low Coefficient of Friction under High Contact pressure, <i>N.K. Fukumasu, A.P. Tschiptschin, R.M. Souza, I.F. Machado</i> , University of São Paulo, Brazil
3:00pm	C2-1-WeA4 High-performance Thermochromic VO ₂ -based Coatings Prepared on Glass by a Low-temperature Scalable Deposition, <i>T. Bárta, J. Vlček, D. Kolenatý, J. Rezek, J. Houška, S. Haviar</i> , University of West Bohemia, Czech Republic	E1-4-WeA4 Evaluation of the Wear Resistance of Borided AISI 1018 Steel Exposed to the Diffusion Annealing Process, <i>E.J. Hernández-Ramírez</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>I.E. Campos-Silva</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México, Mexico; <i>A. Ruiz-Ríos, A.M. Delgado-Brito, A.D. Contla-Pacheco</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>J. Oseguera-Peña</i> , Tecnológico de Monterrey, Campus Estado de México, México
3:20pm	INVITED: C2-1-WeA5 Thermal and Plasma-Enhanced Atomic Layer Deposition for Nanoscale Coatings, <i>W.M.M. Kessels</i> , Eindhoven University of Technology, The Netherlands	E1-4-WeA5 Numerical-Experimental Analysis of the Tribological Behavior of Borided AISI 316L Steel, <i>D. Fernández-Valdés</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; <i>A. Meneses-Amador</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico, México; <i>A. Ocampo-Ramírez</i> , Grupo SSC Unidad de Simulación e Ingeniería Mecánica, Mexico; <i>A. López-Liévano</i> , Grupo SSC Unidad de Simulación e Ingeniería Mecánica, Mexico; <i>U. Figueroa-López</i> , Tecnológico de Monterrey, Campus Estado de México, Mexico, México; <i>I.E. Campos-Silva</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; <i>G.A. Rodríguez-Castro</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico, México
3:40pm	Invited talk continues.	E1-4-WeA6 Use of Digital Tribology to Design Cu-Ti-Si Interlayers to Increase Adhesion of a:C Coatings on C17200 Copper-Beryllium Alloy, <i>M.D. Santos, N.K. Fukumasu, V. Seriacopi, I.F. Machado</i> , University of São Paulo, Brazil
4:00pm	C2-1-WeA7 Achieving High Dopant Activation in Doped Semi-conductive Oxide Films by Tuning Compositional and Topological Metastability, <i>Y. Chen</i> , Chinese Academy of Sciences, China	E1-4-WeA7 Effect of Electrostatic Solid Lubrication on Tribological Behavior of Ti-6Al-4V Alloy, <i>R.K. Gunda</i> , BITS Pilani Hyderabad Campus, India; <i>U.M.R. Paturi</i> , CVR College of Engineering, Hyderabad, India; <i>S.K.R. Narala</i> , BITS Pilani Hyderabad Campus, India
4:20pm	C2-1-WeA8 Structural and Optical Properties of Pulsed-Laser Deposited β-Ga ₂ O ₃ Thin Films, <i>M. Bandi</i> , Center for Advanced Materials Research (CMR), University of Texas at El Paso, USA, United States of America	E1-4-WeA8 Assessment and Enhancement of Tribocorrosion Behaviour of Aluminum-Titanium Diboride (Al-TiB ₂) Metal Matrix Composite, <i>A. Sheelwant</i> , BITS-Pilani, Hyderabad Campus, India; <i>S.K.R. Narala</i> , BITS-Pilani Hyderabad Campus, India; <i>P. Shailesh</i> , Methodist College of Engineering and Technology, India
4:40pm	INVITED: C2-1-WeA9 High k Dielectrics for MIM Architecture: From Capacitors to Non-volatile Memories Applications, <i>C. Vallee</i> , UGA - LTM, France, France; <i>P. Gonon, M. Bonvalot, A. Bsiesy</i> , UGA-LTM, France	
5:00pm	Invited talk continues.	
5:20pm		

Wednesday Afternoon, April 29, 2020

<p>New Horizons in Coatings and Thin Films Room Pacific Salon 6-7 - Session F1-WeA Nanomaterials and Nanofabrication Moderator: Vitezslav Stranak, University of South Bohemia, Czech Republic</p>		<p>Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G6-WeA Application-Driven Cooperations between Industry and Research Institutions Moderators: Tobias Brögelmann, Surface Engineering Institute - RWTH Aachen University, Germany, Joern Kohlscheen, Kennametal GmbH, Germany, Kumar Yalamanchili, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein</p>	
2:00pm	<p>INVITED: F1-WeA1 Plasma Based Deposition of Nanostructures and Nanoparticles: From Preparation to Function, O. Polonskyi, University of California Santa Barbara, USA</p>	<p>INVITED: G6-WeA1 Success Factors for Collaborative Industrial Coating Development, M. Morstein, Hightech Zentrum Aargau AG, Switzerland</p>	
2:20pm	Invited talk continues.	Invited talk continues.	
2:40pm	<p>F1-WeA3 Deposition of Cu and Pt Metallic Clusters onto Titanium Dioxide Nanoparticles by DC Magnetron Sputtering for Hydrogen Production, G.T. West, Manchester Metropolitan University, UK; M. Bernareggi, G.L. Chiarelli, E. Selli, University of Milan, Italy; A.M. Ferretti, ISTM-CNR Lab Nanotechnology, Italy; M. Ratova, P.J. Kelly, Manchester Metropolitan University, UK</p>	<p>G6-WeA3 (Cr,Al,Mo)N Coatings for Higher System Stability under Minimum Quantity Lubrication, K. Bobzin, T. Brögelmann, C. Kalscheuer, Surface Engineering Institute - RWTH Aachen University, Germany; K. Stahl, T. Lohner, M. Yilmaz, Gear Research Centre – Technical University of Munich, Germany</p>	
3:00pm	<p>F1-WeA4 Mesoporous Coatings of Refractory Metal Nanoparticles Prepared by Magnetron Sputtering with Gas Aggregation, A. Shukurov, Charles University, Faculty of Mathematics and Physics, Czech Republic; P. Pleskunov, M. Vaidulych, T. Kretkova, M. Cieslar, M. Dopita, Charles University, Faculty of Mathematics and Physics; M. Thomsen, Kiel University, Faculty of Engineering, Institute for Materials Science; J. Houska, University of West Bohemia, Faculty of Applied Sciences, Czech Republic; H. Biederman, Charles University, Faculty of Mathematics and Physics</p>	<p>G6-WeA4 Performance and Characterization of PVD Coatings with Different Al/Ti Ratio During High Speed Turning of Stainless Steel 304, Q. He, J.M. Paiva, McMaster University, Canada; J. Kohlscheen, Kennametal GmbH, Germany; G. Fox-Rabinovich, S.C. Veldhuis, McMaster University, Canada</p>	
3:20pm	<p>F1-WeA5 Effect of Cu Irradiated Zr/Nb Nanometric Multilayers, N.I. Daghbouj, Czech Technical University in Prague, Czech Republic</p>	<p>INVITED: G6-WeA5 Mechanical and Tribological Properties of CVD α-Al₂O₃ Coatings at Ambient and Elevated Temperatures, R. M'Saoubi, Seco Tools AB, Sweden</p>	
3:40pm	<p>F1-WeA6 Manipulation of Thin Films and Nanostructures on Weakly-interacting Substrates by Selective Surfactant Deployment, A. Jamnig, Linköping University, IFM, Nanoscale Engineering Division, Sweden; N. Pliatsikas, M. Konpan, Linköping University, IFM, Nanoscale Engineering Division; J. Lu, Linköping University, IFM, Thin Film Physics Division, Sweden; J. Kovac, Josef Stefan Institute; G. Abadías, University of Poitiers, PPRIME Institute, CNRS, France; I. Petrov, University of Illinois, USA, Linköping University, Sweden, USA; J.E. Greene, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan, USA; K. Sarakinos, Linköping University, Sweden</p>	Invited talk continues.	
4:00pm	<p>F1-WeA7 Novel Type of Bent-Lattice Nanostructure in Crystallizing Amorphous Films Revealed by TEM: From Transrotational Microcrystals to Strain Nanoengineering and Novel Amorphous Models, V.Y. Kolosov, Ural Federal University, Russian Federation</p>		
4:20pm	<p>F1-WeA8 Ultrasensitivity of Self-powered Wireless Triboelectric Vibration Sensor for Operating in Underwater Environment Based on Surface Functionalization of Rice Husks, S.-N. Lai, C.-K. Chang, C.-S. Yang, National Tsing Hua University, Taiwan; C.-W. Su, C.-M. Leu, Industrial Technology Research Institute, Taiwan; Y.-H. Chu, P.-W. Sha, National Chiao Tung University, Taiwan; J.M. Wu, National Tsing Hua University, Taiwan</p>		
4:40pm	<p>F1-WeA9 Fabrication and Characterization of Thin-film Metallic Glass/polyacrylonitrile Composite Membrane for Nitrogen Separation, E.T. Gizaw, National Taiwan University of Science and Technology, Taiwan; H.-H. Yeh, Chung Yuan Christian University, Taiwan; J.P. Chu, National Taiwan University of Science and Technology (NTUST), Taiwan; C.-C. Hu, Chung Yuan Christian University, National Taiwan University of Science and Technology (NTUST), Taiwan</p>		
5:00pm	<p>F1-WeA10 Enhanced Surface Hydrophobicity Effect by Using Metal Glass Nanotube Array, M. Roshanzamir Modaberi, National Taiwan University of Science and Technology, Taiwan; J.P. Chu, National Taiwan University of Science and Technology (NTUST), Taiwan; P.M. Yiu, National Taiwan University of Science and Technology, Taiwan</p>		
5:20pm	<p>F1-WeA11 High Performances Supercapacitor having N, S-doped Soft Carbon Electrodes and Water-in-Salt Electrolyte, Y.U. Fan, National Cheng Kung University, Taiwan</p>		

Wednesday Afternoon, April 29, 2020

<p>Topical Symposia Room Pacific Salon 3 - Session TS3-1-WeA In-Silicio Design of Novel Materials by Quantum Mechanics and Classical Methods (jointly sponsored by ICMCTF and AQS) I Moderators: David Holec, Montanuniversität Leoben, Austria, Davide Sangiovanni, Linköping University, Sweden</p>	
2:00pm	<p>TS3-1-WeA1 Evolutionary Structure Prediction of Transition Metal Borides, <i>D.V. Rybkovskiy, A.G. Kvashnin, Y.A. Kvashnina</i>, Skolkovo Institute of Science and Technology, Russian Federation; <i>H.A. Zakaryan</i>, Yerevan State University, Armenia; <i>A.R. Oganov</i>, Skolkovo Institute of Science and Technology, Russian Federation</p>
2:20pm	<p>TS3-1-WeA2 Design of Ultrastrong 5d Transition Metal Diborides, <i>D. Legut</i>, VSB - Technical University of Ostrava, Czech Republic; <i>N. Wang, Z. Fu, B. Wei</i>, Beihang University, China; <i>T. Germann</i>, Los Alamos National Laboratory, USA; <i>R. Zhang</i>, Beihang University, China</p>
2:40pm	<p>INVITED: TS3-1-WeA3 Bill Sproul Award and Honorary ICMCTF Lecture: Are Protective Coatings Predictable? A Mid-Career Assessment, <i>J.M. Schneider</i>¹, RWTH Aachen University, Germany</p>
3:00pm	<p>Invited talk continues.</p>
3:20pm	<p>TS3-1-WeA5 Influence of Impurities on Mechanical Properties of Nitride Multilayer Coatings, <i>L. Löffler</i>, Montanuniversität Leoben, Austria; <i>J. Buchinger, P.H. Mayrhofer, M. Bartosik</i>, TU Wien, Austria; <i>D. Holec</i>, Montanuniversität Leoben, Austria</p>
3:40pm	<p>TS3-1-WeA6 Strength, Transformation Toughening and Fracture Dynamics of Rocksalt-structure $Ti_{1-x}Al_xN$ ($0 \leq x \leq 0.75$) Alloys, <i>D.G. Sangiovanni, F. Tasnadi, M. Oden, I.A. Abrikosov</i>, Linköping University, Sweden</p>
4:00pm	<p>TS3-1-WeA7 Multiscale Modelling of Thin Metal Film Growth on Weakly-interacting Substrates, <i>V. Gervilla, M. Zarshenas, B. Lü, G. Almyras</i>, Linköping University, Sweden; <i>J.E. Greene</i>, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan, USA; <i>D.G. Sangiovanni, K. Sarakinos</i>, Linköping University, Sweden</p>
4:20pm	<p>INVITED: TS3-1-WeA8 Computational Modeling of 3D Thin Film Growth Morphology: Influence of Angular and Energy Distribution of Particle Flux, <i>G. Abadias, C. Mastail, C. Furgeaud, F. Nita, R. Mareus, A. Michel</i>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France</p>
4:40pm	<p>Invited talk continues.</p>
5:00pm	
5:20pm	

¹ Bill Sproul Awardee

Wednesday Afternoon, April 29, 2020

Awards Convocation and Honorary Lecture
Room Town & Country - Session HL-WeHL
Bunshah Award Honorary Lecture
Moderator: Ivan Petrov, University of Illinois, USA, Linköping
University, Sweden, USA

5:45pm		
6:05pm	INVITED: HL-WeHL2 R.F. Bunshah Award and ICMCTF Lecture Invited Talk: A Journey from Trial & Error to the Knowledge-based Design of Coatings and Thin Films, C. Mitterer ¹ , Montanuniversität Leoben, Austria	
6:25pm	Invited talk continues.	
6:45pm		

¹ R.F. Bunshah Awardee

Thursday Morning, April 30, 2020

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-1-ThM PVD Coatings and Technologies I Moderators: Frank Kaulfuss , Fraunhofer IWS, Germany, Qi Yang , National Research Council of Canada, Canada		Hard Coatings and Vapor Deposition Technologies Room California - Session B4-2-ThM Properties and Characterization of Hard Coatings and Surfaces II Moderators: Naureen Ghafoor , Thin Film Physics Division, IFM, Linköping University, Sweden, Marcus Günther , Robert Bosch GmbH, Germany, Fan-Bean Wu , National United University, Taiwan	
8:00am	B1-1-ThM1 Influence of the Period of a Multilayer TiN / TiAlN Coating System on its Microstructure and Electrochemical Behavior for Potential Applications in Hot Work Steel, <i>H.D. Mejía Vásquez</i> , <i>G. Bejarano Gaitan</i> , University of Antioquia, Medellín, Colombia; <i>M. Arroyave Franco</i> , University EAFIT, Colombia	B4-2-ThM1 Structure and Properties of VSiCN Coatings Deposited by Plasma Enhanced Magnetron Sputtering, <i>F.C. Thompson</i> , South Dakota School of Mines and Technology, USA; <i>F.M. Kustas</i> , NanoCoatings, Inc., USA; <i>K.E. Coulter</i> , Southwest Research Institute, USA; <i>G.A. Crawford</i> , South Dakota School of Mines and Technology, USA	
8:20am	B1-1-ThM2 ScAlN-Based Multilayer Structure for High K ² SAW Devices, <i>P.H. Lee</i> , <i>Y.H. Huang</i> , National Cheng Kung University (NCKU), Taiwan; <i>S. Wu</i> , Tung-Fang Design University, Taiwan; <i>J.L. Huang</i> , National Cheng Kung University (NCKU), Taiwan		
8:40am	INVITED: B1-1-ThM3 Coating Design and Mechanical Properties of Multicomponent AlTi(X)N Hard Coatings, <i>Y.Y. Chang</i> , National Formosa University, Taiwan	B4-2-ThM3 Residual Stress Measurement on Coatings by 2D-XRD with Single Sample Tilt, <i>B. He</i> , Bruker AXS, Inc., USA, United States of America	
9:00am	Invited talk continues.	B4-2-ThM4 Nanoscale Stress and Microstructure Distributions across Scratch Track Cross-Sections in a Brittle-Ductile CrN-Cr Bilayer Film on Steel Revealed by X-ray Nanodiffraction, <i>M. Meindlhuber</i> , Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben, Leoben, Austria; <i>J. Todt</i> , <i>Z. Zalesak</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; <i>M. Rosenthal</i> , ESRF, Grenoble, France; <i>H. Hruby</i> , eifeler-Vacotec GmbH, Düsseldorf, Germany; <i>C. Mitterer</i> , Montanuniversität Leoben, Leoben, Austria; <i>R. Daniel</i> , Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben, Leoben, Austria; <i>J. Keckes</i> , Montanuniversität Leoben, Austria	
9:20am	B1-1-ThM5 Investigation of the Influence of the Thickness of Nanolayers in Wear-resistant Layers of Ti-TiN-(Ti,Cr,Al)N Coating on Destruction in the Cutting and Wear of Carbide Cutting Tools, <i>A. Vereschaka</i> , <i>S. Grigoriev</i> , MSTU Stankin, Russian Federation; <i>N. Sitnikov</i> , National Research Nuclear University MEPhI, Russian Federation; <i>J.I. Bublikov</i> , Ikti Ran, Russian Federation	B4-2-ThM5 Microstructure and Mechanical Investigation of Textured CVD Alumina Coatings, <i>S. Shoja</i> , <i>O. Bäcke</i> , Chalmers University of Technology, Sweden; <i>O. Alm</i> , Seco Tools AB, Sweden; <i>L. von Fieandt</i> , <i>S. Norgren</i> , Sandvik Coromant R&D, Sweden; <i>M. Halvarsson</i> , Chalmers University of Technology, Sweden	
9:40am	B1-1-ThM6 Key Importance of the Controlled Reactive HiPIMS for Low-temperature Preparation of Tunable Oxynitrides and Thermochromic Oxides, <i>J. Vlček</i> , <i>J. Houška</i> , University of West Bohemia, Czech Republic	B4-2-ThM6 Effect of Boriding Medium Composition on Microstructure and Mechanical Properties of Borided AISI 4140 Steel, <i>L. Silveira</i> , Pontifícia Universidade Católica do Paraná, Brazil; <i>A.G.M. Pukaszewicz</i> , Universidade Tecnológica Federal do Paraná, Brazil; <i>P. Brum</i> , Fiven GmbH, Brazil; <i>R.D. Torres</i> , Pontifícia Universidade Católica do Paraná, Brazil	
10:00am	B1-1-ThM7 Influence of Zirconium Addition on the Properties of Tungsten Borides Deposited by the RF-MS and Hybrid PLD-MS Methods, <i>T. Moscicki</i> , <i>R. Psiuk</i> , Institute of Fundamental Technological Research Polish Academy of Science, Poland	B4-2-ThM7 The Erosion Resistance of Boride Layers on X12CrNiMoV12-3 Stainless Steel, <i>A. Ruiz-Ríos</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>I.E. Campos-Silva</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; <i>A.M. Delgado-Brito</i> , <i>E.J. Hernández-Ramírez</i> , <i>A.D. Contla-Pacheco</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México	
10:20am	B1-1-ThM8 On the Synthesis and Characterization of (Ti,Zr) _n +1AlC _n MAX Phase Coatings using Elemental and Compound Targets, <i>C. Azina</i> , <i>A. Petruhins</i> , <i>M. Yildizhan</i> , <i>B. Xin</i> , <i>P.O.Å. Persson</i> , <i>J. Rosen</i> , <i>P. Eklund</i> , Linköping Univ., IFM, Thin Film Physics Div., Sweden		
10:40am	B1-1-ThM9 Deposition of Crystalline Alumina Thin Films without Substrate Heating by Reactive Magnetron Sputtering, <i>F.Y. Gao</i> , University of Windsor, Canada; <i>G. Li</i> , Chinese Academy of Sciences, China; <i>X.Y. Nie</i> , University of Windsor, Canada; <i>Y. Xia</i> , Chinese Academy of Sciences, China		
11:00am	B1-1-ThM10 Microstructural and Biological Behavior of TiAlVN(Ag) Nanocomposite Coatings, <i>F. Giraldo</i> , <i>G. Bejarano</i> , Universidad de Antioquia, Colombia		
11:20am			
11:40am			

Thursday Morning, April 30, 2020

<p>Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C1-ThM Optical Materials: Design, Synthesis, Characterization, and Applications Moderators: Nikolas Podraza, University of Toledo, USA, Juan Antonio Zapien, City University of Hong Kong, Hong Kong</p>		<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E2-1-ThM Mechanical Properties and Adhesion I Moderators: Megan J. Cordill, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, Jazmin Duarte, MPI für Eisenforschung GMBH, Germany, Ming-Tzer Lin, National Chung Hsing University, Taiwan</p>	
8:00am	<p>INVITED: C1-ThM1 Metrology for Emerging Semiconductor Devices and Processes, <i>N.G. Orji</i>, National Institute of Standards and Technology (NIST), USA</p>	E2-1-ThM1	<p>Influence of polyamide type film former and alkoxy silane association on the surface and adhesion properties of PA 6-6/Glass, <i>N. Halawani</i>, Solvay R&I Lyon, France; <i>O. Gain</i>, <i>Y. Gabet</i>, <i>S. Al Akhrass</i>, Université de Lyon, France; <i>L. Trouillet-Fonti</i>, Solvay R&I Lyon, France; <i>E. Espuche</i>, Université de Lyon, France</p>
8:20am	Invited talk continues.	E2-1-ThM2	<p>Substrate Influence on the Adhesion of Metallic Films, <i>M.J. Cordill</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>P. Kreiml</i>, Erich Schmid Institute for Material Science, Austrian Academy of Sciences, Austria</p>
8:40am	<p>C1-ThM3 Enhancing Plasmonic Sensing with Nanostructured Thin Films Containing Au Nanoparticles, <i>M.S. Rodrigues</i>, <i>J. Borges</i>, <i>F. Vaz</i>, University of Minho, Portugal</p>	E2-1-ThM3	<p>Molecular Dynamics Investigation of Adhesion Between MoS₂ coated AFM tips, <i>J.D. Schall</i>, <i>S.R. Toom</i>, North Carolina Agricultural and Technical State University, USA; <i>T. Sato</i>, <i>R.W. Carpick</i>, University of Pennsylvania, USA; <i>Y.R. Jeng</i>, Changung University of Science and Technology, Taiwan; <i>N.R. Glavin</i>, Air Force Research Laboratory, USA; <i>C. Muratore</i>, University of Dayton and Air Force Research Laboratory, USA</p>
9:00am	<p>C1-ThM4 Chemical Bath Deposition of ZnO Nanorods on Ion-plated ZnO:Ga Seed Layers and Their Structural, Photoluminescence and UV Light Detecting Properties, <i>T. Terasako</i>, <i>S. Obara</i>, <i>N. Hashikuni</i>, <i>S. Namba</i>, Ehime University, Japan; <i>M. Yagi</i>, National Institute of Technology (KOSEN), Kagawa College, Japan; <i>Y. Furubayashi</i>, <i>T. Yamamoto</i>, Research Institute, Kochi University of Technology, Japan</p>	INVITED: E2-1-ThM4	<p>Controlled Spalling of Microscale, Single-Crystal Films of High-Quality, High-Value Semiconductors, <i>C.E. Packard</i>, Colorado School of Mines, USA</p>
9:20am	<p>C1-ThM5 Optical Probing of Vanadium Oxide Thin Film Composition and Phase, <i>M. M. Junda</i>, <i>N. J. Podraza</i>, University of Toledo, USA</p>	Invited talk continues.	
9:40am	<p>C1-ThM6 ZnO/SnS₂ Composites for Tunable UV and Blue Light Shielding Properties, <i>S.M. Tseng</i>, <i>S.B. Brahma</i>, National Cheng Kung University (NCKU), Taiwan; <i>H.H. Lu</i>, National Chin-Yi University of Technology, Taiwan; <i>J.L. Huang</i>, National Cheng Kung University (NCKU), Taiwan</p>	E2-1-ThM6	<p>Thin-film Adhesion: A Comparative Study Between Colored Picosecond Acoustics and the Stressed Overlayer technique, <i>A. Devos</i>, Iemn, Umr Cnrs, France; <i>M.J. Cordill</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria</p>
10:00am	<p>C1-ThM7 Upconversion of Core-shell-nanoparticles on Diatom as Micro-Optical Trapping Device, <i>Y.H. Su</i>, <i>Ting Wei Shen</i>, <i>K.B Lin</i>, National Cheng Kung University (NCKU), Taiwan</p>	E2-1-ThM7	<p>Hyperelasticity and Viscoelasticity in Thin Organic Semiconductor Coatings, <i>J Bull</i>, Newcastle University, United Kingdom of Great Britain and Northern Ireland; <i>A. Yadav</i>, <i>H. Gonabadi</i>, Newcastle University</p>
10:20am	<p>INVITED: C1-ThM8 Measurement of Feature Dimension and Shape for Nanowire Test Structures Using Mueller Matrix Spectroscopic Ellipsometry based Scatterometry and Small Angle X-Ray Scattering, <i>A.C. Diebold</i>, SUNY Polytechnic Institute Albany, USA</p>	E2-1-ThM8	<p>Effect of Functionally Graded Layers on the Stress Relief of TiZrN Coating on Silicon Substrate, <i>M.W.-J. Liu</i>, <i>J.-H. Huang</i>, National Tsing Hua University, Taiwan</p>
10:40am	Invited talk continues.	E2-1-ThM9	<p>Comparing the Residual Stress Gradient Measurement of ZrN using FIB-DIC and Xray Diffraction, <i>W-Y. Lin</i>, <i>Y.-C. Chou</i>, National Chung Hsing University, Taiwan; <i>J.-H. Huang</i>, National Tsing Hua University, Taiwan; <i>M.T. Lin</i>, National Chung Hsing University, Taiwan</p>
11:00am		E2-1-ThM10	<p>Effect of Si Addition to DLC on the Sliding Interface Structure between the DLC-Coated Disk and Bearing Steel Ball Slid under Dry Condition in Ambient Air, <i>T. Ikeda</i>, <i>H. Kousaka</i>, <i>T. Nakano</i>, Gifu University, Japan; <i>I. Tanaka</i>, University of Hyogo, Japan</p>
11:20am			
11:40am			

Thursday Morning, April 30, 2020

<p>New Horizons in Coatings and Thin Films Room Pacific Salon 6-7 - Session F2-ThM High Entropy and Other Multi-principal-element Materials II Moderators: Diederik Depla, Ghent University, Belgium, Ulf Jansson, Uppsala University, Sweden, Erik Lewin, Uppsala University, Sweden</p>		<p>Topical Symposia Room Pacific Salon 3 - Session TS3-2-ThM In-Silico Design of Novel Materials by Quantum Mechanics and Classical Methods jointly sponsored by ICMCTF and AQS II Moderators: David Holec, Montanuniversität Leoben, Austria, Ivan Petrov, University of Illinois, USA, Linköping University, Sweden, USA, Davide Sangiovanni, Linköping University, Sweden</p>	
8:00am	<p>INVITED: F2-ThM1 High-Entropy Ceramic Thin Films; A Case Study of Nitrides, Oxides and Diborides, P.H. Mayrhofer, A. Kirnbauer, R. Hahn, TU Wien, Institute of Materials Science and Technology, Austria; P. Polcik, Plansee Composite Materials GmbH, Germany</p>	<p>TS3-2-ThM1 First-Principles Study of Metal/Ceramic Interfaces, X.L. Pang, University of Science and Technology Beijing, China</p>	
8:20am	Invited talk continues.	<p>TS3-2-ThM2 Structural Ordering of Molybdenum Disulfide studied via Reactive Molecular Dynamics Simulations, P. Nicolini, Czech Technical University in Prague, Czech Republic; R. Capozza, Italian Institute of Technology, UK; T. Polcar, Czech Technical University in Prague, Czech Republic</p>	
8:40am	<p>F2-ThM3 High Entropy alloy TiZrHfMoW Coatings: Effect of Ti Content on its Microstructure and Mechanical and Tribological Behaviour, R. Akhter, University of New South Wales, Australia; Z.F. Zhou, City University of Hong Kong, Hong Kong; Z.H. Xie, University of Adelaide, Australia; P. Munroe, University of New South Wales, Australia</p>	<p>INVITED: TS3-2-ThM3 Method Development to Enable In-Silico Design of Materials, S.B. Sinnott, The Pennsylvania State University, USA</p>	
9:00am	<p>F2-ThM4 Surface Characteristics of Ni₂FeCoCrAl_x High Entropy Alloys under Atmospheric Pressure Plasma Treatment, C.R. Huang, F.B. Wu, National United University, Taiwan</p>	Invited talk continues.	
9:20am	<p>F2-ThM5 Structural Properties of AlSiTaTiZr Multicomponent Metallic and Nitride Thin Film Alloys, F. Cemin, M.J.M. Jimenez, UNICAMP, Brazil; L.M. Leidens, Universidade de Caxias do Sul, Brazil; R.B. Merlo, UNICAMP, Brazil; C.A. Figueroa, Universidade de Caxias do Sul, Brazil; F. Alvarez, UNICAMP, Brazil</p>	<p>TS3-2-ThM5 From Dry Sliding to Full Coverage: The Role of Water in Molybdenum Disulfide Lubrication Studied in Silico, V.E.P. Claerbout, Czech Technical University in Prague, Czech Republic; T. Polcar, University of Southampton, UK; P. Nicolini, Czech Technical University in Prague, Czech Republic</p>	
9:40am	<p>F2-ThM6 Carbon Supersaturated Refractory Multicomponent Nanostructured Coatings, S. Fritze, P. Malinovskis, L. Riekehr, L. von Fieandt, E. Lewin, U. Jansson, Uppsala University, Sweden</p>	<p>TS3-2-ThM6 Friction and Energy Dissipation in Transition Metal Dichalcogenides, A. Cammarata, T. Polcar, Czech Technical University in Prague, Czech Republic</p>	
10:00am	<p>INVITED: F2-ThM7 Single-phased High Entropy Oxides for Energy Applications, J.-M. Ting, National Cheng Kung University, Taiwan</p>	<p>TS3-2-ThM7 Quantitative Description and Electronic Structure Tuning of the Anomalous Thermoelastic Behavior of Elemental V, Nb, Ta, Pd, and Pt as well as Nb-X (X=Zr, V, Mo) Solid Solutions, P. Keuter, D. Music, V. Schnabel, RWTH Aachen University, Germany; M. Stuer, Manufactures Cartier Horlogerie, Switzerland; J.M. Schneider, RWTH Aachen University, Germany</p>	
10:20am	Invited talk continues.	<p>TS3-2-ThM8 Identifying Fingerprints of Point Defects in X-ray Photoelectron Spectroscopy Measurements of TiN and TiON with <i>ab initio</i> Calculations, P. Ondračka, RWTH Aachen University, Germany; D. Holec, Montanuniversität Leoben, Austria; M. Hans, J.M. Schneider, RWTH Aachen University, Germany</p>	
10:40am	<p>F2-ThM9 Improving Phase Stability, Hardness and Oxidation Resistance of Reactive Magnetron Sputtered (Al_xCr_wNb_xTa_yTi_z)N Thin Films by Si-alloying, A. Kretschmer, Institute of Materials Science and Technology, TU Wien, Austria; K. Yalamanchili, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; H. Rudigier, OC Oerlikon Management AG, Switzerland; P.H. Mayrhofer, TU Wien, Institute of Materials Science and Technology, Austria</p>	<p>INVITED: TS3-2-ThM9 Theoretical Insights into Transition Metal Nitrides for Thermoelectric and Piezoelectric Applications, B. Alling, Linköping Univ., IFM, Theoretical Physics Div., Sweden</p>	
11:00am	<p>F2-ThM10 Electrochemical and Mechanical Properties of Multi-Component Al-Cr-Nb-Y-Zr Nitride Thin Films, K. von Fieandt, Uppsala University, Angstrom Laboratory, Sweden, Sverige; A. Srinath, R. Lindblad, B. Osinger, S. Fritze, L. Riekehr, L. Nyholm, E. Lewin, Uppsala University, Angstrom Laboratory, Sweden</p>	Invited talk continues.	
11:20am	<p>F2-ThM11 Structural and Mechanical Properties of AlTiTaZr-N Medium Entropy Alloy Films Obtained by DC Magnetron Sputtering via a Combinatorial Approach, M. EL GARAH, S. Achache, LASMIS, CNRS- Université Technologique de Troyes, France; A. Michau, F. Schuster, CEA, Université Paris-Saclay, France; F. Sanchette, LASMIS, CNRS- Université Technologique de Troyes, France</p>	<p>INVITED: TS3-2-ThM11 Plasticity and Fracture in Transition Metal Carbides, G. Po, University of Miami, USA; M. Chen, J. Wheeler, ETH Zürich, Switzerland; D. Sangiovanni, Linköping University, Sweden; S. Kodambaka, University of California Los Angeles, USA</p>	
11:40am	<p>F2-ThM12 Sputter Deposition of High Entropy Alloy Oxynitrides, R. Dedoncker, Ghent University, Belgium; G. Radnóci, Hungarian Academy of Sciences, Hungary; D. Depla, Ghent University, Belgium</p>	Invited talk continues.	

Thursday Afternoon, April 30, 2020

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-2-ThA PVD Coatings and Technologies II Moderators: Frank Kaulfuss , Fraunhofer IWS, Germany, Yen-Hsun Su , National Cheng Kung University (NCKU), Taiwan, Qi Yang , National Research Council of Canada, Canada		Hard Coatings and Vapor Deposition Technologies Room California - Session B4-3-ThA Properties and Characterization of Hard Coatings and Surfaces III Moderators: Naureen Ghafoor , Thin Film Physics Division, IFM, Linköping University, Sweden, Marcus Günther , Robert Bosch GmbH, Germany, Fan-Bean Wu , National United University, Taiwan	
1:20pm		B4-3-ThA1	Low Temperature Deposition of TiB-based Hard Coating Films by Pulsed DC Plasma CVD, <i>T.K. Saito, H.M. Matsushima, K.F. Fuji, D.K. Kiyokawa, N.O. Okamoto</i> , Osaka Prefecture University, Japan
1:40pm	B1-2-ThA2 Monitoring Tantalum Nitride Thin Films Structure by Reactive HiPIMS Magnetron Sputtering: From Microstructure to Properties, <i>A. Poulon-Quintin, B. Giroire, L. Teule-Gay</i> , ICMCB-CNRS, France; <i>M. Cavarroc</i> , Safran Tech, France; <i>A. Achille</i> , ICMCB-CNRS, France	B4-3-ThA2	TiAlN/TiMoN Multi-Layered-Coatings as Hydrogen Barriers, <i>M. Tamura</i> , University of Electro-Communications, Japan
2:00pm	B1-2-ThA3 On Electron Heating and Ion Recycling in the High Power Impulse Magnetron Sputtering Discharge, <i>J.T. Gudmundsson</i> , University of Iceland, Iceland; <i>D. Lundin</i> , LPGP, Université Paris-Sud, France; <i>M.A. Raadu</i> , KTH Royal Institute of Technology, Sweden; <i>T.J. Petty, T.M. Minea</i> , LPGP, Université Paris-Sud, France; <i>N. Brenning</i> , KTH Royal Institute of Technology, Sweden	INVITED: B4-3-ThA3	Air-based Sputtering Deposition of Gradient Oxynitride Coatings, <i>F.-H. Lu</i> , National Chung Hsing University, Taiwan; <i>Y.-C. Liou, Y.-L. Lee, M.-H. Chan</i> , National Chung-Hsing University, Taiwan
2:20pm	B1-2-ThA4 How to Deposit a Porous Thin Film by Magnetron Sputtering ?, <i>D. Depla, R. De Doncker</i> , Ghent University, Belgium	Invited talk continues.	
2:40pm	B1-2-ThA5 Effects of Nitrogen Concentration on the Microstructure and Mechanical Properties of VNbMoTaWNx High-Entropy Alloy Coatings, <i>W.-H. Wang</i> , National Taiwan University of Science and Technology (NTUST), Taiwan, 台灣; <i>C.-J. Wang</i> , National Taiwan University of Science and Technology (NTUST), Taiwan; <i>B.-S. Lou</i> , Chang Gung University, Taiwan; <i>J.-W. Lee</i> , Ming Chi University of Technology, Taiwan	B4-3-ThA5	Fabrication and Microstructure Evolution of Sputtering Single Element Transition Metal Nitride Multilayers, <i>K.Y. Liu, Y.H. Yang, J.Y. Xiang, Z.X. Lin, F.B. Wu</i> , National United University, Taiwan
3:00pm	B1-2-ThA6 Tribocorrosion Behaviours of VNbMoTaWCr High Entropy Alloy Coatings, <i>I. Rahmadtulloh</i> , Ming Chi University of Technology, Taiwan; <i>W.-H. Wang</i> , National Taiwan University of Science and Technology (NTUST), Taiwan, 台灣; <i>C.-J. Wang</i> , National Taiwan University of Science and Technology (NTUST), Taiwan; <i>B.-S. Lou</i> , Chang Gung University, Taiwan; <i>J.-W. Lee</i> , Ming Chi University of Technology, Taiwan	B4-3-ThA6	Iron Aluminides Layers Prepared by Ionized Jet Deposition, <i>J. Čech, P. Haušild, J. Škočdopole, J. Čapek</i> , Czech Technical University in Prague, Czech Republic; <i>K. Nová, P. Novák</i> , University of Chemistry and Technology, Czech Republic
3:20pm	B1-2-ThA7 Surface Morphologies and Mechanical Properties of Multicomponent TiNbCrMoZr Thin Films after Laser Texture Oxidation Treatment, <i>Y.Y. Chang, C.S. Chen</i> , National Formosa University, Taiwan	B4-3-ThA7	Effect Of The Projection Parameters On The Morphology And The Abrasive Wear Resistance To The Of Nickel-Based Coatings Produced With Thermal Spraying Flame Technique, <i>F. Rojas, F. Orjuela B, E. Gómez</i> , Universidad Libre, Colombia; <i>A. Cueva</i> , Sena - Cme, Colombia
3:40pm	B1-2-ThA8 Multifunctional Coatings with Antifouling Properties, <i>J. Castro, I. Carvalho, M. Henriques, S. Carvalho</i> , University of Minho, Portugal	B4-3-ThA8	Evaluation of the Mechanical Properties of Single Fe2B Phase Formed on 316L Steel by Interrupted Boriding, <i>G. A. Rodríguez-Castro</i> , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; <i>O. Vázquez-de la Rosa, A. Meneses-Amador</i> , Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; <i>J. L. Arciniega-Martinez</i> , Instituto Politecnico Nacional ESIME, México; <i>I. E. Campos-Silva</i> , Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; <i>O. A. Morales-Contreras</i> , Universidad Autónoma de Baja California, México, Mexico
4:00pm	INVITED: B1-2-ThA9 Multilayer nano-composite Oxidation-resistant Coatings for Accident-tolerant Nuclear Fuel Cladding using Reactive HiPIMS with Positive Kick and Precision Ion Energy Control, <i>B. Jurczyk, R. Stubbers, I. Shchelkanov, T. Houlahan</i> , Starfire Industries LLC, USA		
4:20pm	Invited talk continues.		
4:40pm			

Thursday Afternoon, April 30, 2020

<p>Fundamentals and Technology of Multifunctional Materials and Devices Room Royal Palm 1-3 - Session C2-2-ThA Functional Coatings & Thin Films for Electronic Devices II Moderators: Julien Keraudy, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Jörg Patscheider, Evatec AG, Switzerland</p>		<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E2-2-ThA Mechanical Properties and Adhesion II Moderators: Megan J. Cordill, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, Jazmin Duarte, MPI für Eisenforschung GMBH, Germany, Ming-Tzer Lin, National Chung Hsing University, Taiwan</p>	
1:20pm	<p>C2-2-ThA1 Effect of Substrate bias on the Properties and Microstructure of Nanotwinned Cu Thin Films, S.Y. Chang, <i>F.-Y. Ouyang</i>, Tsinghua University, Taiwan</p>	E2-2-ThA1	<p>Toughening Magnetron Sputtered S-phase Stainless Steel Coatings by Cycling the N₂ Gas Flow Rate, C.M. Garzon, Universidad Nacional de Colombia - Bogotá, Colombia; A.A. Recco, Universidade do Estado de Santa Catarina, Brazil</p>
1:40pm	<p>C2-2-ThA2 Study of Thermal Stability of Highly (111)-oriented Nanotwinned Ag Films by using Unbalanced Magnetron Sputtering, Y.C. Hao, National Tsing Hua University, Taiwan, Republic of China, Taiwan; L.-P. Chang, <i>F.-Y. Ouyang</i>, National Tsing Hua University, Taiwan, Republic of China</p>	E2-2-ThA2	<p>Nb-containing Diamond-like Carbon Films Fabricated by Radio Frequency (rf) Magnetron Sputtering Technique, A.S. Adeniyi, <i>J. Corona</i>, <i>J. Patel</i>, <i>Q. Yang</i>, University of Saskatchewan, Canada</p>
2:00pm	<p>C2-2-ThA3 Fabrication and Surface/Interface Characterization of Mo-Ga Thin Films, NLR Lalitha Raveendran, University of Texas at El Paso, USA, United States of America; LP M. Porter, Carnegie Mellon University, USA, United States of America; CVR Chintalapalle, University of Texas at El Paso, USA</p>	INVITED: E2-2-ThA3	<p>Insights into Indentation-Induced Cracking via 3D-FIB Tomography and HR-EBSD, B.-S. Li, University of Oxford, UK</p>
2:20pm	<p>C2-2-ThA4 Stress Relaxation in the Si-SiO₂ System and its Influence on the Interface Properties, D. Kropman, University of Tartu; V. Seeman, University of Tartu, Estonia; A. Medvids, Riga Technical University, Latvia</p>	Invited talk continues.	
2:40pm	<p>INVITED: C2-2-ThA5 FeRh and BiFeO₃: Functional Ferroics for Emerging Applications, A. Mei, Cornell University, USA</p>	E2-2-ThA5	<p>Influence of Twin Wire Arc Spraying Process Parameters on Microstructure and Hardness of Steel Coatings, N.J. Wagner, Cal Poly Pomona, USA</p>
3:00pm	Invited talk continues.	E2-2-ThA6	<p>Effect of Transitional Layers on Wear Behavior of Ti_{0.15}Zr_{0.85}N Coatings on AISI D2 Steel, H.-H. Liu, Hsing Hua University, Taiwan; J.-H. Huang, National Tsing Hua University, Taiwan</p>
3:20pm	<p>C2-2-ThA7 P-type Nitrogen Substituted Zinc Oxide Transparent Semiconductor Thin Films Grown on Glass Substrates by Sol-gel Method, C.-Y. Tsay, <i>W.Y. Chiu</i>, Feng Chia University, Taiwan</p>	E2-2-ThA7	<p>Effect of the Incorporation of Ag Layers in the Structure of an Hydroxyapatite Coating Deposited by Magnetron Sputtering, J.A. Lenis, <i>F.J. Bolívar</i>, University of Antioquia, Medellín, Colombia</p>
3:40pm	<p>C2-2-ThA8 Atmospheric-Pressure Synthesis of Atomically Smooth, Conformal, and Ultrathin Low-k Polymer Insulating Layers by Plasma-Initiated CVD, D. Abessolo Ondo, <i>F. Loyer</i>, <i>R. Leturcq</i>, <i>N.D. Boscher</i>, Luxembourg Institute of Science and Technology, Luxembourg</p>	E2-2-ThA8	<p>Abrasion Wear Resistance of Low Temperature Plasma Nitrided Inconel 625 Superalloy, L.B. Varela, <i>M.F.C. Ordoñez</i>, University of São Paulo, Brazil; C.E. Pinedo, Heat Tech & University of Mogi das Cruzes, Brazil; A.P. Tschitschin, University of São Paulo, Brazil</p>
4:00pm		E2-2-ThA9	<p>Effects of Processing Parameters of Plasma Electrolytic Oxidation on the Microstructure, Adhesion Strength and Corrosion Resistance of Oxide Layers on ZK60 Magnesium Alloys, M.G. Asrat, National Taiwan University of Science and Technology, Taiwan, Ming Chi University of Technology, Taiwan; J.P. Chu, National Taiwan University of Science and Technology (NTUST), Taiwan; J.W. Lee, Ming Chi University of Technology, Taiwan; B.-S. Lou, Chang Gung University, Taiwan</p>
4:20pm		E2-2-ThA10	<p>Progressive Metallic Coatings for Enhancing Corrosive Properties of Magnesium Alloys, S. Dutta, <i>S.K.R. Narala</i>, BITS Pilani Hyderabad Campus, India</p>
4:40pm		E2-2-ThA11	<p>Nanostructured CVD W/WC Coating with Enhanced Resistance to Water Droplet Erosion and Cavitation, Y. Zhuk, Hardide Plc, UK</p>

Thursday Afternoon, April 30, 2020

New Horizons in Coatings and Thin Films Room Pacific Salon 6-7 - Session F3-ThA 2D Materials: Synthesis, Characterization, and Applications Moderators: Suneel Kodambaka, University of California Los Angeles, USA, Eli Sutter, University of Nebraska-Lincoln, USA		Topical Symposia Room Pacific Salon 3 - Session TS1-ThA Anti- and De-icing Surface Engineering I Moderators: Alina Agüero, National Institute of Aerospace Technology, Spain, Jolanta Ewa Sapieha, École Polytechnique de Montréal, Canada	
1:20pm	INVITED: F3-ThA1 Pulsed Laser Deposition and Conversion of Atomically-Thin 2D Materials Controlled by <i>in situ</i> Diagnostics, D.B. Geohegan , Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, USA; Y.-C. Lin, Y. Yu , Oak Ridge National Laboratory, USA; C. Liu, G. Duscher , University of Tennessee at Knoxville, USA; A.A. Puzos, M. Yoon, C.M. Rouleau , Oak Ridge National Laboratory, USA; P.D. Rack , University of Tennessee and Oak Ridge National Laboratory, USA; G. Eres, K. Xiao , Oak Ridge National Laboratory, USA	INVITED: TS1-ThA1 Ice Adhesion Mechanics and Durable Icephobic Surfaces, J.Y. He , Norwegian University of Science and Technology (NTNU), Norway	
1:40pm	Invited talk continues.	Invited talk continues.	
2:00pm		TS1-ThA3 Low Ice Adhesion Enhanced Electrothermal Ice Protection, J. Hu , Collins Aerospace, USA, United States of America; C. Slane , Collins Aerospace, USA; C. Botura , Collins Aerospace, USA	
2:20pm	F3-ThA4 Low-Temperature Synthesis of Vertically Standing Graphene by Microwave-Chemical Vapour Deposition, I. Vasconcelos Joviano dos Santos, J. Kulczyk-Malecka, S.J. Rowley-Neale, C.E. Banks, P.J. Kelly , Manchester Metropolitan University, UK	TS1-ThA4 Role of the Thin Coating in the Durability of Icephobic Thin-on-Thick Coating Systems, S. Brown, J. Lengaigne , Polytechnique Montreal, Canada; N. Sharifi, A. Dolatabadi , Concordia University, Canada; L. Martinu, J. E. Klemberg-Sapieha , Polytechnique Montreal, Canada	
2:40pm	F3-ThA5 Wettability, Structural and Optical Examination of Sputtered Zirconium Oxide Thin Films, U. 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	INVITED: TS1-ThA5 Low Interfacial Toughness Materials for Effective Large-scale Deicing, K. Golovin , University of British Columbia, Canada	
3:00pm	F3-ThA6 Better than Homoepitaxy? van der Waals Layer Assisted Growth of Thin Films, K. Tanaka , University of California Los Angeles, USA; K. Hojo , Nagoya University, Japan; A. Deshpande, P. Arias, M.E. Liao, Y. Wang, H. Zaid, A. Aleman, M.S. Goorsky, S. Kodambaka , University of California Los Angeles, USA	Invited talk continues.	
3:20pm	INVITED: F3-ThA7 Large Piezoelectric Response of van der Waals Layered Solids, C. Ciobanu, S. Manna, P. Gorain, G.L. Brennecka, V. Stevanovic , Colorado School of Mines, USA	TS1-ThA7 Collins Aerospace - Low Icing Adhesion Testing Methodology for Aerospace Application, C. Botura , Collins Aerospace, USA; J. Hu , Collins Aerospace, USA, United States of America; N. Ching , Collins Aerospace, USA	
3:40pm	Invited talk continues.	TS1-ThA8 Limitations of Anti-icing Materials for Aeronautic Applications, P. Garcia , National Institute of Aerospace Technology, Spain; J. Mora , Isdefe, Spain; A.A. Agüero , National Institute of Aerospace Technology, Spain	
4:00pm		TS1-ThA9 Anti-Icing Properties of Silicon and Fluorine-doped Hydrocarbons and their Ice Adhesion Strength, C. Ellis-Terrell, R. Wei, M. Miller , Southwest Research Institute, USA; M. Zou , University of Arkansas, USA; S. Beckford , Surftec, USA; K.E. Coulter , Southwest Research Institute, USA	
4:20pm		TS1-ThA10 Improving the Efficiency of Electro-thermal De-icing Systems with Icephobic Coatings, J. Brierley, X.H. Hou, B. Turnbull, W. Sun , University of Nottingham, UK	
4:40pm			

Coatings for Use at High Temperatures

Room Grand Hall & Foyer - Session AP-ThP

Coatings for Use at High Temperatures (Symposium A)

Poster Session

5:00pm

AP-ThP1

Effect of Different Addition of Fluoride on Wear Behavior of TC₄ Alloys at Elevated Temperature as Hard Phase and Lubricating Phase, **Z. Xie, X.F. Cui, G. Jin, E. Liu, W. Su**, Harbin Engineering University, China

AP-ThP2

Anodic Plasma Electrolytic Deposition of Composite Coating on Ferrous Alloys with Low Thermal Conductivity and Excellent Thermal Stability, **C. Zhao, J. Sun, X.Y. Nie**, University of Windsor, Canada

AP-ThP3

Oxidation of NiCrAlY Coating Deposited by Selective Laser Melting for Thermal Barrier Coating Application, **E. Copin, D. Texier, A. Flores, J. Lee**, ICA, France; **M. Terner, H.-U. Hong**, Changwon National University, Republic of Korea; **P. Lours**, ICA, France

AP-ThP4

Development of Aerospace Turbine Blade Thermal Barrier Coating, **Y.-M. Liu**, National Taipei University of Technology, Taiwan

AP-ThP5

Preparation of Solid Oxide Fuel Cell Electrolyte by Thermal Spraying, **Y.C. Lai**, National Taipei University of Technology, Taiwan

AP-ThP6

Aging Behavior of Ag-Pt Alloy Thick Film on AlN at High Temperature by Joule Heating, **Joeng Jeong, An An**, Korea Electronics Technology Institute (KETI), Republic of Korea; **Sa Sa**, SEMES CO., LTD, Republic of Korea

AP-ThP7

Effect of Different Addition of Fluoride on Wear Behavior of TC₄ Alloys at Elevated Temperature as Hard Phase and Lubricating Phase, **Z. Xie**, Harbin Engineering University, China; **X. Cui, G. Jin**, Institute of Surface/Interface Science And Technology, China; **E. Liu, W. Su**, Harbin Engineering University, China

Hard Coatings and Vapor Deposition Technologies

Room Grand Hall & Foyer - Session BP-ThP

Hard Coatings and Vapor Deposition Technologies (Symposium B) Poster Session

5:00pm

BP-ThP1

Behavior of Partially Oxidized Metal Targets, **J. Houska, T. Kozak**, University of West Bohemia, Czech Republic

BP-ThP2

Effects of Cu Metal Barrier on Electrical Stability and Reliability of Porous Low-dielectric-constant Materials, **C.Y. Lee, Y.L. Cheng**, National Chi-Nan University, Taiwan

BP-ThP3

Nanolayer Ti-Al-O-N Hard Coatings for Corrosion Protection in Electrolytes Simulating Polycarbonate Melt Processing Conditions, **T. Brögelmann, K. Bobzin**, Surface Engineering Institute - RWTH Aachen University, Germany; **G. Grundmeier, T. de los Arcos**, Technical and Macromolecular Chemistry - University of Paderborn, Germany; **N.C. Kruppe**, Surface Engineering Institute - RWTH Aachen University, Germany; **S. Schwiderek**, Technical and Macromolecular Chemistry - University of Paderborn; **M. Carlet**, Surface Engineering Institute - RWTH Aachen University, Germany

BP-ThP4

Mechanical and Tribological Performance of V-C-N Coatings Deposited by RF Magnetron Sputtering, **L. Aissani**, Larbi Ben M'Hidi University, Algeria; **A.A. Alhussein**, University of Technology of Troyes (UTT), France; **C. Nouveau**, ENSAM Cluny, France

BP-ThP5

Correlation Between the Plasma Analysis and Properties of the Films of ZnO-Au Deposited by the Hybrid Technique Combining Pulsed Laser Ablation and Magnetron Sputtering, **O. Depablos-Rivera, R. Álvarez-Mendoza, M. Martínez-Fuentes, C. Sánchez-Aké**, Universidad Nacional Autónoma de México, México; **T. García-Fernández**, Universidad Autónoma de Ciudad de México, México, Mexico; **S. Muhl, M. Villagrán-Muniz**, Universidad Nacional Autónoma de México, México

BP-ThP6

Pulse Synchronized Substrate Bias for the HPPMS Deposition of (Cr,Al)N, **K. Bobzin, T. Brögelmann, N.C. Kruppe, M. Engels, D.C. Hoffmann, C. Schulze**, Surface Engineering Institute - RWTH Aachen University, Germany

BP-ThP7

Fracture-related Characteristics of TiN Films at Elevated Temperatures, **J. Buchinger**, TU Wien, Austria; **L. Löfler**, Montanuniversität Leoben, Austria; **J. Ast, J. Michler**, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; **P.H. Mayrhofer**, TU Wien, Austria; **D. Holec**, Montanuniversität Leoben, Austria; **M. Bartosik**, TU Wien, Austria

BP-ThP8

High Photoresponsivity Sensor with Stannic Oxide Thin Film Transistor based Architecture, **Y.-C. Chiu, P.-T. Liu, D.-B. Ruan, K.-J. Gan, C.-C. Hsu, S.M. Sze**, National Chiao Tung University, Taiwan

BP-ThP9

Incorporation Of Metallic Nanoparticles On Diamond-Like Carbon Films For Combustion Engine Components Using Dc Pulsed Pe-Cvd With Additional Cathode., **M.A.R. Ramos**, Universidade do Vale do Paraiba - UNIVAP- Brazil, Brasil; **F.O. Kolawole, L.B. Varela**, University of São Paulo, Brazil; **V.J. Trava-Airoldi**, National Institute for Space Research - INPE, Brazil; **A. Tschiptchin**, University of São Paulo, Brazil

BP-ThP10

e-Poster Presentation: Bipolar HiPIMS for Tailoring Ion Energies in Thin Film Deposition, **D. Lundin, R.P.B. Viloan**, Linköping University, Sweden; **M. Zanáška**, Linköping University; **H. Du**, Guizhou University, China; **R. Boyd**, Linköping University, Sweden; **T. Shimizu**, Tokyo Metropolitan University, Japan; **U. Helmersson**, Linköping University, Sweden

BP-ThP11

Influence of Deposition Parameters on the Corrosion Resistance and Wear Resistance of Iron-Based Coatings Produced with Electric Wire Arc Spraying Technique for Application in Shipbuilding Industry, **F. Rojas**, Universidad Libre, Colombia

BP-ThP12

In-situ Analysis of B-doped Diamond Synthesis using Hot Filament CVD, **R. Tanaka, M. Takuya**, Chiba Institute of Technology Graduate School, Japan; **Y. Sakamoto**, Chiba Institute of Technology, Japan

BP-ThP13

Relationship between Electrical Resistivity and Emission Species in Plasma during Boron Doped Diamond Synthesis, **J. Adegawa**, Chiba Institute of Technology, Japan; **A. Suzuki**, Chiba Institute of Technology, Japan; **Y. Sakamoto**, Chiba Institute of Technology, Japan

BP-ThP14

Development of a Multilayer Ti/TiN/TiAlN/ReN Coating System and Evaluation of their Microstructural, Mechanical and Tribological Properties, **H.D. Mejía Vásquez, G. Bejarano Gaitan**, University of Antioquia, Medellín, Colombia; **M. Arroyave Franco**, University EAFIT, Colombia

BP-ThP15

Pulsed Laser Deposition of Nitride and Carbide Single- and Multi-Layered Coatings, **J. Falko, S. Weißmantel**, University of Applied Sciences Mittweida, Germany

BP-ThP16

Hybrid LACS Coatings: Industrial Use, **M. Jilek**, PLATIT a.s., Czech Republic; **A. Luemkemann**, PLATIT AG, Switzerland; **B. Torp**, PLATIT Inc., USA; **D. Bloesch**, PLATIT AG, Switzerland

Fundamentals and Technology of Multifunctional Materials and Devices

Room Grand Hall & Foyer - Session CP-ThP

Fundamentals and Technology of Multifunctional Materials and Devices (Symposium C) Poster Session

5:00pm

CP-ThP1

Preparation and Photocatalytic Properties of Heterostructured Ceria/Polyaniline Core-Shell Nanoparticles, **C.-Y. Chen, Y.-S. Li, G.-J. Lee, J.-J. Wu, Y.-C. Chang, C.-Y. Tsay, J.-H. Chen, T.-L. Horng**, Feng Chia University, Taiwan; **A. Fang**, Texas A&M University, USA

CP-ThP2

Investigation of Nanostructured Thin Films based on Water Soluble Precursors for Perovskite Solar Cells, **G.M. Wu**, Chang Gung University, Taiwan

CP-ThP4

Sonochemical Synthesis of BiVO₄ composite photocatalysts for Photocatalytic Degradation of Bisphenol A under Simulated Sunlight Irradiation, *J.-H. Chen, G.-J. Lee, H.-Y. Lee, J.-J. Wu*, Feng Chia University, Taiwan

CP-ThP5

High Emissivity Coatings as Active Heat Element, *A. Martin, H. Scheerer, T.C. Engler, M. Oechsner*, TU Darmstadt, Germany

CP-ThP6

Synthesis of Copper-doped CdS/COF Composite Photocatalysts for Efficient Visible Light Photocatalytic Production of Solar Fuels, *G.-J. Lee, H.-J. Yang, J.-J. Wu*, Feng Chia University, Taiwan

CP-ThP7

Characterization of Phosphor Layer for Perovskite Solar Cell with Enhanced Stability, *S.G. Shin, C.W. Bark, H.W. Choi*, Gachon University, Republic of Korea

CP-ThP8

An Algorithm for Fast Diagnostics of the Sensitivity of Localized Surface Plasmon Resonance Sensors Based on Thin Films, *M.S. Rodrigues, R.M.S. Pereira, M.I. Vasilevskiy, J. Borges, F. Vaz*, University of Minho, Portugal

CP-ThP9

Electron Fluence Dependency on Synthesis of Ru-rGO and its Specific Capacitance, *M. Iqbal*, Central University of Punjab, India; *A. Ambadas*, University of Pune, India; *N. Saykar*, Central University of Punjab, India; *I. Banerjee*, Central University of Gujarat, India; *V.N. Bhoraskar*, University of Pune, India; *S.K. Mahapatra*, Central University of Punjab, India

CP-ThP10

Atmospheric Plasma Oxidative Polymerization of Ethylene Dioxothiophene (EDOT) for the Large-Scale Preparation of Highly Transparent Conducting Thin Films, *D. Abessolo Ondo*, Luxembourg Institute of science and Technology, Luxembourg; *F. Loyer*, Luxembourg Institute of Science and Technology, Luxembourg; *J.B. CHEMIN, S. Bulou, P. Choquet*, Luxembourg Institute of science and Technology, Luxembourg; *N.D. Boscher*, Luxembourg Institute of Science and Technology, Luxembourg

CP-ThP11

A Comparative Microstructure and Wear Morphology Study of Various Uncoated Cermet Tools for the High-Speed Dry Turning of AISI 304, *U. Patel, S. Rawal, A.F. Arif, S.C. Veldhuis*, McMaster University, Canada

CP-ThP12

Characterization of Flexible Transparent Electrodes Fabricated by Etching-Free Patterning of Silver Nanowire-Conductive Polymer Composites, *T.G. Park, J.S. Park, J.S. Park*, Hanyang University, Republic of Korea

CP-ThP13

Mesh-like Patterning of Silver Nanowires through Selective Heat Treatment for Application to Flexible Transparent Electrodes, *J.S. Park, T.G. Park, J.S. Park*, Hanyang University, Republic of Korea

CP-ThP14

Optical and Electrical Properties of ZnO/Ag/ZnO and AZO/Ag/AZO Multilayers Deposited on Flexible Substrate Using High Power Impulse Magnetron Sputtering, *Y.H. Hsu, H.-W. Liu*, National Chung Hsing University, Taiwan; *W.-Y. Wu*, Da-Yeh University, Taiwan

Coatings for Biomedical and Healthcare Applications

Room Grand Hall & Foyer - Session DP-ThP

Coatings for Biomedical and Healthcare Applications

(Symposium D) Poster Session

5:00pm

DP-ThP1

Analysis of NO Radicals Generation by Extended Atmospheric Pressure Plasma Jet through Machine Learning and its use in Bactericide, *J.H. Hsieh, C.Y. Lee*, Ming Chi University of Technology, Taiwan

DP-ThP2

Characterization of Hierarchical TiO₂ Nanowires-Calcium Phosphate Composite for Biomedical Application, *K.H. Park, H.J. Song, Y.J. Park*, Chonnam National University, Republic of Korea

DP-ThP3

Light-activated High Efficiency Antimicrobial Coatings, *V. Bellido-Gonzalez, P. Killen, T. Sgrilli, D. Monaghan*, Gencoa Ltd, UK; *O. Hernandez-Rodriguez*, IK4-TEKNIKER, Spain

DP-ThP4

e-Poster Presentation: Metallization of Polymers for Medical Applications using HIPIMS, *A.R. Chacko, K. Thorwarth, R. Crockett, U. Müller, H.J. Hug*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland

DP-ThP5

Preparation and Properties of Ag Doped DLC Coating for Total Hip Joint Replacement, *J. Patel*, University of Saskatchewan, Canada

DP-ThP6

Superamphiphobic Stainless Steel Surface Prepared by Femtosecond Laser Patterning and Pulsed Plasma-Polymerization, *C.W. Lin*, Central Taiwan University of Science and Technology; Feng Chia University, Taiwan; *C.M. Chou*, Taichung Veterans General Hospital; National Yang-Ming University, Taiwan; *C.J. Chung*, Central Taiwan University of Science and Technology, Taiwan; *J.L. He*, Feng Chia University, Taiwan

DP-ThP7

Low Temperature Plasma Oxidation Capability and Bactericidal Effectiveness of the Transparent Diffusive Coplanar Surface Barrier Discharge, *S.W. Huang*, Ming Chi University of Technology, Taiwan; *C. Li*, National Yang Ming University, Taiwan; *J.H. Hsieh*, Ming Chi University of Technology, Taiwan

DP-ThP8

Improved Biocompatibility of Materials for Medical Applications via Coating Revealed by Studies of Nanoparticle-Cell Interactions, *N.A. Abrikosova, G. Pozina*, Linköping University, IFM, Thin Film Physics Division, Sweden

DP-ThP9

Parameter Analysis of Flame Spraying Biomedical Ceramic Coatings, *P.J. Lai*, National Taipei University of Technology, Taiwan

Tribology and Mechanical Behavior of Coatings and Engineered Surfaces

Room Grand Hall & Foyer - Session EP-ThP

Tribology and Mechanical Behavior of Coatings and

Engineered Surfaces (Symposium E) Poster Session

5:00pm

EP-ThP1

Effect of Molybdenum Disulfide nanoparticles addition on the Structure and Wear Resistance of Micro-arc Oxidation Self-lubricant Ceramic Layer on the 2A50 Aluminum Alloy, *X.-J. Li, M. Zhang, S. Wen, X. Mao*, Liaoning Normal University, China; *Y. Guo*, Liaoning University of Science & Technology, China

EP-ThP2

e-Poster Presentation: Triboactive and Tribocatalytic Effects of Mo, W and Cu in (Cr,Al)N based PVD Coatings, *K. Bobzin, T. Brägelmann, C. Kalscheuer, M. Welters*, Surface Engineering Institute - RWTH Aachen University, Germany

EP-ThP3

Influence of Gaseous Environment on the Tribological Behavior of TMD-based MS Coatings, *A. Bondarev, T. Polcar*, Czech Technical University in Prague, Czech Republic

EP-ThP4

Tribological Behavior of DLC Films with Niobium Nanolayers of Several Thicknesses, *A.S. Adeniyi, J. Corona, J. Patel, Q. Yang*, University of Saskatchewan, Canada

EP-ThP5

Preparation and Tribological Research of the Electrodeposited Ni-W Coatings for Piston Ring Application, *P.C. Huang, C.C. Chou*, National Defense University, Taoyuan, Taiwan; *H.C. Wang*, National Chung-Shan Institute of Science & Technology, Taoyuan, Taiwan

EP-ThP6

Research on Thermal Lying Cu-Ni-Ti Three-element Alloy Coating, *P.-C. Jhan*, National Taipei University of Technology, Taipei Tech, Taiwan

EP-ThP7

Crack Behaviors and Optimization of Residual Stresses in Laser Cladding Based on HVOF Sprayed WC-Co C lad s, *M.D. Jean, C.W. Liu*, Fujian University of Technology, China

EP-ThP8

The Effect of Interlayer on the Mechanical and Tribological Properties of TiSiN/CrAlN Multilayered Coatings Deposited by Cathodic Arc Deposition, *W.Y. Ho*, MingDao University, Taiwan; *J. Hung, L.C. Hsu*, Aurora Scientific Corp., Canada; *D.Y. Wang*, MingDao University, Taiwan

Thursday Afternoon Poster Sessions, April 30, 2020

EP-ThP9

Fabrication and Characteristics of La-doped CoCrFeMnNi High-Entropy Alloy Films, **C.L. Li**, National Taiwan University of Science and Technology, Taiwan

EP-ThP10

Influence of Nitrogen Flow Variation on The Structural, Mechanical and Tribological Properties of TiAlVN Coatings Deposited By DC magnetron sputtering, **F. Giraldo**, **G. Bejarano**, Universidad de Antioquia, Colombia

EP-ThP11

Novel Spatially Coordinated In-situ Raman and Nanoscale Wear Analysis of DLC Film, **M. Rouhani**, **Y.R. Jeng**, National Chung Cheng University, Taiwan

EP-ThP12

Solid Lubricant Coatings Based on WS₂ Inorganic Fullerene, **S. Barseghyan**, Genio Inc., USA

EP-ThP13

Effects of Sputtering Gas Systems on the Preparation of a-BN Films using RF Sputtering, **Y. Yamada**, **T. Markuko**, Chiba Institute of Technology Graduate School, Japan; **M. Imamiya**, Hana Saidan, Japan; **Y. Sakamoto**, Chiba Institute of Technology, Japan

EP-ThP14

Preparation of Bi Films by IR Lamp Heating Evaporation, **M. Matsushita**, **T. Maruco**, **Y. Sakamoto**, Chiba Institute of Technology, Japan

EP-ThP15

Development of Hydroxyapatite (HA) - Si Multi-layer Coatings Deposited on Ti-6Al-4V by Magnetron Sputtering, **J.A. Lenis**, **K. Pérez**, **F.J. Bolívar**, University of Antioquia, Medellín, Colombia

EP-ThP16

Corrosion Resistance of Plasma Nitrided 410S Ferritic-Martensitic Stainless Steels, **L. B. Varela**, University of São Paulo, Brasil; **M.T. Umemura**, **J.C. Calderón-Hernández**, University of São Paulo; **C.E. Pinedo**, Heat Tech Technology for Heat Treatment and Surface Engineering Ltd.; **A.P. Tschiptschin**, University of São Paulo

EP-ThP17

Mechanical Behavior of Boriding Microalloyed Steels Immersed in Diesel, **N. Lopez Perrusquia**, Universidad Politécnica del Valle de México, México; **M.A. Donu-Ruiz**, Universidad Politécnica del Valle de México, México; **E.D. Garcia Bustos**, Universidad de Guadalajara, Mexico; **C.R. Torres San Miguel**, Instituto Politécnico Nacional - ESIME, Mexico; **G.J. Perez Mendoza**, Universidad Politécnica del Valle de Mexico, México; **J.V. Cortes Suarez**, Universidad Autonoma Metropolitana Azcapotzalco, Mexico, México

New Horizons in Coatings and Thin Films

Room Grand Hall & Foyer - Session FP-ThP

New Horizons in Coatings and Thin Films (Symposium F)

Poster Session

5:00pm

FP-ThP1

High Efficient Water Splitting Cell having High-entropy Oxide Catalysts, **Z.T. Huang**, **J.-M. Ting**, National Cheng Kung University, Taiwan

FP-ThP2

Characterization of Fe-Cr-Ni Alloy Thin Film Sputter Deposited from SUS316 Target, **P.M. Yiu**, **S.T. Wang**, **J.D. You**, **J.P. Chu**, National Taiwan University of Science and Technology (NTUST), Taiwan

FP-ThP3

High-Entropy Perovskite Oxides as Advanced Catalysis, **Y.-C. Liao**, **J.-M. Ting**, National Cheng Kung University, Taiwan

FP-ThP5

Hybrid Structures of p-n junction for Improving Efficiency of Photovoltaic Devices, **P. Jarka**, Silesian University of Technology, Poland; **T. Tański**, **W. Matysiak**, Silesian University of Technology, Poland, Polska; **B. Hajduk**, Polish Academy of Sciences, Poland

FP-ThP6

The Electrospun 2D Nanomaterials And Their Application Possibilities, **W. Matysiak**, Silesian University of Technology, Poland, Polska

FP-ThP7

Comparison of Optical Properties of Bi₂O₃ Solid Layer and Thin Fibrous Mats Obtained via Spin-Coating and Electrospinning Techniques, **W. Matysiak**, **T. Tański**, Silesian University of Technology, Polska

FP-ThP8

Structure and Mechanical Properties of ZrB_{2+x} and ZrAlB_{2+x} Hard Coatings, **T. Fiantok**, **T. Roch**, **M. Truchlý**, Comenius University in Bratislava, Slovakia; **P. Švec**, Slovak Academy of Sciences, Slovakia; **M. Zahoran**, **M. Mikula**, Comenius University in Bratislava, Slovakia

FP-ThP9

Structural and Photoluminescence Properties of ZnO Nanorods Grown on Various TCO Seed Layers by Chemical Bath Deposition, **T. Terasako**, **K. Hamamoto**, Ehime University, Japan; **M. Yagi**, National Institute of Technology (KOSEN), Kagawa College, Japan; **Y. Furubayashi**, **T. Yamamoto**, Research Institute, Kochi University of Technology, Japan

Surface Engineering - Applied Research and Industrial Applications

Room Grand Hall & Foyer - Session GP-ThP

Surface Engineering - Applied Research and Industrial

Applications (Symposium G) Poster Session

5:00pm

GP-ThP1

Ultra-Low Temperature CVD Tungsten Carbide Coating to Replace Hard Chrome Plating on Aerospace Components made of Temperature-sensitive Grades of Steel, **Y. Zhuk**, Hardide Plc, UK

GP-ThP2

On the Oxygen Radical Production in a Remote Inductively Coupled Plasma Source, **Y. Seol**, **H.Y. Chang**, Korea Advanced Institute of Science and Technology, Republic of Korea

GP-ThP3

Synthesis of Large Area ta-C Coating by Single-bend FCVA Source using in-line PVD System, **H.K. Kim**, **K.T. Lee**, Korea Aerospace University, Republic of Korea; **J.W. Kim**, Incheon National University, Republic of Korea; **S.M. Kim**, Hyundai Steel, Republic of Korea; **S.Y. Lee**, Korea Aerospace University, Republic of Korea

GP-ThP4

Development, Testing and Production of Coatings on Bipolar Plates in Polymer Electrolyte Fuel Cells, **P. Jaschinski**, KCS Europe GmbH, Germany; **V. Lukassek**, **J. Wartmann**, **A. Heinzel**, ZBT GmbH The Hydrogen and Fuel Cell Center, Germany; **R. Cremer**, KCS Europe GmbH, Germany

GP-ThP5

Enhanced Plasma Nitriding by Elastic Shot Blasting Pretreatment, **Y. Handa**, **P. Abraha**, Meijo University, Japan

GP-ThP6

Characterization of Tungsten-doped InZnO Thin Films with Plasma Treatment for Conductive-bridge RAM Applications, **C.-C. Hsu**, **P.-T. Liu**, **K.-J. Gan**, **Y.-C. Chiu**, **D.-B. Ruan**, **S.M. Sze**, National Chiao Tung University, Taiwan

GP-ThP7

Anodic Vacuum Arc Deposited Nanostructured NiTi Coating for Hydrogen Storage, **I. Banerjee**, Central University of Gujarat, India; **A. Pathak**, Birla Institute of Technology, India; **S. Rai**, Birla Institute of Technology, India; **S.K. Mahapatra**, Central University of Punjab, India

GP-ThP8

The Radiation Effect on FinFET device with Double Pattern Lithography Process, **F.-Y. Chu**, **K.-S. Chang-Liao**, **D.-B. Ruan**, **Z.-Q. Hong**, **S.-H. Hsu**, **Y.-H. Chien**, **Y.-L. Li**, National Tsing Hua University, Taiwan

GP-ThP9

Thin Films for Protection of Integrated Sensor Systems on Tribological Loaded Surfaces, **A.S. Dörner-Reisel**, Schmalkalden University of Applied Sciences, Germany; **W.A. Ahmad Akhtar**, **J. Seeger**, **G. Reisel**, Oerlikon Metco WOKA GmbH Barchfeld, Germany

GP-ThP10

Influence of Synchronized Pulsed Substrate Bias on the Deposition of Ti and TiN Films Using High Power Impulse Magnetron Sputtering Technique, **Y.X. Lin**, **P.Y. Liu**, **W.Y. Wu**, Da-Yeh University, Taiwan

GP-ThP11

Microstructure and Mechanical Properties of M4/D2 Hard-Faced-Surface by Direct Energy Deposition, **JB Jeon**, **GW Park**, **SM Shin**, **WJ Lee**, Korea Institute of Industrial Technology (KITECH), Republic of Korea

GP-ThP12

Effect of Cu Content and Melting Temperature on the Oxide Film Formation and the Quality of Molten 6000-Series Aluminum Alloys, *H. Jang, P. Youn, H. Kang, G. Lee, J. Park, E. Kim, J. Jeon, S. Shin*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

GP-ThP13

Performance Enhancement of pGe MOS device with Pre- and Post-Deposition Microwave Annealing Treatment, *Y.-H. Chien, K.-S. Chang-Liao, D.-B. Ruan, S.-H. Yi, F.-Y. Chu*, National Tsing Hua University

GP-ThP14

The Radiation Effect on FinFET device with Double Pattern Lithography Process, *F.-Y. Chu, K.-S. Chang-Liao, D.-B. Ruan, Z.-Q. Hong, S.-H. Hsu, Y.-H. Chien*, National Tsing Hua University, Taiwan

GP-ThP15

TiO₂-Silicon Nanowire Arrays for Inorganic Solar Cell Applications, *A.H. Chiou*, National Formosa University, Taiwan

GP-ThP16

Design of Surface Layers with Phase Change with Novel Properties, *R Basu*, VTU Kundana, Bangalore, India

GP-ThP17

Ni-Al₂O₃ Composite Coating for Reduction of Wear and Particle Emission of a Brake System, *R. Cai, C. Zhao, J. Sun, X.Y. Nie*, University of Windsor, Canada; *J. Tjong*, Ford Motor of Canada, Canada; *J. Zhang*, University of Windsor, Canada

Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes

Room Grand Hall & Foyer - Session HP-ThP

Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes (Symposium H) Poster Session 5:00pm

HP-ThP1

ZnO Thin Films Growth at Low Temperature by PE-ALD using O₂ and H₂O Plasma, *J.R. Castillo, B. Valdez*, Universidad Autónoma de Baja California, Mexico; *E. Martinez*, CIMAV Centro de Materiales Avanzados Unidad Monterrey, Mexico; *D. Mateos, M. Curriel*, Universidad Autónoma de Baja California, Mexico; *M. Martinez, I. Mendivil*, CIMAV Centro de Materiales Avanzados Unidad Monterrey, Mexico; *N. Nedev*, Universidad Autónoma de Baja California, Mexico

HP-ThP2

Optimization of Grain Growth for High performance Planar p-i-n Perovskite Solar Cell, *W.C. Lee, B. Hong*, Sungkyunkwan University, Republic of Korea

HP-ThP3

e-Poster Presentation: Nanoindentation Analysis as a Two-Dimensional Tool for Mapping the Mechanical Properties of Complex Microstructures, *N Randall, JM Breguet*, Alemnis, Switzerland

HP-ThP4

Characterization of Flexible Transparent Electrodes Fabricated via Etching-free Patterning of Silver Nanowire-conductive Polymer Composites, *T.G Park*, Hanyang University, Republic of Korea

Topical Symposia

Room Grand Hall & Foyer - Session TSP-ThP

Topical Symposia (TS) Poster Session 5:00pm

TSP-ThP1

Fragmentation of Atomic Layer Deposited Oxide Thin Films and Nanolaminates under Uniaxial Tension, *M. Ruoho, J.-P. Niemelä, B. Putz, N. Tarasiuk, G. Robertson*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *A.A. Taylor*, University of California Santa Barbara, USA; *X. Maeder*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *C. Kapusta*, AGH University of Science and Technology Krakow, Poland; *J. Michler, I. Utke*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

TSP-ThP2

Highly Efficient Hydrogen Evolution of Copper-Doped MoS₂/MOF Composite Photocatalysts via Fabricating the 2D Periodic Structure, *T.-L. Horng, G.-J. Lee, H.-T. Huang, J.-J. Wu*, Feng Chia University, Taiwan

TSP-ThP3

Stability of Mechanical Properties of Molecular Layer-deposited Alucone, *M. Ruoho, N. Tarasiuk, N. Rohbeck, J.-P. Niemelä*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *C. Kapusta*, AGH University of Science and Technology Krakow, Poland; *J. Michler, I. Utke*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

TSP-ThP4

Mechanical Properties of High Entropy Alloys (HEA) Thin Films on Flexible Substrate: Study of CoCrCuFeNi System, *C-H Li, F Sedghgooya*, LSPM-CNRS, Université Paris13, France; *R Dedoncker*, Ghent University, Belgium; *F Zighem*, LSPM-CNRS, Université Paris13; *D Depla*, Ghent University, Belgium; *P Djemia, D Faurie*, LSPM-CNRS, Université Paris13, France

Friday Morning, May 1, 2020

Hard Coatings and Vapor Deposition Technologies Room Golden West - Session B1-3-FrM PVD Coatings and Technologies III Moderators: Frank Kaulfuss , Fraunhofer IWS, Germany, Qi Yang , National Research Council of Canada, Canada		Hard Coatings and Vapor Deposition Technologies Room California - Session B4-4-FrM Properties and Characterization of Hard Coatings and Surfaces IV Moderators: Naureen Ghafoor , Thin Film Physics Division, IFM, Linköping University, Sweden, Marcus Günther , Robert Bosch GmbH, Germany, Fan-Bean Wu , National United University, Taiwan	
8:00am	B1-3-FrM1 Plasma-assisted Deposition of TCO FhIn Films by Sublimation in an Anodic Vacuum Arc Discharge, B. Scheffel , O. Zywitzki, T. Preußner, T. Modes, Fraunhofer FEP, Germany	B4-4-FrM1	The Structure and Properties of V _{1-x} Mo _x N Thin Films Deposited by HIPIMS, Y.Q. Feng , J.-H. Huang, National Tsing Hua University, Taiwan
8:20am	B1-3-FrM2 Effect of Spatial Distribution of Chemical Species on Nitride Hard Coating Structure in Cathodic Arc PVD Method, S. Sato , K. Yamaguchi, M. Takahashi, Mitsubishi Materials Corporation, Japan	B4-4-FrM2	Study of Synergic Effects of Laser Ablation and Coating on Cemented Carbides: Surface and Mechanical Integrity Assessment, S. Fang , Universitat Politècnica de Catalunya, Spain; D. Bähre , Saarland University, Germany; N. Salan , L. Llanes, Universitat Politècnica de Catalunya, Spain
8:40am	INVITED: B1-3-FrM3 Industrial Scale ta-C Coating Using Laser Arc Technology, W. Fukarek , B. Gebhardt, VTD Vakuumtechnik Dresden GmbH, Germany; V. Weihnacht , F. Kaulfuss, Fraunhofer IWS, Germany	B4-4-FrM3	Fatigue Behaviour of Thin Coating and the Influences of Plastic Deformation of Harden-case using Irreversible Cohesive Zone Model, J. Feng , Manchester Metropolitan University, UK; Y. Qin , University of Strathclyde, UK; T.W. Liskiewicz , Manchester Metropolitan University, UK; B.D. Beake , Micro Materials Ltd, UK
9:00am	Invited talk continues.	B4-4-FrM4	Behavior of Helium and Hydrogen on the Microstructure Evolution of He/H irradiated 6H-SiC: A Comparison, B. Li , State Key Laboratory for Environment-friendly Energy Materials, Southwest University of Science and Technology, Mianyang, Sichuan 621010, China; N.I. Daghbouj , Czech Technical University in Prague, Czech Republic; M. Callisti , University of Cambridge, UK
9:20am	B1-3-FrM5 New Details about Surface Modification on Multi-element Arc Cathodes Revealed by Dedicated Cathode Design, M. Golzadeh Najafabadi , F. Mendez Martin, Montanuniversität Leoben, Austria; S. Kolozsvári , Plansee Composite Materials GmbH, Germany; R. Franz , Montanuniversität Leoben, Austria	B4-4-FrM5	Microstructure and Oxidation Behaviour of Arc Evaporated TiSiN Coatings Investigated by <i>in-situ</i> Synchrotron X-ray Diffraction, Y. Moritz , C. Saringer, M. Tkadletz, Montanuniversität Leoben, Austria; A. Stark , N. Schell, Helmholtz-Zentrum Geesthacht, Germany; M. Pohler , CERATIZIT Austria GmbH, Austria; N. Schalk , Montanuniversität Leoben, Austria
9:40am	B1-3-FrM6 Utilization of Hybrid LACS® Technology (Lateral ARC and Central Sputtering) for the Enhancing of the DC Magnetron Sputtering Deposition, A. Lümke , R. Zemlicka, PLATIT AG, Switzerland; M. Jilek , J. Kluson, PLATIT a.s., Czech Republic; B. Torp , PLATIT Inc., USA, Denmark; D. Blösch , PLATIT AG, Switzerland	B4-4-FrM6	Surface Properties of Titanium Alloy Treated with Gas Blow IH Nitriding and its Effects on Fatigue Strength, S. Huang , M. Hayama, Keio University, Japan; S. Takesue , Kyoto Institute of Technology, Japan; J. Komatori , Keio University, Japan
10:00am	B1-3-FrM7 Designing A Versatile Vacuum System For Thin Film Research And Development, A. Guastavino , AGS Plasma Systems, USA	B4-4-FrM7	Corrosion Resistance of Cobalt Boride Layer Exposed to a Diffusion Annealing Process, A.M. Delgado-Brito , Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; I. Mejía-Caballero , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; G.A. Rodríguez-Flores , Universidad Autónoma Metropolitana- Azcapotzalco, México; A. Ruiz-Ríos , E.J. Hernández-Ramírez, A.D. Contla-Pacheco, Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México; I.E. Campos-Silva , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, México, Mexico
10:20am	B1-3-FrM8 Zn Interlayer Design to Improve the Adhesion Strength of PVD Zn-Mg/Zn Coating on High-strength Steel, S.H. Lee , S.Y. Lee, H.K. Kim, Korea Aerospace University, Republic of Korea; J.W. Kim , Incheon National University, Republic of Korea	B4-4-FrM8	Finite Element Modeling of Powder-Pack Boriding Thermochemical Treatment, O. Reyes-Carcaño , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; A. Meneses-Amador , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico, México; I.E. Campos-Silva , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico; G.A. Rodríguez-Castro , R.C. Vega-Morón, Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico, México; D. Fernández-Valdés , Instituto Politécnico Nacional Grupo Ingeniería de Superficies, Mexico
10:40am	B1-3-FrM9 Characterization and Erosion Resistance Evaluation of TiAlN Thick Film by Cathodic Arc Deposition, D.Y. Wang , MingDao University, Taiwan; L.C. Hsu , J. Hung, Aurora Scientific Corp., Canada	INVITED: B4-4-FrM9	Metal Oxynitride Thin Films: A Review on Synthesis Developments, Performance, and Applications, S. Ali , Linnaeus University, Sweden
11:00am			Invited talk continues.
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Friday Morning, May 1, 2020

	<p>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces Room San Diego - Session E3-FrM Tribology of Coatings for Automotive and Aerospace Applications Moderators: Carsten Gachot, TU Wien, Institute for Engineering Design and Logistics Engineering, Austria, Christian Greiner, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany, Oliver Hunold, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein</p>	<p>Surface Engineering - Applied Research and Industrial Applications Room Pacific Salon 2 - Session G1-FrM Advances in Industrial PVD, CVD and PCVD Processes and Equipment Moderators: Ladislav Bárdos, Uppsala University, Sweden, Vikram Bedekar, The Timken Company, USA</p>
8:00am	<p>E3-FrM1 Determination of Method for Tribological Experiment on Ultra-Hard Coatings in Low-Viscosity Fuels, K. Jacques, University of North Texas, USA, United States of America; S. Berkebile, N. Murthy, J.E. Mogonye, Army Research Laboratories, USA; S. Dixit, Plasma Technology Inc., USA; D. Berman, T. Scharf, University of North Texas, USA</p>	<p>INVITED: G1-FrM1 New Developments in Magnetron Sputtering Devices, D. Monaghan, V. Bellido-Gonzalez, T. Sgrilli, R. Brown, J. Brindley, B. Daniel, Gencoa Ltd, UK</p>
8:20am	<p>E3-FrM2 Tribology and Corrosion Behavior of Ni-Al₂O₃ Composite Coating on Cast Iron, J. Sun, C. Zhao, R. Cai, X.Y. Nie, University of Windsor, Canada</p>	<p>Invited talk continues.</p>
8:40am	<p>E3-FrM3 Abrasion Protection by Magnetron Sputtered Coatings of Epoxy Based Composites Exposed to Harsh Environmental Conditions, D.M. Mihut, A. Afshar, S. Hill, N. Cordista, G. Baker, Mercer University, USA</p>	<p>G1-FrM3 HIPIMS –Ready on Industrial Scale for Modern Production, P. Immich, G. Negrea, D. Doerwald, R. Jacobs, M. Eerden, R. Ganesan, L. Tegelaers, IHI Hauser Techno Coating B.V., Netherlands</p>
9:00am	<p>E3-FrM4 Effect of HiPIMS Deposition on the High Temperature Tribomechanical Properties of Silicon Containing Diamond-like Carbon Films, B.J. Rodriguez, University of Warwick, UK; J.A. Santiago, I. Fernández-Martínez, Nano4Energy SL, Spain; P. Navabpour, H. Sun, Teer Coatings Ltd, UK; T. Schiller, University of Warwick, UK</p>	<p>G1-FrM4 A Novel Hollow Cathode System for Fast, Low Temperature Nitriding and Ultra High Deposition Rate of Metal Nitride Coatings., T. Casserly, F. Papa, Duralar Technologies, USA; B. Strahin, Precision Surface Science, USA; S. Gennaro, A. Tudhope, Duralar Technologies, USA</p>
9:20am	<p>E3-FrM5 Self-lubricating Triboactive (Cr,Al)N+Mo:S Coatings for Fluid-free Applications, M. Thieux, K. Bobzin, T. Brögelmann, C. Karlscheuer, Surface Engineering Institute - RWTH Aachen University, Germany</p>	<p>INVITED: G1-FrM5 DLC Coatings for the Automotive Industry, R. Ahuja, HEF US, USA</p>
9:40am	<p>E3-FrM6 Coating Properties and Wear Resistance of ta-C Deposited by Arc Ion Plating (AIP) Technique, Y. Isomura, T. Takahashi, J. Fujita, Kobe Steel, Ltd., Japan; S. Kujime, Kobe Steel Ltd., Japan</p>	<p>Invited talk continues.</p>
10:00am	<p>INVITED: E3-FrM7 Tribological Mechanisms Leading to Moving Cracks and to Co-emission from Hip Implants, M. Herbig, Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany</p>	<p>INVITED: G1-FrM7 Deposition of Functional Nano-Coatings Using Atmospheric Pressure Plasmas, D. Pappas, Plasmamatreat USA, USA; N. Eternal, R. Gonzalesz, Plasmamatreat USA</p>
10:20am	<p>Invited talk continues.</p>	<p>Invited talk continues.</p>
10:40am	<p>E3-FrM9 Thermal Stability of Hydrogenated DLC Coatings on Tappet Valve Substrate, F.O. Kolawole, University of Sao Paulo, Brazil; L.B. Varela, University of São Paulo, Brazil; S. Kolawole, National Agency for Science and Engineering Infrastructure, Abuja, Nigeria; M. Ramirez, University of Vale do Paraiba, Brazil; A.P. Tschiptschin, University of São Paulo, Brazil</p>	
11:00am	<p>E3-FrM10 Duplex TiN and TiAlN Coatings on Ti-6Al-4V Alloy Formed by a Combination of Plasma Nitriding and Cathodic Arc Evaporation, V Pankov, Q. Yang, National Research Council of Canada, Canada</p>	
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