

# Program Key

## Conference Topics

<b>A</b>	Coatings for Use at High Temperatures
<b>B</b>	Hard Coatings and Vapor Deposition Technologies
<b>C</b>	Fundamentals and Technology of Multifunctional Materials and Devices
<b>D</b>	Coatings for Biomedical and Healthcare Applications
<b>E</b>	Tribology and Mechanical Behavior of Coatings and Engineered Surfaces
<b>EX</b>	Exhibition Keynote Lecture
<b>F</b>	New Horizons in Coatings and Thin Films
<b>G</b>	Surface Engineering - Applied Research and Industrial Applications
<b>H</b>	Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes
<b>HL</b>	Awards Convocation and Honorary Lecture
<b>PL</b>	Plenary Lecture
<b>SIT</b>	Special Interest Talks
<b>TS</b>	Topical Symposia

# Program Overview

Room /Time	California	Golden West	Grand Hall	Pacific Salon 1	Pacific Salon 2
MoPL					
MoM	B3-1-MoM: Deposition Technologies and Applications for Diamond-like Coatings I	B1-1-MoM: PVD Coatings and Technologies I		H2-1-MoM: Fatigue and Wear	D1-1-MoM: Surface Coating and Modification for Use in Biological Environments I
MoA	B3-2-MoA: Deposition Technologies and Applications for Diamond-like Coatings II	B1-2-MoA: PVD Coatings and Technologies II		H2-2-MoA: Nanoscale Plasticity	D1-2-MoA: Surface Coating and Modification for Use in Biological Environments II
TuM	B4-1-TuM: Properties and Characterization of Hard Coatings and Surfaces I	B1-3-TuM: PVD Coatings and Technologies III		H1-1-TuM: Spatially-resolved and In-Situ Characterization of Thin Films and Engineered	A1-1-TuM: Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling I
TuEx					
TuA	B4-2-TuA: Properties and Characterization of Hard Coatings and Surfaces II	B7-TuA: Plasma Diagnostics and Growth Processes		H1-2-TuA: Spatially-resolved and In-Situ Characterization of Thin Films and Engineered	A1-2-TuA: Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling II
TuSIT					
WeM	B4-3-WeM: Properties and Characterization of Hard Coatings and Surfaces III	C3+C1-WeM: Thin Films for Energy-related Applications I/Optical Metrology in Design,		H3-1-WeM: Variable Temperature Nanomechanics	A1-3-WeM: Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling III
WeSIT					
WeA	B4-4-WeA: Properties and Characterization of Hard Coatings and Surfaces IV	C2-WeA: Novel Oxide Films for Active Devices		H3-2-WeA: Degradation under Extreme Conditions	A3-WeA: Materials and Coatings for Solar Power Concentration Plants
WeHL					
ThM	B6-ThM: Coating Design and Architectures	TS2-ThM: Icephobic Surface Engineering		G1+G3-ThM: Advances in Industrial PVD, CVD, and PECVD Processes and Equipment/Innovative	A2-1-ThM: Thermal and Environmental Barrier Coatings I
ThA	B5-1-ThA: Hard and Multifunctional Nanostructured Coatings I	B2-1-ThA: CVD Coatings and Technologies I		G4+G5+G6-ThA: Pre-/Post-Treatment and Duplex Technology/Hybrid	A2-2-ThA: Thermal and Environmental Barrier Coatings II
ThP			Poster Sessions		
FrM	B5-2-FrM: Hard and Multifunctional Nanostructured Coatings II	B2-2-FrM: CVD Coatings and Technologies II		G2-FrM: Component Coatings for Automotive, Aerospace, Medical, and Manufacturing	

# Program Overview

Room /Time	Pacific Salon 3	Pacific Salon 6-7	San Diego	Town & Country
MoPL				PL-MoPL: Plenary Lecture
MoM	TS4-1-MoM: Thin Film Materials for Flexible Electronics			
MoA	TS3+4-2-MoA: Surface Engineering for Lightweight Materials & Thin Film Materials for Flexible Electronics			
TuM	D3-TuM: Surfaces and Coatings to Promote Tailored Biological Responses	F1-TuM: Nanomaterials and Nanofabrication	E2-1-TuM: Mechanical Properties and Adhesion I	
TuEx				EX-TuEx: Exhibition Keynote Lecture
TuA	D2-TuA: Bio-corrosion and Bio-tribology	F3-TuA: 2D Materials: Synthesis, Characterization, and Applications	E2-2-TuA: Mechanical Properties and Adhesion II	
TuSIT				SIT1-TuSIT: Special Interest Session I
WeM	TS1-1-WeM: High Entropy and Other Multi-principal-element Materials I	F4-1-WeM: Functional Oxide and Oxynitride Coatings I	E3-WeM: Tribology of Coatings for Automotive and Aerospace Applications	
WeSIT				SIT2-WeSIT: Special Interest Talk II
WeA	TS1-2-WeA: High Entropy and Other Multi-principal-element Materials II	F4-2-WeA: Functional Oxide and Oxynitride Coatings II	E1-4-WeA: Friction, Wear, Lubrication Effects, and Modeling I	
WeHL				HL-WeHL: Bunshah Award Honorary Lecture
ThM	C3+C2+C1-ThM: Thin Films for Energy-related Applications II/Novel Oxide Films for Active Devices/Optical Metrology in	F2-1-ThM: HiPIMS, Pulsed Plasmas and Energetic Deposition I	E1-1-ThM: Friction, Wear, Lubrication Effects, and Modeling II	
ThA	C4-ThA: Fundamentals of Metallurgy in Thin Films and Coatings	F2-2-ThA: HiPIMS, Pulsed Plasmas and Energetic Deposition II	E1-2-ThA: Friction, Wear, Lubrication Effects, and Modeling III	
ThP				
FrM			E1-3-FrM: Friction, Wear, Lubrication Effects, and Modeling IV	

# Special Events Monday

## Special Events Monday

- 7:00 AM Conference Registration/Atlas Foyer
- 7:30 AM Short Course: Practical Thin Film Characterization/Atlas Foyer
- 7:30 AM Short Course: Reactive Magnetron Sputter Deposition/Atlas Foyer
- 8:00 AM Plenary Lecture/Town & Country
- 10:00 AM Technical Sessions/See Program/Mobile App
- 12:20 PM Anton Paar Focused Topic Session: "Latest Developments in Advanced Mechanical Surface Characterization"/Town & Country
- 5:45 PM Welcome Mixer/Atlas Foyer

# Monday Morning, May 20, 2019

**Plenary Lecture**  
**Room Town & Country - Session PL-MoPL**  
**Plenary Lecture**  
**Moderators: Christopher Muratore**, University of Dayton,  
**Michael Stüber**, Karlsruhe Institute of Technology, Germany

8:00am		
8:20am		
8:40am	<b>INVITED: PL-MoPL-3</b> Soft Electronics for the Human Body, <i>John Rogers</i> , Northwestern University, USA	
9:00am	Invited talk continues.	

# Monday Morning, May 20, 2019

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B1-1-MoM</b> <b>PVD Coatings and Technologies I</b> <b>Moderators: Frank Kaulfuss, Fraunhofer Institute for Material and Beam Technology (IWS), Jyh-Ming Ting, National Cheng Kung University, Qi Yang, National Research Council of Canada</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B3-1-MoM</b> <b>Deposition Technologies and Applications for Diamond-like Coatings I</b> <b>Moderator: Klaus Böbel, Bosch GmbH</b>	
10:00am			
10:20am			<b>B3-1-MoM-2</b> On the Deposition and Properties of Carbon-based Multilayer Systems Prepared by PLD, <b>Steffen Weißmantel</b> , University of Applied Sciences Mittweida, Germany; <i>M Hess</i> , Fritz Stepper GmbH & Co. KG, Deutschland, Germany; <i>R Bertram, D Haldan, T Warnk, J Maus, S Rupp</i> , University of Applied Sciences Mittweida, Germany
10:40am	<b>B1-1-MoM-3</b> Structural, Optical and Wettability Properties of Thermally Evaporated CaF <sub>2</sub> , MgF <sub>2</sub> and CaF <sub>2</sub> /MgF <sub>2</sub> Films, <b>Ravish Kumar Jain, J Kaur, A Khanna</b> , Guru Nanak Dev University Amritsar India, India		<b>B3-1-MoM-3</b> Improved Adhesion of a-C and a-C:H Films with a CrC Interlayer on 16MnCr5 by HiPIMS-Pretreatment, <i>W Tillmann, Nelson Filipe Lopes Dias, D Stangier</i> , TU Dortmund University, Germany; <i>W Maus-Friedrichs, R Gustus</i> , Technical University Clausthal, Germany
11:00am	<b>B1-1-MoM-4</b> Metal / ScAlN / Interdigital Transducer (IDT)/ LiNbO <sub>3</sub> Multilayer Structure for High K <sup>2</sup> Surface Acoustic Wave Device, <b>Yu Hsuan Huang</b> , National Cheng Kung University, Taiwan; <i>S Wu</i> , Tung-Fang Design University, Taiwan; <i>J Huang</i> , National Cheng Kung University, Taiwan		<b>B3-1-MoM-4</b> Properties Of Diamond-Like Carbon Films With Incorporated CVD-Diamond Nanoparticles, <b>Rebeca Falcão</b> , Institute of Science and Technology, Federal University of São Paulo (UNIFESP), Brasil; <i>C Wachesk</i> , Federal University of São Paulo, Brazil, Brasil; <i>T Taiaroli</i> , National Institute for Space Research, Brazil; <i>G Vasconcelos</i> , Instituto de Estudos Avançados, Brazil; <i>E Corat, V Trava-Airoldi</i> , National Institute for Space Research, Brazil
11:20am	<b>B1-1-MoM-5</b> Sputter Deposited W-HfO <sub>2</sub> for Solar Absorbers, <b>Lih-Yang Chiu, J Ting</b> , National Cheng Kung University, Taiwan		<b>B3-1-MoM-5</b> Influence of the Argon as an Ignitor and an Agent on DLC Properties Growth at Pressure as Low as 3 x 10 <sup>-4</sup> mbar by Modified Pulsed-DC PECVD Method, <b>Vladimir Jesus Trava-Airoldi, K Nass, E Corat</b> , National Institute for Space Research, Brazil; <i>N Fukumasu</i> , Sao Paulo University, Brazil; <i>M Ramirez</i> , University of Vale do Paraiba, Brazil; <i>G Capote</i> , National University of Bogota, Colombia
11:40am	<b>INVITED: B1-1-MoM-6</b> High Power Impulse Magnetron Sputtering using Deep Oscillatory Micro Pulses for Surface Engineering, <b>Jianliang Lin</b> , Southwest Research Institute, USA		
12:00pm	Invited talk continues.		

# Monday Morning, May 20, 2019

<b>Coatings for Biomedical and Healthcare Applications</b> <b>Room Pacific Salon 2 - Session D1-1-MoM</b> <b>Surface Coating and Modification for Use in Biological Environments I</b> <b>Moderator: Mathew T. Mathew</b> , University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA		<b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b> <b>Room Pacific Salon 1 - Session H2-1-MoM</b> <b>Fatigue and Wear</b> <b>Moderators: Olivier Pierron</b> , Georgia Institute of Technology, USA, <b>Timothy Rupert</b> , University of California, Irvine, USA	
10:00am			<b>INVITED: H2-1-MoM-1</b> Acoustic Emission Measurements to Quantifying Damage Accumulation and Crack Initiation in Nickel Single Crystals during High Frequency <i>In Situ</i> Cyclic Loading Experiments, <i>S Lavenstein, Jaafar El-Awady</i> , Johns Hopkins University, USA
10:20am	<b>D1-1-MoM-2</b> Very Thin Gold Films Deposited on Collagen Fabric for Skin Cell Recover, <i>Sheng-Yang Huang</i> , Taichung Veterans General Hospital, Feng Chia University, Taiwan; <i>Y Chang</i> , Feng Chia University, Taiwan; <i>P Hsieh</i> , Institute of Plasma, Feng Chia University, Taiwan; <i>C Chou</i> , Taichung Veterans General Hospital, National Yang-Ming University, Taiwan; <i>C Chung</i> , Central Taiwan University of Science and Technology, Taiwan; <i>J He</i> , Feng Chia University, Taiwan		Invited talk continues.
10:40am	<b>D1-1-MoM-3</b> Effect of Calf Serum on Tribological Behavior of DLC Coating in Ti-6Al-4V / Ti-6Al-4V Contact for Application to STEM / NECK Contact of Modular Hip Implant, <i>H Ding, Vincent Fridrici, G Bouvard</i> , Ecole Centrale de Lyon, LTDS - Université de Lyon, France; <i>J Géringier</i> , Ecole des Mines de St-Etienne - Université de Lyon, France; <i>P Kapsa</i> , Ecole Centrale de Lyon, LTDS - Université de Lyon, France		<b>H2-1-MoM-3</b> A Data-driven Approach to Describe Fatigue Damage Evolution and Crack Initiation in a BCC Steel Microstructure, <i>A Durmaz, Thomas Straub, C Eberl</i> , Fraunhofer IWM, Germany
11:00am	<b>INVITED: D1-1-MoM-4</b> Accelerated Tests for Lifetime Prediction of Interlayers and Interfaces of Coated Implants in Body Fluid, <i>Roland Hauert, E Ilic, A Pardo-Perez, K Thorwarth, P Schmutz</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>S Mischler</i> , Institut des Matériaux IMX, EPFL, Lausanne, Switzerland		<b>H2-1-MoM-4</b> Low and High Cycle Fatigue Testing of Ni Microbeams, <i>Alejandro Barrios</i> , Georgia Institute of Technology, USA; <i>E Kakandar</i> , Cranfield University, UK; <i>X Maeder</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>G Castelluccio</i> , Cranfield University, UK; <i>O Pierron</i> , Georgia Institute of Technology, USA
11:20am	Invited talk continues.		<b>H2-1-MoM-5</b> Nanocrystalline Alloys with Disordered Complexions Probed by In Situ Mechanical Testing, <i>Timothy Rupert, J Wardini, J Schuler</i> , University of California, Irvine, USA
11:40am	<b>D1-1-MoM-6</b> Thin Film Metallic Glass Coating as an Effective Antiadhesion Coating for Platelet and Cancer Cells, <i>Jinn P. Chu</i> , National Taiwan University of Science and Technology (NTUST), Taiwan; <i>C Li, Y Chen, S Chyntara</i> , National Taiwan University of Science and Technology, Taiwan; <i>M Chen</i> , Mackay Medical College, Taiwan; <i>S Chang</i> , Mackay Memorial Hospital Tamsui Campus, Taiwan		<b>H2-1-MoM-6</b> Structural Evolution and Wear-rate Transitions in Nanocrystalline Alloys, <i>Olivia Donaldson, J Panzarino, T Rupert</i> , University of California, Irvine, USA
12:00pm	<b>D1-1-MoM-7</b> Improvement of Surface Properties of Nitinol Alloy through Deposition of Graphene by Electrophoretic Deposition Technique for Biomedical Applications, <i>Madhusmita Mallick, N Arunachalam</i> , Indian Institute of Technology Madras, India		<b>H2-1-MoM-7</b> Effects of Thermal Cycling on Nano-mechanical Properties of Thermal Barrier Coatings, <i>Marco Sebastiani</i> , Roma TRE University, Italy

# Monday Morning, May 20, 2019

<p><b>Topical Symposia</b>  <b>Room Pacific Salon 3 - Session TS4-1-MoM</b>  <b>Thin Film Materials for Flexible Electronics</b>  <b>Moderators: Oleksandr Glushko</b>, Erich Schmid Institute of Materials Science, <b>Nicholas Glavin</b>, Air Force Research Laboratory, Materials and Manufacturing Directorate, USA</p>		
10:00am	<p><b>INVITED: TS4-1-MoM-1</b> 2D Materials Based Epidermal and Implantable Conformable Bioelectronics, <b>Nanshu Lu</b>, University of Texas at Austin, USA</p>	
10:20am	<p>Invited talk continues.</p>	
10:40am	<p><b>TS4-1-MoM-3</b> Performance Deterioration Characteristics of Silver-Nanoparticle-Printed Flexible Electric Wirings under Severe Bending Deformation, <b>Shoji Kamiya</b>, <i>H Izumi</i>, Nagoya Institute of Technology, Japan; <i>T Sekine</i>, Yamagata University, Japan; <i>Y Haga</i>, <i>H Sugiyama</i>, Nagoya Institute of Technology, Japan; <i>N Shishido</i>, Green Electronics Research Institute, Kitakyushu, Japan; <i>M Koganemaru</i>, Kagoshima University, Japan</p>	
11:00am	<p><b>TS4-1-MoM-4</b> Characterizing the Mechanical Reliability of Flexible and Stretchable Conductive Inks on Polymeric Substrates, <b>Gabriel Cahn</b>, Georgia Institute of Technology, USA; <i>M Wolfe</i>, DuPont Photovoltaic and Advanced Materials, USA; <i>J Meth</i>, DuPont Electronics and Imaging, USA; <i>S Graham</i>, <i>O Pierron</i>, Georgia Institute of Technology, USA</p>	
11:20am	<p><b>INVITED: TS4-1-MoM-5</b> Printed Hybrid Materials for Flexible Electronic and Optoelectronic Devices, <i>E List-Kratochvil</i>, <b>Felix Hermerschmidt</b>, Humboldt-Universität zu Berlin, Germany</p>	
11:40am	<p>Invited talk continues.</p>	



# Monday Afternoon, May 20, 2019

	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B1-2-MoA</b> <b>PVD Coatings and Technologies II</b> <b>Moderators: Frank Kaulfuss, Fraunhofer Institute for Material and Beam Technology (IWS), Jyh-Ming Ting, National Cheng Kung University, Qi Yang, National Research Council of Canada</b>	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B3-2-MoA</b> <b>Deposition Technologies and Applications for Diamond-like Coatings II</b> <b>Moderator: Frank Papa, Gencoa</b>
1:40pm	<b>B1-2-MoA-1</b> Harlan™: High Rate-High Density Pulsed Magnetron Sputtering Source for Depositing Metal & Ceramic Coatings for Industrial Applications., <i>B Abraham, Roman Chistyakov</i> , Ionex Corp, USA	<b>B3-2-MoA-1</b> Transfer of DLC Coating Processes between Different Coating Machines Assisted by Plasma Simulation, <i>Marcus Günther, O Schmidt, W Dobrygin, G Schütze</i> , Robert Bosch GmbH, Germany
2:00pm	<b>B1-2-MoA-2</b> Arc Sources for Low Defect Coatings and High Target Utilization, <i>Victor Bellido-Gonzalez, D Monaghan, B Daniel, R Brown, J Price, A Azzopardi</i> , Gencoa Ltd, UK	<b>B3-2-MoA-2</b> Stress-Free ta-C Industrially Deposited by PLD for High Performance Stamping Applications: Results and Challenges of 1st Production Year, <i>Martin Hess</i> , Fritz Stepper GmbH & Co. KG, Deutschland, Germany; <i>S Weißmantel, R Bertram</i> , Hochschule Mittweida University of Applied Sciences, Germany
2:20pm	<b>B1-2-MoA-3</b> Cutting Tools in the Era of Industrial Internet of Things and Additive Manufacturing, <i>Aharon Inspektor, A Rollett, P Salvador</i> , Carnegie Mellon University, USA	<b>INVITED: B3-2-MoA-3</b> Hollow Cathode Discharges for Rapid DLC, <i>Thomas Casserly, S Gennaro, F Papa, A Tudhope</i> , Duralar Technologies, USA
2:40pm	<b>B1-2-MoA-4</b> Overstoichiometric Transition Metal Nitride Films, <i>Zuzana Číperová, J Musil, Š Kos, M Jaroš</i> , European Centre of Excellence, University of West Bohemia, Czech Republic	Invited talk continues.
3:00pm	<b>B1-2-MoA-5</b> Introducing of New Hybrid LACS® Technology (Lateral ARC and Central Sputtering by Rotating Cathodes), <i>Radek Zemlicka, M Jilek (Sr.), M Jilek (Jr.), A Lümekmann, T Cselle, D Bloesch, V Krsek</i> , Platin AG, Switzerland	<b>B3-2-MoA-5</b> Hard Cr-doped DLC Coatings Deposited by Low-frequency HiPIMS with Enhanced Tribomechanical Behavior at High Temperature, <i>José Antonio Santiago Varela</i> , PVT Plasma und Vakuum Technik GmbH, Germany; <i>I Fernandez</i> , Nano4Energy SL, Spain; <i>A Wennberg</i> , Nano4Energy, Spain; <i>M Monclus, J Molina Aldareguia</i> , IMDEA Materials; <i>V Bellido-Gonzalez</i> , Gencoa Ltd, UK; <i>C Rojas, J Sanchez Lopez</i> , ICMSe CSIC, Spain; <i>R Gonzalez Arrabal</i> , Universidad Politécnica de Madrid, Spain; <i>N Dams, H Gabriel</i> , PVT Plasma und Vakuum Technik GmbH, Germany
3:20pm	<b>B1-2-MoA-6</b> Edge-related Effects During Arc-PVD Deposition Processes, <i>Tim Krülle, F Kaulfuss, O Zimmer, A Leson, C Leyens</i> , Fraunhofer Institute for Material and Beam Technology (IWS), Germany	
3:40pm	<b>B1-2-MoA-7</b> Reactive Sputtering for Highly Oriented HfN Film Growth on Si(100) Substrate, <i>Yu-Siang Fang, K Chiu, H Do, L Chang</i> , National Chiao Tung University, Taiwan	<b>B3-2-MoA-7</b> Effect of Pulse Shape and Plasma Composition (Ar + Ne) on the Properties of Hard DLC Films Deposited by HiPIMS: Correlation with Substrate Ion Fluxes, <i>João Oliveira, F Ferreira, R Serra</i> , University of Coimbra, Portugal; <i>T Kubart</i> , Uppsala University, Angstrom Laboratory, Sweden; <i>C Vitelaru</i> , National Institute for Optoelectronics, Romania; <i>A Cavaleiro</i> , University of Coimbra, Portugal
4:00pm	<b>INVITED: B1-2-MoA-8</b> Study of Orthorhombic ZnSnN <sub>2</sub> Fabricated using Zn-Sn <sub>3</sub> N <sub>4</sub> Composition Spreads through Combinatorial Reactive Sputtering, <i>Kao-Shuo Chang</i> , National Cheng Kung University, Taiwan	<b>B3-2-MoA-8</b> The Comparison of Deposition Processes, Composition and Properties of Hydrogenated W-C:H Coatings Prepared by Different Sputtering Techniques, <i>Frantisek Lofaj, M Kabatova, L Kvetkova</i> , Institute of Materials Research of SAS, Slovakia; <i>J Dobrovodsky</i> , ATRI, Slovakia
4:20pm	Invited talk continues.	<b>B3-2-MoA-9</b> The Mechanism of Graphite Nucleation in Amorphous Carbon Films Deposited with the Condition of Energetic Bombardment and High Temperature, <i>Di Zhang, P Yi, L Peng, X Lai</i> , Shanghai Jiaotong University, China
4:40pm	<b>B1-2-MoA-10</b> Angular Resolved Mass-energy Analyses of Species Emitted from a d.c. Magnetron Sputtered NiW-target, <i>Martin Rausch</i> , Montanuniversität Leoben, Austria; <i>S Mraz, J Schneider</i> , RWTH Aachen University, Germany; <i>J Winkler</i> , Plansee SE, Austria; <i>C Mitterer</i> , Montanuniversität Leoben, Austria	
5:00pm	<b>B1-2-MoA-11</b> Effect Produced by Architecture of Nanolayer Composite Coatings Deposited with Filtered Cathodic Vacuum Arc Deposition (FCVAD) Technology on their Mechanical and Performance Properties, <i>Alexey Vereschaka, S Grigoriev, Mstu Stankin</i> , Russian Federation; <i>N Sitnikov</i> , National Research Nuclear University MEPhI, Russian Federation; <i>N Andreev</i> , National University of Science and Technology "MISIS", Russian Federation	
5:20pm	<b>B1-2-MoA-12</b> Effects of Nitrogen Flow Rate and Substrate Bias on Structure and Properties of Molybdenum Nitride Thin Film, <i>Cho-Cheng Chou, J Huang</i> , National Tsing Hua University, Taiwan	

# Monday Afternoon, May 20, 2019

<b>Coatings for Biomedical and Healthcare Applications</b> <b>Room Pacific Salon 2 - Session D1-2-MoA</b> <b>Surface Coating and Modification for Use in Biological Environments II</b> <b>Moderator: Mathew T. Mathew</b> , University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA		<b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b> <b>Room Pacific Salon 1 - Session H2-2-MoA</b> <b>Nanoscale Plasticity</b> <b>Moderators: Timothy Rupert</b> , University of California, Irvine, USA, <b>Olivier Pierron</b> , Georgia Institute of Technology, USA	
1:40pm	<b>INVITED: D1-2-MoA-1</b> Recent Development of Biocompatible Thin Film Metallic Glass Materials, <i>Jyh-Wei Lee</i> , Ming Chi University of Technology, Taiwan; <i>B Lou</i> , Chang Gung University, Taiwan; <i>Y Yang</i> , National Taipei University of Technology, Taiwan; <i>C Lin</i> , National Taiwan University, Taiwan		<b>H2-2-MoA-1</b> Assessing the Mechanical Properties of Thin Organic Semiconductor Coatings, <i>Steve Bull</i> , Newcastle University, UK
2:00pm	Invited talk continues.		<b>H2-2-MoA-2</b> In Situ TEM Activation Volume Measurements, <i>S Gupta</i> , <i>S Stangebye</i> , <i>J Kacher</i> , <b>Olivier Pierron</b> , Georgia Institute of Technology, USA
2:20pm			<b>H2-2-MoA-3</b> In-situ Microscale Mechanical Testing of Metal/Ceramic Interfacial Regions, <i>X Zhang</i> , <i>Y Mu</i> , <i>S Shao</i> , <b>Wen Jin Meng</b> , Louisiana State University, USA
2:40pm	<b>D1-2-MoA-4</b> Antibacterial and Biocompatible Properties of Ga-doped TaON Thin Films, <i>Jang-Hsing Hsieh</i> , <i>Q Liu</i> , Ming Chi University of Technology, Taiwan; <i>C Li</i> , National Yang Ming University, Taiwan		<b>H2-2-MoA-4</b> Nano-wedging: A Novel Test Method to Combine Nanoscale Strain Mapping with Multiaxial Stress States, <b>Thomas Edwards</b> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>F Di Gioacchino</i> , <i>J Pürstl</i> , University of Cambridge, UK; <i>X Maeder</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>W Clegg</i> , University of Cambridge, UK; <i>J Michler</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland
3:00pm	<b>D1-2-MoA-5</b> TiO <sub>2</sub> Nanotubes Produced in Aqueous Electrolytes with CMC for Biomaterials Application, <b>Robinson Aguirre Ocampo</b> , <i>M Echeverry-Rendón</i> , <i>S Robledo</i> , <i>F Echeverría</i> , Universidad de Antioquia, Colombia		<b>H2-2-MoA-5</b> Micromechanical Characterisation of Ag/Au Multilayers by Means of Bulge and Nanoindentation Testing, <b>Sebastian Krauß</b> , <i>M Göken</i> , <i>B Merle</i> , Friedrich Alexander-University Erlangen-Nürnberg (FAU), Germany
3:20pm	<b>D1-2-MoA-6</b> Electrochemical Evaluation of Titanium Oxide Coatings Deposited on Magnesium Alloys, <i>B Millan-Ramos</i> , Universidad Nacional Autonoma de Mexico, México; <i>J Victoria-Hernandez</i> , <i>S Yi</i> , Magnesium Innovation Centre, Helmholtz-Zentrum, Germany; <i>D Letzig</i> , Magnesium Innovation Centre, Helmholtz-Zentrum, Germany, Germany; <b>Phaedra Silva-Bermudez</b> , Instituto Nacional de Rehabilitación, Mexico; <i>S Rodil</i> , Universidad Nacional Autonoma de Mexico, México		<b>H2-2-MoA-6</b> Size Effect on Superplastic Flow – In situ Micromechanical Characterization of Superplastic Zn-22% Al, <b>Patrick Feldner</b> , <i>M Göken</i> , University Erlangen-Nürnberg, Germany; <i>B Merle</i> , Friedrich Alexander-University Erlangen-Nürnberg (FAU), Germany
3:40pm			<b>INVITED: H2-2-MoA-7</b> Studies on the Mechanisms in Hexagonal Close Packed Metal Nanolaminates, <b>Irene Beyerlein</b> , University of California, Santa Barbara, USA
4:00pm	<b>D1-2-MoA-8</b> Metallization of Polymers for Medical Applications, <b>Aarati Chacko</b> , <i>H Hug</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>S Gauter</i> , Christian-Albrechts-University Kiel, Germany; <i>K Thorwarth</i> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland		Invited talk continues.
4:20pm	<b>D1-2-MoA-9</b> Characteristics of a Composite Ceramic Coating Fabricated on Mg-1.2Zn-0.5Ca-0.5Mn Alloy Towards Biodegradable Bone Implants, <b>Hamdy Ibrahim</b> , University of Tennessee at Chattanooga, USA; <i>D Dean</i> , Ohio State University, USA; <i>M Elahinia</i> , University of Toledo, USA		<b>H2-2-MoA-9</b> Critical Assessment of the Criteria for Minimum Indentation Spacing, <i>S Pardhasaradhi</i> , ARCI, India; <b>Warren Oliver</b> , KLA-Tencor, USA
4:40pm			<b>H2-2-MoA-10</b> Surface Laboratory Assistant – The New Combination of Measurement Device and Analysis Software, <b>Nick Bierwisch</b> , <i>N Schwarzer</i> , SIO, Germany

# Monday Afternoon, May 20, 2019

<p><b>Topical Symposia</b>  <b>Room Pacific Salon 3 - Session TS3+4-2-MoA</b>  <b>Surface Engineering for Lightweight Materials &amp; Thin Film Materials for Flexible Electronics</b>  <b>Moderators: Klaus Böbel</b>, Bosch GmbH, <b>Oleksandr Glushko</b>, Erich Schmid Institute of Materials Science, <b>Nicholas Glavin</b>, Air Force Research Laboratory, Materials and Manufacturing Directorate, USA</p>		
1:40pm		
2:00pm		
2:20pm	<p><b>TS3+4-2-MoA-3</b> Electro-mechanical Reliability of Flexible Electronics: An Overview of Testing and Characterization Techniques, <b>Oleksandr Glushko</b>, <i>M Cordill</i>, Erich Schmid Institute of Materials Science, Austria</p>	
2:40pm	<p><b>TS3+4-2-MoA-4</b> Bending Fatigue of Al/Mo Bilayers on Polymer Substrates with Varied Al Layer Thickness, <b>Patrice Kreiml</b>, <i>M Rausch, V Terziyska</i>, Montanuniversität Leoben, Austria; <i>J Winkler</i>, Plansee SE, Austria; <i>C Mitterer</i>, Montanuniversität Leoben, Austria; <i>M Cordill</i>, Austrian Academy of Sciences, Austria</p>	
3:00pm	<p><b>TS3+4-2-MoA-5</b> Enabling High-Power Flexible Devices through Tailored Nanocomposite Interface Materials, <b>Katherine Burzynski</b>, University of Dayton, USA; <i>N Glavin</i>, Air Force Research Laboratory, Materials and Manufacturing Directorate, USA; <i>E Heller, M Snure, E Heckman</i>, Air Force Research Laboratory, Sensors Directorate, USA; <i>C Muratore</i>, University of Dayton, USA</p>	
3:20pm	<p><b>INVITED: TS3+4-2-MoA-6</b> Plasma Polymers...A Family of Materials that is Full of Surprises, <b>Rony Snyders</b>, University of Mons, Belgium</p>	
3:40pm	Invited talk continues.	
4:00pm	<p><b>TS3+4-2-MoA-8</b> Environmental Challenges of Thin Film Systems on Polymer Substrates for Space Applications, <b>Barbara Putz</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; <i>G Milassin, C Semprimoschnig</i>, European Space Research and Technology Centre; <i>M Cordill</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria</p>	
4:20pm	<p><b>TS3+4-2-MoA-9</b> Sputtered Thin Film Sensors for Self-sensing Composite Materials, <b>Florian Cougnon</b>, <i>A Lamberti, W Van Paepegem, D Depla</i>, Ghent University, Belgium</p>	
4:40pm	<p><b>TS3+4-2-MoA-10</b> A New Method for Influencing Coating Properties on Polymer Substrates at Low Temperature: High Power Impulse Magnetron Sputtering (HIPIMS) with Positive Voltage Reversal, <b>Ambiörn Wennberg</b>, Nano4Energy SL, Spain; <i>M Simmons</i>, Intellivation, USA; <i>F Papa</i>, GP Plasma, Spain; <i>I Fernandez</i>, Nano4Energy SL, Spain</p>	
5:00pm	<p><b>INVITED: TS3+4-2-MoA-11</b> Tribological Challenges and Surface Engineering Solutions for Extreme Environments and Lightweight Materials, <b>Andras Korenyi-Both</b>, Tribologix, Inc., USA</p>	
5:20pm	Invited talk continues.	

# Special Events Tuesday

## Special Events Tuesday

- 7:00 AM Bruker Focused Topic Session: "Advanced Technologies for the In-Depth Characterization of Surfaces"/Town & Country
- 7:30 AM Conference Registration/Atlas Foyer
- 7:30 AM Short Course: Industrial Surface Engineering: Fundamentals, Practice and Applications/Atlas Foyer
- 7:30 AM Short Course: Thin Film Nucleation, Growth, and Microstructure Evolution/Atlas Foyer
- 8:00 AM Technical Sessions/See Program/Mobile App
- 11:00 AM Exhibition Keynote Lecture/Town & Country
- 12:00 PM Exhibit Hall - Light Lunch (While Supplies Last)/Grand Hall
- 12:00 PM Exhibition/Grand Hall
- 3:20 PM Session Break - Complimentary Refreshments in Exhibit Hall/Grand Hall
- 5:30 PM Exhibition Reception/Grand Hall
- 7:00 PM Special Interest Talk: Gregory Abadias/Town & Country

# Tuesday Morning, May 21, 2019

	<b>Coatings for Use at High Temperatures</b> <b>Room Pacific Salon 2 - Session A1-1-TuM</b> <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling I</b> <b>Moderators: Justyna Kulczyk-Malecka, Manchester Metropolitan University, Lars-Gunnar Johansson, Chalmers University of Technology, Sweden, Shigenari Hayashi, Hokkaido University</b>	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B1-3-TuM</b> <b>PVD Coatings and Technologies III</b> <b>Moderators: Frank Kaulfuss, Fraunhofer Institute for Material and Beam Technology (IWS), Jyh-Ming Ting, National Cheng Kung University, Qi Yang, National Research Council of Canada</b>
8:00am	<b>A1-1-TuM-1</b> Modeling the Influence of Heat Treatment and Base Alloy Composition on the Performance of Aluminide Coatings for High Performance Engine Valve Alloys, <i>Rishi Pillai, S Dryepondt, B Armstrong, Q Guo, K Unocic, G Muralidharan</i> , Oak Ridge National Laboratory, USA	<b>B1-3-TuM-1</b> PVD-AlTiN with High Al Content – How to Overcome the “Magic” 67%-Limit, <i>Fred Fietzke, T Modes, O Zywitzki</i> , Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Germany
8:20am	<b>A1-1-TuM-2</b> Fabrication, Characterisation and Testing of Cr Coated Zr Alloy Nuclear Fuel Cladding for Enhanced Accident Tolerance, <i>A Evans</i> , Manchester Metropolitan University, UK; <i>D Goddard</i> , National Nuclear Laboratory, UK; <i>A Cole-Baker</i> , Wood plc, UK; <i>G Obasi, M Preuss</i> , Manchester University, UK; <i>E Vernon</i> , National Nuclear Laboratory, UK; <i>Peter Kelly</i> , Manchester Metropolitan University, UK	<b>INVITED: B1-3-TuM-2</b> PVD Methods and Coatings for Protection of Aero Engine Components, <i>Uwe Schulz, R Naraparaju, R Braun, N Laska</i> , German Aerospace Center (DLR), Germany
8:40am	<b>A1-1-TuM-3</b> High-temperature Oxidation Resistance and Self-healing Capability of HiPIMS Cr-Al-C Coating on Zr-based Alloy, <i>Michaël Ougier, A Michau, F Lomello</i> , CEA, Université Paris-Saclay, France; <i>F Schuster</i> , CEA Cross-Cutting Program on Materials and Processes Skills, France; <i>H Maskrot, M Schlegel</i> , CEA, Université Paris-Saclay, France	Invited talk continues.
9:00am	<b>INVITED: A1-1-TuM-4</b> Ceramic Coatings for Protection of Ti and Zr Alloys at High Temperature, <i>Ping Xiao, Z Gao, X Zhang, H Liu</i> , University of Manchester, UK; <i>J Kulczyk-Malecka, P Kelly</i> , Manchester Metropolitan University, UK; <i>Z Zhang</i> , University of Manchester, UK	<b>B1-3-TuM-4</b> High-temperature Nanoindentation and Microcantilever Deflection Tests of CrAlN and CrAlSiN Hard Coatings, <i>Aljaž Drnovšek</i> , Montanuniversität Leoben, Austria; <i>H Vo</i> , University of California Berkeley, USA; <i>A Xia, M Rebelo de Figueiredo</i> , Montanuniversität Leoben, Austria; <i>S Kolosvári</i> , Plansee Composite Materials GmbH, Germany; <i>S Vachhani</i> , Bruker Nano Surfaces, Germany; <i>P Hosemann</i> , University of California at Berkeley, USA; <i>R Franz</i> , Montanuniversität Leoben, Austria
9:20am	Invited talk continues.	<b>B1-3-TuM-5</b> On Crystallization and Oxidation Behavior of $Zr_{54}Cu_{46}$ and $Zr_{27}Hf_{27}Cu_{46}$ Thin-film Metallic Glasses Compared to a Crystalline $Zr_{54}Cu_{46}$ Thin-film Alloy, <i>Michaela Kotrlová, M Žitek, P Zeman</i> , University of West Bohemia, Czech Republic
9:40am	<b>A1-1-TuM-6</b> Multi-functional AlZr-TiO <sub>2</sub> Bilayer Coatings Combining Anticorrosion and Antifouling Properties, <i>Caroline Villardi de Oliveira</i> , ICD-LASMIS, Université de Technologie de Troyes, France, France; <i>A Alhussein</i> , University of Technology of Troyes (UTT), France; <i>C Jiménez</i> , Univ. Grenoble Alpes, CNRS, France; <i>Z Dong</i> , School of Materials Science and Engineering, Nanyang Technological University, Singapore; <i>F Schuster</i> , CEA, PTCMP, France; <i>S Narasimalu</i> , School of Materials Science and Engineering, Nanyang Technological University, Singapore; <i>M Schlegel</i> , CEA, Université Paris-Saclay, France; <i>F Sanchette</i> , Nogent International Center for CVD Innovation, LRC CEA-ICD LASMIS UMR6281, UTT, Antenne de Nogent, France	<b>B1-3-TuM-6</b> On the Origin of Multilayered Structure of W-B-C Coating Prepared by Non-Reactive Magnetron Sputtering from a Single Segmented Target, <i>Michael Kroker, P Soucek, M Fekete, L Zabransky, V Bursikova</i> , Masaryk University, Brno, Czech Republic; <i>P Zikan, A Obrušnik</i> , Plasma Solve, Brno, Czech Republic; <i>Z Czigany, K Balazsi</i> , Hungarian Academy of Sciences, Hungary; <i>P Vasina</i> , Masaryk University, Brno, Czech Republic
10:00am	<b>A1-1-TuM-7</b> The Oxidation Behavior of ZrO <sub>2</sub> -Coated Zircaloy-4 with ZrN Interlayer, <i>I-Sheng Ting, J Huang</i> , National Tsing Hua University, Taiwan	
10:20am	<b>A1-1-TuM-8</b> Novel HIPIMS Deposited Nanostructured CrN/NbN Coatings for Environmental Protection of Steam Turbine Components., <i>Papken Hovsepian, A Ehiasarian, Y Purandare</i> , Sheffield Hallam University, UK; <i>P Mayr, K Abstoss</i> , Technische Universität Chemnitz, Germany; <i>M Mosquera, W Schulz, A Kranzmann</i> , Federal Institute for Materials Research and Testing, Germany; <i>M Lasanta Carrasco, J Trujillo</i> , Universidad Complutense de Madrid, Spain	
10:40am	<b>A1-1-TuM-9</b> NiAl Coatings Deposited on Inconel 600 by Using an Arc Ion Plating Process, <i>Yinan Li</i> , University of Manchester, UK; <i>Y Hung</i> , Feng Chia University, Taiwan; <i>M Lin, A Matthews</i> , University of Manchester, UK; <i>J He</i> , Feng Chia University, Taiwan	

# Tuesday Morning, May 21, 2019

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B4-1-TuM</b> <b>Properties and Characterization of Hard Coatings and Surfaces I</b> <b>Moderators: Naureen Ghafoor</b> , Linköping Univ., IFM, Thin Film Physics Div., <b>Ulrich May</b> , Robert Bosch GmbH, Diesel Systems, <b>Fan-Bean Wu</b> , National United University, Taiwan		<b>Coatings for Biomedical and Healthcare Applications</b> <b>Room Pacific Salon 3 - Session D3-TuM</b> <b>Surfaces and Coatings to Promote Tailored Biological Responses</b> <b>Moderators: Sandra Rodil</b> , Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, <b>Vincent Fridrici</b> , Ecole Centrale de Lyon - LTDS	
8:00am			
8:20am	<b>INVITED: B4-1-TuM-2</b> Preparation and Characterization of Hard and Tough Coatings of Ion-assisted Co-sputtered Transition Metal Borides, <b>Ming-Show Wong</b> , National Dong Hwa University, Taiwan		
8:40am	Invited talk continues.	<b>D3-TuM-3</b> <i>In Vitro</i> Evaluation of Macrophage Response to Ionic Liquid-Coated Titanium; <b>Sutton Wheelis</b> , <b>L Guida</b> , <b>D C. Rodrigues</b> , University of Texas at Dallas, USA	
9:00am	<b>B4-1-TuM-4</b> Strategy for Increasing Both Hardness and Toughness in Transition-metal Diboride Thin Films, <b>B Bakht</b> , Linköping Univ., IFM, Thin Film Physics Div., Sweden; <b>I Petrov</b> , University of Illinois, USA, Linköping University, Sweden, USA; <b>J Greene</b> , University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan; <b>L Hultman</b> , <b>J Lu</b> , <b>J Rosén</b> , <b>G Greczynski</b> , <b>Naureen Ghafoor</b> , Linköping Univ., IFM, Thin Film Physics Div., Sweden	<b>INVITED: D3-TuM-4</b> Materials To Control Biological Function, <b>Karine Anselme</b> , CNRS, France	
9:20am	<b>B4-1-TuM-5</b> Tribocorrosion Resistance of Borided ASTM F1537 Alloy, <b>I Campos-Silva</b> , <b>Angel Manuel Delgado-Brito</b> , Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; <b>J Oseguera-Peña</b> , Tecnológico de Monterrey-CEM, México; <b>J Martinez-Trinidad</b> , Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, México; <b>R Perez Pasten-Borja</b> , Instituto Politecnico Nacional, SEPI ENCB, Mexico; <b>D Lopez-Suero</b> , Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, México; <b>A Mojica-Villegas</b> , Instituto Politecnico Nacional, ENCB, México	Invited talk continues.	
9:40am	<b>B4-1-TuM-6</b> Corrosion Behavior of TiAlSiN Doped with Ag Coating Deposited by Co-sputtering in Physiological Fluids, <b>Alvaro Danilo Caiza Tapia</b> , <b>S Rodriguez Arevalo</b> , <b>E Borja Goyeneche</b> , <b>J Olaya Florez</b> , <b>B Gamboa Mendoza</b> , Universidad Nacional de Colombia, Colombia	<b>D3-TuM-6</b> Comparison of Elution of Antibiotic and Biofilm Inhibitor from Manually Applied and Spray Deposited Phosphatidylcholine Coatings, <b>Zoe Harrison</b> , <b>R Awais</b> , <b>R Gopalakrishnan</b> , <b>J Jennings</b> , University of Memphis, USA	
10:00am	<b>B4-1-TuM-7</b> Adhesion Strength of Titanium Carbide Thin Film Coatings on Surface Microstructure Controlled WC-Co, <b>Takeyasu Saito</b> , <b>C Tanaka</b> , <b>N Okamoto</b> , Osaka Prefecture University, Japan; <b>A Kitajima</b> , <b>K Higuchi</b> , Osaka University, Japan	<b>D3-TuM-7</b> <i>In vitro</i> Osseointegration Analysis of Bio-functionalized Titanium Samples in a Protein-rich Medium, <b>S Rao</b> , <b>S Hashemiastaneh</b> , <b>J Villanueva</b> , University of Illinois at Chicago, USA; <b>F Silva</b> , University of Minho, Portugal; <b>C Takoudis</b> , University of Illinois at Chicago, USA; <b>D Bijukumar</b> , University of Illinois College of Medicine, USA; <b>J Souza</b> , University of Illinois at Chicago, USA; <b>Mathew T. Mathew</b> , University of Illinois College of Medicine, USA	
10:20am		<b>D3-TuM-8</b> Microstructural and Electrochemical Properties of TiAlN-(Ag,Cu) Nanocomposite Coatings Deposited by DC Magnetron Sputtering for Medical Applications, <b>H Mejía</b> , <b>Aida Echavarría</b> , <b>G Bejarano</b> , Universidad de Antioquia, Colombia	

# Tuesday Morning, May 21, 2019

<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room San Diego - Session E2-1-TuM</b>  <b>Mechanical Properties and Adhesion I</b>  <b>Moderators: Megan J. Cordill</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, <b>Ming-Tzer Lin</b>, National Chung Hsing University &amp; Chaoyang University of Technology</p>		<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific Salon 6-7 - Session F1-TuM</b>  <b>Nanomaterials and Nanofabrication</b>  <b>Moderators: Ulf Helmersson</b>, Linköping University, <b>Vitezslav Stranak</b>, University of South Bohemia</p>	
8:00am	<p><b>INVITED: E2-1-TuM-1</b> Indentation Behavior of Metal-Ceramic Multilayer Coatings: Modeling vs. Experiment, <b>Yu-Lin Shen</b>, University of New Mexico, USA</p>	<p><b>INVITED: F1-TuM-1</b> Single and Multi-component Nanomaterials Prepared by Means of Cluster Beam Deposition, <b>Ondrej Kylian</b>, Charles University, Czech Republic; <b>A Shelemin</b>, <b>D Nikitin</b>, Charles University, Czech Republic, Czechia; <b>P Pleskunov</b>, <b>J Hanus</b>, <b>P Solar</b>, <b>A Choukourov</b>, <b>A Kuzminova</b>, <b>M Cieslar</b>, <b>H Biederman</b>, Charles University, Czech Republic</p>	
8:20am	Invited talk continues.	Invited talk continues.	
8:40am	<p><b>E2-1-TuM-3</b> Indentation Induced Delamination for Adhesion Measurements, <b>Megan J. Cordill</b>, <b>A Kleinbichler</b>, Erich Schmid Institute of Materials Science, Austria</p>	<p><b>F1-TuM-3</b> Preparation of High Activity and Stability of Cobalt Carbide Nanoparticles for Hydrogen Evolution Reaction, <b>Yi-Heng Lin</b>, National Cheng Kung University, Taiwan; <b>S Wang</b>, Southern Taiwan University of Science and Technology, Taiwan; <b>J Huang</b>, National Cheng Kung University, Taiwan</p>	
9:00am	<p><b>E2-1-TuM-4</b> Intrinsic Stress in Polycrystalline Film: An Atomistic View, <b>Enrique Vasco</b>, Instituto de Ciencia de Materiales de Madrid, Spanish National Research Council (CSIC), Spain; <b>D Franco</b>, Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Spain; <b>E Michel</b>, <b>C Polop</b>, Departamento de Física de la Materia Condensada and Condensed Matter Physics Center (IFIMAC), Universidad Autónoma de Madrid, Spain</p>	<p><b>F1-TuM-4</b> Nanocluster-Based Metal Oxide Films for Hydrogen Gas Sensing, <b>Stanislav Haviar</b>, <b>J Čapek</b>, <b>Š Batková</b>, <b>N Kumar</b>, University of West Bohemia, Czech Republic</p>	
9:20am	<p><b>E2-1-TuM-5</b> Development of a Methodology for Measuring the Elastic Constants of Anisotropic Coatings Using Impulse Excitation Technique, <b>Elia Zgheib</b>, University of Technology of Troyes (UTT) and Lebanese University (UL), France; <b>M Slim</b>, <b>A Alhussein</b>, University of Technology of Troyes (UTT), France; <b>K Khalil</b>, Lebanese University (UL), Lebanon; <b>M Francois</b>, University of Technology of Troyes (UTT), France</p>	<p><b>F1-TuM-5</b> Deposition of Magnetic Thin Films by High Power Impulse Magnetron Sputtering, <b>Jon Tomas Gudmundsson</b>, <b>H Hajihoseini</b>, <b>M Kateb</b>, <b>S Ingvarsson</b>, University of Iceland, Iceland</p>	
9:40am		<p><b>F1-TuM-6</b> Fluorination of the Magnesium Particle Surface: Enhancing the Reactivity of Magnesium, <b>M Pantoya</b>, <b>Shancita Islam</b>, Texas Tech University, USA</p>	

# Tuesday Morning, May 21, 2019

<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific Salon 1 - Session H1-1-TuM</b>  <b>Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces I</b>  <b>Moderators: Grégory Abadias</b>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, <b>Xavier Maeder</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, <b>Michael Tkadletz</b>, Montanuniversität Leoben</p>		
8:00am		
8:20am	<p><b>H1-1-TuM-2</b> Evolution of the Nanoporous Structure of Sintered Ag Joints at High Temperature using In-Situ X-ray Nanotomography, <b>Xavier Milhet</b>, <i>A Nait-Ali, D Tandiang, L Signor</i>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <i>M Legros</i>, Cemes - Cnrs, France; <i>Y Liu, D Van Campen</i>, Stanford Synchrotron Radiation Lightsource - SLAC National Accelerator Laboratory, USA</p>	
8:40am	<p><b>INVITED: H1-1-TuM-3</b> Atom Probe Tomography to Help Understand Deformation Mechanisms in Metallic Alloys, <b>Baptiste Gault</b>, Max-Planck Institute for Iron Research, Düsseldorf, Germany; <i>P Kontis, S Makinen, J He, Z Peng</i>, Max-Planck Institut für Eisenforschung, Germany; <i>S Neumeier</i>, Friedrich Alexander-University Erlangen-Nürnberg (FAU), Germany; <i>J Cormier</i>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <i>D Raabe</i>, Max-Planck Institut für Eisenforschung, Germany</p>	
9:00am	Invited talk continues.	
9:20am	<p><b>H1-1-TuM-5</b> On the Chemical Composition of TiAlN Thin Films - Comparison of Ion Beam Analysis and Laser-assisted Atom Probe Tomography with Varying Laser Pulse Energy, <b>Marcus Hans</b>, <i>J Schneider</i>, RWTH Aachen University, Germany</p>	
9:40am	<p><b>H1-1-TuM-6</b> Microstructure and Oxidation States of Ni in Sub-Nanometric Layer Depending on its Seed-Layer (Zinc Oxide, Silver Layers): A Multi-Techniques Approach to Trespass Limits of Resolution, <b>Justine Voronkoff</b>, <i>H Montigaud</i>, Saint-Gobain Recherche/CNRS, France; <i>L Largeau</i>, CNRS/C2N, France; <i>S Grachev</i>, Saint-Gobain Recherche/CNRS, France</p>	
10:00am	<p><b>H1-1-TuM-7</b> Nanomechanical Investigation on Lateral fcc-w Phase Fields of a Partially Decomposed and Transformed Nano-lamellar CVD fcc-Ti<sub>0.2</sub>Al<sub>0.8</sub>N Coating, <b>Michael Tkadletz</b>, <i>A Lechner, N Schalk</i>, Montanuniversität Leoben, Austria; <i>B Sartory</i>, Materials Center Leoben Forschung GmbH (MCL), Austria; <i>C Mitterer</i>, Montanuniversität Leoben, Austria; <i>C Czetti</i>, CERATIZIT Austria GmbH, Austria</p>	



# Tuesday Morning, May 21, 2019

**Exhibition Keynote Lecture**

**Room Town & Country - Session EX-TuEx**

**Exhibition Keynote Lecture**

**Moderators: Christopher Muratore**, University of Dayton,  
**Michael Stüber**, Karlsruhe Institute of Technology, Germany

11:00am **INVITED: EX-TuEx-1** Advanced Performance of Tools in Sheet-metal Forming - The Synergy of Surface Technology and Tooling Material Selection, **Farwah Nahif**, voestalpine eifeler Vacotec GmbH, Germany

11:20am Invited talk continues.

# Tuesday Afternoon, May 21, 2019

<b>Coatings for Use at High Temperatures</b> <b>Room Pacific Salon 2 - Session A1-2-TuA</b> <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling II</b> <b>Moderators: Lars-Gunnar Johansson</b> , Chalmers University of Technology, Sweden, <b>Shigenari Hayashi</b> , Hokkaido University, <b>Justyna Kulczyk-Malecka</b> , Manchester Metropolitan University		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B4-2-TuA</b> <b>Properties and Characterization of Hard Coatings and Surfaces II</b> <b>Moderators: Naureen Ghafoor</b> , Linköping Univ., IFM, Thin Film Physics Div., <b>Ulrich May</b> , Robert Bosch GmbH, Diesel Systems, <b>Fan-Bean Wu</b> , National United University, Taiwan	
1:40pm	<b>INVITED: A1-2-TuA-1</b> Nano Coatings To Achieve Cost Effective And Long Lifetime SOFC Interconnects, <b>Jan-Erik Svensson</b> , Chalmers University of Technology, Sweden	<b>B4-2-TuA-1</b> Fracture Toughness Enhancement in Superlattice Hard Coatings, <b>Rainer Hahn</b> <sup>1</sup> , <b>M Bartosik</b> , <b>H Riedl</b> , TU Wien, Institute of Materials Science, Austria; <b>H Bolvardi</b> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>S Kolosvári</b> , Plansee Composite Materials GmbH, Germany; <b>P Mayrhofer</b> , TU Wien, Institute of Materials Science, Austria	
2:00pm	Invited talk continues.	<b>B4-2-TuA-2</b> Simultaneous Topographical and Electrochemical Mapping using Scanning Ion Conductance Microscopy - Scanning Electrochemical Microscopy (SICM-SECM), <b>W Shi</b> , <b>G Mendoza</b> , <b>Byong Kim</b> , <b>K Lee</b> , Park Systems Corporation, USA	
2:20pm	<b>A1-2-TuA-3</b> Influence of Ta Content on Properties of TiAlTaN Films, <b>Hongfei Shang</b> , <b>T Shao</b> , State Key Laboratory of Tribology, Tsinghua University, China		
2:40pm	<b>A1-2-TuA-4</b> Cr-Al-Si-N Quaternary Coating Applied on Zirconium Alloy: Combining Superior Resistance of High-temperature Steam Oxidation and Improved Mechanical Properties, <b>Fangfang Ge</b> , <b>H Zhu</b> , <b>F Huang</b> , Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, China		
3:00pm			
3:20pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
3:40pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
4:00pm	<b>A1-2-TuA-8</b> Polyurethane Protective Coating with Self Polishing Property, <b>Mohammad Mizanur Rahman</b> , King Fahd University of Petroleum and Minerals, Saudi Arabia	<b>B4-2-TuA-8</b> Performance Comparison of Two Diffusion Models for Describing the Growth Kinetics of Iron Boride Layers, <b>M Ortiz-Domínguez</b> , Universidad Autónoma del Estado de Hidalgo, México; <b>O Gómez-Vargas</b> , <b>José Salis-Romero</b> , Instituto Tecnológico de Tlalnepantla, México; <b>G Ares de Parga</b> , Instituto Politécnico Nacional, México; <b>J Oseguera-Peña</b> , Tecnológico de Monterrey, México	
4:20pm	<b>A1-2-TuA-9</b> Production of a Zinc Impregnated Stainless Steel Surface Utilizing Cathodic Plasma Electrolytic Deposition (CPED) for Retardation of Cobalt Ion Deposition in High Temperature Aqueous Conditions, <b>Clara Fox</b> , <b>F Scenini</b> , <b>A Yerokhin</b> , <b>N Laugel</b> , University of Manchester, UK; <b>R Wain</b> , Rolls-Royce, UK	<b>B4-2-TuA-9</b> Microstructure and Surface Strength of Chemically Modified WC-Co for Adhesive Strength Improvement, <b>Daichi Kiyokawa</b> , <b>C Tanaka</b> , <b>T Saito</b> , <b>N Okamoto</b> , Osaka Prefecture University, Japan; <b>A Kitajima</b> , <b>K Higuchi</b> , Osaka University, Japan	

# Tuesday Afternoon, May 21, 2019

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B7-TuA</b> <b>Plasma Diagnostics and Growth Processes</b> <b>Moderators: Arutiun P. Ehasarian, Sheffield Hallam University, Yolanda Aranda Gonzalvo, Consultant, USA</b>		<b>Coatings for Biomedical and Healthcare Applications</b> <b>Room Pacific Salon 3 - Session D2-TuA</b> <b>Bio-corrosion and Bio-tribology</b> <b>Moderators: Jessica Jennings, University of Memphis, USA, Steve Bull, Newcastle University</b>	
1:40pm	<b>B7-TuA-1</b> On the Growth of TiO <sub>x</sub> Coatings by Reactive Magnetron Sputtering from Metallic and Ceramic (TiO <sub>1.8</sub> ) Targets: A Joint Modelling and Experimental Story, <b>Romain Tonneau</b> , P Moskovkin, University of Namur, Belgium; <i>W De Bosscher</i> , Soleras Advanced Energy, Belgium; <i>A Pflug</i> , Fraunhofer Institute for Surface Engineering and Thin Films, Germany; <i>S Lucas</i> , University of Namur, Belgium		<b>D2-TuA-1</b> Bio-Tribocorrosive Behavior of the Contact M30NW Stainless Steel against HDPE Reinforced with MoS <sub>2</sub> Particles. New Polymer Implant: Promising Material?, <i>A Salem, M Guezmil, W Bensalah, S Mezlini</i> , Université de Monastir, Tunisia; <b>Jean Géringier</b> , Mines Saint-Etienne, France
2:00pm	<b>B7-TuA-2</b> Titanium Atom and Ion Number Density Evolution in Reactive HiPIMS with Oxygen, Nitrogen and Acetylene Gas, <i>M Fekete</i> , Masaryk University, Brno, Czech Republic; <i>D Lundin</i> , Université Paris-Sud/CNRS, France; <i>K Bernatova, P Klein, J Hnilica, Petr Vasina</i> , Masaryk University, Brno, Czech Republic		<b>INVITED: D2-TuA-2</b> Evaluation of the Adhesion of Electrospayed and Solution-Cast Chitosan Coatings on Titanium Surfaces, <i>V Suresh, E Chng, J Bumgardner, Ranganathan Gopalakrishnan</i> , University of Memphis, USA
2:20pm	<b>B7-TuA-3</b> Phase Formation during Sputtering of Copper in Argon/Oxygen Mixtures, <i>D Altangerel, Diederik Depla</i> , Ghent University, Belgium		Invited talk continues.
2:40pm	<b>INVITED: B7-TuA-4</b> Plasma Diagnostics During Growth of Transparent Conductive Oxide Thin Films by Magnetron Sputtering, <b>Eugen Stamate</b> , Technical University of Denmark, Denmark		<b>D2-TuA-4</b> Study of the Mechanical and Tribological Properties of the TaN with Ti Inclusion Multilayer Films on Si Substrate, <b>Ernesto Garcia</b> , Cátedras-CONACyT, Universidad de Guadalajara, México; <i>J Berumen</i> , ITESO, Universidad Jesuita de Guadalajara, Tlaquepaque, Jalisco, México; <i>M Flores-Martinez</i> , Universidad de Guadalajara, México; <i>E Camps</i> , Instituto Nacional de Investigaciones Nucleares, México; <i>S Muhl</i> , Instituto de Investigaciones en Materiales-UNAM, México
3:00pm	Invited talk continues.		<b>D2-TuA-5</b> Enhancement of Tribocorrosion Properties of Ti6Al4V by Formation of a Carbide-Derived Carbon (CDC) Surface Layer, <b>Kai-yuan Cheng</b> , University of Illinois at Chicago, USA; <i>R Nagaraj, D Bijukumar, M Mathew</i> , University of Illinois College of Medicine, USA; <i>M McNallan</i> , University of Illinois at Chicago, USA
3:20pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>		<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
3:40pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>		<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
4:00pm			<b>INVITED: D2-TuA-8</b> Considerations when using Additive Manufacturing to make Medical Devices, <b>Alejandro Espinoza Orías</b> , Rush University Medical Center, USA
4:20pm	<b>B7-TuA-9</b> On Three Different Ways to Quantify the Degree of Ionization in Sputtering Magnetrons, <i>A Butler</i> , Université Paris-Sud, Université Paris-Saclay, France; <i>N Brenning</i> , Université Paris-Sud, Université Paris-Saclay, Sweden; <i>M Raadu</i> , KTH Royal Institute of Technology, Sweden; <i>J Gudmundsson</i> , University of Iceland, Iceland; <b>Tiberiu Minea</b> , <i>D Lundin</i> , Université Paris-Sud, Université Paris-Saclay, France		Invited talk continues.
4:40pm			<b>D2-TuA-10</b> Nanostructured Surfaces for (Bio)sensors, <b>Vitezslav Stranak</b> , University of South Bohemia, Czech Republic; <i>R Bogdanowicz</i> , Gdansk University of Technology, Poland; <i>P Sezemsky, V Prysiazny, J Kratochvil</i> , University of South Bohemia, Czech Republic; <i>M Smietana</i> , Warsaw University of Technology, Poland; <i>O Kylian</i> , Charles University, Czech Republic; <i>Z Hubicka, M Cada</i> , Institute of Physics CAS, v. v. i., Czech Republic
5:00pm	<b>B7-TuA-11</b> Characterization of Microwave Surfatron Plasma-enhanced-ALD System for Low-temperature Deposition of Thin Oxide Films, <b>Martin Cada</b> , <i>D Tvarog</i> , Institute of Physics CAS, v. v. i., Czech Republic; <i>J Kim</i> , ISAC Research Inc., Republic of Korea; <i>A Poruba</i> , SVCS Process Innovation s.r.o., Czech Republic; <i>Z Hubicka</i> , Institute of Physics CAS, v. v. i., Czech Republic		

# Tuesday Afternoon, May 21, 2019

<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room San Diego - Session E2-2-TuA</b>  <b>Mechanical Properties and Adhesion II</b>  <b>Moderators: Megan J. Cordill</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, <b>Ming-Tzer Lin</b>, National Chung Hsing University &amp; Chaoyang University of Technology</p>		<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific Salon 6-7 - Session F3-TuA</b>  <b>2D Materials: Synthesis, Characterization, and Applications</b>  <b>Moderator: Eli Sutter</b>, University of Nebraska-Lincoln, USA</p>	
1:40pm		<p><b>INVITED: F3-TuA-1</b> Roll-to-roll Plasma Chemical Vapor Deposition for Scalable Graphene Production, <b>Timothy Fisher</b>, UCLA, USA; <b>M Alrefae</b>, Purdue University, USA</p>	
2:00pm	<p><b>E2-2-TuA-2</b> Mechanical Behavior Study of 50 nm-thick Thin Film of Gold Single Crystal with In situ X-ray Pole Figures Measurements, <b>Pierre-Olivier Renault</b>, Université de Poitiers, France; <b>J Drieu La Rochelle</b>, <b>P Godard</b>, <b>M Drouet</b>, <b>J Nicolai</b>, <b>M Beaufort</b>, University of Poitiers, France; <b>D Thiaudière</b>, <b>C Mocuta</b>, SOLEIL Synchrotron, France</p>	<p>Invited talk continues.</p>	
2:20pm	<p><b>E2-2-TuA-3</b> Evaluation of the Mechanical Properties in Antibacterial Multi-layer HA-Ag Coatings Deposited by RF Magnetron Sputtering, <b>Julian Lenis</b>, <b>M Gómez</b>, <b>F Bolívar</b>, University of Antioquia, Colombia</p>	<p><b>F3-TuA-3</b> Magnetron Sputtered MoS<sub>2</sub>/C Nanocomposites as Highly Efficient Electrocatalyst in Hydrogen Evolution Reaction, <b>S Rowley-Neale</b>, <b>M Ratova</b>, Manchester Metropolitan University, UK; <b>L Fugita</b>, University of Sao Paulo, Brazil; <b>G Smith</b>, University of Chester, UK; <b>A Gaffar</b>, <b>Justyna Kulczyk-Malecka</b>, <b>P Kelly</b>, <b>C Banks</b>, Manchester Metropolitan University, UK</p>	
2:40pm	<p><b>INVITED: E2-2-TuA-4</b> Mechanical Deformation in Metal and Ceramic Nano Multilayers, <b>Andrea Hodge</b>, University of Southern California, USA</p>	<p><b>F3-TuA-4</b> HIPIMS Graphene on Copper for Heat Spreading, <b>C Chen</b>, <b>E Liao</b>, <b>Ping-Yen Hsieh</b>, <b>Y Chen</b>, <b>J He</b>, Feng Chia University, Taiwan</p>	
3:00pm	<p>Invited talk continues.</p>	<p><b>F3-TuA-5</b> Tailoring Optical Properties of Two-Dimensional Transition Metal Dichalcogenides Via Photonic Annealing, <b>Rachel Rai</b>, <b>K Gleibe</b>, University of Dayton, Air Force Research Laboratory, USA; <b>N Glavin</b>, Air Force Research Laboratory, Wright-Patterson AFB, USA; <b>R Wheeler</b>, UES, Inc., Air Force Research Laboratory, USA; <b>R Kim</b>, Air Force Research Laboratory, Wright-Patterson AFB, USA; <b>A Jawaid</b>, UES, Inc., Air Force Research Laboratory, USA; <b>L Bissell</b>, Air Force Research Laboratory, Wright-Patterson AFB, USA; <b>C Muratore</b>, University of Dayton, USA</p>	
3:20pm	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	
3:40pm	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	
4:00pm	<p><b>E2-2-TuA-8</b> Deposition of Highly Adhesive Ta Based Thin Films on a Biomedical Grade CoCrMo Alloy, <b>Jesus Corona-Gomez</b>, <b>Q Yang</b>, <b>Y Li</b>, University of Saskatchewan, Canada</p>	<p><b>F3-TuA-8</b> Mechanism of Formation of Nitrogenated Doped Graphene Films, Investigated by In situ XPS During Thermal Annealing in Vacuum, <b>Yannick Bleu</b>, Univ. Lyon, Université Jean Monnet, France; <b>V Barnier</b>, <b>F Christien</b>, Laboratoire Georges Friedel, Ecole Nationale Supérieure des Mines, France; <b>F Bourquard</b>, Univ. Lyon, Laboratoire Hubert Curien, Université Jean Monnet, France; <b>J Avila</b>, Synchrotron SOLEIL &amp; Université Paris-Saclay, France; <b>F Garrelie</b>, Univ. Lyon, Université Jean Monnet, France; <b>M Asensio</b>, Synchrotron SOLEIL &amp; Université Paris-Saclay, France; <b>C Donnet</b>, Université de Lyon, Université Jean Monnet, France</p>	
4:20pm	<p><b>E2-2-TuA-9</b> DIC on FIB Ring-Core of Thin Films for Depth Sensing Residual Stress Measurement, <b>Ming-Tzer Lin</b>, <b>W Pan</b>, National Chung Hsing University, Taiwan; <b>T Chen</b>, <b>F Cheng</b>, National Cheng Kung University, Taiwan; <b>J Huang</b>, National Tsing Hua University, Taiwan</p>	<p><b>INVITED: F3-TuA-9</b> Engineering Point and Extended Defects in Transition Metal Dichalcogenides, <b>Hannu-Pekka Komsa</b>, Aalto University, Finland</p>	
4:40pm	<p><b>E2-2-TuA-10</b> Metallic Glass/Crystalline Nanolayered Coatings with High Nanoscratch Resistance and Damage Tolerance, <b>M Abboud</b>, Middle East Technical University, Turkey; <b>A Motallebzadeh</b>, Koç University, Turkey; <b>Sezer Özerinç</b>, Middle East Technical University, Turkey</p>	<p>Invited talk continues.</p>	
5:00pm	<p><b>E2-2-TuA-11</b> Coatings Effect On Crack Initiation Behavior Of Ti Alloys, <b>Xiaolu Pang</b>, University of Science and Technology Beijing, China</p>	<p><b>F3-TuA-11</b> Physicochemical and Mechanical Performance of Nylon 6.6 Coated Thin Free-standing Boron-doped Diamond Nanosheets, <b>Robert Bogdanowicz</b>, <b>M Ficek</b>, Gdansk University of Technology, Poland; <b>V Stranak</b>, <b>J Kratochvil</b>, University of South Bohemia, Czech Republic; <b>M Szkodo</b>, <b>J Ryl</b>, <b>M Sobaszek</b>, Gdansk University of Technology, Poland</p>	

# Tuesday Afternoon, May 21, 2019

<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific Salon 1 - Session H1-2-TuA</b>  <b>Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces II</b>  <b>Moderators: Grégory Abadías</b>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, <b>Xavier Maeder</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, <b>Michael Tkadletz</b>, Montanuniversität Leoben</p>		
1:40pm	<b>H1-2-TuA-1</b> Complex Study of Thermally Induced Order Reactions in Cu-Au Thin Films, <i>Alla Sologubenko, M Volpi, P Okle, R Spolenak</i> , ETH Zürich, Switzerland	
2:00pm	<b>H1-2-TuA-2</b> Kinetics Dependence of Microstructure and Stress Evolutions in Polycrystalline Cu Films: Real-time Diagnostics and Atomistic Modelling. <i>Clarisse Furgeaud<sup>1</sup>, C Mastail, A Michel, L Simonot</i> , Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <i>E Chason</i> , Brown University, USA; <i>G Abadías</i> , Institut Pprime - CNRS - ENSMA - Université de Poitiers, France	
2:20pm	<b>H1-2-TuA-3</b> Understanding the Crystallization of Amorphous Films with Embedded Seed Crystals using High-resolution STEM Composition and Structural Mapping. <i>Paul Rasmussen, J Rajagopalan, R Berlia</i> , Arizona State University, USA	
2:40pm	<b>H1-2-TuA-4</b> In-situ Investigation of the Oxidation Behavior of Metastable CVD Ti <sub>1-x</sub> Al <sub>x</sub> N Using Combined Synchrotron XRD and DSC, <i>Christian Saringer, M Tkadletz</i> , Montanuniversität Leoben, Austria; <i>A Stark</i> , Helmholtz Zentrum Geesthacht, Germany; <i>C Czetti</i> , Ceratizit Austria GmbH, Austria; <i>N Schalk</i> , Montanuniversität Leoben, Austria	
3:00pm	<b>H1-2-TuA-5</b> In-situ X-ray Characterization of Liquid-solid Transition Phase in Small Volume, <i>Mohamed Kbibou, L Barrallier</i> , Mechanics, Surfaces and Materials Processing Laboratory, France; <i>M El Mansori</i> , Arts et Métiers ParisTech d'Aix en Provence, Laboratory of Mechanics, Surface and Materials Processing (MSMP-EA7350), France; <i>L Heraud</i> , Mechanics, Surfaces and Materials Processing Laboratory, France	
3:20pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
3:40pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
4:00pm	<b>H1-2-TuA-8</b> Novel Quantitative Thin Film Thickness and Chemical State Analysis X-ray Techniques, <i>Wenbing Yun, B Stripe, S Shesadri, S Lewis, X Yang, R Qiao, S Lau</i> , Sigray, Inc., USA	
4:20pm	<b>H1-2-TuA-9</b> Effect of Heat Treatment on Microstructure of Erbium Film on Steel Substrate with Yttria Buffer Layer Fabricated by MOCVD, <i>Kenji Matsuda, M Tanaka, S Lee</i> , University of Toyama, Japan; <i>Y Hishinuma</i> , NIFS, Japan; <i>K Nishimura, T Tsuchiya</i> , University of Toyama, Japan	
4:40pm		
5:00pm	<b>H1-2-TuA-11</b> Study of Volmer-Weber Thin Film Growth Mechanisms by Coupling <i>in situ</i> Resistivity, Optical and Mechanical Measurements, <i>Quentin Herauld, S Grachev, I Gozhyk, H Montigaud</i> , Saint-Gobain Recherche/CNRS, France; <i>R Lazzari</i> , Institut des Nano Sciences de Paris - Sorbonne Université, France	

# Tuesday Evening, May 21, 2019

## Special Interest Talks

Room Town & Country - Session SIT1-TuSIT

### Special Interest Session I

Moderators: **Christopher Muratore**, University of Dayton,

**Michael Stüber**, Karlsruhe Institute of Technology, Germany

7:00pm **INVITED: SIT1-TuSIT-1** Advanced Monitoring of Thin Film Growth from Real-time Diagnostics, **Grégory Abadias**, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France

7:20pm Invited talk continues.

# Special Events Wednesday

## Special Events Wednesday

- 7:30 AM Conference Registration/Atlas Foyer
- 7:30 AM Short Course: Fundamentals of HiPIMS Plasmas for Thin Film Deposition/Atlas Foyer
- 7:30 AM Short Course: In-Situ and Ex-Situ Ellipsometry Characterizations for Thin Film Deposition/Atlas Foyer
- 8:00 AM Technical Sessions/See Program/Mobile App
- 10:00 AM Exhibition/Grand Hall
- 10:00 AM Session Break - Complimentary Coffee in Exhibit Hall/Grand Hall
- 12:20 PM Exhibit Hall - Light Lunch (While Supplies Last)/Grand Hall
- 1:00 PM Special Interest Talk: Ivan Petrov/Town & Country
- 5:45 PM Awards Convocation/Town & Country
- 7:30 PM Awards Buffet Reception/Golden Ballroom

# Wednesday Morning, May 22, 2019

	<p><b>Coatings for Use at High Temperatures</b>  <b>Room Pacific Salon 2 - Session A1-3-WeM</b>  <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling III</b>  <b>Moderators: Justyna Kulczyk-Malecka, Manchester Metropolitan University, Lars-Gunnar Johansson, Chalmers University of Technology, Sweden, Shigenari Hayashi, Hokkaido University</b></p>	<p><b>Hard Coatings and Vapor Deposition Technologies</b>  <b>Room California - Session B4-3-WeM</b>  <b>Properties and Characterization of Hard Coatings and Surfaces III</b>  <b>Moderators: Naureen Ghafoor, Linköping Univ., IFM, Thin Film Physics Div., Ulrich May, Robert Bosch GmbH, Diesel Systems, Fan-Bean Wu, National United University, Taiwan</b></p>
8:00am		
8:20am	<p><b>A1-3-WeM-2</b> Corrosion Monitoring Of High-Temperature Protective Coatings Under Molten Salts Environments For CSP Applications, <b>Francisco Javier Pérez Trujillo</b>, V Encinas Sánchez, T de Miguel Gamo, Universidad Complutense de Madrid, Spain; <b>M Lasanta Carrasco</b>, Universidad Complutense de Madrid, Spain; <b>G García-Martín</b>, Universidad Complutense de Madrid, Spain</p>	<p><b>B4-3-WeM-2</b> Physical Properties of Nano-structured Chromium Nitride Hard Coatings obtained by RF Physical Vapor Dynamic Glancing Angle Deposition, <b>M Jimenez</b>, V Antunes, S Cucatti, A Riul, L Zaganel, UNICAMP, Brazil; <b>C Figueroa</b>, Universidade de Caxias do Sul, Brazil; <b>D Wisnivesky</b>, UNICAMP, Brazil; <b>Fernando Alvarez</b>, Instituto de Física, UNICAMP, Brazil</p>
8:40am	<p><b>A1-3-WeM-3</b> Development of a Ti<sub>2</sub>Si<sub>3</sub> Protective Layer on TiAl48-2Cr-2Nb for Increased Oxidation Resistance, <b>Josefina Crespo Villegas</b>, S Loquai, É Bousser, École Polytechnique de Montréal, Canada; <b>M Cavarroc</b>, SAFRAN Tech, France; <b>S Knittel</b>, SAFRAN Aircraft Engines, France; <b>L Martinu</b>, J Klemberg-Sapieha, École Polytechnique de Montréal, Canada</p>	<p><b>B4-3-WeM-3</b> Synthesis and Characterization of Sputter Deposited Hard Coatings within the Quasibinary System TiB<sub>2</sub>-VB<sub>2</sub>, <b>Christian Mitterer</b>, V Terziyska, M Tkadletz, L Hatzenbichler, D Holec, Montanuniversität Leoben, Austria; <b>V Moraes</b>, Institute of Materials Science and Technology, TU Wien, Austria; <b>A Lümkmann</b>, PLATIT AG Advanced Coating Systems, Switzerland; <b>M Morstein</b>, Hightech Zentrum Aargau AG, Switzerland; <b>P Polcik</b>, Plansee Composite Materials GmbH, Germany</p>
9:00am	<p><b>A1-3-WeM-4</b> The Impact of Aluminide and MCrAlY Coatings on the Fatigue Properties of Ni-based Valve Alloys, <b>Sebastien Dryepondt</b>, B Armstrong, G Muralidharan, Oak Ridge National Laboratory, USA</p>	<p><b>B4-3-WeM-4</b> Deposition-controlled Stabilization of Metastable fcc-(Al,Ti)N in CVD and PVD Coatings, <b>Ulrike Ratayski</b>, Technische Universität Bergakademie Freiberg, Germany; <b>M Höhn</b>, Fraunhofer IKTS, Germany; <b>B Scheffel</b>, Fraunhofer FEP, Germany; <b>F Fietzke</b>, Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Germany; <b>M Motylenko</b>, D Rafaja, Technische Universität Bergakademie Freiberg, Germany</p>
9:20am	<p><b>A1-3-WeM-5</b> High Temperature Oxidation of γ-TiAl Produced by Additive Manufacturing, <b>Radoslaw Swadzba</b>, Institute for Ferrous Metallurgy, Poland; <b>B Mendala</b>, L Swadzba, B Witala, J Tracz, Silesian University of Technology, Poland; <b>L Pyclik</b>, K Marugi, S Sabbadini, Avio Aero A GE Aviation Business, Poland</p>	<p><b>B4-3-WeM-5</b> Oxidation Resistance of AIP Deposited AlCrN and AlTiN Coatings with High Al Compositions, <b>Kenji Yamamoto</b>, H Nii, Kobe Steel, Ltd., Japan</p>
9:40am		<p><b>B4-3-WeM-6</b> Standing Contact Fatigue Behavior of Nitrided AISI 316L Steels, <b>Daybelis Fernández-Valdés</b>, A Meneses-Amador, G Rodríguez-Castro, I Campos-Silva, Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; <b>A Mouftiez</b>, ICAM Lille, Matériaux, France; <b>J Nava-Sánchez</b>, Tecnológico de Estudios Superiores de Chalco, México</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><b>A1-3-WeM-10</b> High Temperature Oxidation Protection of Gamma-based TiAl by Sputtered Al-O-F Films, <b>Florence Bergeron</b>, S Loquai, É Bousser, École Polytechnique de Montréal, Canada; <b>M Cavarroc</b>, SAFRAN Tech, France; <b>S Knittel</b>, SAFRAN Aircraft Engines, France; <b>L Martinu</b>, J Klemberg-Sapieha, École Polytechnique de Montréal, Canada</p>	<p><b>B4-3-WeM-10</b> Effect of Composition on Toughening Mechanism of V<sub>1-x</sub>Mo<sub>x</sub>N Nanocrystalline Thin Film, <b>Yi-Qun Feng</b>, J Huang, National Tsing Hua University, Taiwan</p>
11:20am	<p><b>A1-3-WeM-11</b> Corrosion Behavior and Durability of Microstructure of Stainless Steel Rebars in Simulated Concrete Pore Solution Containing Chloride with Different Ph, <b>Dhruba Babu Subedi</b>, Chinese Academy of Sciences, China</p>	<p><b>B4-3-WeM-11</b> Influence of Mo Contents on Elevated Temperature Tribological Characteristics of CrAlMoSiN Nanocomposite Coating, <b>Yu-Chia Lin</b>, H Tao, J Duh, National Tsing Hua University, Taiwan; <b>J Lee</b>, Ming Chi University of Technology, Taiwan</p>
11:40am	<p><b>A1-3-WeM-12</b> High-temperature Sulfidation of Hot-dip Aluminized 9Cr-1Mo Steel, <b>Muhammad Ali Abro</b>, Mehran University of Engineering and Technology, Pakistan; <b>D Lee</b>, Sungkyunkwan University, Republic of Korea</p>	<p><b>B4-3-WeM-12</b> Characterization of Cosputtered W-Si-N Coatings, <b>Yu-Heng Liu</b>, National Taiwan Ocean University, Taiwan; <b>L Chang</b>, Ming Chi University of Technology, Taiwan; <b>B Liu</b>, Y Chen, National Taiwan Ocean University, Taiwan</p>
12:00pm		<p><b>B4-3-WeM-13</b> RF Input Power Effect on Microstructure and Mechanical Properties of TaSiN Coatings, <b>Zheng-Xin Lin</b>, Y Liu, S Wang, National United University, Taiwan; <b>M Guillon</b>, Polytech Lyon, France; <b>F Wu</b>, National United University, Taiwan</p>



# Wednesday Morning, May 22, 2019

	<p><b>Fundamentals and Technology of Multifunctional Materials and Devices</b>  <b>Room Golden West - Session C3+C1-WeM</b>  <b>Thin Films for Energy-related Applications I/Optical Metrology in Design, Optimization, and Production of Multifunctional Materials</b>  <b>Moderators: Per Eklund</b>, Linköpings Universitet, <b>Tushar Shimpi</b>, Colorado State University, USA</p>	<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room San Diego - Session E3-WeM</b>  <b>Tribology of Coatings for Automotive and Aerospace Applications</b>  <b>Moderators: John Curry</b>, Sandia National Laboratories, USA, <b>Christian Greiner</b>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), <b>Oliver Hunold</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG</p>
8:00am		<p><b>INVITED: E3-WeM-1</b> Self-assembly of Ultra-high Strength Nanoporous Metals for Multifunctional Coatings and Free-standing Films, <b>James Pikul</b>, University of Pennsylvania, USA; <b>N Argibay</b>, <b>J Curry</b>, Sandia National Laboratories, USA; <b>Z Hsain</b>, University of Pennsylvania, USA</p>
8:20am	<p><b>C3+C1-WeM-2</b> Avoiding Blistering of Magnetron Sputtered Thin Film CdTe Photovoltaic Devices, <b>J Walls</b>, <b>F Bittau</b>, <b>R Greenhalgh</b>, <b>A Abbas</b>, <b>Peter Hatton</b>, <b>R Smith</b>, Loughborough University, UK</p>	<p>Invited talk continues.</p>
8:40am	<p><b>C3+C1-WeM-3</b> Electrochromic Device Based on WO<sub>3</sub>/NiO Complementary Electrodes Prepared by Using Vacuum Cathodic Arc Plasma, <b>Po-Wen Chen</b>, Institute of Nuclear Energy Research, Taiwan</p>	<p><b>E3-WeM-3</b> Elevated Temperature Sliding Wear of PEO-Chameleon Duplex Coating, <b>Andrey A. Voevodin</b>, <b>A Shirani</b>, University of North Texas, USA; <b>A Yerokhin</b>, The University of Manchester, UK; <b>A Korenyi-Both</b>, Tribologix Inc., USA; <b>D Berman</b>, University of North Texas, USA; <b>J Zabinski</b>, Army Research Laboratory, USA</p>
9:00am	<p><b>C3+C1-WeM-4</b> Influence of Film Thickness on Growth, Structure and Properties of Magnetron Sputtered ITO Films, <b>Andrius Subacius</b>, Manchester University, UK; <b>É Bousser</b>, École Polytechnique de Montréal, Canada; <b>B Baloukas</b>, Polytechnique Montreal, Canada; <b>S Hinder</b>, <b>M Baker</b>, Surrey University, UK; <b>D Ngo</b>, Manchester University, UK; <b>C Rebbholz</b>, Cyprus University, Cyprus; <b>A Matthews</b>, Manchester University, UK</p>	<p><b>E3-WeM-4</b> Formation Mechanisms of Zn, Mo, S and P Containing Reaction Layers on a DLC Coating, <b>K Bobzin</b>, <b>T Brögelmann</b>, <b>C Kalscheuer</b>, <b>Matthias Thiex</b>, Surface Engineering Institute - RWTH Aachen University, Germany</p>
9:20am	<p><b>INVITED: C3+C1-WeM-5</b> Metal/Semiconductor Superlattice Metamaterials: A New Paradigm in Solid-State Energy Conversion, <b>Bivas Saha</b>, Jawaharlal Nehru Centre for Advanced Scientific Research, India</p>	<p><b>E3-WeM-5</b> ta-C Coatings for Tribological Applications, <b>J Becker</b>, Oerlikon Balzers Coating Germany GmbH, Germany; <b>N Beganovic</b>, <b>Astrid Gies</b>, <b>J Karner</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>J Vetter</b>, Oerlikon Balzers Coating Germany GmbH, Germany</p>
9:40am	<p>Invited talk continues.</p>	
10:00am	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>
10:20am	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>
10:40am	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>
11:00am		<p><b>E3-WeM-10</b> Titanium Nitrides Coatings for Hard Chromium Replacement, <b>Marjorie Cavarroc</b>, Safran Tech, France; <b>B Giroire</b>, <b>L Teulé-Gay</b>, <b>D Michau</b>, <b>A Poulon-Quintin</b>, ICMCB, France</p>
11:20am		<p><b>E3-WeM-11</b> Tribological Coating Solutions and Lubrication Strategies for Gas Turbine Engines, <b>Pantcho Stoyanov</b>, Pratt &amp; Whitney, USA</p>

# Wednesday Morning, May 22, 2019

	<b>New Horizons in Coatings and Thin Films</b> <b>Room Pacific Salon 6-7 - Session F4-1-WeM</b> <b>Functional Oxide and Oxynitride Coatings I</b> <b>Moderators: Anders Eriksson, Oerlikon Balzers, Oerlikon</b> <b>Surface Solutions AG, Marcus Hans, RWTH Aachen University,</b> <b>Jörg Patscheider, Evatec AG</b>	<b>Advanced Characterization Techniques for Coatings,</b> <b>Thin Films, and Small Volumes</b> <b>Room Pacific Salon 1 - Session H3-1-WeM</b> <b>Variable Temperature Nanomechanics</b> <b>Moderators: Jeffrey M. Wheeler, ETH Zürich, James Gibson,</b> <b>RWTH Aachen University</b>
8:00am	<b>F4-1-WeM-1</b> Microstructure and Piezoelectric Properties of Hexagonal Mg <sub>x</sub> Zn <sub>1-x</sub> O and Mg <sub>x</sub> Zn <sub>1-x</sub> O/ZnO Films at Lower Mg Compositions, <b>Hsin Hung Chen, C Liu, J Huang</b> , National Cheng Kung University, Taiwan	<b>H3-1-WeM-1</b> On the Activation of Slip in the Mg-Al-Ca Laves Systems: A Combined Study Using High Temperature Indentation, Micropillar Compression and TEM, <b>James Gibson, C Zehnder, S Sandlöbes, S Korte-Kerzel</b> , RWTH Aachen University, Germany
8:20am	<b>F4-1-WeM-2</b> Structure Optimization of Ta-O-N Films Prepared by Reactive HiPIMS for More Effective Water Splitting, <b>Sárka Batková</b> , Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Czech Republic; <b>J Čapek, S Haviar, J Houška, R Čerstvý</b> , University of West Bohemia, Czech Republic; <b>M Krbal</b> , University of Pardubice, Czech Republic; <b>T Duchoň</b> , Charles University, Czech Republic	<b>H3-1-WeM-2</b> Recent Evolution of Instrumentation for Nanoindentation Measurements at Elevated Temperatures, <b>Philippe Kempe, V Haibliková</b> , Anton Paar, Switzerland
8:40am	<b>INVITED: F4-1-WeM-3</b> A Sustainable and Viable Alternative to Low Cost Electronics based on Metal Oxides, <b>Elvira Fortunato, R Martins</b> , New University of Lisbon, Portugal	<b>H3-1-WeM-3</b> High Temperature Mechanical Characterization of Binary Cu-X Alloys Produced by Combinatorial Synthesis, <b>Viswanadh Gowtham Arigela</b> , Max-Planck Institut für Eisenforschung, Germany; <b>T Oellers, A Ludwig</b> , Ruhr Universität Bochum, Germany; <b>C Kirchlechner, G Dehm</b> , Max-Planck Institut für Eisenforschung, Germany
9:00am	Invited talk continues.	<b>H3-1-WeM-4</b> Temperature and Strain-rate Dependence of the Mechanical Behavior of Freestanding Gold Thin Films, <b>Benoit Merle</b> , Friedrich Alexander-University Erlangen-Nürnberg (FAU), Germany
9:20am	<b>F4-1-WeM-5</b> Photocatalytic Study for Indium Tantalum Oxide Thin Film in Visible Light, <b>Chuan Li</b> , National Yang Ming University, Taiwan; <b>J Hsieh</b> , Ming Chi University of Technology, Taiwan; <b>P Hsueh</b> , National Central University, Taiwan	<b>INVITED: H3-1-WeM-5</b> In-situ Investigation on Mechanical Properties at the Micrometer Scale in Cryogenic Environment, <b>Seok-Woo Lee</b> , University of Connecticut, USA
9:40am	<b>F4-1-WeM-6</b> Tailoring the Microstructure of ZnO Thin Films for Antimicrobial Applications, <b>P Pereira-Silva, J Borges, A Costa-Barbosa, D Costa, M Rodrigues, Filipe Vaz, P Sampaio</b> , University of Minho, Portugal	Invited talk continues.
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	<b>F4-1-WeM-10</b> Exploring Thin Film Zn-Sn-O (ZTO) Composition Spreads Using Combinatorial Sputtering, <b>Siang-Yun Li, Y Shen, K Chang, J Ting</b> , National Cheng Kung University, Taiwan	
11:20am	<b>F4-1-WeM-11</b> Can Thin-Film Technology Help to Realize The Einstein Gravity Quantum Computer?, <b>Norbert Schwarzer</b> , SIO, Germany	

# Wednesday Morning, May 22, 2019

<p><b>Topical Symposia</b>  <b>Room Pacific Salon 3 - Session TS1-1-WeM</b>  <b>High Entropy and Other Multi-principal-element Materials I</b>  <b>Moderators: Diederik Depla, Ghent University, Ulf Jansson, Uppsala University, Angstrom Laboratory</b></p>		
8:00am	<p><b>TS1-1-WeM-1</b> Effect of Nitrogen Content on the Microstructure and Mechanical and Tribological Properties of Magnetron Sputtered FeMnNiCoCr Nitride Coatings, <b>Chuhan Sha, P Munroe</b>, University of New South Wales, Australia; <b>Z Zhou</b>, City University of Hong Kong, Hong Kong; <b>Z Xie</b>, University of Adelaide, Australia</p>	
8:20am	<p><b>TS1-1-WeM-2</b> Reactive Sputtering of High Entropy Alloys with Nitrogen – The Effect of Enthalpy and Entropy, <b>Robin Dedoncker, D Depla</b>, Ghent University, Belgium</p>	
8:40am	<p><b>TS1-1-WeM-3</b> Compositional Variations and Resulting Structure-property Correlations in Multicomponent Al-Cr-Nb-Y-Zr-N Thin Films, <b>K Johansson, A Srinath</b>, Uppsala University, Sweden; <b>L Nyholm</b>, Uppsala University, Angstrom Laboratory, Sweden; <b>Erik Lewin</b>, Uppsala University, Sweden</p>	
9:00am	<p><b>TS1-1-WeM-4</b> Exploring High Entropy Alloy Core Effects in Multi-principal Transition Metal-Al-Si-N, and Multi-principal Boride PVD Thin Films, <b>Kumar Yalamanchili, F Doris, M Arndt</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>H Rudigier</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Switzerland</p>	
9:20am	<p><b>TS1-1-WeM-5</b> Mechanical Properties and Corrosion Resistance of Magnetron Sputtered Co-Cr-Fe-Mn-Ni-C Thin Films, <b>León Zendejas Medina, P Berastegui</b>, Uppsala University, Sweden; <b>L Nyholm, U Jansson</b>, Uppsala University, Angstrom Laboratory, Sweden</p>	
9:40am	<p><b>TS1-1-WeM-6</b> Thermal Property Evaluation of V-Nb-Mo-Ta-W and V-Nb-Mo-Ta-W-Cr-B High-entropy Alloy Thin Films, <b>Sheng-Bo Hung, C Wang</b>, National Taiwan University of Science and Technology, Taiwan; <b>J Lee</b>, Ming Chi University of Technology, Taiwan</p>	
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
10:20am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
10:40am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
11:00am	<p><b>TS1-1-WeM-10</b> Structure, Mechanical Properties and Thermal Stability of Magnetron Sputtered HfTaVWZr High-entropy Boride Coatings, <b>Alexander Kirnbauer, C Koller</b>, TU Wien, Institute of Materials Science and Technology, Austria; <b>P Polcik</b>, Plansee Composite Materials GmbH, Germany; <b>P Mayrhofer</b>, TU Wien, Institute of Materials Science and Technology, Austria</p>	

# Wednesday Afternoon, May 22, 2019

## Special Interest Talks

### Room Town & Country - Session SIT2-WeSIT

#### Special Interest Talk II

**Moderators:** Christopher Muratore, University of Dayton,  
Michael Stüber, Karlsruhe Institute of Technology, Germany

1:00pm **INVITED: SIT2-WeSIT-1** Linking Intrinsic Plasma Characteristics to the Microstructure and Properties of Thin Films, *Ivan Petrov*, University of Illinois, USA, Linköping University, Sweden, USA; *G Greczynski, L Hultman*, Linköping Univ., IFM, Thin Film Physics Div., Sweden; *J Greene*, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science & Technology, Taiwan

1:20pm Invited talk continues.

# Wednesday Afternoon, May 22, 2019

<p><b>Coatings for Use at High Temperatures</b>  <b>Room Pacific Salon 2 - Session A3-WeA</b>  <b>Materials and Coatings for Solar Power Concentration Plants</b>  <b>Moderators: Vladislav Kolarik</b>, Fraunhofer Institute for Chemical Technology ICT, <b>Gustavo García-Martín</b>, Universidad Complutense de Madrid</p>		<p><b>Hard Coatings and Vapor Deposition Technologies</b>  <b>Room California - Session B4-4-WeA</b>  <b>Properties and Characterization of Hard Coatings and Surfaces IV</b>  <b>Moderators: Naureen Ghafoor</b>, Linköping Univ., IFM, Thin Film Physics Div., <b>Ulrich May</b>, Robert Bosch GmbH, Diesel Systems, <b>Fan-Bean Wu</b>, National United University, Taiwan</p>	
2:00pm		<p><b>B4-4-WeA-1</b> Effect of Ti Interlayer on Stress Relief of ZrN/Ti Bilayer Thin Films on Si Substrate, <b>Jia-Hong Huang</b>, <b>T Zheng</b>, National Tsing Hua University, Taiwan</p>	
2:20pm		<p><b>B4-4-WeA-2</b> In-situ Observation of Stress Fields during Crack Tip Shielding in Loaded Soft-hard Micro-Cantilevers using Cross-sectional X-ray Nanodiffraction, <b>Michael Meindlhuber</b>, Montanuniversität Leoben, Department of Physical Metallurgy and Materials Testing, Austria; <b>J Todt</b>, <b>J Zálešák</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; <b>S Klima</b>, <b>N Jäger</b>, Montanuniversität Leoben, Department of Physical Metallurgy and Materials Testing, Austria; <b>M Rosenthal</b>, <b>M Burghammer</b>, ESRF Grenoble, France; <b>H Hruby</b>, voestalpine eifeler Vacotec GmbH, Germany; <b>C Mitterer</b>, <b>R Daniel</b>, Montanuniversität Leoben, Department of Physical Metallurgy and Materials Testing, Austria; <b>J Keckes</b>, Montanuniversität Leoben, Austria</p>	
2:40pm	<p><b>A3-WeA-3</b> Ductility and Creep Rupture Behavior of Diffusion Coatings Deposited on Grade 91 Steel for Concentrated Solar Power Applications, <b>Ceyhan Oskay</b>, <b>T Meissner</b>, <b>C Dobler</b>, <b>M Galetz</b>, DECHEMA-Forschungsinstitut, Germany</p>	<p><b>B4-4-WeA-3</b> Experimentally Parameterized Simulation of an Instrumented Dry Milling Arrangement – Parameter Study Identifying Damage-relevant Coating Properties for End Mills, <b>Andreas W. Nemetz</b>, <b>W Daves</b>, <b>T Klünsner</b>, <b>W Ecker</b>, Materials Center Leoben Forschung GmbH, Austria; <b>C Praetzas</b>, Institute of Production Management, Technology and Machine Tools (PTW), Germany; <b>C Czetti</b>, <b>J Schäfer</b>, CERATIZIT Austria GmbH, Austria</p>	
3:00pm	<p><b>A3-WeA-4</b> Long-term Molten Salt Corrosion of Aluminide Coatings for Heat Storage in Concentrated Solar Power Plants, <b>P Audigié</b>, <b>S Rodríguez</b>, <b>Alina Agüero</b>, Instituto Nacional de Técnica Aeroespacial (INTA), Spain</p>	<p><b>B4-4-WeA-4</b> Mechanical Properties and Cutting Performance of AlCrSiN and AlTiCrSiN Hard Coatings, <b>Liang-Chan Chao</b>, <b>Y Chang</b>, National Formosa University, Taiwan</p>	
3:20pm	<p><b>A3-WeA-5</b> Burn-in Heat Treatment to Form Aluminide Diffusion Coatings for Industrial Large Scale Application, <b>Vladislav Kolarik</b>, <b>M Juez Lorenzo</b>, <b>J Bermejo Sanz</b>, <b>S Weick</b>, Fraunhofer Institute for Chemical Technology ICT, Germany</p>	<p><b>B4-4-WeA-5</b> Erosion, Corrosion Resistance and Hydrophobicity of Nano-layered and Multi-layered Nitride Coatings, <b>Qi Yang</b>, <b>L Zhao</b>, <b>P Patnaik</b>, National Research Council of Canada, Canada</p>	
3:40pm	<p><b>A3-WeA-6</b> High-Temperature Coatings For Protection of Steels in Contact with Molten Salt for CSP Technology, <b>Gustavo García-Martín</b>, REP-Energy Solutions, Spain; <b>V Encinas Sánchez</b>, Universidad Complutense de Madrid, Spain; <b>M Lasanta Carrasco</b>, Universidad Complutense de Madrid, Spain; <b>T de Miguel Gamo</b>, <b>F Pérez Trujillo</b>, Universidad Complutense de Madrid, Spain</p>	<p><b>B4-4-WeA-6</b> Microstructure and Thermal Stability of Al-rich Ti-Al-Mo-N Protective Coatings, <b>Christina Wüstefeld</b>, Institute of Materials Science, TU Bergakademie Freiberg, Germany; <b>M Motylenko</b>, Technische Universität Bergakademie Freiberg, Germany; <b>S Berndorf</b>, Institute of Materials Science, TU Bergakademie Freiberg, Germany; <b>M Pohler</b>, <b>C Czetti</b>, CERATIZIT Austria GmbH, Austria; <b>D Rafaja</b>, Technische Universität Bergakademie Freiberg, Germany</p>	

# Wednesday Afternoon, May 22, 2019

<b>Fundamentals and Technology of Multifunctional Materials and Devices</b> <b>Room Golden West - Session C2-WeA</b> <b>Novel Oxide Films for Active Devices</b> <b>Moderators: Vanya Darakchieva, Linköping University, Sweden, Alyssa Mock, Naval Research Laboratory</b>		<b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b> <b>Room San Diego - Session E1-4-WeA</b> <b>Friction, Wear, Lubrication Effects, and Modeling I</b> <b>Moderators: Nazlim Bagcivan, Schaeffler Technologies GmbH &amp; Co. KG, Germany, Carsten Gachot, Vienna University of Technology</b>	
2:00pm	<b>INVITED: C2-WeA-1</b> The Physics of Low Symmetry Metal Oxides with Special Attention to Phonons, Plasmons and Excitons, <b>Alyssa Mock</b> , Linköping University, Sweden		
2:20pm	Invited talk continues.	<b>E1-4-WeA-2</b> Surface Characteristics of the Chameleon/PEO Coating after Fretting Wear Tests, <b>Mengyu Lin</b> , A Nemcova, University of Manchester, UK; A Voevodin, University of North Texas, USA; T Liskiewicz, University of Leeds, UK; A Matthews, A Yerokhin, University of Manchester, UK	
2:40pm	<b>INVITED: C2-WeA-3</b> Materials Interfaces for $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Power Devices, <b>Rebecca L. Peterson</b> , University of Michigan, USA	<b>E1-4-WeA-3</b> Characterization of W Alloyed DLC Coatings Deposited by a Hybrid DC / HIPIMS Magnetron Sputtering Process, <b>Manuel Evaristo</b> , A Cavaleiro, SEG-CEMMPRE - University of Coimbra, Portugal	
3:00pm	Invited talk continues.		
3:20pm	<b>INVITED: C2-WeA-5</b> Phase Selectivity in Heteroepitaxial Ga <sub>2</sub> O <sub>3</sub> Thin Films, <b>Virginia Wheeler</b> , N Nepal, U.S. Naval Research Laboratory, USA; L Nyakiti, Texas A&M University at Galveston, USA; D Boris, S Walton, D Meyer, B Downey, C Eddy Jr., U.S. Naval Research Laboratory, USA		
3:40pm	Invited talk continues.	<b>E1-4-WeA-6</b> Analysis of Tribomechanical Behavior of Low-Temperature Plasma Blued Tool Steels, <b>Fernando Santiago</b> , ITESM Estado de México, Mexico; R Meza, Termoinnova, S.A. de C.V., Mexico; J Oseguera-Peña, Tecnológico de Monterrey, México	
4:00pm	<b>INVITED: C2-WeA-7</b> Exfoliated $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Nano-layer based (Opto)electronic Devices, J Kim, <b>Sooyeoun Oh</b> , Korea University, Republic of Korea		
4:20pm	Invited talk continues.		
4:40pm	<b>C2-WeA-9</b> Towards Controlled Exfoliation of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> through Ion Implantation, <b>Michael E. Liao</b> , T Bai, Y Wang, M Goorsky, UCLA, USA		
5:00pm			
5:20pm	<b>C2-WeA-11</b> Investigation on Microstructure and Piezoelectric Property of High Orientation Y-doped ZnO Thin Films via RF Magnetron Sputtering, <b>Li-Cheng Cheng</b> , C Liu, J Huang, National Cheng Kung University, Taiwan		

# Wednesday Afternoon, May 22, 2019

	<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific Salon 6-7 - Session F4-2-WeA</b>  <b>Functional Oxide and Oxynitride Coatings II</b>  <b>Moderators: Anders Eriksson, Oerlikon Balzers, Oerlikon Surface Solutions AG, Marcus Hans, RWTH Aachen University, Jörg Patscheider, Evatec AG</b></p>	<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific Salon 1 - Session H3-2-WeA</b>  <b>Degradation under Extreme Conditions</b>  <b>Moderators: James Gibson, RWTH Aachen University, Jeffrey M. Wheeler, ETH Zürich</b></p>
2:00pm		<p><b>H3-2-WeA-1</b> Application of Micro-cantilever Bending to Probe the Fracture Behavior of Thin Film Interfaces, <i>J Kabel, Peter Hosemann</i>, University of California at Berkeley, USA; <i>T Koyanagi, Y Katoh</i>, Oak Ridge National Laboratory, USA</p>
2:20pm		<p><b>H3-2-WeA-2</b> Probing Fatigue Resistance in Multilayer DLC Coatings by Micro-impact: Correlation to Erosion Tests, <i>Ben Beake</i>, Micro Materials Ltd, UK; <i>T Liskiewicz, S McMaster, A Neville</i>, University of Leeds, UK</p>
2:40pm		<p><b>H3-2-WeA-3</b> Development of an In-Situ Ion Irradiation and Nanomechanics Scanning Electron Microscope, <i>Khalid Hattar, N Heckman, S Briggs, C Barr, A Monterrosa, C Chisholm, L Treadwell, B Boyce</i>, Sandia National Laboratories, USA</p>
3:00pm	<p><b>F4-2-WeA-4</b> Structural, Optical and Electrochromic Properties of Nanocrystalline WO<sub>3</sub> Thin Films, <i>Madhuri Venkat Kalapala</i>, VFSTR University, India</p>	<p><b>H3-2-WeA-4</b> Proton Radiation and He Implantation Effect on Radiation-resistant Zr/Nb Sputtered Multilayer Coatings, <i>Tomas Polcar</i>, Czech Technical University in Prague, Czech Republic; <i>M Callisti</i>, University of Cambridge, UK; <i>S Sen, H Yavas</i>, Czech Technical University in Prague, Czech Republic; <i>A Lider</i>, Tomsk State University, Czech Republic</p>
3:20pm	<p><b>F4-2-WeA-5</b> Structure, Mechanical Characteristics and Thermal Stability of HS-PVD (Al,Cr)<sub>2</sub>O<sub>3</sub> Coatings, <i>K Bobzin, T Brögelmann, C Kalscheuer, Martin Welters</i>, Surface Engineering Institute - RWTH Aachen University, Germany</p>	<p><b>H3-2-WeA-5</b> Tracking the Temporal Oxidation Behavior in TiN Thin Films by In-situ Resistivity Measurements, <i>Bastian Stelzer, X Chen, J Sälker, J Schneider</i>, RWTH Aachen University, Germany</p>
3:40pm	<p><b>F4-2-WeA-6</b> Reactive HIPIMS Deposition of <math>\gamma</math>-Al<sub>2</sub>O<sub>3</sub> Thin Films using Transition Metal Doped Al Targets, <i>Stefan Kagerer, L Zauner</i>, TU Wien, Institute of Materials Science, Austria; <i>S Kolosvári</i>, Plansee Composite Materials GmbH, Germany; <i>J Čapek, T Kozák, P Zeman</i>, University of West Bohemia, Czech Republic; <i>H Riedl</i>, TU Wien, Institute of Materials Science, Austria; <i>P Mayrhofer</i>, Institute of Materials Science and Technology, TU Wien, Austria</p>	<p><b>H3-2-WeA-6</b> Industrial XRF Coating Thickness Analyzer for Real Time Measurement of Aluminum Deposited on Rolled Steel, <i>Jelena Hasikova, A Sokolov, A Pecerskis, A Pone, V Gostilo</i>, Baltic Scientific Instruments, Latvia</p>
4:00pm	<p><b>F4-2-WeA-7</b> Influence of V Content on Phase Evolution and Thermal Stability of Reactive Pulsed DC Magnetron Sputtered (Al,V)<sub>2</sub>O<sub>3</sub>, <i>Ludvig Landälv</i>, Linköping Univ., IFM, Thin Film Physics Div. and Sandvik Coromant R&amp;D, Sweden; <i>C Carlström</i>, Sandvik Coromant R&amp;D, Sweden; <i>J Lu</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden; <i>M Johansson-Jöesaar</i>, SECO tools AB, Sweden; <i>M Ahlgren, E Göthelid</i>, Sandvik Coromant R&amp;D, Sweden; <i>B Alling, L Hultman, P Eklund</i>, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>	<p><b>H3-2-WeA-7</b> <i>In situ</i> Characterization of Dual Phase Diamond-like Carbon (DLC) at Elevated Temperatures, <i>Ming Chen</i>, ETH Zürich, Switzerland; <i>C Liu, K Li</i>, City University of Hong Kong, China; <i>R Spolenak, J Wheeler</i>, ETH Zürich, Switzerland</p>
4:20pm	<p><b>F4-2-WeA-8</b> Al Vacancies in Wurtzite Al-(Si)-(O)-N: Theory and Experimental Assessment, <i>Maria Fischer, M Trant, K Thorwarth, D Scopece, C Pignedoli, D Passerone, H Hug</i>, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>	<p><b>H3-2-WeA-8</b> <i>In situ</i> micro-Tensile Testing of TiN Coating: Deformation and Fracture in Relation to Residual Stress, <i>Erika Judith Herrera Jimenez</i>, École Polytechnique de Montréal, Canada; <i>N Vanderesse</i>, École de Technologie Supérieure, Canada; <i>T Schmitt, É Bousser</i>, École Polytechnique de Montréal, Canada; <i>P Bocher</i>, École de Technologie Supérieure, Canada; <i>L Martinu, J Klemberg-Sapieha</i>, École Polytechnique de Montréal, Canada</p>
4:40pm	<p><b>INVITED: F4-2-WeA-9</b> Thermal Atomic Layer Etching of Oxide and Nitride Thin Films, <i>Steven M. George</i>, University of Colorado at Boulder, USA</p>	<p><b>H3-2-WeA-9</b> Small Scale Fracture of Mo<sub>2</sub>BC Coatings, <i>Hariprasad Gopalan, R Soler, S Gleich, C Kirchlechner, C Scheu</i>, Max-Planck Institut für Eisenforschung, Germany; <i>J Schneider</i>, RWTH Aachen University, Germany; <i>G Dehm, V Arigela</i>, Max-Planck Institut für Eisenforschung, Germany</p>
5:00pm	<p>Invited talk continues.</p>	<p><b>H3-2-WeA-10</b> The Effect of Selected Laser Beam Micromilling Parameters on the Surface Layer Structure of HVOF Sprayed WC-CoCr Coating, <i>Aleksander Iwaniak</i>, Silesian University of Technology, Poland; <i>L Norymberczyk</i>, ANGA Uszczelnienia Mechaniczne Sp. z o.o., Poland</p>
5:20pm	<p><b>F4-2-WeA-11</b> Growth and Characterization ALD Films with a new Continuous Flow Process, <i>Biral Kuyel, A Alphonse, K Hong</i>, Nano-Master, Inc., USA</p>	

# Wednesday Afternoon, May 22, 2019

<b>Topical Symposia</b> <b>Room Pacific Salon 3 - Session TS1-2-WeA</b> <b>High Entropy and Other Multi-principal-element Materials II</b> <b>Moderators: Diederik Depla, Ghent University, Ulf Jansson, Uppsala University, Angstrom Laboratory</b>		
2:00pm	<b>TS1-2-WeA-1</b> Structure and Mechanical Properties of Refractory Type High-entropy Alloy Thin Films Deposited by Vacuum-arc, <b>Martin Kuczyk, U Nimsch, O Zimmer, J Kaspar, F Kaulfuss, A Leson, M Zimmermann, C Leyens, Fraunhofer Institute for Material and Beam Technology (IWS), Germany</b>	
2:20pm	<b>TS1-2-WeA-2</b> Templated Stacking of Organic/Inorganic Semiconductors Crystals Upon Coalescence, Assembly and Split Behaviors of High-entropy Ferroelectric Lamellar Crystals, <b>Jr-Jeng Ruan, C Pan, J Ting, K Chang, Y Su, National Cheng Kung University, Taiwan</b>	
2:40pm	<b>TS1-2-WeA-3</b> Angular-dependent Deposition of High Entropy Alloy Thin Films by DCMS, HIPIMS and Cathodic Arc, <b>Ao Xia, Montanuniversität Leoben, Austria; A Togni, University of Modena and Reggio Emilia, Italy; S Hirn, Montanuniversität Leoben, Austria; L Lusvarghib, University of Modena and Reggio Emilia, Italy; R Franz, Montanuniversität Leoben, Austria</b>	
3:00pm	<b>TS1-2-WeA-4</b> Combustion Synthesis of High Entropy Alloys Thin Films: AlCrFeNi, AlCrCuFeNi, and AlCoCrFeNi, <b>Anni Wang, M Hopfeld, T Kups, D Flock, H Romanus, L Kellmann, H Rupapara, P Schaaf, Technische Universität Ilmenau, Germany</b>	
3:20pm	<b>TS1-2-WeA-5</b> Nanostructured Highly Concentrated Solid Solution Alloy Coatings on a Zirconium Based Alloy, <b>M Tunes, S Donnelly, Institute for Materials Science, University of Huddersfield, UK; P Edmondson, Oak Ridge National Laboratory, USA; Vladimir Vishnyakov, University of Huddersfield, UK</b>	
3:40pm	<b>TS1-2-WeA-6</b> High Temperature Electrical Conductivity and Oxidation Resistance of V-Nb-Mo-Ta-W High Entropy Alloy Thin Films, <b>Yen-Yu Chen, Ming Chi University of Technology, Taiwan; S Hung, C Wang, W Wei, National Taiwan University of Science and Technology, Taiwan; J Lee, Ming Chi University of Technology, Taiwan</b>	
4:00pm	<b>INVITED: TS1-2-WeA-7</b> Micro-mechanics of High Entropy Alloys: Size Effects and Rate Sensitivity, <b>Y Xiao, R Spolenak, Jeffrey M. Wheeler, ETH Zürich, Switzerland</b>	
4:20pm	Invited talk continues.	
4:40pm	<b>TS1-2-WeA-9</b> Is the Entropy of High Entropy Ceramics High?, <b>Jochen Michael Schneider, S Evertz, D Neuß, M Steinhoff, D Holzapfel, RWTH Aachen University, Germany; S Kolosvári, Plansee Composite Materials GmbH, Germany; P Polcik, PLANSEE Composite Materials GmbH, Germany; H Rueß, RWTH Aachen University, Germany</b>	
5:00pm	<b>TS1-2-WeA-10</b> Next Generation Entropy Stabilized Material, <b>Jyh-Ming Ting, J Ting, K Chang, Y Su, National Cheng Kung University, Taiwan</b>	



# Wednesday Afternoon, May 22, 2019

**Awards Convocation and Honorary Lecture  
Room Town & Country - Session HL-WeHL  
Bunshah Award Honorary Lecture**

5:45pm		
6:05pm		
6:25pm	<p><b>INVITED: HL-WeHL-3</b> R.F. Bunshah Award and ICMCTF Lecture: Some Highlights from over Four Decades of Thin-film Science, <i>Joe Greene</i><sup>1</sup>, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science &amp; Technology, Taiwan</p>	
6:45pm	Invited talk continues.	

<sup>1</sup> R.F. Bunshah Awardee

# Special Events Thursday

## Special Events Thursday

- 7:30 AM Conference Registration/Atlas Foyer
- 7:30 AM Short Course: Plasmas in Physical Vapor Deposition, Including Arcs and HiPIMS/Atlas Foyer
- 7:30 AM Short Course: Understanding and Control of Stresses in PVD Thin Films/Atlas Foyer
- 8:00 AM Technical Sessions/See Program/Mobile App
- 12:20 PM Elsevier Focused Topic Session: "The Art of Publishing"/Golden West
- 12:20 PM ICMCTF 2020 Informational Meeting/California
- 5:00 PM Poster Session/Grand Hall
- 6:00 PM Poster Reception/Grand Hall

# Thursday Morning, May 23, 2019

	<b>Coatings for Use at High Temperatures</b> <b>Room Pacific Salon 2 - Session A2-1-ThM</b> <b>Thermal and Environmental Barrier Coatings I</b> <b>Moderators: Sabine Faulhaber, University of California, San Diego, USA, Kang N. Lee, NASA Glenn Research Center, USA, Pantcho Stoyanov, Pratt &amp; Whitney, USA</b>	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B6-ThM</b> <b>Coating Design and Architectures</b> <b>Moderators: Shou-Yi Chang, National Tsing Hua University, Paul Heinz Mayrhofer, Institute of Materials Science and Technology, TU Wien, Austria</b>
8:00am	<b>INVITED: A2-1-ThM-1</b> Mechanical Characterization and Modelling Issues for Thermal Barrier Coating Lifetime Assessment, <i>Vincent Maurel, V Guipont, Mines-ParisTech, France</i>	<b>B6-ThM-1</b> The Mechanical and Tribological Properties of Boron Based Films Grown by HIPIMS Under Different N <sub>2</sub> Contents, <i>A Keles, Ihsan Efeoglu, Y Totik, Ataturk University, Turkey</i>
8:20am	Invited talk continues.	<b>B6-ThM-2</b> Peculiar Oscillations in Nano-scale AlN/TiN and Other Nitride-based Superlattices, <i>Nikola Koutna, Institute of Materials Science and Technology, TU Wien, Austria; P Řehák, Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Czech Republic; Z Zhang, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; M Černý, Central European Institute of Technology, CEITEC VUT, Brno University of Technology, Czech Republic; M Bartosik, Institute of Materials Science and Technology, TU Wien, Austria; M Friák, M Šob, Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Czech Republic; P Mayrhofer, Institute of Materials Science and Technology, TU Wien, Austria; D Holec, Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Austria</i>
8:40am	<b>A2-1-ThM-3</b> The Effect of Bond Coat Asperity Removal on the Lifetime of Atmospheric Plasma Sprayed Thermal Barrier Coatings, <i>Kenneth Kane, Oak Ridge National Laboratory, USA; M Sweet, Praxair, USA; M Lance, B Pint, Oak Ridge National Laboratory, USA</i>	<b>B6-ThM-3</b> Impact Fatigue and Mechanical Properties of AlTiCrN and AlTiCrSiN Hard Coatings with Optimal Design of Interlayers, <i>Yu-Ju Yang, Y Chang, S Weng, National Formosa University, Taiwan</i>
9:00am	<b>A2-1-ThM-4</b> Effect of Superalloy Substrate on the Lifetime of Electron Beam Physical Vapour Deposited Thermal Barrier Coatings, <i>Chen Liu, Y Chen, P Xiao, University of Manchester, UK</i>	<b>B6-ThM-4</b> Improvement of CrMoN/ SiN <sub>x</sub> Multilayered Coatings on Mechanical and High Temperature Tribological Properties, <i>Wei-Li Lo, L Yeh-Liu, J Lee, J Duh, National Tsing Hua University, Taiwan</i>
9:20am	<b>A2-1-ThM-5</b> Self-Healing Thermal Barrier Coatings Produced by Laser Processing, <i>Bowen Wei, J Gu, S Joshi, T Huang, N Dahotre, S Aouadi, University of North Texas, USA</i>	<b>B6-ThM-5</b> Tuning the Hardness–toughness Relationship by Combining MoN with TaN, <i>F Klimashin, N Koutna, L Lobmaier, TU Wien, Institute of Materials Science and Technology, Austria; D Holec, Montanuniversität Leoben, Austria; Paul Heinz Mayrhofer, TU Wien, Institute of Materials Science and Technology, Austria</i>
9:40am	<b>A2-1-ThM-6</b> Influence of Heat Treatment on Thermal Cyclic Fatigue Lifetime of TBC System, <i>Jianhong He, T Sharobem, Oerlikon Metco, USA</i>	<b>B6-ThM-6</b> Microstructure, Mechanical and Tribological Performance of Complex TiAlTaN-[TiAlN/TaN <sub>x</sub> ] Coatings: Understanding the Effect of Volume Fraction, <i>Elbert Contreras, J Cortinez, Universidad de Antioquia, Colombia; A Hurtado, Centro de Investigación en Materiales Avanzados CIMAV, Mexico; M Gómez, Universidad de Antioquia, Colombia</i>
10:00am		<b>INVITED: B6-ThM-7</b> Plastic Deformation in Transition-Metal Nitrides and Carbides via Density-Functional Molecular Dynamics, <i>Davide Sangiovanni, Linköping University, Sweden, Ruhr-Universität Bochum, Germany</i>
10:20am	<b>A2-1-ThM-8</b> Effects of Chemical Modification on Bond Coat Oxidation and Internal Stresses in Yb <sub>2</sub> Si <sub>2</sub> O <sub>7</sub> Environmental Barrier Coatings, <i>Benjamin Herren, California Institute of Technology, USA; J Almer, Argonne National Laboratory, USA; K Lee, NASA Glenn Research Center, USA; K Faber, California Institute of Technology, USA</i>	Invited talk continues.
10:40am	<b>A2-1-ThM-9</b> Thermal Shock and CMAS Resistant Tunable Self-Healing Thermal Barrier Coatings, <i>Jingjing Gu, B Wei, T Huang, S Bakkar, D Berman, R Reidy, S Aouadi, University of North Texas, USA</i>	<b>B6-ThM-9</b> Phase Evolution and Mechanical Properties of Isostructural Decomposing W <sub>1-x</sub> M <sub>x</sub> B <sub>2</sub> Thin Films, <i>Vincent Moraes, L Zauner, TU Wien, Institute of Materials Science, Austria; H Bolvardi, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; P Polcik, Plansee Composite Materials GmbH, Germany; H Riedl, P Mayrhofer, TU Wien, Institute of Materials Science, Austria</i>
11:00am	<b>A2-1-ThM-10</b> Variables Affecting Steam Oxidation Kinetics of Environmental Barrier Coatings, <i>Kang N. Lee, NASA Glenn Research Center, USA</i>	<b>B6-ThM-10</b> Van der Waals Layer Promoted Heteroepitaxy in Sputter-deposited Thin Films, <i>Koichi Tanaka, P Arias, M Liao, Y Wang, H Zaid, A Aleman, M Goorsky, S Kodambaka, University of California, Los Angeles, USA</i>
11:20am	<b>A2-1-ThM-11</b> High Temperature Investigations of Thermochemistry and Phase Stability in the ZrO <sub>2</sub> -Y <sub>2</sub> O <sub>3</sub> -Ta <sub>2</sub> O <sub>5</sub> System, <i>Maren Lepple, DEHEMA Forschungsinstitut, Technische Universität Darmstadt, Germany; S Ushakov, K Lilova, University of California, Davis, USA; C Maccauley, C Levi, University of California, Santa Barbara, USA; A Navrotsky, University of California, Davis, USA</i>	<b>B6-ThM-11</b> Improvement of Tribological Properties for Hard Coatings by Stress Control, <i>Tianmin Shao, State Key Laboratory of Tribology, Tsinghua University, China</i>
11:40am		<b>B6-ThM-12</b> Is WB <sub>2-z</sub> a Proper Base System for Designing Ternary Diboride based Thin Films?, <i>Helmut Riedl, V Moraes, C Fuger, H Euchner, R Hahn, T Wojcik, TU Wien, CDL AOS at the Institute of Materials Science, Austria; M Arndt, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; P Polcik, Plansee Composite Materials GmbH, Germany; P Mayrhofer, TU Wien, Institute of Materials Science, Austria</i>

# Thursday Morning, May 23, 2019

	<b>Fundamentals and Technology of Multifunctional Materials and Devices</b> <b>Room Pacific Salon 3 - Session C3+C2+C1-ThM</b> <b>Thin Films for Energy-related Applications II/Novel Oxide Films for Active Devices/Optical Metrology in Design, Optimization, and Production of Multifunctional Materials</b> <b>Moderators: Per Eklund, Linköpings Universitet, Tushar Shimpi, Colorado State University, USA</b>	<b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b> <b>Room San Diego - Session E1-1-ThM</b> <b>Friction, Wear, Lubrication Effects, and Modeling II</b> <b>Moderators: Nazlim Bagcivan, Schaeffler Technologies GmbH &amp; Co. KG, Germany, Carsten Gachot, Vienna University of Technology, Tomas Polcar, Czech Technical University in Prague, Czech Republic</b>
8:00am		
8:20am		
8:40am	<b>C3+C2+C1-ThM-3</b> Nanoflaky Titanium Dioxide Grown on Titanium Foil for Capacitive Deionization Purpose, <i>Jung-Ta Huang, P Hsieh, J He, Feng Chia University, Taiwan</i>	<b>E1-1-ThM-3</b> Sliding Wear Resistance of Nickel Boride Layers on Inconel 718 Superalloy, <i>I Campos-Silva, Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México; Alan Daniel Contla-Pacheco, Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, México; U Figueroa-Lopez, Tecnológico de Monterrey-CEM, Mexico; J Martinez-Trinidad, A Ruiz-Rios, M Ortega-Aviles, Instituto Politecnico Nacional Grupo Ingeniería de Superficies, México</i>
9:00am	<b>C3+C2+C1-ThM-4</b> Mixed-oxide Coated Ni Foam for High Performance Supercapacitor, <i>Kuang-Cheng Lin, National Cheng Kung University, Taiwan</i>	<b>E1-1-ThM-4</b> A Study of the Wear Mechanism of PTFE: The Effects of Temperature and Environment on its Mechanical and Tribological Properties, <i>Vilayvone Saisnith, V Fridrici, Ecole Centrale de Lyon, LTDS - Université de Lyon, France</i>
9:20am	<b>INVITED: C3+C2+C1-ThM-5</b> Wavefront Shaping: A New Tool in Optics, <i>Moussa N'Gom, University of Michigan, USA</i>	<b>E1-1-ThM-5</b> Harness Intrinsic Friction in Transition Metal Dichalcogenides, <i>Antonio Cammarata, Czech Technical University in Prague, Czech Republic; T Polcar, University of Southampton, UK</i>
9:40am	Invited talk continues.	<b>E1-1-ThM-6</b> Static Friction at High Temperature: from Methodology to Severe-Service Valve Application, <i>Thomas Schmitt, J Schmitt, Polytechnique Montréal, Canada; É Bousser, École Polytechnique de Montréal, Canada; M Azzi, Tricomat, Canada; F Khelfaoui, V Najarian, L Vernhes, Velan; J Klemberg-Sapieha, Polytechnique Montréal, Canada</i>
10:00am	<b>C3+C2+C1-ThM-7</b> Optical Optimisation of Semi-transparent a-Si:H Solar Cells for Photobioreactor Application, <i>Agathe Brodu, C Ducros, Univ. Grenoble Alpes, CEA, France; C Dublanche-Tixier, Univ. Limoges, France; C Seydoux, G Finazzi, Univ. Grenoble Alpes, CNRS, CEA, France</i>	<b>INVITED: E1-1-ThM-7</b> Coating Development, Characterization and Application-oriented Tests, <i>Lars Pleth Nielsen, K Almqvist, B Christensen, S Louring, Danish Technological Institute, Denmark; H Ronkainen, T Hakala, VTT Technical Research Centre of Finland, Finland; D Drees, FALEX Tribology, Belgium</i>
10:20am	<b>C3+C2+C1-ThM-8</b> Properties of Highly Transparent AlN/SiO <sub>x</sub> Multilayer Systems, <i>Chelsea Appleget, A Sáenz-Trevizo, A Hodge, University of Southern California, USA</i>	Invited talk continues.
10:40am	<b>C3+C2+C1-ThM-9</b> Tailoring the Optical Properties of Highly Porous Superlattice-type Si-Au Slanted Columnar Heterostructure Thin Films, <i>U Kilic, University of Nebraska-Lincoln, USA; A Mock, Linköping University, Sweden; R Feder, The Fraunhofer Institute for Microstructure of Materials and Systems (IMWS), Germany; D Sekora, M Hilfiker, R Korlacki, Eva Schubert, C Argyropoulos, M Schubert, University of Nebraska Lincoln, USA</i>	
11:00am	<b>C3+C2+C1-ThM-10</b> Microstructures and Optoelectronic Properties of Cu <sub>3</sub> N Thin Films and its Diode Rectification Characteristics, <i>Yin-Hung Chen, S Chen, S Sakalley, S Huang, A Paliwal, Ming Chi University of Technology, Taiwan; M Liao, National Taiwan University, Taiwan; H Sun, Shandong University at Weihai, China; S Biring, Ming Chi University of Technology, Taiwan</i>	
11:20am	<b>C3+C2+C1-ThM-11</b> Effects of the Frequency of Pulsed DC Sputtering Power on Amorphous Carbon Film used for Metallic Bipolar Plates in Proton Exchange Membrane Fuel Cells, <i>Xiaobo Li, P Yi, L Peng, X Lai, Shanghai Jiaotong University, China</i>	
11:40am	<b>C3+C2+C1-ThM-12</b> On the Mechanisms of Halloysite Nanotubes Incorporation in the Surface Layer of Forsterite Grown by Plasma Electrolytic Oxidation, <i>B Mingo, Y Guo, A Némcova, A Gholinia, A Matthews, Aleksey Yerokhin, The University of Manchester, UK</i>	
12:00pm	<b>C3+C2+C1-ThM-13</b> Inorganic-Organic Perovskites: Handle with Care, Properties May Depend on It, <i>Nikolas Podraza, B Subedi, M Junda, K Ghimire, University of Toledo, USA</i>	

# Thursday Morning, May 23, 2019

	<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific Salon 6-7 - Session F2-1-ThM</b>  <b>HiPIMS, Pulsed Plasmas and Energetic Deposition I</b>  <b>Moderators: Jon Tomas Gudmundsson, University of Iceland,</b>  <b>Tiberiu Minea, Université Paris-Sud</b></p>	<p><b>Surface Engineering - Applied Research and Industrial Applications</b>  <b>Room Pacific Salon 1 - Session G1+G3-ThM</b>  <b>Advances in Industrial PVD, CVD, and PECVD Processes and Equipment/Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications</b>  <b>Moderators: Ladislav Bardos, Uppsala University, Sweden,</b>  <b>Emmanuelle Göthelid, Sandvik Machining Solutions, Ali Khatibi, Oerlikon Balzers, Oerlikon Surface Solutions AG, Christoph Schiffers, CemeCon AG, Germany</b></p>
8:00am		<p><b>G1+G3-ThM-1</b> Predicting Coating Uniformity and Cathode Utilization in Magnetron Sputtering Applications using Numerical Simulation, <b>Adam Obrusnik, P Zikan, Plasma Solve, Brno, Czech Republic</b></p>
8:20am		<p><b>G1+G3-ThM-2</b> Multinary HiPIMS, <b>T Leyendecker, W Koelker, S Bolz, Christoph Schiffers, CemeCon AG, Germany</b></p>
8:40am	<p><b>INVITED: F2-1-ThM-3</b> Recent Insights into HiPIMS Physics via Coherent and Incoherent Thomson Scattering, <b>Sedina Tsikata, CNRS, ICARE, France; T Minea, Université Paris-Sud/CNRS, France; B Vincent, CNRS, France; A Revel, Université Paris-Sud/CNRS, France</b></p>	<p><b>G1+G3-ThM-3</b> From Small Parts to Particles – Experiences in Bulk Coating, <b>Heidrun Klostermann, F Fietzke, B Kraetzschmar, Fraunhofer FEP, Germany</b></p>
9:00am	Invited talk continues.	<p><b>G1+G3-ThM-4</b> A Novel Industrial Coating System for the Deposition of Smooth Hard Coatings Combining HiPIMS V+ and Rotatable Magnetrons, <b>Herbert Gabriel, J Santiago Varela, PVT Plasma und Vakuum Technik GmbH, Germany; I Fernandez, N4E Nano4Energy S.L.N.E, Spain; N Dams, PVT Plasma und Vakuum Technik GmbH, Germany; A Wennberg, N4E Nano4Energy S.L.N.E, Spain; J Lu, PVT Harbin Coating Ltd, China</b></p>
9:20am	<p><b>F2-1-ThM-5</b> Process Gas Rarefaction and Other Transport Phenomena in High Power Impulse Magnetron Sputtering Discharges Studied by Particle Simulations, <b>Tomas Kozák, University of West Bohemia, Czech Republic</b></p>	<p><b>INVITED: G1+G3-ThM-5</b> From DCMS to HiPIMS: A Giant Leap for Cutting Tools?, <b>Bastian Gaedike, Hartmetall-Werkzeugfabrik Paul Horn GmbH, Germany</b></p>
9:40am	<p><b>F2-1-ThM-6</b> Insight on the Sputtered Material in HiPIMS by 2D PIC-MCC Modeling, <b>Adrien Revel, Université Paris-Sud/CNRS, France; T Minea, Université Paris-Sud, Université Paris-Saclay, France</b></p>	Invited talk continues.
10:00am	<p><b>F2-1-ThM-7</b> Spoke Formation in Large Scale Rectangular Magnetrons, <b>Arutiun P. Eghasarian, Sheffield Hallam University, UK</b></p>	<p><b>G1+G3-ThM-7</b> Application of Twin-Roll PECVD for Surface Functionalization on Flexible Substrate, <b>Y Isomura, Y Ikari, Tadao Okimoto, Kobe Steel, Ltd., Japan</b></p>
10:20am	<p><b>F2-1-ThM-8</b> The Use of Bipolar-HiPIMS for the Design of Ion Energies in Thin Film Growth, <b>Ulf Helmersson, J Keraudy, R Viloan, Linköping University, Sweden; N Brenning, M Raadu, KTH Royal Institute of Technology, Sweden; D Lundin, Université Paris-Sud, Université Paris-Saclay, France; I Petrov, University of Illinois, USA, Linköping University, Sweden, USA; J Greene, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science &amp; Technology, Taiwan; J Gudmundsson, University of Iceland, Iceland</b></p>	<p><b>G1+G3-ThM-8</b> A New System Platform for Ultrafast Nitriding and Diamond Like Carbon (DLC) Deposition Based on a Hollow Cathode Discharge, <b>Frank Papa, T Casserly, A Tudhope, S Gennaro, Duralar Technologies, USA</b></p>
10:40am	<p><b>F2-1-ThM-9</b> Latest Developments in HiPIMS with Positive Pulsing, <b>Ivan Fernandez, Nano4Energy, Spain; A Wennberg, Nano4Energy SL, Spain; F Papa, GP Plasma, Spain</b></p>	<p><b>INVITED: G1+G3-ThM-9</b> Combinatorial Development of Nitride and Oxide Thin Films on an Industrial Scale, <b>Rainer Cremer, KCS Europe GmbH, Germany</b></p>
11:00am	<p><b>F2-1-ThM-10</b> HiPIMS- Advantages of a Positive Kick Pulse, <b>Jason Hrebik, Kurt J. Lesker Company, USA</b></p>	Invited talk continues.
11:20am	<p><b>F2-1-ThM-11</b> Plasma Parameter Determination in a HiPIMS Discharge Using Laser Thomson Scattering, <b>P Ryan, James Bradley, M Bowden, University of Liverpool, UK</b></p>	<p><b>G1+G3-ThM-11</b> Protective, Tribological and Decorative PECVD Coatings Deposited with a New Microwave Source: Plasma and Layer Characterization for Appropriate Applications, <b>Rolf Schäfer, T Radny, K Nauenburg, robeko GmbH &amp; Co.KG, Germany; S Ulrich, Karlsruhe Institute of Technology (KIT), IAM, Germany</b></p>
11:40am		<p><b>G1+G3-ThM-12</b> Complex Coating Technique for Smallest Part of Advanced Powertrain Fuel System, <b>Sung Chul Cha, H Park, J Lee, Hyundai Motor Group-Hyundai Kefico, Republic of Korea; K Ko, C Shin, Dongwoo HST Co. Ltd., Republic of Korea</b></p>

# Thursday Morning, May 23, 2019

<p><b>Topical Symposia</b>  <b>Room Golden West - Session TS2-ThM</b>  <b>Icephobic Surface Engineering</b>  <b>Moderators: Alina Agüero Bruna</b>, Instituto Nacional de Técnica Aeroespacial (INTA), <b>Jolanta-Ewa Klemberg-Sapieha</b>, École Polytechnique de Montréal, Canada</p>		
8:00am		
8:20am	<p><b>TS2-ThM-2</b> Synthesis And Characterization Of Amphiphobic Hybrid Coatings For Industrial Applications, <b>Giulio Boveri</b>, <i>M Raimondo, F Veronesi</i>, Institute of Science and Technology for Ceramics, Italy</p>	
8:40am	<p><b>TS2-ThM-3</b> <i>In situ</i> Ice Growth Kinetics on Water-repellent Coatings in Atmospheric Icing Conditions, <b>Jacques Lengaigne</b>, <i>P Xing, É Bousser</i>, École Polytechnique de Montréal, Canada; <i>A Dolatabadi</i>, Concordia University, Canada; <i>L Martinu, J Klemberg-Sapieha</i>, École Polytechnique de Montréal, Canada</p>	
9:00am	<p><b>TS2-ThM-4</b> Icephobic Elastomeric Surfaces?, <b>Pablo Francisco Ibáñez</b>, <i>F Montes Ruiz-Cabello, M Rodríguez Valverde, M Cabrerizo Vílchez</i>, Universidad de Granada, Spain</p>	
9:20am	<p><b>INVITED: TS2-ThM-5</b> Design and Fabrication of Superhydrophobic, Icephobic Coatings for High Voltage (HV) Power Lines Application, <b>Mariarosa Raimondo</b>, <i>G Boveri, F Veronesi</i>, ISTECCNR - Institute of Science and Technology for Ceramics, Italy</p>	
9:40am	Invited talk continues.	
10:00am	<p><b>TS2-ThM-7</b> Energy Saving Strategy for the Development of Icephobic Coating and Surface, <i>Y Zheng, J Wang, J Liu, K Choi, Xianghui Hou</i>, The University of Nottingham, UK</p>	
10:20am	<p><b>TS2-ThM-8</b> Anti-Icing Hard Steel Coating Modified With Polymer Particles, <i>P García, Julio Mora, A Agüero</i>, Instituto Nacional de Técnica Aeroespacial (INTA), Spain</p>	
10:40am	<p><b>INVITED: TS2-ThM-9</b> Development of Superhydrophobic and Icephobic Coatings by Suspension Plasma Spraying, <b>Ali Dolatabadi</b>, <i>N Sharifi, R Attarzadeh, C Moreau, M Pugh</i>, Concordia University, Canada</p>	
11:00am	Invited talk continues.	
11:20am	<p><b>TS2-ThM-11</b> Minimum Required Thickness of a Hydrophobic Topcoat to withstand Cycling in an Icing Wind Tunnel, <b>Stephen Brown</b>, École Polytechnique de Montreal, Canada; <i>J Lengaigne</i>, Polytechnique Montréal, Canada; <i>N Sharifi</i>, Concordia University, Canada; <i>L Martinu, J Klemberg-Sapieha</i>, École Polytechnique de Montreal, Canada</p>	

# Thursday Afternoon, May 23, 2019

	<b>Coatings for Use at High Temperatures</b> <b>Room Pacific Salon 2 - Session A2-2-ThA</b> <b>Thermal and Environmental Barrier Coatings II</b> <b>Moderators: Sabine Faulhaber, University of California, San Diego, USA, Kang N. Lee, NASA Glenn Research Center, USA, Pantcho Stoyanov, Pratt &amp; Whitney, USA</b>	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B2-1-ThA</b> <b>CVD Coatings and Technologies I</b> <b>Moderators: Kazunori Koga, Kyushu University, Japan, Francis Maury, CNRS-CIRIMAT</b>
1:20pm	<b>INVITED: A2-2-ThA-1</b> Design of Multiphase Environmental Barrier Coatings: Toward Multifunctional Molten Deposit Resistance, <b>David Poerschke</b> , University of Minnesota, USA	<b>B2-1-ThA-1</b> Impact of HfO <sub>2</sub> as a Buffer Layer on the Electrical and Ferroelectric Memory Characteristics of Metal/Ferroelectric/High-K/Semiconductor Gate Stack for Nonvolatile Memory Applications, <b>R Jha, P Singh, Manish Goswami</b> , Indian Institute of Information Technology Allahabad, India; <b>B Singh</b> , Park Systems, India
1:40pm	Invited talk continues.	<b>B2-1-ThA-2</b> Studies on Properties and Cutting Performance of Al-rich AlTiN Coating with Controlled Orientation via LP-CVD, <b>Yasuki Kido, A Paseuth, S Okuno, S Imamura</b> , Sumitomo Electric Hardmetal Corp., Japan
2:00pm	<b>A2-2-ThA-3</b> Comparison of Oxidation Procedures of MCrAlY Coatings Deposited by PVD Cathodic Arc Evaporation, <b>X Maeder, J Ast</b> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>M Polyakov</b> , EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>M Döbeli</b> , ETH Zürich, Switzerland; <b>A Neels, A Dommann</b> , Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>B Widrig, Oliver Hunold, J Ramm</b> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein	<b>B2-1-ThA-3</b> Effects of Al Content and Growth Orientation on Mechanical Properties of AlTiN Coatings Prepared by CVD Method, <b>Kosuke Yanagisawa, T Ishigaki, H Nakamura, H Homma</b> , Mitsubishi Materials Corporation, Japan
2:20pm	<b>A2-2-ThA-4</b> Effect of APS Flash Bond Coatings and Curvature on Furnace Cycle Lifetime of Rods, <b>Michael Lance, J Haynes, B Pint</b> , Oak Ridge National Laboratory, USA; <b>E Gildersleeve, S Sampath</b> , Stony Brook University, USA	<b>B2-1-ThA-4</b> Thermal Crack Network Formation in CVD TiCN/ $\alpha$ -Al <sub>2</sub> O <sub>3</sub> Coatings, <b>Nina Schalk, R Stylianou, M Gassner</b> , Montanuniversität Leoben, Austria; <b>D Velic, W Daves, W Ecker</b> , Materials Center Leoben Forschung GmbH, Austria; <b>M Tkadletz</b> , Montanuniversität Leoben, Austria; <b>C Czetti</b> , CERATIZIT Austria GmbH, Austria; <b>C Mitterer</b> , Montanuniversität Leoben, Austria
2:40pm	<b>A2-2-ThA-5</b> Investigation of Thermally Grown Oxide Stress in Plasma-spray Physical Vapor Deposition and Electron-beam Physical Vapor Deposition Thermal Barrier Coatings via Photoluminescence Spectroscopy, <b>Linda Rossmann, M Northam</b> , University of Central Florida, USA; <b>V Viswanathan</b> , Praxair Surface Technologies, USA; <b>B Harder</b> , NASA Glenn Research Center, USA; <b>S Raghavan</b> , University of Central Florida, USA	
3:00pm	<b>A2-2-ThA-6</b> Thermally Conductive and Electrically Insulating Epoxy Nanocomposites with Intercalation of Aluminum Nitride Nanoparticles into Exfoliated Graphite, <b>Che Juei Wu</b> , National Cheng Kung University, Taiwan	<b>B2-1-ThA-6</b> Structural and Piezoelectric Properties of Chemical Vapor Deposited AlN Films on Metallic Substrates, <b>Juan Su, M Pons, F Mercier, D Chen, R Boichot</b> , Université Grenoble Alpes, CNRS, France
3:20pm	<b>A2-2-ThA-7</b> Effect of Feedstock Species on Thermal Durability of Thermal Barrier Coatings, <b>Sangwon Myoung, B Yang, I Kim</b> , Doosan Heavy Industries and Construction, Republic of Korea; <b>Y Jung</b> , Changwon National University, Republic of Korea	<b>B2-1-ThA-7</b> Aluminum Nitride Based Coatings for High Temperature Solar Receiver Systems, <b>DanYing Chen</b> , Université Grenoble Alpes, CNRS, France; <b>J Colas</b> , PROMES-CNRS, France; <b>J Su</b> , Université Grenoble Alpes, CNRS, France; <b>L Charpentier, M Balat-Pichelin</b> , PROMES-CNRS, France; <b>F Mercier, M Pons</b> , Université Grenoble Alpes, CNRS, France
3:40pm	<b>A2-2-ThA-8</b> Development of Environmental Barrier Coatings for SiC/SiC Ceramic Matrix Composites via CVD, <b>Till König, M Galetz</b> , DEHEMA-Forschungsinstitut, Germany	<b>B2-1-ThA-8</b> Residual Stress and Quantitative Texture of CVD Al <sub>2</sub> O <sub>3</sub> Coatings, <b>Zhenyu Liu</b> , Kennametal Inc., USA; <b>S Tan</b> , University of Pittsburgh, USA; <b>D Banerjee</b> , Kennametal Inc., USA
4:00pm		<b>INVITED: B2-1-ThA-9</b> Gas Source Chemical Vapor Deposition of Wafer-scale Mono- and few-layer MX <sub>2</sub> (M=W or Mo and X=S or Se) and Their Alloys, <b>Mikhail Chubarov, T Choudhury, D Reifsnnyder Hickey, S Bachu, N Alem, J Redwing</b> , The Pennsylvania State University, USA
4:20pm		Invited talk continues.
4:40pm		<b>B2-1-ThA-11</b> The Effect of Dopants and Bilayer Period on Microstructure and Mechanical Properties of CVD Ti(B,C)N Hard Coatings, <b>Christina Kainz, N Schalk, M Tkadletz, C Mitterer</b> , Montanuniversität Leoben, Austria; <b>C Czetti</b> , CERATIZIT Austria GmbH, Austria

# Thursday Afternoon, May 23, 2019

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B5-1-ThA</b> <b>Hard and Multifunctional Nanostructured Coatings I</b> <b>Moderators: Tomas Kozak, University of West Bohemia, Helmut Riedl, TU Wien, Institute of Materials Science and Technology</b>		<b>Fundamentals and Technology of Multifunctional Materials and Devices</b> <b>Room Pacific Salon 3 - Session C4-ThA</b> <b>Fundamentals of Metallurgy in Thin Films and Coatings</b> <b>Moderators: Karsten Woll, Karlsruhe Institute of Technology (KIT), Ibrahim Gunduz, Purdue University, USA</b>	
1:20pm			
1:40pm		<b>C4-ThA-2</b> Analytical Modelling of Propagation Velocity in Electron Transparent Nanolaminates, <b>Michael Abere</b> , Sandia National Laboratories, USA; <b>G Egan</b> , Lawrence Livermore National Laboratory, USA; <b>D Adams</b> , Sandia National Laboratories, USA	
2:00pm	<b>B5-1-ThA-3</b> Interfaces and Mechanisms: A Molecular Dynamics Approach to Fine Tuning Manipulation of Mechanical Properties, <b>Alberto Fraile</b> , <b>H Yavas</b> , <b>E Frutos</b> , Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic; <b>T Huminiuc</b> , Engineering Science, Faculty of Engineering and the Environment, University of Southampton, Southampton, UK; <b>T Polcar</b> , Czech Technical University in Prague, Czech Republic		
2:20pm	<b>B5-1-ThA-4</b> Preparation of Hard Yet Fracture Resistant W-B-C Coatings Using High Power Impulse Magnetron Sputtering, <b>Pavel Soucek</b> , <b>M Polacek</b> , <b>P Klein</b> , <b>L Zabransky</b> , <b>V Bursikova</b> , <b>M Stupavska</b> , Masaryk University, Brno, Czech Republic; <b>Z Czigany</b> , <b>K Balazi</b> , Hungarian Academy of Sciences, Hungary; <b>P Vasina</b> , Masaryk University, Brno, Czech Republic		
2:40pm	<b>B5-1-ThA-5</b> Analytical Modelling of Misfit Dislocation Formation in Superlattice Coatings and its Effect on the Fracture Toughness, <b>Antonia Wagner</b> , TU Wien, Institute of Materials Science and Technology, Austria; <b>D Holec</b> , Montanuniversität Leoben, Austria; <b>M Tadt</b> , TU Wien, Institute of Lightweight Design and Structural Biomechanics, Austria; <b>P Mayrhofer</b> , <b>M Bartosik</b> , TU Wien, Institute of Materials Science and Technology, Austria		<b>C4-ThA-5</b> Twin-Wire Arc Coatings for Repair of Structural Components, <b>C Jasien</b> , <b>Nicole Wagner</b> , Cal Poly Pomona, USA
3:00pm	<b>B5-1-ThA-6</b> The Electrical Response of PVD Deposited Nanocrystallized Carbon Film in Magnetic Field, <b>Chao Wang</b> , <b>J Guo</b> , <b>X Dai</b> , Institute of Nanosurface Science and Engineering, College of Mechatronics and Control Engineering, Shenzhen University, China		<b>C4-ThA-6</b> Unstable Propagating Reactions in Sputter-Deposited Nanolaminates, <b>David Adams</b> , <b>M Abere</b> , Sandia National Laboratories, USA
3:20pm	<b>INVITED: B5-1-ThA-7</b> Aluminium Nitride Based Piezoelectric MEMS: From Material Aspects to Low Power Devices, <b>Ulrich Schmid</b> , <b>M Schneider</b> , TU Wien - Institute of Sensor and Actuator Systems, Austria		<b>C4-ThA-7</b> Synthesis of Reactive Ni-Al Composites Using High Pressure Torsion, <b>O Renk</b> , Austrian Academy of Sciences, Austria; <b>M Tkadletz</b> , <b>N Kostoglou</b> , Montanuniversität Leoben, Austria; <b>I Gunduz</b> , Naval Postgraduate School, USA; <b>C Doumanidis</b> , Nazarbayev University, Astana, Kazakhstan; <b>R Pippan</b> , Austrian Academy of Sciences, Austria; <b>C Mitterer</b> , Montanuniversität Leoben, Austria; <b>Claus Rebolz</b> , University of Cyprus, Cyprus
3:40pm	Invited talk continues.		
4:00pm	<b>B5-1-ThA-9</b> Superamphiphobic Surface Produced by Femtosecond Laser Patterning and Pulsed Plasma Polymerization, <b>Cheng-Wei Lin</b> , Feng Chia University; Central Taiwan University of Science and Technology, Taiwan; <b>G Lu</b> , <b>X Chang</b> , <b>P Hsieh</b> , Feng Chia University, Taiwan; <b>C Chau</b> , Department of Surgery, Taichung Veterans General Hospital, National Yang-Ming University, Taiwan; <b>C Chung</b> , Central Taiwan University of Science and Technology, Taiwan; <b>J He</b> , Feng Chia University, Taiwan		



# Thursday Afternoon, May 23, 2019

	<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room San Diego - Session E1-2-ThA</b>  <b>Friction, Wear, Lubrication Effects, and Modeling III</b>  <b>Moderators: Nazlim Bagcivan</b>, Schaeffler Technologies GmbH &amp; Co. KG, Germany, <b>Carsten Gachot</b>, Vienna University of Technology, <b>Tomas Polcar</b>, Czech Technical University in Prague, Czech Republic</p>	<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific Salon 6-7 - Session F2-2-ThA</b>  <b>HiPIMS, Pulsed Plasmas and Energetic Deposition II</b>  <b>Moderators: Jon Tomas Gudmundsson</b>, University of Iceland, <b>Tiberiu Minea</b>, Université Paris-Sud</p>
1:20pm		
1:40pm	<p><b>E1-2-ThA-2</b> Exploring the Nanomechanical Properties of Transition Metal Dichalcogenides using Density Functional Theory, <b>Benjamin Irving</b>, <i>P Nicolini</i>, Czech Technical University in Prague, Czech Republic; <i>T Polcar</i>, University of Southampton, UK</p>	
2:00pm	<p><b>INVITED: E1-2-ThA-3</b> Mechanics, Materials, and Design Problems in Medical Device Technology and Information Storage, <b>Frank E. Talke</b>, University of California, San Diego, USA</p>	<p><b>F2-2-ThA-3</b> HiPIMS Deposition of W Thin Films, <b>Alison Engwall</b>, <i>S Shin</i>, <i>Y Wang</i>, Lawrence Livermore National Laboratory, USA</p>
2:20pm	Invited talk continues.	<p><b>F2-2-ThA-4</b> Study and Development of Thermochromic VO<sub>2</sub> Thin Films Deposited by HiPIMS, <b>Jean-Louis Victor</b>, <i>C Marcel</i>, CEA Le Ripault, France; <i>A Rougier</i>, CNRS, France; <i>L Sauques</i>, DGA, France</p>
2:40pm	<p><b>E1-2-ThA-5</b> Frictional Anisotropy of MoS<sub>2</sub> During Sliding: A Molecular Dynamics Study on the Atomistic Understanding of Frictional Mechanisms, <b>Victor Claerbout</b>, <i>P Nicolini</i>, Czech Technical University in Prague, Czech Republic</p>	<p><b>INVITED: F2-2-ThA-5</b> A Paradigm Shift in Thin Film Growth by Magnetron Sputtering: from Gas-ion to Metal-ion-controlled Irradiation, <b>Grzegorz Greczynski</b>, Department of Physics, Linköping Univ., Sweden; <i>I Petrov</i>, University of Illinois, USA, Linköping University, Sweden, USA; <i>J Greene</i>, University of Illinois, USA, Linköping University, Sweden, National Taiwan Univ. Science &amp; Technology, Taiwan; <i>L Hultman</i>, Department of Physics, Linköping Univ., Sweden</p>
3:00pm	<p><b>E1-2-ThA-6</b> Effect of the Presence of Small Molecules on the Entangled Electronic and Dynamic Features in Layered MX<sub>2</sub> Transition Metal Dichalcogenides: Systematic Quantum Mechanic Ab Initio Simulations, <b>Jamil Missaoui</b>, <i>A Cammarata</i>, Czech Technical University in Prague, Czech Republic</p>	Invited talk continues.
3:20pm	<p><b>E1-2-ThA-7</b> Nanoscale Frictional Properties of Ordered and Disordered MoS<sub>2</sub>, <i>E Serpini</i>, <i>A Rota</i>, Università di Modena e Reggio Emilia, Italy; <i>S Valeri</i>, Istituto CNR-NANO S3, Italy; <i>E Ukrainsev</i>, Academy of Science of the Czech Republic, Czech Republic; <i>B Rezek</i>, Czech Technical University in Prague, Czech Republic; <i>T Polcar</i>, University of Southampton, UK; <i>Paolo Nicolini</i>, Czech Technical University in Prague, Czech Republic</p>	<p><b>F2-2-ThA-7</b> In Vitro and In Vivo Biocompatibility Evaluation of Zr-Ti-Si and Fe-Zr-Nb Thin Film Metallic Glasses, <b>Ai Ju Chen</b>, <i>J Wang</i>, <i>Y Yang</i>, National Taipei University of Technology, Taiwan; <i>B Lou</i>, Chang Gung University, Taiwan; <i>J Lee</i>, Ming Chi University of Technology, Taiwan</p>
3:40pm	<p><b>E1-2-ThA-8</b> Electrical Tuning of Vibrational Modes in Transition Metal Dichalcogenides, <b>Florian Belviso</b>, Advanced Material Group, Czech Technical University in Prague, Czech Republic</p>	<p><b>F2-2-ThA-8</b> Microstructural and Tribological Properties of Sputtered AlCrSiWN Films Deposited with Segmented Powder Metallurgic Target Materials, <i>W Tillmann</i>, <b>Alexander Fehr</b>, <i>D Stangier</i>, TU Dortmund University, Germany</p>
4:00pm	<p><b>E1-2-ThA-9</b> On the In-situ Formation of Transition Metal Disulphides in Lubricated WN or WC Coating Contacts, <b>Bernhard Kohlhauser</b>, TU Wien, Institute of Materials Science and Technology, Austria; <i>M Rodríguez Ripoll</i>, AC2T research GmbH, Austria; <i>H Riedl</i>, <i>C Koller</i>, <i>N Koutna</i>, TU Wien, Institute of Materials Science and Technology, Austria; <i>G Ramirez</i>, <i>A Erdemir</i>, Argonne National Laboratory, USA; <i>C Gachot</i>, TU Wien, Institute for Engineering Design and Logistics Engineering, Austria; <i>P Mayrhofer</i>, TU Wien, Institute of Materials Science and Technology, Austria</p>	<p><b>F2-2-ThA-9</b> Linking an Atmospheric-pressured Arc Reactor to a Magnetron Sputter Device to Synthesize Novel Nanostructured Thin Films, <i>W Tillmann</i>, <b>David Kokalj</b>, <i>D Stangier</i>, TU Dortmund University, Germany; <i>Q Fu</i>, <i>E Kruijs</i>, University of Duisburg-Essen, Germany</p>
4:20pm	<p><b>E1-2-ThA-10</b> Tribological Investigations of Coated Roller Finger Followers using Application Oriented Valve Train Test, <b>Ricardo H. Brugnara</b>, <i>E Schulz</i>, <i>L Dobrenizki</i>, <i>N Bagcivan</i>, <i>C Geers</i>, Schaeffler AG, Germany</p>	
4:40pm	<p><b>E1-2-ThA-11</b> Physical Understanding to Nano-friction of C:H/D Thin Films: Coupling Mechanism by Atomic-scale Vibration Damping, <i>F Echeverrigaray</i>, <i>S de Mello</i>, Universidade de Caxias do Sul, Brazil; <i>F Alvarez</i>, Universidade Estadual de Campinas, Brazil; <i>A Michels</i>, <b>Carlos Figueroa</b>, Universidade de Caxias do Sul, Brazil</p>	

# Thursday Afternoon, May 23, 2019

<p><b>Surface Engineering - Applied Research and Industrial Applications</b>  <b>Room Pacific Salon 1 - Session G4+G5+G6-ThA</b>  <b>Pre-/Post-Treatment and Duplex Technology/Hybrid Systems, Processes and Coatings/Application-Driven Collaborations between Industry and Research Institutions</b>  <b>Moderators: Heidrun Klostermann, Fraunhofer FEP, Kumar Yalamanchili, Oerlikon Balzers, Oerlikon Surface Solutions AG, Tobias Brögelmann, Surface Engineering Institute - RWTH Aachen University, Hana Barankova, Uppsala University, Sweden</b></p>		
1:20pm	<b>INVITED: G4+G5+G6-ThA-1</b> From Detailed Understanding to In Operando Studies of Coated Cutting Tools: A Successful and Long Term Collaboration between Industry and Universities, <i>Jon Anderson</i> , Seco Tools AB, Sweden	
1:40pm	Invited talk continues.	
2:00pm	<b>G4+G5+G6-ThA-3</b> Electrolytic Plasma Polishing of Titanium Alloys, <i>Nicolas Laugel, A Yerokhin, A Matthews</i> , University of Manchester, UK	
2:20pm	<b>G4+G5+G6-ThA-4</b> Characterization of Surface Modification Mechanisms for Boron Nitride Films under Plasma Exposure, <i>T Higuchi</i> , Kyoto University, Japan; <i>M Noma</i> , Shinko Seiki Co., Ltd, Japan; <i>M Yamashita</i> , Hyogo Prefectural Institute of Technology, Japan; <i>K Urabe</i> , Kyoto University, Japan; <i>S Hasegawa</i> , Osaka University, Japan; <i>Koji Eriguchi</i> , Kyoto University, Japan	
2:40pm	<b>G4+G5+G6-ThA-5</b> Ultra-fast Decoating Method for PVD Coatings, <i>B Wittel, C Buechel, T Cselle</i> , Platit AG, Switzerland; <i>Bo Torp</i> , Platit Scandinavia, Denmark; <i>A Lümekemann, D Bloesch</i> , Platit AG, Switzerland	
3:00pm	<b>G4+G5+G6-ThA-6</b> Development of an Omni-phobic Spray Coating for the Oil and Gas Industry, <i>Carol Ellis-Terrell, R Wei, R McKnight</i> , Southwest Research Institute, USA; <i>X Huang, K Lin</i> , Beijing Sanju Environmental Protection & New Materials Co., Ltd., China	
3:20pm	<b>INVITED: G4+G5+G6-ThA-7</b> Hybrid Reactive High Power Impulse Magnetron Sputtering System Combined with Electron Cyclotron Wave Resonance ECWR Plasma used for the Deposition of Semiconducting Thin Films., <i>Zdenek Hubicka, M Cada</i> , Institute of Physics CAS, v. v. i., Czech Republic; <i>S Kment</i> , Institute of Physics, Academy of Sciences of the Czech Republic, Czech Republic; <i>V Stranak, R Hippler</i> , Institute of Physics, Academy of Sciences of the Czech Republic; <i>J Olejnicek</i> , Institute of Physics CAS, v. v. i., Czech Republic	
3:40pm	Invited talk continues.	
4:00pm	<b>INVITED: G4+G5+G6-ThA-9</b> Pre- and Post-Surface Treatments using Electron Beam Technology for Load-Related Application of Thermochemical and PVD Hard Coatings on Soft Substrate Materials, <i>Anja Buchwalder, R Zenker</i> , TU Bergakademie Freiberg, Germany	
4:20pm	Invited talk continues.	
4:40pm	<b>G4+G5+G6-ThA-11</b> Black Oxide and Carbon-Based Coatings for Roller Bearing Applications, <i>Esteban Broitman, X Zhou</i> , SKF Research & Technology Development Center, Netherlands	

## Coatings for Use at High Temperatures

### Room Grand Hall - Session AP-Thp

#### Coatings for Use at High Temperatures (Symposium A)

##### Poster Session

5:00pm

**AP-Thp-2** High Temperature Performance of CrAlN Coating on Stainless Steel Substrates in Simulated Diesel Exhaust Environment, *S Yang*, Miba Coating Group, Teer Coatings Ltd., UK; *V Vishnyakov*, Institute for Materials Science, University of Huddersfield, UK; *P Navabpour*, Miba Coating Group, Teer Coatings Ltd., UK; *J Allport*, Institute for Materials Science, University of Huddersfield, UK; *Hai Lin Sun*, Miba Coating Group, Teer Coatings Ltd., UK

**AP-Thp-3** e-Poster Presentation: Improvement of the Robustness of Time to Failure Assessment in Tbc System, *M Theveneau*, *B Marchand*, *V Guipont*, Mines ParisTech, PSL Research University, MAT - Centre des Matériaux, France; *F Coudon*, SAFRAN Tech, France; *Vincent Maurel*, Mines ParisTech, PSL Research University, MAT - Centre des Matériaux, France

**AP-Thp-5** Wear Resistance Performance of AlCrN and TiAlN Coated H13 Tools during Friction Stir Welding of A2124/SiC Composite, *Akeem Adesina*, *F Al-Badour*, *Z Gasem*, King Fahd University of Petroleum and Minerals, Saudi Arabia

**AP-Thp-6** Diffusion Model for Estimating the Iron Boride Layer Thicknesses, *Oscar Armando Gómez-Vargas*, Instituto Tecnológico de Tlalnepantla, México; *M Ortiz-Domínguez*, Universidad Autónoma del Estado de Hidalgo, México; *J Solís-Romero*, Instituto Tecnológico de Tlalnepantla, México; *M Flores-Rentería*, *I Morgado-Gonzalez*, *E Cardoso-Legorreta*, Universidad Autónoma del Estado de Hidalgo, México; *M Elias-Espinosa*, Tecnológico de Monterrey, México; *A Cruz Avilés*, Universidad Autónoma del Estado de Hidalgo, México

**AP-Thp-7** STEM Investigations of Oxide Scales formed during Pre-oxidation of  $\gamma$ -TiAl, *Radoslaw Swadzba*, Institute for Ferrous Metallurgy, Poland

**AP-Thp-9** Microstructure of MCrAlY Coatings Deposited Using HVOF after Heat Treatment and Aluminizing, *L Swadzba*, *Aleksander Iwaniak*, *R Swadzba*, *B Witala*, *B Mendala*, Silesian University of Technology, Poland; *G Wieclaw*, *P Lubaszka*, Certech Sp. z o.o., Poland

**AP-Thp-10** Effect of Vanadium Content on the High-temperature Tribomechanical Properties of Cr-Al-V-N Coatings Deposited by DC UBMS, *H Kim*, *In-Wook Park*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

**AP-Thp-11** Tensile Behavior of Air Plasma Spray MCrAlY Coatings: Role of High Temperature Aging and Process Defects, *C Cadet*, Mines ParisTech, PSL Research University, France; *Thomas Straub*, Fraunhofer Institute for Mechanics of Materials IWM, Germany; *D Texier*, Mines Albi, ISAE-SUPAERO, France; *C Eberl*, Fraunhofer Institute for Mechanics of Materials IWM, Germany; *V Maurel*, Mines ParisTech, PSL Research University, France

**AP-Thp-13** Influence of Si-Al Coating on Mechanical Properties of EBMed TiAl Alloy, *Lukasz Pyclik*, Avio Aero A GE Aviation Business, Poland; *L Swadzba*, *B Mendala*, *B Witala*, *J Tracz*, *R Swadzba*, Silesian University of Technology, Poland; *K Marugi*, Avio Aero A GE Aviation Business, Poland

## Hard Coatings and Vapor Deposition Technologies

### Room Grand Hall - Session BP-Thp

#### Hard Coatings and Vapor Deposition Technologies

##### (Symposium B) Poster Session

5:00pm

**BP-Thp-1** Low Stress AlTiN-Based Coating Systems, *C Charlton*, Kennametal Inc., USA; *Joern Kohlscheen*, Kennametal GmbH, Germany; *D Banerjee*, Kennametal Inc., USA

**BP-Thp-2** Multi-Target Co-Sputtering Deposition and Mechanical Properties of Ti-Zr-Based High-Entropy Alloy and Nitride Coatings, *Shou-Yi Chang*, *Y Hsiao*, National Tsing Hua University, Taiwan; *S Lin*, National Formosa University, Taiwan

**BP-Thp-3** (Ti<sub>1-x</sub>Y<sub>x</sub>)B<sub>2+δ</sub> Thin Films - Structural Evolution and Mechanical Properties, *Martin Truchlý*, *B Grancic*, Comenius University in Bratislava, Slovakia; *P Švec Jr.*, Slovak Academy of Sciences, Bratislava, Slovakia; *T Roch*, *L Satrapinskyy*, *V Izaii*, Comenius University in Bratislava, Slovakia; *M Harsani*, Staton s.r.o., Slovakia; *O Kohulak*, *P Kus*, *M Mikula*, Comenius University in Bratislava, Slovakia

**BP-Thp-4** Post-annealing of (Ti,Al,Si)N Coatings deposited by High-Speed Physical Vapor Deposition (HS-PVD), *K Bobzin*, *T Brögelmann*, *C Kalscheuer*, *T Liang*, *Martin Welters*, Surface Engineering Institute - RWTH Aachen University, Germany

**BP-Thp-6** Discrete Thin-film Multilayer Structures of TiB<sub>2</sub> and ZrB<sub>2</sub> Ceramics for Super-hard and Tough Coating, *A Ghimire*, National Tsing Hua University, National Dong Hwa University, Taiwan; *Ming-Show Wong*, National Dong Hwa University, Taiwan; *S Chang*, National Tsing Hua University, Taiwan

**BP-Thp-7** Effect of Bias Voltage on Mechanical Properties of Zr-Si-N Films Fabricated through HiPIMS/RFMS Cosputtering, *Yung-I Chen*, *Y Zheng*, National Taiwan Ocean University, Taiwan; *L Chang*, Ming Chi University of Technology, Taiwan

**BP-Thp-11** The Effects of Pulse Frequency on the Growth of Diamond Using Pulse Microwave Plasma CVD, *Yi Zeng*, *Y Sakamoto*, *T Maruko*, Chiba Institute of Technology, Japan

**BP-Thp-12** Analysis of Reaction Gas States on Synthesis of Boron Doped Diamond by HF-CVD, *Takuya Maruko*, *Y Sakamoto*, Chiba Institute of Technology, Japan

**BP-Thp-13** Effects of Boronizing Pretreatment on the Adhesion of B-doped Diamond on Ti Substrates, *Yuuta Izu*, Chiba Institute of Technology, Japan; *T Sakuma*, Ogura Jewel Industry, Japan; *A Suzuki*, *T Maruko*, Chiba Institute of Technology Graduate School, Japan; *M Imamiya*, *Y Sakamoto*, Chiba Institute of Technology, Japan

**BP-Thp-14** High Entropy Nitride Thin Film (Cr<sub>0.35</sub>Al<sub>0.25</sub>Nb<sub>0.12</sub>Si<sub>0.08</sub>V<sub>0.20</sub>)N<sub>x</sub> for Tribological Characteristics at High Temperature, *Yu-Chia Lin*, *J Duh*, National Tsing Hua University, Taiwan

**BP-Thp-15** Search of New (Al<sub>0.25</sub>Cr<sub>0.3</sub>Nb<sub>0.1</sub>Si<sub>0.08</sub>Ti<sub>0.1</sub>Mo<sub>0.17</sub>)N<sub>x</sub> Coatings for Feasible Application at High Temperature, *Wei-Li Lo*, *J Duh*, National Tsing Hua University, Taiwan

**BP-Thp-18** e-Poster Presentation: The Role of Vacancies in the W-N System, *F Klimashin*, *Paul Heinz Mayrhofer*, TU Wien, Institute of Materials Science and Technology, Austria

**BP-Thp-19** Probing Defected Layers of MoN/TaN and TiN/WN Superlattices, *Nikola Koutna*, *J Buchinger*, *R Hahn*, Institute of Materials Science and Technology, TU Wien, Austria; *J Zálešák*, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; *M Bartosik*, Institute of Materials Science and Technology, TU Wien, Austria; *M Friák*, *M Šob*, Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Czech Republic; *D Holec*, Montanuniversität Leoben, Austria; *P Mayrhofer*, Institute of Materials Science and Technology, TU Wien, Austria

**BP-Thp-20** Investigation of CVD Stability Windows for Tungsten Carbide Phases, *Katalin Bőör*, *J Gerdin*, Uppsala University, Sweden; *R Qiu*, Chalmers University of Technology, Sweden; *M Boman*, Uppsala University, Sweden; *E Lindahl*, Sandvik Coromant R&D, Sweden

**BP-Thp-22** Photocatalytic Activity of Metal Oxide Thin Films Deposited by MS-PVD and Layer-by-Layer for Hydrogen Production by Water Splitting, *P Rivero*, Public University of Navarra, Spain; *Jose Antonio Garcia*, Universidad Publica de Navarra, Spain; *R Rodriguez*, Public University of Navarra, Spain; *J Esparza*, AIN, Ingeniería Avanzada de Superficies, Spain; *G Garcia Fuentes*, Public University of Navarra, Spain

**BP-Thp-23** Nanocomposite (Ti,Al,Cr,Si)N HPPMS Coatings for High Performance Cutting Tools, *K Bobzin*, *T Brögelmann*, *N Kruppe*, *M Carlet*, *Matthias Thiex*, RWTH Aachen University, Germany

**BP-Thp-26** Low Temperature Titanium Boron-Carbide Based Thin Film Coatings by Plasma Enhanced Chemical Vapor Deposition on Surface Microstructure Controlled WC-Co, *Takeyasu Saito*, *D Kiyokawa*, *K Fuji*, *N Okamoto*, Osaka Prefecture University, Japan; *A Kitajima*, *K Higuchi*, Osaka University, Japan

**BP-Thp-27** Performance of the CrAlSiN and Hydrogen free DLC Combined Hard Coatings Deposited on Micro Tools Cutting Printed Circuit Board, *D Wang*, MingDao University, Taiwan; *Li-Chi Hsu*, *J Hung*, Aurora Scientific Corp., Canada; *W Chen*, *W Ho*, MingDao University, Taiwan

**BP-Thp-28** Study and Characterization of the Vanadium Carbide Interlayer Deposited by Laser Cladding over Carbon Steel for CVD Diamond Growth, *D Damm*, *R Pinheiro*, *J Gomez*, National Institute for Space Research (INPE), Brazil; *A Contín*, Federal University of Goiás (UFG), Brazil; *R Correia*, Federal University of São Paulo (UNIFESP), Brazil; *R Volu*, Institute for Advanced Studies (IEAV), Brazil; *Vladimir Jesus Trava-Airoldi*, National Institute for Space Research (INPE), Brazil; *G de Vasconcelos*, Institute for Advanced Studies (IEAV), Brazil; *D Barquete*, Santa Cruz State University (UESC), Brazil; *E Corat*, National Institute for Space Research (INPE), Brazil

**BP-Thp-30** Optimization for Adhesion Properties of c-BN Films Coated with HiPIMS, *Ihsan Efeoğlu*, *Y Totik*, *A Keleş*, Ataturk University, Turkey

**BP-Thp-31** Si-DLC Films Prepared by Magnetron Sputtering under Different Working Pressure, *Chaoqian Guo*, *S Lin*, *Q Shi*, *C Wei*, *H Li*, *W Wang*, *M Dai*, Guangdong Institute of New Materials, China

# Thursday Afternoon Poster Sessions, May 23, 2019

**BP-ThP-32** Multielement Rutile-structured AlCrNbTaTi-oxide Coatings Synthesised by Reactive Magnetron Sputtering, *Alexander Kirnbauer, C Koller, TU Wien, Institute of Materials Science and Technology, Austria; S Koloszvári, Plansee Composite Materials GmbH, Germany; P Mayrhofer, TU Wien, Institute of Materials Science and Technology, Austria*

**BP-ThP-33** Magnetron Sputtering of Tungsten-containing /TiN<sub>x</sub>O<sub>y</sub> Multilayered Solar Selective Coatings, *Siang-Yun Li, Y Shen, K Chang, J Ting, National Cheng Kung University, Taiwan*

**BP-ThP-34** Electron-configuration Stabilized (W,Al)B<sub>2</sub> Solid Solutions, *R Hahn, Vincent Moraes, P Mayrhofer, Institute of Materials Science and Technology, TU Wien, Austria; A Limbeck, Institute of Chemical Technologies and Analytics, TU Wien, Austria; P Polcik, Plansee Composite Materials GmbH, Germany; H Euchner, Helmholtz Institute for Electrochemical Energy Storage, Germany*

**BP-ThP-35** Apparent Fracture Toughness of TiN Coatings with Alternating Stress Fields, *Antonia Wagner, J Buchinger, TU Wien, Institute of Materials Science and Technology, Austria; M Todt, TU Wien, Institute of Lightweight Design and Structural Biomechanics, Austria; D Holec, Montanuniversität Leoben, Austria; P Mayrhofer, M Bartosik, TU Wien, Institute of Materials Science and Technology, Austria*

**BP-ThP-36** Synthesis and Structural Characterization of Nanostructured CN<sub>0.1</sub> Films Deposited by RF Magnetron Sputtering at Different Bias Voltages, *Arturo Lousa, D Cano, C Villabos, J Esteve, University of Barcelona, Spain*

**BP-ThP-37** An X-ray Diffraction Study on CrAlN and CrAlSiN PVD Coatings, *Jan Latarius, D Stangier, C Albers, K Berger, M Elbers, A Sparenberg, G Surmeier, M Paulus, C Sternemann, W Tillmann, M Tolan, TU Dortmund University, Germany*

**BP-ThP-41** Influence of Oxygen Addition on Microstructure and Properties of TiAlN, *Damian Mauritiu Holzapfel, M Hans, RWTH Aachen University, Germany; A Eriksson, M Arndt, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; D Primetzhofer, Uppsala University, Sweden; J Schneider, RWTH Aachen University, Germany*

**BP-ThP-42** An Investigation on Synthesis of Novel Oxide-Based Superhard Cr-Zr-O Coatings, *M Mohammadtaheri, Q Yang, Y Li, Jesus Corona-Gomez, University of Saskatchewan, Canada*

**BP-ThP-43** Study of Erosion on Metals and Ceramic Coated Metals Using Magnetron Sputtering Process, *S Hill, D Mihut, A Afshar, Z Grantham, S Sanchez-Lara, Christopher D. Raffield, N Cordista, S Sanchez Lara, Mercer University, USA*

## Fundamentals and Technology of Multifunctional Materials and Devices

### Room Grand Hall - Session CP-ThP

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

5:00pm

**CP-ThP-1** Comparison of Si<sub>3</sub>N<sub>4</sub> Barriers using Different Precursors Deposited on Porous Low-Dielectric-constant SiCOH Dielectric Films, *Y Cheng, Y Lin, Chih-Yen Lee, National Chi-Nan University, Taiwan*

**CP-ThP-2** Stretchable Ultrasonic Transducer Arrays for Three-Dimensional Imaging on Complex Surfaces, *Hongjie Hu, X Zhu, C Wang, L Zhang, S Xu, University of California, San Diego, USA*

**CP-ThP-6** Fabrication and Characterization of Ni-coated Ag Nanowire Electrodes with Bubble-like Random Meshes, *Jong-Seol Park, R Yoo, T Park, J Park, Hanyang University, Republic of Korea*

**CP-ThP-13** Study of Stress-electrical Properties of ITO Film Deposited on Stretchable Substrate, *Pierre-Olivier Renault, Université de Poitiers, France; C Grossias, P Goudeau, P Godard, F Paumier, S Hurand, University of Poitiers, France; D Thiaudière, SOLEIL Synchrotron, France; P Guerin, University of Poitiers, France*

**CP-ThP-18** Dual Box Model based *In situ* Ellipsometry Growth Characterization: Oxygen Plasma Enhanced Atomic Layer Deposition of Metal Oxide Ultra-thin Films, *U Kilic, University of Nebraska-Lincoln, USA; A Mack, Linköping University, Sweden; D Sekora, N Ianno, Eva Schubert, M Schubert, University of Nebraska Lincoln, USA*

**CP-ThP-19** Controlled Release of Encapsulated Agents Deposited on Plasma Electrolytic Oxidation (PEO) Coatings for Corrosion Resistance and Biomedical Applications, *Y Guo, B Mingo, A Matthews, Aleksey Yerokhin, The University of Manchester, UK*

**CP-ThP-21** Influence of Substrate Temperature on the Growth of Molybdenum Trioxide Thin Films, *Madhuri Venkat Kalapala, VFSTR University, India*

**CP-ThP-22** Evaluation of the Influence of Pre-carburisation on the In-situ Performance of Chromized 304 Stainless Steel Bipolar Plate, *Atinuke Oladaye, University of Lagos, Nigeria; J Carton, J Stokes, Dublin City University, Ireland; A Olabi, University of the West of Scotland, UK*

**CP-ThP-23** Piezo- and Thermo-resistive Thin Films Integrated into a Polymer Injection Mold to Control Dynamically the Pressure and Temperature of the Injection Process, *Filipe Vaz, A Ferreira, M Barbosa, University of Minho, Portugal; J Larangeira, Moldit, Portugal*

**CP-ThP-25** Investigation of Sb<sub>2</sub>Se<sub>3</sub> Ultra-thin Hole-transporting Material for Perovskite/ Sb<sub>2</sub>Se<sub>3</sub> Heterojunction Solar Cells, *Gwomei Wu, Chang Gung University, Chang Gung Memorial Hospital, Taiwan*

**CP-ThP-27** Fabrication of a Thermoelectric Generator Device by Suspension Plasma Spray Technique, *Fabian Ambriz-Vargas, C Moreau, Concordia University, Canada*

**CP-ThP-31** Morphology Controlled of Silver/Silver Oxide Nanoparticles-MnO<sub>2</sub> Nanocomposites for Supercapacitor Application, *F Sari, Kuang-Cheng Lin, J Ruan, J Huang, J Ting, National Cheng Kung University, Taiwan*

## Coatings for Biomedical and Healthcare Applications

### Room Grand Hall - Session DP-ThP

## Coatings for Biomedical and Healthcare Applications

### (Symposium D) Poster Session

5:00pm

**DP-ThP-4** Development of Multilayer HA-Ag and TiN-HA-Ag Coatings Deposited by RF Magnetron Sputtering with Potential Application in the Biomedical Field, *Julian Lenis, G Gaitán, University of Antioquia, Medellín, Colombia; P Rico, J Ribelles, Universitat Politècnica de València, Spain; F Bolívar, University of Antioquia, Medellín, Colombia*

**DP-ThP-5** Electrochemical Activated Iridium Oxide Film as a Bio-interface Electrode for Neurostimulation Applications, *Y Chiu, P Chen, National Taipei University of Technology, Taiwan; Chien-Ming Lei, Chinese Culture University, Taiwan; P Wu, National Chiao Tung University, Taiwan*

**DP-ThP-6** HIPIMS Titanium Dioxide on Laser Roughened PEEK Surface for Biomedical Application, *P Hsieh, Institute of Plasma, Department of Materials Science and Engineering, Feng Chia University, Taiwan; Chi-Jen Chung, Central Taiwan University of Science and Technology, Taiwan; H Tsou, Taichung Veterans General Hospital, Taiwan; H Chen, China Medical University Hospital, Taiwan; J He, Institute of Plasma, Department of Materials Science and Engineering, Feng Chia University, Taiwan*

**DP-ThP-7** Corrosion Property and Biocompatibility Evaluation of Fe-Zr-Nb Thin Film Metallic Glasses, *B Lou, Chang Gung University, Taiwan; T Lin, Jyh-Wei Lee, Ming Chi University of Technology, Taiwan; J Wang, Y Yang, National Taipei University of Technology, Taiwan*

**DP-ThP-9** Bone-like Nano-hydroxyapatite Coating on Low-modulus Ti-5Nb-5Mo Alloy Using Hydrothermal and Post-heat Treatments, *H Hsu, S Wu, S Hsu, Central Taiwan University of Science and Technology, Taiwan; Wen-Fu Ho, National University of Kaohsiung, Taiwan*

**DP-ThP-10** Surface Characteristics and Structure of Porous TNM Alloy for Biomedical Applications, *W Ho, National University of Kaohsiung, Taiwan; S Wu, S Hsu, W Hsiao, Hsueh-Chuan Hsu, Central Taiwan University of Science and Technology, Taiwan*

**DP-ThP-11** In vitro Wear Tests of the Dual-layer Grid Blasting-plasma Polymerized Superhydrophobic Coatings on Substrates Made into Dental Stainless Archwires, *Cheng-Wei Lin, Feng Chia University, Central Taiwan University of Science and Technology, Taiwan; C Chou, Taichung Veterans General Hospital, National Yang-Ming University, Taiwan; C Chung, Central Taiwan University of Science and Technology, Taiwan; J He, Feng Chia University, Taiwan*

**DP-ThP-19** Obtaining of CVD Nanodiamonds and Evaluation of the Cytotoxicity in B16f10 Cells for Treatment of Melanoma, *C Wachesk, Federal University of São Paulo (UNIFESP), Brazil; C Hurtado, Institute of Science and Technology, Federal University of São Paulo (UNIFESP), Brazil; Rebeca Falcão, Institute of Science and Technology, Federal University of São Paulo (UNIFESP), Brazil; D Arruda, University of Mogi das Cruzes, Brazil; D Tada, Institute of Science and Technology, Federal University of São Paulo (UNIFESP), Brazil; V Airolidi, National Institute for Space Research (INPE), Brazil*

**DP-ThP-22** Tantalum Oxynitride PVD Coatings a Potential Candidate for Dental Implants Application, *O Banakh, University of Applied Sciences (HES-SO), Switzerland; Pierre-Albert Steinmann, Positive Coating SA, Switzerland*

# Thursday Afternoon Poster Sessions, May 23, 2019

**DP-ThP-25** Influence of Ag-Cu Nanoparticles on the Microstructural and Bactericidal Properties of TiAlN- (Ag,Cu) Coatings Deposited by DC Magnetron Sputtering for Medical Applications, *H Mejía, G Bejarano, Aida Echavarría*, Universidad de Antioquia, Colombia

**DP-ThP-26** Antibacterial Activity of Conductive Thin Films Deposited on Water Filter Paper, *D Mihut, A Afshar, S Hill, L Khang, Nicholas Cordista*, Mercer University, USA

## Tribology and Mechanical Behavior of Coatings and Engineered Surfaces

### Room Grand Hall - Session EP-ThP

## Tribology and Mechanical Behavior of Coatings and Engineered Surfaces (Symposium E) Poster Session 5:00pm

**EP-ThP-2** Deposition of DLC/Si-N Composite Films Synthesized by Sputtering-PBII Hybrid System and Their Thermal Stability, *Anas Melih, K Yamada, S Watanabe*, Nippon Institute of Technology, Japan

**EP-ThP-3** Mechanical and Tribological Performance of TiAlN, TaN and Nanolayered TiAlN/TaN Coatings Deposited by DC Magnetron Sputtering, *Elbert Contreras, J Cortínez, M Gómez*, Universidad de Antioquia, Colombia; *A Hurtado*, Centro de Investigación en Materiales Avanzados CIMAV, Mexico

**EP-ThP-4** Development of Catalytically Active Nano-Composite Coating for Severe Boundary Lubricated Conditions of Hydraulic Fluids, *V DaSilva, Osman Levent Eryilmaz, A Erdemir*, Argonne National Laboratory, USA

**EP-ThP-5** Size-Independent High Strength of CuTi/Ti Metallic Glass/Crystalline Nanolayers, *M Abboud*, Middle East Technical University, Turkey; *A Motallebzadeh*, Koç University, Turkey; *Sezer Özerinç*, Middle East Technical University, Turkey

**EP-ThP-6** Extended Crack-free Tensile Deformation of Ultrathin Metallic Glass Films Due to an Intrinsic Size Effect, *Oleksandr Glushko*, Erich Schmid Institute of Materials Science, Austria; *M Mühlbacher*, Montanuniversität Leoben, Austria; *C Gammer, M Cordill*, Erich Schmid Institute of Materials Science, Austria; *C Mitterer*, Montanuniversität Leoben, Austria; *J Eckert*, Erich Schmid Institute of Materials Science, Austria

**EP-ThP-11** Effect of Surface Treatments on AISI H13 Steels, *Marco Antonio Doñu Ruiz*, Universidad Politécnica del Valle de México, Mexico, México; *M Buenrostro Arvizu*, Universidad Autónoma Metropolitana Azcapotzalco, Mexico; *N Lopez Perrusquia*, Universidad Politécnica del Valle de México, Mexico, México; *V Cortés Suárez*, Universidad Autónoma Metropolitana Azcapotzalco, Mexico; *C Torres San Miguel*, Instituto Politécnico Nacional, Mexico; *G Pérez Mendoza*, Universidad Politécnica del Valle de México

**EP-ThP-12** Mechanical Properties and Fretting Corrosion of Zr/ZrN/CNx Hierarchical Multilayers Deposited by HIPIMS on Ti Biomedical Alloy, *Martin Flores, J Perez, O Jiménez, L Flores*, Universidad de Guadalajara, Mexico

**EP-ThP-13** Quantum Tools for Life-Time Prediction of Coatings and Thin Films, *Norbert Schwarzer*, SIO, Germany

**EP-ThP-16** Structure and Fretting Wear Behavior of CuNiIn/MoS<sub>2</sub>-Ti Multilayers Fabricated by Magnetron Sputtering Method, *Chunbei Wei, Q Li, S Lin, H Hou, M Dai*, Guangdong Institute of New Materials, China

**EP-ThP-17** Contact-focusing Electron Flow (CFEF) Induced Near-zero Running-in for Low Friction of Carbon-steel contact Interface, *Dongfeng Diao*, Institute of Nanosurface Science and Engineering, Shenzhen University, China

**EP-ThP-18** Misinterpreting Size-effects during Coating Nanoindentation, *Esteban Broitman*, SKF Research & Technology Development Center, Netherlands

**EP-ThP-19** e-Poster Presentation: Think You Have Produced DLC? Think Again!, *Arman Mohammad Khan, H Wu, Y Chung, Q Wang*, Northwestern University, USA

**EP-ThP-20** Mechanical and Tribological Properties of Cr-Al-Si-N-O Coatings Prepared by Arc Ion Plating for Cutting Tools, *Jun-Ho Kim, W Kim*, Korea Institute of Industrial Technology (KITECH), Republic of Korea

**EP-ThP-22** Friction Property of Si-DLC with Scratch Damage Before and After Local Repairing Deposition to the Scratch Scar, *H Takamatsu, K Tanaka, Akihiko Ito, H Kousaka, T Furuki*, Gifu University, Japan

**EP-ThP-23** Raman Scattering Characterizes Thermally Annealed HiPIMS Sputtered MoS<sub>2</sub> Coatings, *Henning Moldenhauer, W Tillmann, A Wittig, D Kocali, D Stangier, A Brümmer, J Debus*, TU Dortmund University, Germany

**EP-ThP-24** Friction Reduction in Sliding Between Si-DLC vs. Steel Ball by Ar Plasma Irradiation Using Microwave-excited Atmospheric Pressure Plasma Jet, *T Hibino, Hiroyuki Kousaka, T Furuki*, Gifu University, Japan; *J Kim, H Sakakita*, National Institute of Advanced Industrial Science and Technology (AIST), Japan

**EP-ThP-27** Taguchi Method to Study Effects of Plasma Surface Texturing on Friction Reduction of Cast Iron at High Speed Sliding Lubricated Conditions, *W Zha, C Zhao, R Cai, Xueyuan Nie*, University of Windsor, Canada

**EP-ThP-30** Test Rig Development For Static Friction Assessment At High Temperature, *M Azzi*, Lebanese University (UL), Lebanon; *E Bitar-Nehme*, Tricomat, Canada; *J Schmitt, T Schmitt, L Martinu, Jolanta-Ewa Klemberg-Sapieha*, École Polytechnique de Montréal, Canada

## New Horizons in Coatings and Thin Films

### Room Grand Hall - Session FP-ThP

## New Horizons in Coatings and Thin Films (Symposium F)

### Poster Session

#### 5:00pm

**FP-ThP-3** Influencing the Cubic to Wurtzite Phase Transition in Ti-Al-N by Reactive HiPIMS Deposition, *L Zauner*, TU Wien, CDL AOS at the Institute of Materials Science, Austria; *Helmut Riedl*, TU Wien, Institute of Materials Science, Austria; *T Kozák, J Čapek*, University of West Bohemia, Czech Republic; *T Wojcik*, TU Wien, Institute of Materials Science, Austria; *H Bolvardi*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *S Koloszvári*, Plansee Composite Materials GmbH, Germany; *P Mayrhofer*, TU Wien, Institute of Materials Science, Austria

**FP-ThP-5** e-Poster Presentation: Vacancies to Compensate for Electronic Imbalances in Crystals, *Maria Fischer, D Scopece, M Trant, C Pignedoli, K Thorwarth, D Passerone, H Hug*, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

**FP-ThP-6** Role of the Thermalized Ions in the Reduction of the Atomic Shadowing Effect in HiPIMS, *João Oliveira, F Ferreira*, University of Coimbra, Portugal; *A Anders*, Leibniz Institute of Surface Engineering, Germany; *A Cavaleiro*, University of Coimbra, Portugal

**FP-ThP-7** Study of the Self-organizing Structures in Magnetron Plasma by a Pseudo 3D Model, *Adrien Revel*, Université Paris-Sud/CNRS, France; *T Minea*, Université Paris-Sud, Université Paris-Saclay, France; *M George, B Vincent*, CNRS, France; *S Tsikata*, CNRS, ICARE, France

**FP-ThP-9** Point Ion Beam Sputtering for Novel Applications, *Victor Bellido-Gonzalez, D Monaghan, R Brown*, Genco Ltd, UK; *D Perry*, Quorum Technologies, UK; *J Brindley, A Azzopardi*, Genco Ltd, UK

**FP-ThP-10** Reducing the Intrinsic Stress of TiN Films in HiPIMS, *F Cemin*, LPGP, Université Paris-Sud, Orsay, France; *Grégory Abadías*, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; *T Minea, D Lundin*, LPGP, Université Paris-Sud, Orsay, France

**FP-ThP-11** Study on Tribological Behavior of ZrB<sub>2</sub>-Zr Coatings Deposited on Ti6Al4V and CoCrMo Alloys by HiPIMS, *Luis Flores-Cova, O Jiménez, M Flores, J Pérez-Alvarez*, Universidad de Guadalajara, Mexico

**FP-ThP-16** Detecting the Direction of a Magnetic Field with a Nanocrystallized Carbon Film by Using its Anisotropic Magnetoresistance and Hall Effect, *Chao Wang, T Huang, W Zhang, J Guo, X Dai*, Institute of Nanosurface Science and Engineering, College of Mechatronics and Control Engineering, Shenzhen University, China

**FP-ThP-17** Effect of Synchronized Bias on the Oxygen Content in r-HiPIMS Deposited  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Thin Films, *Stefan Kagerer*, TU Wien, Institute of Materials Science, Austria; *S Koloszvári*, Plansee Composite Materials GmbH, Germany; *T Kozák, J Čapek, P Zeman*, University of West Bohemia, Czech Republic; *H Riedl*, TU Wien, Institute of Materials Science and Technology, Austria; *P Mayrhofer*, TU Wien, Institute of Materials Science and Technology, Österreich, Austria

## Surface Engineering - Applied Research and Industrial Applications

### Room Grand Hall - Session GP-ThP

## Surface Engineering - Applied Research and Industrial Applications (Symposium G) Poster Session

### 5:00pm

**GP-ThP-1** Effect of Plasma Nitriding and Modulation Structure on the Adhesion and Corrosion Resistance of CrN/Cr<sub>2</sub>O<sub>3</sub> Coating, *C Huang, F Yang, Y Tsai, Chi-Lung Chang*, Ming Chi University of Technology, Taiwan

# Thursday Afternoon Poster Sessions, May 23, 2019

**GP-ThP-2** Study on SiN and SiCN Film Production using PE-ALD Process with High-density Multi-ICP Source at Low Temperature, *Hohyun Song, H Chang*, Korea Advanced Institute of Science and Technology, Republic of Korea

**GP-ThP-3** PEO Coatings for Adhesive Bonded Aluminium Structures, *Dominic Shore, A Rogov, A Matthews, A Yerokhin*, The University of Manchester, UK

**GP-ThP-5** Hydrogen Barrier Coatings Deposited by Magnetron Sputtering: A Study of Different Oxide Materials and Their Microstructure on the Hydrogen Permeability Properties, *Sofia Gimeno*, Fersa Bearings, Spain; *J Garcia*, Universidad Publica de Navarra, Spain; *I Quintana, L Mendizabal, C Zubizarreta*, Physic of Surfaces and Materials Unit, IK4 – TEKNIKER, Spain

**GP-ThP-6** Process for Obtaining TiO<sub>2</sub>/SiO<sub>2</sub> Systems using Magnetron Sputtering RF from Ceramic Targets: Studies on their Anti-Reflective Response, *Dario Zambrano, R Villarrol, R Espinoza*, Universidad de Chile, Chile

**GP-ThP-7** Microstructure Evolution of Overlay Welded Duplex Stainless Steel Joints, *Paola Andressa Luchtenberg, R Torres, P Soares, P Campos*, Pontificia Universidade Católica do Paraná, Brazil

**GP-ThP-11** Ion Beam Assisted Deposition of DLC for Sheet Metal Forming Tools, *Lars Pleth Nielsen, K Almtoft, C Jeppesen, C Mathiasen, P Pedersen*, Danish Technological Institute, Denmark

**GP-ThP-13** Effect of Interaction between Microbial Fluid and Electrode on Performance, *Yu-Chen Liu, Y Yang*, National Taipei University of Technology, Taiwan

**GP-ThP-15** Design of Low-Pressure Chemical Vapor Deposition Reactors Using Vertical Cavity Surface Emitting Lasers, *Seungho Park, Y Noh, Y Kim*, Hongik University, Seoul, Republic of Korea; *B Kim, H Kim*, Viatron Technologies, Republic of Korea

**GP-ThP-16** Optical, Mechanical and Anti-corrosive Property Investigation of Tantalum Oxynitride Thin Films for Hard Coating Applications, *Jignesh Hirpara, R Chandra*, Indian Institute of Technology Roorkee, India

**GP-ThP-17** Synthesis and Properties of Two-dimensional Zirconium Phosphate/Polyimide Nanocomposites as Anticorrosion Coatings, *G Lai*, National Chin-Yi University of Technology, Taiwan; *I Tseng*, Feng Chia University, Taiwan; *T Huang, P Tsai, Mei-Hui Tsai*, National Chin-Yi University of Technology, Taiwan

**GP-ThP-18** Improvement of the Corrosion Resistance in the ASTM F75 Alloy by Ball Burnishing, *Eric Noe Hernandez-Rodriguez, D Silvia Alvarez, A Marquez Herrera, A Saldana Rovles, J Moreno Palmerin*, University of Guanajuato, Mexico

**GP-ThP-19** Surface Modification of Sputter Deposited  $\gamma$ -WO<sub>3</sub> Thin Film for Scaled Electrochromic Behaviour, *R Chandra, Gaurav Malik, S Mourya, J Jaiswal, IIC, IIT Roorkee, India; J Hirpara*, Indian Institute of Technology Roorkee, India

**GP-ThP-21** Nanotexturization and Passivation of Single Crystalline Silicon Surface for Passivated Emitter and Rear Contact Solar Cells, *C Hsu*, Xiamen University of Technology, China; *S Liu*, Da-Yeh University, Taiwan, Taiwan; *Wan-Yu Wu*, Da-Yeh University, Taiwan; *S Lien*, Xiamen University of Technology, China

**GP-ThP-24** Optical Performances of Antireflective Moth-Eye Structures under Thermal and Humid Stress – Application to Outdoor Lighting LEDs., *C Ducros, Agathe Brodu, G Lorin, F Emieux, A Pereira*, Univ. Grenoble Alpes, CEA, France

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

### Room Grand Hall - Session HP-ThP

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

**HP-ThP-1** Cyclic Tensile Deformation of Freestanding, Nanocrystalline NiTi Films using MEMS Stages, *Paul Rasmussen, R Sarkar, J Rajagopalan*, Arizona State University, USA

**HP-ThP-3** Ion Irradiation Behavior of a Nanocrystalline BCC High-Entropy Alloy, *Y Xiao, H Ma, A Sologubenko, R Spolenak, Jeffrey M. Wheeler*, ETH Zürich, Switzerland

**HP-ThP-4** Evaluation of Properties in Steel with Hard Coating under Hydrogen, *Noe Lopez Perrusquia*, Universidad Politecnica Del Valle De México, México; *M Doñu Ruiz*, Universidad Politecnica del Valle de México, México; *C Torres San Miguel*, Sección de Estudios de Posgrado e Investigación de la Escuela Superior de Ingeniería Mecánica y Eléctrica Unidad Zacatenco, Mexico; *V Cortés Suárez, J Garcia Sanchez*, Universidad Autonoma Metropolitana Azcapotzalco, Mexico; *L Sánchez Fuentes*, Universidad Politecnica del Valle de México, Mexico

**HP-ThP-6** Coatings and Interfaces Characterization: Depth Profiling from the First Nanometer down to the Substrate using RF GD-OES, *Philippe Hunault*, HORIBA Instruments, USA; *M Chausseau, K Savadkouei*, HORIBA Scientific, USA; *P Chapon, S Gaiaschi*, HORIBA Scientific, France

**HP-ThP-7** *In situ* Measurement Setup for DC Magnetron Sputtering Thin Film Deposition, *Quentin Herault, S Grachev, I Gozhyk, H Montigaud*, Saint-Gobain Recherche/CNRS, France; *R Lazzari*, Institut des Nano Sciences de Paris - Sorbonne Université, France

**HP-ThP-8** Preparation and Physical Properties of Multiferroic CaMn<sub>7</sub>O<sub>12</sub> Thin Films, *Yu-Chin Tseng*, National Chiao Tung University, Taiwan; *S Jian*, I-Shou University, Taiwan; *C Lin*, National Tsing Hua University, Taiwan; *J Juang*, National Chiao Tung University, Taiwan

**HP-ThP-9** SIO X-Ray: View Inside your Material with Contact Experiments, *Nick Bierwisch, N Schwarzer*, SIO, Germany

**HP-ThP-11** Glow Discharge Optical Emission Spectroscopy: Advances toward Quantitative Coating Compositional Depth Profiling, *Amir Tavakoli, F Li*, Air Liquide - Balazs NanoAnalysis Laboratory, USA

## Topical Symposia

### Room Grand Hall - Session TSP-ThP

## Topical Symposia (TS) Poster Session

### 5:00pm

**TSP-ThP-1** Surface Modification of Multiwalled Carbon Nanotubes for Electro-Thermal Heating in Ice Protection, *Francesco Zangrossi, F Xu, N Warrior, X Hou*, University of Nottingham, UK

**TSP-ThP-2** Nanostructured a-C:H:SiO<sub>x</sub> Coatings with Superhydrophobic Properties, *Damian Batory*, Lodz University of Technology, Poland; *J Lengaigne*, Ecole Polytechnique de Montreal, Canada; *A Jedrzejczak*, Lodz University of Technology, Poland; *S Brown, J Klemberg-Sapieha*, Ecole Polytechnique de Montreal, Canada

**TSP-ThP-4** Structural Investigation of the Stability in Temperature of Some High Entropy Alloys, *Monique Calvo-Dahlborg*, University of Rouen Normandie-CNRS, France, Swansea University, UK; *U Dahlborg, J Cornide*, University of Rouen Normandie-CNRS, France; *S Mehraban*, College of Engineering, Swansea University, UK; *R Wunderlich*, University of Ulm, Germany; *N Lavery*, College of Engineering, Swansea University, UK; *S Brown*, Swansea University, UK

**TSP-ThP-6** Cu-nanoparticles /Polyfluoroacrylate Emulsion Nanocomposite Coating for Icephobic Applications, *T Barman, H Chen, J Liu, Xianghui Hou*, The University of Nottingham, UK

**TSP-ThP-7** Surface Characteristics and Diffusion Phenomenon of Ni<sub>2</sub>FeCoCrAl<sub>x</sub> Alloys Treated by Atmospheric Pressure Plasma, *Chi-Ruei Huang*, National United University, Taiwan; *J Duh*, National Tsing Hua University, Taiwan; *F Wu*, National United University, Taiwan

**TSP-ThP-8** Development of Microwave Remote Plasma Source for New Surface Functionalization, *Y Isomura, Y Ikari, Tadao Okimoto, Y Tauchi, K Nishiyama*, Kobe Steel, Ltd., Japan; *H Toyoda, H Suzuki*, Nagoya University, Japan

# Special Events Friday

## Special Events Friday

7:30 AM Conference Registration/Atlas Foyer  
8:00 AM Technical Sessions/See Program/Mobile App  
12:00 PM Thank You, See You Next Year Party!/Lion Fountain Courtyard

# Friday Morning, May 24, 2019

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Golden West - Session B2-2-FrM</b> <b>CVD Coatings and Technologies II</b> <b>Moderators: Kazunori Koga, Kyushu University, Japan, Francis Maury, CNRS-CIRIMAT</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room California - Session B5-2-FrM</b> <b>Hard and Multifunctional Nanostructured Coatings II</b> <b>Moderators: Tomas Kozak, University of West Bohemia, Helmut Riedl, TU Wien, Institute of Materials Science and Technology</b>	
8:00am			
8:20am			
8:40am			
9:00am		<b>B5-2-FrM-4</b> Microstructural and Mechanical Stability of TaCu Composite Coatings, <i>A Bahrami, C Onofre, A Delgado</i> , Universidad Nacional Autonoma de México, México; <i>T Huminiuc, T Polcar</i> , University of Southampton, UK; <b>Sandra Rodil</b> , Universidad Nacional Autonoma de México, México	
9:20am	<b>B2-2-FrM-5</b> Scale up of the DLI-MOCVD Process to Treat 16 Nuclear Fuel Cladding Segments in Parallel with a Protective Cr <sub>x</sub> Coating, <i>A Michau, F Addou</i> , CEA, Université Paris-Saclay, France; <i>Y Gazal, F Maury, Thomas Duguet</i> , CIRIMAT, France; <i>R Boichot, M Pons</i> , Université Grenoble Alpes, CNRS, France; <i>E Monsifrot, Dephis, France; F Schuster</i> , CEA, PTCMP, France		
9:40am	<b>B2-2-FrM-6</b> Assessment of Low Temperature CVD Routes to MAX Phases in the Cr-Si-C System, <i>A Michau</i> , CEA, Université Paris-Saclay, France; <b>Francis Maury</b> , CIRIMAT, France; <i>F Schuster</i> , CEA Cross-Cutting Program on Materials and Processes Skills, France; <i>T Duguet</i> , CIRIMAT, France; <i>E Monsifrot</i> , Dephis, France		<b>INVITED: B5-2-FrM-6</b> Tantalum Alloying - Improvement of Thermal Stability and Mechanical Properties of Ternary and Quaternary Transition Metal Nitrides, <b>Branislav Grancic</b> , Comenius University in Bratislava, Slovakia; <i>D Sangiovanni</i> , Linköping University, Sweden, Ruhr-Universität Bochum, Germany; <i>T Roch, M Truchlý, M Mikula</i> , Comenius University in Bratislava, Slovakia
10:00am	<b>B2-2-FrM-7</b> Towards CVD of Hard Coatings Using Hetero-Metallic Precursors, <b>Sebastian Öhman</b> , <i>M Ek</i> , Uppsala University, Angstrom Laboratory, Sweden; <i>R Brenning</i> , Sandvik Coromant R&D, Sweden; <i>M Boman</i> , Uppsala University, Angstrom Laboratory, Sweden		Invited talk continues.
10:20am	<b>B2-2-FrM-8</b> CVD of Tungsten, Tungsten Nitride and Tungsten Carbide Multilayers, <i>J Hulkko, K Bööf</i> , Uppsala University, Angstrom Laboratory, Sweden; <i>R Qiu</i> , Chalmers University of Technology, Sweden; <i>E Lindahl</i> , Sandvik Coromant R&D, Sweden; <b>Mats Boman</b> , Uppsala University, Angstrom Laboratory, Sweden		<b>B5-2-FrM-8</b> Interface Characteristics Between PVD- AlTiN and Electroplated Hard Chrome by Duplex Process, <i>D Wang</i> , MingDao University, Taiwan; <b>Li-Chi Hsu</b> , <i>J Hung</i> , Aurora Scientific Corp., Canada; <i>C Chen, H Liu</i> , Surftech Corp., Taiwan; <i>W Ho</i> , MingDao University, Taiwan
10:40am	<b>B2-2-FrM-9</b> Deposition of Carbon Nanoparticles Using Multi-Hollow Discharge Plasma CVD for Synthesis of Carbon Nanoparticle Composite Films, <b>Kazunori Koga</b> , <i>S Hwang</i> , Kyushu University, Japan; <i>T Nakatani</i> , Okayama University of Science, Japan; <i>J Oh</i> , Osaka City University, Japan; <i>K Kamataki, N Itagaki, M Shiratani</i> , Kyushu University, Japan		<b>B5-2-FrM-9</b> Manipulation of Bimodal Matrix in Plasma Sprayed Nanostructured YSZ Coating and Its Effect on the Microstructure, <b>Pavan Bijalwan</b> , Tata Steel Limited, India; <i>A Islam, K Pandey</i> , Indian Institute of Technology, India; <i>A Pathak, M Dutta</i> , Tata Steel Limited, India; <i>A Keshri</i> , Indian Institute of Technology, India
11:00am	<b>B2-2-FrM-10</b> Hot Filament CVD Diamond Coating Technology for Cutting Tool Applications, <b>Michael Woda</b> , <i>W Puetz, M Frank, C Schiffers, W Koelker, O Lemmer, T Leyendecker</i> , CemeCon AG, Germany		



# Friday Morning, May 24, 2019

	<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room San Diego - Session E1-3-FrM</b>  <b>Friction, Wear, Lubrication Effects, and Modeling IV</b>  <b>Moderators:</b> Nazlim Bagcivan, Schaeffler Technologies GmbH &amp; Co. KG, Germany, <b>Carsten Gachot</b>, Vienna University of Technology, <b>Tomas Polcar</b>, Czech Technical University in Prague, Czech Republic</p>	<p><b>Surface Engineering - Applied Research and Industrial Applications</b>  <b>Room Pacific Salon 1 - Session G2-FrM</b>  <b>Component Coatings for Automotive, Aerospace, Medical, and Manufacturing Applications</b>  <b>Moderators:</b> Tetsuya Takahashi, Kobe Steel, Ltd., <b>Etienne Bousser</b>, Ecole Polytechnique, Canada, <b>Satish Dixit</b>, Plasma Technology Inc., USA</p>
8:00am	<b>E1-3-FrM-1</b> Numerical and Experimental Analyses on the Influence of Irregular Columnar Boundaries on Mechanical and Tribological Behavior of a WC/C Coating, <b>Cassiano Bernardes</b> , <i>N Fukumasu, R Souza, I Machado</i> , University of São Paulo, Brazil	
8:20am	<b>E1-3-FrM-2</b> Structure, Mechanical and Tribological Properties of Mo-S-N Solid Lubricant Coatings, <b>Tomáš Hudec</b> , University of Southampton, UK; <i>M Mikula, L Satrapinskyy, T Roch, M Truchlý</i> , Comenius University in Bratislava, Slovakia; <i>P Švec Jr.</i> , Slovak Academy of Sciences, Bratislava, Slovakia; <i>T Huminiuc, T Polcar</i> , University of Southampton, UK	
8:40am	<b>INVITED: E1-3-FrM-3</b> Superlubricity with Carbon Coatings Lubricated by Organic Friction Modifiers, <b>Michael Moseler</b> , Fraunhofer IWM, Germany	<b>INVITED: G2-FrM-3</b> YKK's Sustainable Development: Reduction of Mold Cleaning Load by Diecast Mold Coating and Release Agent, <b>Mai Mizubayashi</b> , <i>T Sakuragi, N Watanabe, M Ishida</i> , YKK Corporation, Japan; <i>K Matsuda</i> , University of Toyama, Japan; <i>M Nose</i> , Hokuriku Polytechnic College, Japan
9:00am	Invited talk continues.	Invited talk continues.
9:20am	<b>E1-3-FrM-5</b> Multipass and Reciprocating Microwear Study of TiN Based Films, <b>Roberto Carlos Vega-Morón</b> , Instituto Politecnico Nacional Grupo Ingeniería de Superficies, Mexico, México; <i>D Melo-Máximo</i> , Tecnológico de Monterrey-CEM, México; <i>G Rodríguez-Castro</i> , Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, Mexico, México; <i>J Oseguera-Peña</i> , Tecnológico de Monterrey-CEM, Mexico, México; <i>A Bahrami</i> , Institute for Metallic Materials, Leibniz-Institute for Solid State and Materials Research Dresden, Germany; <i>S Muhl</i> , Instituto de Investigaciones en Materiales-UNAM, México	<b>G2-FrM-5</b> Effect of Plasma Electrolytic Oxidation Process on Surface Characteristics and Tribological Behavior, <b>Ran Cai</b> , <i>C Zhao, X Nie</i> , University of Windsor, Canada
9:40am	<b>E1-3-FrM-6</b> Correlation Between Wear Resistance of Ti/TiN Based Films and Deposition Temperature, <b>Fernanda Toledo-Romo</b> , <i>R Vega-Morón</i> , Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, México; <i>G Rodríguez-Castro</i> , Instituto Politecnico Nacional, Grupo Ingeniería de Superficies, Mexico, México; <i>D Melo-Máximo</i> , <i>J Oseguera-Peña</i> , <i>L Melo-Máximo</i> , Tecnológico de Monterrey-CEM, México; <i>V Araujo-Monsalvo</i> , Laboratorio de Biomecánica, Instituto Nacional de Rehabilitación "Luis Guillermo Ibarra Ibarra", México	<b>G2-FrM-6</b> Effectiveness of Electromagnetic Interference Shielding of Sputtered Nitrogen-Doped Carbon Thin Films, <b>Dian-Hao Liu</b> , <i>Y Lai</i> , National United University Miaoli, Taiwan
10:00am	<b>E1-3-FrM-7</b> Microstructure Evolution and Deposition Parameter Control on Sputtering MoSiN Coating, <b>Yu-Cheng Liu</b> , <i>Z Lin, S Wang, F Wu</i> , National United University, Taiwan	<b>G2-FrM-7</b> Challenges for Surface Solutions for Automotive Applications, <b>Jörg Vetter</b> , <i>J Becker</i> , Oerlikon Balzers Coating Germany GmbH, Germany; <i>P Ernst</i> , Oerlikon Metco AG, Switzerland; <i>J Crummenauer</i> , Oerlikon Balzers Coating Germany GmbH, Germany; <i>A Müller</i> , Oerlikon Surface Solutions AG, BTS, Balzers, Liechtenstein
10:20am	<b>E1-3-FrM-8</b> Influence of Ag Content on the Tribological and Oxidation Behaviour of TISIN(AG) Thin Films Deposited by HIPIMS, <b>Diogo Cavaleiro</b> , <i>F Fernandes, S Carvalho</i> , University of Minho, Portugal; <i>A Cavaleiro</i> , University of Coimbra, Portugal	<b>G2-FrM-8</b> Hard Turning with PVD Coated p-cBN, <i>C Charlton</i> , Kennametal Inc., USA; <b>Joern Kohlscheen</b> , Kennametal GmbH, Germany; <i>D Banerjee</i> , Kennametal Inc., USA; <i>C Bareiss</i> , Kennametal GmbH, Germany
10:40am	<b>E1-3-FrM-9</b> Wear Resistance of Titanium Oxynitride Coatings as a Function of the Relative Humidity, <i>C Rojo-Blanco</i> , IIM-UNAM, Mexico; <b>Stephen Muhl</b> , Instituto de Investigaciones en Materiales-UNAM, México	<b>G2-FrM-9</b> Arc PVD (Cr,Al,Mo)N and (Cr,Al,Cu)N Coatings for Mobility Applications, <i>K Bobzin, T Brögelmann</i> , <b>Christian Kalscheuer</b> , RWTH Aachen University, Germany
11:00am	<b>E1-3-FrM-10</b> Thermo-mechanical/chemical Contact Behavior of DLC Film under Molecularly Thin Lubricants, <b>Shahriar Mufid Rahman</b> , Texas Tech University, USA; <i>J Song</i> , Molex. USA, USA; <i>C Yeo</i> , Texas Tech University, USA	
11:20am	<b>E1-3-FrM-11</b> Investigation of the Wear Resistance of TiN/TiAlN, CrN/TiAlN and CrAlN/TiAlN Double Layer Coated Stainless Steel at Elevated Temperatures, <b>Akeem Adesina</b> , <i>A Sorour</i> , King Fahd University of Petroleum and Minerals, Saudi Arabia	<b>G2-FrM-11</b> Ion Beam Stripping Process for Cutting Tools Reconditioning, <b>Alexey Remnev</b> , ITAC Ltd., Group of ShinMaywa Industries, Japan

**Bold page numbers indicate presenter**

— A —

Abadias, G: FP-ThP-10, **45**; H1-2-TuA-2, 21;  
SIT1-TuSIT-1, **22**  
Abbas, A: C3+C1-WeM-2, 25  
Abboud, M: E2-2-TuA-10, 20; EP-ThP-5, 45  
Abere, M: C4-ThA-2, **40**; C4-ThA-6, 40  
Abraham, B: B1-2-MoA-1, 9  
Abro, M: A1-3-WeM-12, **24**  
Abstoss, K: A1-1-TuM-8, 13  
Adams, D: C4-ThA-2, 40; C4-ThA-6, **40**  
Addou, F: B2-2-FrM-5, 48  
Adesina, A: AP-ThP-5, **43**; E1-3-FrM-11, **49**  
Afshar, A: BP-ThP-43, **44**; DP-ThP-26, 45  
Agüero, A: A3-WeA-4, **29**; TS2-ThM-8, 38  
Aguirre Ocampo, R: D1-2-MoA-5, **10**  
Ahlgren, M: F4-2-WeA-7, 31  
Airoldi, V: DP-ThP-19, 44  
Al-Badour, F: AP-ThP-5, 43  
Albers, C: BP-ThP-37, 44  
Alem, N: B2-1-ThA-9, 39  
Aleman, A: B6-ThM-10, 35  
Alhoussein, A: A1-1-TuM-6, 13; E2-1-TuM-5, 15  
Alling, B: F4-2-WeA-7, 31  
Allport, J: AP-ThP-2, 43  
Almer, J: A2-1-ThM-8, 35  
Almtoft, K: E1-1-ThM-7, 36; GP-ThP-11, 46  
Alphonse, A: F4-2-WeA-11, 31  
Alrefae, M: F3-TuA-1, 20  
Altangerel, D: B7-TuA-3, 19  
Alvarez, F: B4-3-WeM-2, **24**; E1-2-ThA-11, 41  
Ambriz-Vargas, F: CP-ThP-27, **44**  
Anders, A: FP-ThP-6, 45  
Anderson, J: G4+G5+G6-ThA-1, **42**  
Andreev, N: B1-2-MoA-11, 9  
Anselme, K: D3-TuM-4, **14**  
Antunes, V: B4-3-WeM-2, 24  
Aouadi, S: A2-1-ThM-5, 35; A2-1-ThM-9, 35  
Appleget, C: C3+C2+C1-ThM-8, **36**  
Araujo-Monsalvo, V: E1-3-FrM-6, 49  
Ares de Parga, G: B4-2-TuA-8, 18  
Argibay, N: E3-WeM-1, 25  
Argyropoulos, C: C3+C2+C1-ThM-9, 36  
Arias, P: B6-ThM-10, 35  
Arigela, V: H3-1-WeM-3, **26**; H3-2-WeA-9, 31  
Armstrong, B: A1-1-TuM-1, 13; A1-3-WeM-4, 24  
Arndt, M: B6-ThM-12, 35; BP-ThP-41, 44;  
TS1-1-WeM-4, 27  
Arruda, D: DP-ThP-19, 44  
Arunachalam, N: D1-1-MoM-7, 7  
Asensio, M: F3-TuA-8, 20  
Ast, J: A2-2-ThA-3, 39  
Attarzadeh, R: TS2-ThM-9, 38  
Audigié, P: A3-WeA-4, 29  
Avila, J: F3-TuA-8, 20  
Awais, R: D3-TuM-6, 14  
Azzi, M: E1-1-ThM-6, 36; EP-ThP-30, 45  
Azzopardi, A: B1-2-MoA-2, 9; FP-ThP-9, 45

— B —

Bachu, S: B2-1-ThA-9, 39  
Bagcivan, N: E1-2-ThA-10, 41  
Bahrami, A: B5-2-FrM-4, 48; E1-3-FrM-5, 49  
Bai, T: C2-WeA-9, 30  
Baker, M: C3+C1-WeM-4, 25  
Bakhit, B: B4-1-TuM-4, 14  
Bakkar, S: A2-1-ThM-9, 35  
Balat-Pichelin, M: B2-1-ThA-7, 39  
Balazsi, K: B1-3-TuM-6, 13; B5-1-ThA-4, 40  
Baloukas, B: C3+C1-WeM-4, 25  
Banakh, O: DP-ThP-22, 44  
Banerjee, D: B2-1-ThA-8, 39; BP-ThP-1, 43;  
G2-FrM-8, 49  
Banks, C: F3-TuA-3, 20

Barbosa, M: CP-ThP-23, 44  
Bareiss, C: G2-FrM-8, 49  
Barman, T: TSP-ThP-6, 46  
Barnier, V: F3-TuA-8, 20  
Barquete, D: BP-ThP-28, 43  
Barr, C: H3-2-WeA-3, 31  
Barrallier, L: H1-2-TuA-5, 21  
Barrios, A: H2-1-MoM-4, 7  
Bartosik, M: B4-2-TuA-1, 18; B5-1-ThA-5, 40;  
B6-ThM-2, 35; BP-ThP-19, 43; BP-ThP-35, 44  
Batková, Š: F1-TuM-4, 15; F4-1-WeM-2, **26**  
Batory, D: TSP-ThP-2, **46**  
Beake, B: H3-2-WeA-2, **31**  
Beaufort, M: E2-2-TuA-2, 20  
Becker, J: E3-WeM-5, 25; G2-FrM-7, 49  
Beganovic, N: E3-WeM-5, 25  
Bejarano, G: D3-TuM-8, 14; DP-ThP-25, 45  
Bellido-Gonzalez, V: B1-2-MoA-2, **9**; B3-2-MoA-5, 9; FP-ThP-9, **45**  
Belviso, F: E1-2-ThA-8, **41**  
Bensalah, W: D2-TuA-1, 19  
Berastegui, P: TS1-1-WeM-5, 27  
Berger, K: BP-ThP-37, 44  
Bergeron, F: A1-3-WeM-10, **24**  
Berlia, R: H1-2-TuA-3, 21  
Berman, D: A2-1-ThM-9, 35; E3-WeM-3, 25  
Bermejo Sanz, J: A3-WeA-5, 29  
Bernardes, C: E1-3-FrM-1, **49**  
Bernatova, K: B7-TuA-2, 19  
Berndorf, S: B4-4-WeA-6, 29  
Bertram, R: B3-1-MoM-2, 6; B3-2-MoA-2, 9  
Berumen, J: D2-TuA-4, 19  
Beyerlein, I: H2-2-MoA-7, **10**  
Biederman, H: F1-TuM-1, 15  
Bierwisch, N: H2-2-MoA-10, **10**; HP-ThP-9, **46**  
Bijalwan, P: B5-2-FrM-9, **48**  
Bijukumar, D: D2-TuA-5, 19; D3-TuM-7, 14  
Biring, S: C3+C2+C1-ThM-10, 36  
Bissell, L: F3-TuA-5, 20  
Bitar-Nehme, E: EP-ThP-30, 45  
Bittau, F: C3+C1-WeM-2, 25  
Bleu, Y: F3-TuA-8, **20**  
Bloesch, D: B1-2-MoA-5, 9; G4+G5+G6-ThA-5, 42  
Bobzin, K: BP-ThP-23, 43; BP-ThP-4, 43; E3-WeM-4, 25; F4-2-WeA-5, 31; G2-FrM-9, 49  
Bocher, P: H3-2-WeA-8, 31  
Bogdanowicz, R: D2-TuA-10, 19; F3-TuA-11, **20**  
Boichot, R: B2-1-ThA-6, 39; B2-2-FrM-5, 48  
Bolívar, F: DP-ThP-4, 44; E2-2-TuA-3, 20  
Bolvardi, H: B4-2-TuA-1, 18; B6-ThM-9, 35;  
FP-ThP-3, 45  
Bolz, S: G1+G3-ThM-2, 37  
Boman, M: B2-2-FrM-7, 48; B2-2-FrM-8, **48**;  
BP-ThP-20, 43  
Böör, K: B2-2-FrM-8, 48; BP-ThP-20, **43**  
Borges, J: F4-1-WeM-6, 26  
Boris, D: C2-WeA-5, 30  
Borja Goyeneche, E: B4-1-TuM-6, 14  
Bourquard, F: F3-TuA-8, 20  
Bousser, É: A1-3-WeM-10, 24; A1-3-WeM-3, 24; C3+C1-WeM-4, 25; E1-1-ThM-6, 36; H3-2-WeA-8, 31; TS2-ThM-3, 38  
Bouvard, G: D1-1-MoM-3, 7  
Boveri, G: TS2-ThM-2, **38**; TS2-ThM-5, 38  
Bowden, M: F2-1-ThM-11, 37  
Boyce, B: H3-2-WeA-3, 31  
Bradley, J: F2-1-ThM-11, **37**  
Braun, R: B1-3-TuM-2, 13  
Brenning, N: B7-TuA-9, 19; F2-1-ThM-8, 37  
Brenning, R: B2-2-FrM-7, 48  
Briggs, S: H3-2-WeA-3, 31  
Brindley, J: FP-ThP-9, 45

Brodu, A: C3+C2+C1-ThM-7, **36**; GP-ThP-24, **46**  
Brögelmann, T: BP-ThP-23, 43; BP-ThP-4, 43;  
E3-WeM-4, 25; F4-2-WeA-5, 31; G2-FrM-9, 49  
Broitman, E: EP-ThP-18, **45**; G4+G5+G6-ThA-11, **42**  
Brown, R: B1-2-MoA-2, 9; FP-ThP-9, 45  
Brown, S: TS2-ThM-11, **38**; TSP-ThP-2, 46;  
TSP-ThP-4, 46  
Brugnara, R: E1-2-ThA-10, **41**  
Brümmer, A: EP-ThP-23, 45  
Buchinger, J: BP-ThP-19, 43; BP-ThP-35, 44  
Buchwalder, A: G4+G5+G6-ThA-9, **42**  
Buechel, C: G4+G5+G6-ThA-5, 42  
Buenrostro Arvizu, M: EP-ThP-11, 45  
Bull, S: H2-2-MoA-1, **10**  
Bumgardner, J: D2-TuA-2, 19  
Burghammer, M: B4-4-WeA-2, 29  
Bursikova, V: B1-3-TuM-6, 13; B5-1-ThA-4, 40  
Burzynski, K: TS3+4-2-MoA-5, **11**  
Butler, A: B7-TuA-9, 19

— C —

C. Rodrigues, D: D3-TuM-3, 14  
Cabrero Vilchez, M: TS2-ThM-4, 38  
Cada, M: B7-TuA-11, 19; D2-TuA-10, 19;  
G4+G5+G6-ThA-7, 42  
Cadet, C: AP-ThP-11, 43  
Cahn, G: TS4-1-MoM-4, **8**  
Cai, R: EP-ThP-27, 45; G2-FrM-5, **49**  
Caita Tapia, A: B4-1-TuM-6, **14**  
Callisti, M: H3-2-WeA-4, 31  
Calvo-Dahlborg, M: TSP-ThP-4, **46**  
Cammarata, A: E1-1-ThM-5, **36**; E1-2-ThA-6, 41  
Campos, P: GP-ThP-7, 46  
Campos-Silva, I: B4-1-TuM-5, 14; B4-3-WeM-6, 24; E1-1-ThM-3, 36  
Camps, E: D2-TuA-4, 19  
Cano, D: BP-ThP-36, 44  
Čapek, J: F1-TuM-4, 15; F4-1-WeM-2, 26; F4-2-WeA-6, 31; FP-ThP-17, 45; FP-ThP-3, 45  
Capote, G: B3-1-MoM-5, 6  
Cardoso-Legorreta, E: AP-ThP-6, 43  
Carlet, M: BP-ThP-23, 43  
Carlström, C: F4-2-WeA-7, 31  
Carton, J: CP-ThP-22, 44  
Carvalho, S: E1-3-FrM-8, 49  
Casserly, T: B3-2-MoA-3, **9**; G1+G3-ThM-8, 37  
Castelluccio, G: H2-1-MoM-4, 7  
Cavaleiro, A: B3-2-MoA-7, 9; E1-3-FrM-8, 49;  
E1-4-WeA-3, 30; FP-ThP-6, 45  
Cavaleiro, D: E1-3-FrM-8, **49**  
Cavarroc, M: A1-3-WeM-10, 24; A1-3-WeM-3, 24; E3-WeM-10, **25**  
Cemin, F: FP-ThP-10, 45  
Černý, M: B6-ThM-2, 35  
Čerstvý, R: F4-1-WeM-2, 26  
Cha, S: G1+G3-ThM-12, **37**  
Chacko, A: D1-2-MoA-8, **10**  
Chandra, R: GP-ThP-16, 46; GP-ThP-19, 46  
Chang, C: GP-ThP-1, **45**  
Chang, H: GP-ThP-2, 46  
Chang, K: B1-2-MoA-8, **9**; BP-ThP-33, 44; F4-1-WeM-10, 26; TS1-2-WeA-10, 32; TS1-2-WeA-2, 32  
Chang, L: B1-2-MoA-7, 9; B4-3-WeM-12, 24; BP-ThP-7, 43  
Chang, S: BP-ThP-2, **43**; BP-ThP-6, 43; D1-1-MoM-6, 7  
Chang, X: B5-1-ThA-9, 40  
Chang, Y: B4-4-WeA-4, 29; B6-ThM-3, 35; D1-1-MoM-2, 7  
Chao, L: B4-4-WeA-4, **29**

## Author Index

- Chapon, P: HP-ThP-6, 46  
 Charlton, C: BP-ThP-1, 43; G2-FrM-8, 49  
 Charpentier, L: B2-1-ThA-7, 39  
 Chason, E: H1-2-TuA-2, 21  
 Chausseau, M: HP-ThP-6, 46  
 Chen, A: F2-2-ThA-7, **41**  
 Chen, C: B5-2-FrM-8, 48; F3-TuA-4, 20  
 Chen, D: B2-1-ThA-6, 39; B2-1-ThA-7, **39**  
 Chen, H: DP-ThP-6, 44; F4-1-WeM-1, **26**; TSP-ThP-6, 46  
 Chen, M: D1-1-MoM-6, 7; H3-2-WeA-7, **31**  
 Chen, P: C3+C1-WeM-3, **25**; DP-ThP-5, 44  
 Chen, S: C3+C2+C1-ThM-10, 36  
 Chen, T: E2-2-TuA-9, 20  
 Chen, W: BP-ThP-27, 43  
 Chen, X: H3-2-WeA-5, 31  
 Chen, Y: A2-1-ThM-4, 35; B4-3-WeM-12, 24; BP-ThP-7, **43**; C3+C2+C1-ThM-10, **36**; D1-1-MoM-6, 7; F3-TuA-4, 20; TS1-2-WeA-6, **32**  
 Cheng, F: E2-2-TuA-9, 20  
 Cheng, K: D2-TuA-5, **19**  
 Cheng, L: C2-WeA-11, **30**  
 Cheng, Y: CP-ThP-1, 44  
 Chisholm, C: H3-2-WeA-3, 31  
 Chistyakov, R: B1-2-MoA-1, **9**  
 Chiu, K: B1-2-MoA-7, 9  
 Chiu, L: B1-1-MoM-5, **6**  
 Chiu, Y: DP-ThP-5, 44  
 Chng, E: D2-TuA-2, 19  
 Choi, K: TS2-ThM-7, 38  
 Chou, C: B1-2-MoA-12, **9**; B5-1-ThA-9, 40; D1-1-MoM-2, 7; DP-ThP-11, 44  
 Choudhury, T: B2-1-ThA-9, 39  
 Choukourov, A: F1-TuM-1, 15  
 Christensen, B: E1-1-ThM-7, 36  
 Christien, F: F3-TuA-8, 20  
 Chu, J: D1-1-MoM-6, **7**  
 Chubarov, M: B2-1-ThA-9, **39**  
 Chung, C: B5-1-ThA-9, 40; D1-1-MoM-2, 7; DP-ThP-11, 44; DP-ThP-6, **44**  
 Chung, Y: EP-ThP-19, 45  
 Chyntara, S: D1-1-MoM-6, 7  
 Cieslar, M: F1-TuM-1, 15  
 Číperová, Z: B1-2-MoA-4, **9**  
 Claerbout, V: E1-2-ThA-5, **41**  
 Clegg, W: H2-2-MoA-4, 10  
 Colas, J: B2-1-ThA-7, 39  
 Cole-Baker, A: A1-1-TuM-2, 13  
 Contin, A: BP-ThP-28, 43  
 Contla-Pacheco, A: E1-1-ThM-3, **36**  
 Contreras, E: B6-ThM-6, **35**; EP-ThP-3, **45**  
 Corat, E: B3-1-MoM-4, 6; B3-1-MoM-5, 6; BP-ThP-28, 43  
 Cordill, M: E2-1-TuM-3, **15**; EP-ThP-6, 45; TS3+4-2-MoA-3, 11; TS3+4-2-MoA-4, 11; TS3+4-2-MoA-8, 11  
 Cordista, N: BP-ThP-43, 44; DP-ThP-26, **45**  
 Cormier, J: H1-1-TuM-3, 16  
 Cornide, J: TSP-ThP-4, 46  
 Corona-Gomez, J: BP-ThP-42, **44**; E2-2-TuA-8, **20**  
 Correia, R: BP-ThP-28, 43  
 Cortés Suárez, V: EP-ThP-11, 45; HP-ThP-4, 46  
 Cortínez, J: B6-ThM-6, 35; EP-ThP-3, 45  
 Costa, D: F4-1-WeM-6, 26  
 Costa-Barbosa, A: F4-1-WeM-6, 26  
 Coudon, F: AP-ThP-3, 43  
 Cougnon, F: TS3+4-2-MoA-9, **11**  
 Cremer, R: G1+G3-ThM-9, **37**  
 Crespo Villegas, J: A1-3-WeM-3, **24**  
 Crummenauer, J: G2-FrM-7, 49  
 Cruz Avilés, A: AP-ThP-6, 43  
 Cselle, T: B1-2-MoA-5, 9; G4+G5+G6-ThA-5, **42**  
 Cucatti, S: B4-3-WeM-2, 24  
 Curry, J: E3-WeM-1, 25  
 Czettl, C: B2-1-ThA-11, 39; B2-1-ThA-4, 39; B4-4-WeA-3, 29; B4-4-WeA-6, 29; H1-1-TuM-7, 16; H1-2-TuA-4, 21  
 Czigany, Z: B1-3-TuM-6, 13; B5-1-ThA-4, 40  
 — **D** —  
 Dahlborg, U: TSP-ThP-4, 46  
 Dahotre, N: A2-1-ThM-5, 35  
 Dai, M: BP-ThP-31, 43; EP-ThP-16, 45  
 Dai, X: B5-1-ThA-6, 40; FP-ThP-16, 45  
 Damm, D: BP-ThP-28, 43  
 Dams, N: B3-2-MoA-5, 9; G1+G3-ThM-4, 37  
 Daniel, B: B1-2-MoA-2, 9  
 Daniel, R: B4-4-WeA-2, 29  
 DaSilva, V: EP-ThP-4, 45  
 Daves, W: B2-1-ThA-4, 39; B4-4-WeA-3, 29  
 De Bosscher, W: B7-TuA-1, 19  
 de Mello, S: E1-2-ThA-11, 41  
 de Miguel Gamto, T: A1-3-WeM-2, 24; A3-WeA-6, 29  
 de Vasconcelos, G: BP-ThP-28, 43  
 Dean, D: D1-2-MoA-9, 10  
 Debus, J: EP-ThP-23, 45  
 Dedoncker, R: TS1-1-WeM-2, **27**  
 Dehm, G: H3-1-WeM-3, 26; H3-2-WeA-9, 31  
 Delgado, A: B5-2-FrM-4, 48  
 Delgado-Brito, A: B4-1-TuM-5, **14**  
 Depla, D: B7-TuA-3, **19**; TS1-1-WeM-2, 27; TS3+4-2-MoA-9, 11  
 Di Gioacchino, F: H2-2-MoA-4, 10  
 Diao, D: EP-ThP-17, **45**  
 Ding, H: D1-1-MoM-3, 7  
 Do, H: B1-2-MoA-7, 9  
 Döbeli, M: A2-2-ThA-3, 39  
 Dobler, C: A3-WeA-3, 29  
 Dobrenizki, L: E1-2-ThA-10, 41  
 Dobrovodsky, J: B3-2-MoA-8, 9  
 Dobrygin, W: B3-2-MoA-1, 9  
 Dolatabadi, A: TS2-ThM-3, 38; TS2-ThM-9, **38**  
 Dommann, A: A2-2-ThA-3, 39  
 Donaldson, O: H2-1-MoM-6, **7**  
 Dong, Z: A1-1-TuM-6, 13  
 Donnelly, S: TS1-2-WeA-5, 32  
 Donnet, C: F3-TuA-8, 20  
 Doñu Ruiz, M: EP-ThP-11, **45**; HP-ThP-4, 46  
 Doris, F: TS1-1-WeM-4, 27  
 Doumanidis, C: C4-ThA-7, 40  
 Downey, B: C2-WeA-5, 30  
 Drees, D: E1-1-ThM-7, 36  
 Drieu La Rochelle, J: E2-2-TuA-2, 20  
 Drnovšek, A: B1-3-TuM-4, **13**  
 Drouet, M: E2-2-TuA-2, 20  
 Dryepondt, S: A1-1-TuM-1, 13; A1-3-WeM-4, **24**  
 Dublanche-Tixier, C: C3+C2+C1-ThM-7, 36  
 Duchoň, T: F4-1-WeM-2, 26  
 Ducros, C: C3+C2+C1-ThM-7, 36; GP-ThP-24, 46  
 Duguet, T: B2-2-FrM-5, **48**; B2-2-FrM-6, 48  
 Duh, J: B4-3-WeM-11, 24; B6-ThM-4, 35; BP-ThP-14, 43; BP-ThP-15, 43; TSP-ThP-7, 46  
 Durmaz, A: H2-1-MoM-3, 7  
 Dutta, M: B5-2-FrM-9, 48  
 — **E** —  
 Eberl, C: AP-ThP-11, 43; H2-1-MoM-3, 7  
 Echavarría, A: D3-TuM-8, **14**; DP-ThP-25, **45**  
 Echeverría, F: D1-2-MoA-5, 10  
 Echeverrigaray, F: E1-2-ThA-11, 41  
 Echeverry-Rendón, M: D1-2-MoA-5, 10  
 Ecker, W: B2-1-ThA-4, 39; B4-4-WeA-3, 29  
 Eckert, J: EP-ThP-6, 45  
 Eddy Jr., C: C2-WeA-5, 30  
 Edmondson, P: TS1-2-WeA-5, 32  
 Edwards, T: H2-2-MoA-4, **10**  
 Efeoglu, I: B6-ThM-1, **35**; BP-ThP-30, **43**  
 Egan, G: C4-ThA-2, 40  
 Ehasarian, A: A1-1-TuM-8, 13; F2-1-ThM-7, **37**  
 Ek, M: B2-2-FrM-7, 48  
 Eklund, P: F4-2-WeA-7, 31  
 El Mansori, M: H1-2-TuA-5, 21  
 Elahinia, M: D1-2-MoA-9, 10  
 El-Awady, J: H2-1-MoM-1, **7**  
 Elbers, M: BP-ThP-37, 44  
 Elias-Espinosa, M: AP-ThP-6, 43  
 Ellis-Terrell, C: G4+G5+G6-ThA-6, **42**  
 Emieue, F: GP-ThP-24, 46  
 Encinas Sánchez, V: A1-3-WeM-2, 24; A3-WeA-6, 29  
 Engwall, A: F2-2-ThA-3, **41**  
 Erdemir, A: E1-2-ThA-9, 41; EP-ThP-4, 45  
 Eriguchi, K: G4+G5+G6-ThA-4, **42**  
 Eriksson, A: BP-ThP-41, 44  
 Ernst, P: G2-FrM-7, 49  
 Eryilmaz, O: EP-ThP-4, **45**  
 Esparza, J: BP-ThP-22, 43  
 Espinoza Orias, A: D2-TuA-8, **19**  
 Espinoza, R: GP-ThP-6, 46  
 Esteve, J: BP-ThP-36, 44  
 Euchner, H: B6-ThM-12, 35; BP-ThP-34, 44  
 Evans, A: A1-1-TuM-2, 13  
 Evaristo, M: E1-4-WeA-3, **30**  
 Evertz, S: TS1-2-WeA-9, 32  
 — **F** —  
 Faber, K: A2-1-ThM-8, 35  
 Falcão, R: B3-1-MoM-4, **6**; DP-ThP-19, **44**  
 Fang, Y: B1-2-MoA-7, **9**  
 Feder, R: C3+C2+C1-ThM-9, 36  
 Fehr, A: F2-2-ThA-8, **41**  
 Fekete, M: B1-3-TuM-6, 13; B7-TuA-2, 19  
 Feldner, P: H2-2-MoA-6, **10**  
 Feng, Y: B4-3-WeM-10, **24**  
 Fernandes, F: E1-3-FrM-8, 49  
 Fernandez, I: B3-2-MoA-5, 9; F2-1-ThM-9, **37**; G1+G3-ThM-4, 37; TS3+4-2-MoA-10, 11  
 Fernández-Valdés, D: B4-3-WeM-6, **24**  
 Ferreira, A: CP-ThP-23, 44  
 Ferreira, F: B3-2-MoA-7, 9; FP-ThP-6, 45  
 Ficek, M: F3-TuA-11, 20  
 Fietzke, F: B1-3-TuM-1, **13**; B4-3-WeM-4, 24; G1+G3-ThM-3, 37  
 Figueroa, C: B4-3-WeM-2, 24; E1-2-ThA-11, **41**  
 Figueroa-Lopez, U: E1-1-ThM-3, 36  
 Finazzi, G: C3+C2+C1-ThM-7, 36  
 Fischer, M: F4-2-WeA-8, **31**; FP-ThP-5, **45**  
 Fisher, T: F3-TuA-1, **20**  
 Flock, D: TS1-2-WeA-4, 32  
 Flores, L: EP-ThP-12, 45  
 Flores, M: EP-ThP-12, **45**; FP-ThP-11, 45  
 Flores-Cova, L: FP-ThP-11, **45**  
 Flores-Martinez, M: D2-TuA-4, 19  
 Flores-Rentería, M: AP-ThP-6, 43  
 Fortunato, E: F4-1-WeM-3, **26**  
 Fox, C: A1-2-TuA-9, **18**  
 Fraile, A: B5-1-ThA-3, **40**  
 Franco, D: E2-1-TuM-4, 15  
 Francois, M: E2-1-TuM-5, 15  
 Frank, M: B2-2-FrM-10, 48  
 Franz, R: B1-3-TuM-4, 13; TS1-2-WeA-3, 32  
 Friák, M: B6-ThM-2, 35; BP-ThP-19, 43  
 Fridrici, V: D1-1-MoM-3, 7; E1-1-ThM-4, 36  
 Frutos, E: B5-1-ThA-3, 40  
 Fu, Q: F2-2-ThA-9, 41  
 Fuger, C: B6-ThM-12, 35  
 Fugita, I: F3-TuA-3, 20  
 Fujii, K: BP-ThP-26, 43  
 Fukumasu, N: B3-1-MoM-5, 6; E1-3-FrM-1, 49  
 Furgeaud, C: H1-2-TuA-2, **21**  
 Furuiki, T: EP-ThP-22, 45; EP-ThP-24, 45

## Author Index

— G —

- Gabriel, H: B3-2-MoA-5, 9; G1+G3-ThM-4, **37**  
 Gachot, C: E1-2-ThA-9, 41  
 Gaedike, B: G1+G3-ThM-5, **37**  
 Gaffar, A: F3-TuA-3, 20  
 Gaiaschi, S: HP-ThP-6, 46  
 Gaitán, G: DP-ThP-4, 44  
 Galetz, M: A2-2-ThA-8, 39; A3-WeA-3, 29  
 Gamboa Mendoza, B: B4-1-TuM-6, 14  
 Gammer, C: EP-ThP-6, 45  
 Gao, Z: A1-1-TuM-4, 13  
 Garcia Fuentes, G: BP-ThP-22, 43  
 García Sanchez, J: HP-ThP-4, 46  
 García, E: D2-TuA-4, **19**  
 Garcia, J: BP-ThP-22, **43**; GP-ThP-5, 46  
 García, P: TS2-ThM-8, 38  
 García-Martín, G: A1-3-WeM-2, 24; A3-WeA-6, **29**  
 Garrelie, F: F3-TuA-8, 20  
 Gasem, Z: AP-ThP-5, 43  
 Gassner, M: B2-1-ThA-4, 39  
 Gault, B: H1-1-TuM-3, **16**  
 Gauter, S: D1-2-MoA-8, 10  
 Gazal, Y: B2-2-FrM-5, 48  
 Ge, F: A1-2-TuA-4, **18**  
 Geers, C: E1-2-ThA-10, 41  
 Gennaro, S: B3-2-MoA-3, 9; G1+G3-ThM-8, **37**  
 George, M: FP-ThP-7, 45  
 George, S: F4-2-WeA-9, **31**  
 Gerdin, J: BP-ThP-20, 43  
 Géringier, J: D1-1-MoM-3, 7; D2-TuA-1, **19**  
 Ghafoor, N: B4-1-TuM-4, **14**  
 Ghimire, A: BP-ThP-6, 43  
 Ghimire, K: C3+C2+C1-ThM-13, 36  
 Gholinia, A: C3+C2+C1-ThM-12, 36  
 Gibson, J: H3-1-WeM-1, **26**  
 Gies, A: E3-WeM-5, **25**  
 Gildersleeve, E: A2-2-ThA-4, 39  
 Gimeno, S: GP-ThP-5, **46**  
 Giroire, B: E3-WeM-10, 25  
 Glavin, N: F3-TuA-5, 20; TS3+4-2-MoA-5, 11  
 Gleibe, K: F3-TuA-5, 20  
 Gleich, S: H3-2-WeA-9, 31  
 Glushko, O: EP-ThP-6, **45**; TS3+4-2-MoA-3, **11**  
 Godard, P: CP-ThP-13, 44; E2-2-TuA-2, 20  
 Goddard, D: A1-1-TuM-2, 13  
 Göken, M: H2-2-MoA-5, 10; H2-2-MoA-6, 10  
 Gomez, J: BP-ThP-28, 43  
 Gómez, M: B6-ThM-6, 35; E2-2-TuA-3, 20; EP-ThP-3, 45  
 Gómez-Vargas, O: AP-ThP-6, **43**; B4-2-TuA-8, 18  
 Gonzalez Arrabal, R: B3-2-MoA-5, 9  
 Gopalsky, M: B6-ThM-10, 35; C2-WeA-9, 30  
 Gopalakrishnan, R: D2-TuA-2, **19**; D3-TuM-6, 14  
 Gopalan, H: H3-2-WeA-9, **31**  
 Gostilo, V: H3-2-WeA-6, 31  
 Goswami, M: B2-1-ThA-1, **39**  
 Göthelid, E: F4-2-WeA-7, 31  
 Goudeau, P: CP-ThP-13, 44  
 Gozhyk, I: H1-2-TuA-11, 21; HP-ThP-7, 46  
 Grachev, S: H1-1-TuM-6, 16; H1-2-TuA-11, 21; HP-ThP-7, 46  
 Graham, S: TS4-1-MoM-4, 8  
 Grancic, B: B5-2-FrM-6, **48**; BP-ThP-3, 43  
 Grantham, Z: BP-ThP-43, 44  
 Greczynski, G: B4-1-TuM-4, 14; F2-2-ThA-5, **41**; SIT2-WeSIT-1, 28  
 Greene, J: B4-1-TuM-4, 14; F2-1-ThM-8, 37; F2-2-ThA-5, 41; HL-WeHL-3, **33**; SIT2-WeSIT-1, 28  
 Greenhalgh, R: C3+C1-WeM-2, 25  
 Grigoriev, S: B1-2-MoA-11, 9  
 Grossias, C: CP-ThP-13, 44  
 Gu, J: A2-1-ThM-5, 35; A2-1-ThM-9, **35**  
 Gudmundsson, J: B7-TuA-9, 19; F1-TuM-5, **15**; F2-1-ThM-8, 37  
 Guerin, P: CP-ThP-13, 44  
 Guezmil, M: D2-TuA-1, 19  
 Guida, L: D3-TuM-3, 14  
 Guillon, M: B4-3-WeM-13, 24  
 Guipont, V: A2-1-ThM-1, 35; AP-ThP-3, 43  
 Gunduz, I: C4-ThA-7, 40  
 Günther, M: B3-2-MoA-1, **9**  
 Guo, C: BP-ThP-31, **43**  
 Guo, J: B5-1-ThA-6, 40; FP-ThP-16, 45  
 Guo, Q: A1-1-TuM-1, 13  
 Guo, Y: C3+C2+C1-ThM-12, 36; CP-ThP-19, 44  
 Gupta, S: H2-2-MoA-2, 10  
 Gustus, R: B3-1-MoM-3, 6  
 — H —  
 Haga, Y: TS4-1-MoM-3, 8  
 Hahn, R: B4-2-TuA-1, **18**; B6-ThM-12, 35; BP-ThP-19, 43; BP-ThP-34, 44  
 Haiblíková, V: H3-1-WeM-2, 26  
 Hajihoseini, H: F1-TuM-5, 15  
 Hakala, T: E1-1-ThM-7, 36  
 Haldan, D: B3-1-MoM-2, 6  
 Hans, M: BP-ThP-41, 44; H1-1-TuM-5, **16**  
 Hanus, J: F1-TuM-1, 15  
 Harder, B: A2-2-ThA-5, 39  
 Harrison, Z: D3-TuM-6, **14**  
 Harsani, M: BP-ThP-3, 43  
 Hasegawa, S: G4+G5+G6-ThA-4, 42  
 Hashemiastaneh, S: D3-TuM-7, 14  
 Haskova, J: H3-2-WeA-6, **31**  
 Hattar, K: H3-2-WeA-3, **31**  
 Hatton, P: C3+C1-WeM-2, **25**  
 Hatzenbichler, L: B4-3-WeM-3, 24  
 Hauert, R: D1-1-MoM-4, **7**  
 Haviar, S: F1-TuM-4, **15**; F4-1-WeM-2, 26  
 Haynes, J: A2-2-ThA-4, 39  
 He, J: A1-1-TuM-9, 13; A2-1-ThM-6, **35**; B5-1-ThA-9, 40; C3+C2+C1-ThM-3, 36; D1-1-MoM-2, 7; DP-ThP-11, 44; DP-ThP-6, 44; F3-TuA-4, 20; H1-1-TuM-3, 16  
 Heckman, E: TS3+4-2-MoA-5, 11  
 Heckman, N: H3-2-WeA-3, 31  
 Heller, E: TS3+4-2-MoA-5, 11  
 Helmersson, U: F2-1-ThM-8, **37**  
 Heraud, L: H1-2-TuA-5, 21  
 Herault, Q: H1-2-TuA-11, **21**; HP-ThP-7, **46**  
 Hermerschmidt, F: TS4-1-MoM-5, **8**  
 Hernandez-Rodrigues, E: GP-ThP-18, **46**  
 Herren, B: A2-1-ThM-8, **35**  
 Herrera Jimenez, E: H3-2-WeA-8, **31**  
 Hess, M: B3-1-MoM-2, 6; B3-2-MoA-2, **9**  
 Hibino, T: EP-ThP-24, 45  
 Higuchi, K: B4-1-TuM-7, 14; B4-2-TuA-9, 18; BP-ThP-26, 43  
 Higuchi, T: G4+G5+G6-ThA-4, 42  
 Hilfiker, M: C3+C2+C1-ThM-9, 36  
 Hill, S: BP-ThP-43, 44; DP-ThP-26, 45  
 Hinder, S: C3+C1-WeM-4, 25  
 Hippler, R: G4+G5+G6-ThA-7, 42  
 Hirn, S: TS1-2-WeA-3, 32  
 Hirpara, J: GP-ThP-16, **46**; GP-ThP-19, 46  
 Hishinuma, Y: H1-2-TuA-9, 21  
 Hnilica, J: B7-TuA-2, 19  
 Ho, W: B5-2-FrM-8, 48; BP-ThP-27, 43; DP-ThP-10, 44; DP-ThP-9, **44**  
 Hodge, A: C3+C2+C1-ThM-8, 36; E2-2-TuA-4, **20**  
 Höhn, M: B4-3-WeM-4, 24  
 Holec, D: B4-3-WeM-3, 24; B5-1-ThA-5, 40; B6-ThM-2, 35; B6-ThM-5, 35; BP-ThP-19, 43; BP-ThP-35, 44  
 Holzapfel, D: BP-ThP-41, **44**; TS1-2-WeA-9, 32  
 Homma, H: B2-1-ThA-3, 39  
 Hong, K: F4-2-WeA-11, 31  
 Hopfeld, M: TS1-2-WeA-4, 32  
 Hosemann, P: B1-3-TuM-4, 13; H3-2-WeA-1, **31**  
 Hou, H: EP-ThP-16, 45  
 Hou, X: TS2-ThM-7, **38**; TSP-ThP-1, 46; TSP-ThP-6, **46**  
 Houška, J: F4-1-WeM-2, 26  
 Hovsepian, P: A1-1-TuM-8, **13**  
 Hrebik, J: F2-1-ThM-10, **37**  
 Hruby, H: B4-4-WeA-2, 29  
 Hsain, Z: E3-WeM-1, 25  
 Hsiao, W: DP-ThP-10, 44  
 Hsiao, Y: BP-ThP-2, 43  
 Hsieh, J: D1-2-MoA-4, **10**; F4-1-WeM-5, 26  
 Hsieh, P: B5-1-ThA-9, 40; C3+C2+C1-ThM-3, 36; D1-1-MoM-2, 7; DP-ThP-6, 44; F3-TuA-4, **20**  
 Hsu, C: GP-ThP-21, 46  
 Hsu, H: DP-ThP-10, **44**; DP-ThP-9, 44  
 Hsu, L: B5-2-FrM-8, **48**; BP-ThP-27, **43**  
 Hsu, S: DP-ThP-10, 44; DP-ThP-9, 44  
 Hsueh, P: F4-1-WeM-5, 26  
 Hu, H: CP-ThP-2, **44**  
 Huang, C: GP-ThP-1, 45; TSP-ThP-7, **46**  
 Huang, F: A1-2-TuA-4, 18  
 Huang, J: A1-1-TuM-7, 13; B1-1-MoM-4, 6; B1-2-MoA-12, 9; B4-3-WeM-10, 24; B4-4-WeA-1, **29**; C2-WeA-11, 30; C3+C2+C1-ThM-3, **36**; CP-ThP-31, 44; E2-2-TuA-9, 20; F1-TuM-3, 15; F4-1-WeM-1, 26  
 Huang, S: C3+C2+C1-ThM-10, 36; D1-1-MoM-2, **7**  
 Huang, T: A2-1-ThM-5, 35; A2-1-ThM-9, 35; FP-ThP-16, 45; GP-ThP-17, 46  
 Huang, X: G4+G5+G6-ThA-6, 42  
 Huang, Y: B1-1-MoM-4, **6**  
 Hubicka, Z: B7-TuA-11, 19; D2-TuA-10, 19; G4+G5+G6-ThA-7, **42**  
 Hudec, T: E1-3-FrM-2, **49**  
 Hug, H: D1-2-MoA-8, 10; F4-2-WeA-8, 31; FP-ThP-5, 45  
 Hulkko, J: B2-2-FrM-8, 48  
 Hultman, L: B4-1-TuM-4, 14; F2-2-ThA-5, 41; F4-2-WeA-7, 31; SIT2-WeSIT-1, 28  
 Huminiuc, T: B5-1-ThA-3, 40; B5-2-FrM-4, 48; E1-3-FrM-2, 49  
 Hunault, P: HP-ThP-6, **46**  
 Hung, J: B5-2-FrM-8, 48; BP-ThP-27, 43  
 Hung, S: TS1-1-WeM-6, **27**; TS1-2-WeA-6, 32  
 Hung, Y: A1-1-TuM-9, 13  
 Hunold, O: A2-2-ThA-3, **39**  
 Hurand, S: CP-ThP-13, 44  
 Hurtado, A: B6-ThM-6, 35; EP-ThP-3, 45  
 Hurtado, C: DP-ThP-19, 44  
 Hwang, S: B2-2-FrM-9, 48  
 — I —  
 Ianno, N: CP-ThP-18, 44  
 Ibáñez, P: TS2-ThM-4, **38**  
 Ibrahim, H: D1-2-MoA-9, **10**  
 Ikari, Y: G1+G3-ThM-7, 37; TSP-ThP-8, 46  
 Ilic, E: D1-1-MoM-4, 7  
 Imamiya, M: BP-ThP-13, 43  
 Imamura, S: B2-1-ThA-2, 39  
 Ingvarsson, S: F1-TuM-5, 15  
 Inspektor, A: B1-2-MoA-3, **9**  
 Irving, B: E1-2-ThA-2, **41**  
 Ishida, M: G2-FrM-3, 49  
 Ishigaki, T: B2-1-ThA-3, 39  
 Islam, A: B5-2-FrM-9, 48  
 Islam, S: F1-TuM-6, **15**  
 Isomura, Y: G1+G3-ThM-7, 37; TSP-ThP-8, 46  
 Itagaki, N: B2-2-FrM-9, 48  
 Ito, A: EP-ThP-22, **45**

## Author Index

- Iwaniak, A: AP-ThP-9, **43**; H3-2-WeA-10, **31**  
 Izaii, V: BP-ThP-3, 43  
 Izu, Y: BP-ThP-13, **43**  
 Izumi, H: TS4-1-MoM-3, 8  
 — J —  
 Jäger, N: B4-4-WeA-2, 29  
 Jain, R: B1-1-MoM-3, **6**  
 Jaiswal, J: GP-ThP-19, 46  
 Jansson, U: TS1-1-WeM-5, 27  
 Jaroš, M: B1-2-MoA-4, 9  
 Jasien, C: C4-ThA-5, 40  
 Jawaid, A: F3-TuA-5, 20  
 Jedrzejczak, A: TSP-ThP-2, 46  
 Jennings, J: D3-TuM-6, 14  
 Jeppesen, C: GP-ThP-11, 46  
 Jha, R: B2-1-ThA-1, 39  
 Jian, S: HP-ThP-8, 46  
 Jílek (Jr.), M: B1-2-MoA-5, 9  
 Jílek (Sr.), M: B1-2-MoA-5, 9  
 Jiménez, C: A1-1-TuM-6, 13  
 Jimenez, M: B4-3-WeM-2, 24  
 Jiménez, O: EP-ThP-12, 45; FP-ThP-11, 45  
 Johansson, K: TS1-1-WeM-3, 27  
 Johansson-Jöesaar, M: F4-2-WeA-7, 31  
 Joshi, S: A2-1-ThM-5, 35  
 Juang, J: HP-ThP-8, 46  
 Juez Lorenzo, M: A3-WeA-5, 29  
 Junda, M: C3+C2+C1-ThM-13, 36  
 Jung, Y: A2-2-ThA-7, 39  
 — K —  
 Kabatova, M: B3-2-MoA-8, 9  
 Kabel, J: H3-2-WeA-1, 31  
 Kacher, J: H2-2-MoA-2, 10  
 Kagerer, S: F4-2-WeA-6, **31**; FP-ThP-17, **45**  
 Kainz, C: B2-1-ThA-11, **39**  
 Kakandar, E: H2-1-MoM-4, 7  
 Kalapala, M: CP-ThP-21, **44**; F4-2-WeA-4, **31**  
 Kalscheuer, C: BP-ThP-4, 43; E3-WeM-4, 25;  
 F4-2-WeA-5, 31; G2-FrM-9, **49**  
 Kamataki, K: B2-2-FrM-9, 48  
 Kamiya, S: TS4-1-MoM-3, **8**  
 Kane, K: A2-1-ThM-3, **35**  
 Kapsa, P: D1-1-MoM-3, 7  
 Karner, J: E3-WeM-5, 25  
 Kaspar, J: TS1-2-WeA-1, 32  
 Kateb, M: F1-TuM-5, 15  
 Katoh, Y: H3-2-WeA-1, 31  
 Kaulfuss, F: B1-2-MoA-6, 9; TS1-2-WeA-1, 32  
 Kaur, J: B1-1-MoM-3, 6  
 Kbibou, M: H1-2-TuA-5, **21**  
 Keckes, J: B4-4-WeA-2, 29  
 Keleş, A: B6-ThM-1, 35; BP-ThP-30, 43  
 Kellmann, L: TS1-2-WeA-4, 32  
 Kelly, P: A1-1-TuM-2, **13**; A1-1-TuM-4, 13; F3-  
 TuA-3, 20  
 Kempe, P: H3-1-WeM-2, **26**  
 Keraudy, J: F2-1-ThM-8, 37  
 Keshri, A: B5-2-FrM-9, 48  
 Khalil, K: E2-1-TuM-5, 15  
 Khan, A: EP-ThP-19, **45**  
 Khang, L: DP-ThP-26, 45  
 Khanna, A: B1-1-MoM-3, 6  
 Khelfaoui, F: E1-1-ThM-6, 36  
 Kido, Y: B2-1-ThA-2, **39**  
 Kilić, U: C3+C2+C1-ThM-9, 36; CP-ThP-18, 44  
 Kim, B: B4-2-TuA-2, **18**; GP-ThP-15, 46  
 Kim, H: AP-ThP-10, 43; GP-ThP-15, 46  
 Kim, I: A2-2-ThA-7, 39  
 Kim, J: B7-TuA-11, 19; C2-WeA-7, 30; EP-ThP-  
 20, **45**; EP-ThP-24, 45  
 Kim, R: F3-TuA-5, 20  
 Kim, W: EP-ThP-20, 45  
 Kim, Y: GP-ThP-15, 46  
 Kirchlechner, C: H3-1-WeM-3, 26; H3-2-WeA-  
 9, 31  
 Kirnbauer, A: BP-ThP-32, **44**; TS1-1-WeM-10,  
**27**  
 Kitajima, A: B4-1-TuM-7, 14; B4-2-TuA-9, 18;  
 BP-ThP-26, 43  
 Kiyokawa, D: B4-2-TuA-9, **18**; BP-ThP-26, 43  
 Klein, P: B5-1-ThA-4, 40; B7-TuA-2, 19  
 Kleinbichler, A: E2-1-TuM-3, 15  
 Klemberg-Sapieha, J: A1-3-WeM-10, 24; A1-  
 3-WeM-3, 24; E1-1-ThM-6, 36; EP-ThP-30,  
**45**; H3-2-WeA-8, 31; TS2-ThM-11, 38; TS2-  
 ThM-3, 38; TSP-ThP-2, 46  
 Klima, S: B4-4-WeA-2, 29  
 Klimashin, F: B6-ThM-5, 35; BP-ThP-18, 43  
 Klostermann, H: G1+G3-ThM-3, **37**  
 Klünsner, T: B4-4-WeA-3, 29  
 Kment, S: G4+G5+G6-ThA-7, 42  
 Knittel, S: A1-3-WeM-10, 24; A1-3-WeM-3, 24  
 Ko, K: G1+G3-ThM-12, 37  
 Kodambaka, S: B6-ThM-10, 35  
 Koelker, W: B2-2-FrM-10, 48; G1+G3-ThM-2,  
 37  
 Koga, K: B2-2-FrM-9, **48**  
 Koganemaru, M: TS4-1-MoM-3, 8  
 Kohlhauser, B: E1-2-ThA-9, **41**  
 Kohlscheen, J: BP-ThP-1, **43**; G2-FrM-8, **49**  
 Kohulak, O: BP-ThP-3, 43  
 Kokalj, D: EP-ThP-23, 45; F2-2-ThA-9, **41**  
 Kolarik, V: A3-WeA-5, **29**  
 Koller, C: BP-ThP-32, 44; E1-2-ThA-9, 41; TS1-  
 1-WeM-10, 27  
 Koloszári, S: B1-3-TuM-4, 13; B4-2-TuA-1,  
 18; BP-ThP-32, 44; F4-2-WeA-6, 31; FP-ThP-  
 17, 45; FP-ThP-3, 45; TS1-2-WeA-9, 32  
 Komsa, H: F3-TuA-9, **20**  
 König, T: A2-2-ThA-8, **39**  
 Kontis, P: H1-1-TuM-3, 16  
 Korenyi-Both, A: E3-WeM-3, 25; TS3+4-2-  
 MoA-11, **11**  
 Korlacki, R: C3+C2+C1-ThM-9, 36  
 Korte-Kerzel, S: H3-1-WeM-1, 26  
 Kos, Š: B1-2-MoA-4, 9  
 Kostoglou, N: C4-ThA-7, 40  
 Kotrlóvá, M: B1-3-TuM-5, **13**  
 Kousaka, H: EP-ThP-22, 45; EP-ThP-24, **45**  
 Koutna, N: B6-ThM-2, **35**; B6-ThM-5, 35; BP-  
 ThP-19, **43**; E1-2-ThA-9, 41  
 Koyanagi, T: H3-2-WeA-1, 31  
 Kozák, T: F2-1-ThM-5, **37**; F4-2-WeA-6, 31;  
 FP-ThP-17, 45; FP-ThP-3, 45  
 Kraetzschmar, B: G1+G3-ThM-3, 37  
 Kranzmann, A: A1-1-TuM-8, 13  
 Kratochvíl, J: D2-TuA-10, 19; F3-TuA-11, 20  
 Krauß, S: H2-2-MoA-5, **10**  
 Krbal, M: F4-1-WeM-2, 26  
 Kreiml, P: TS3+4-2-MoA-4, **11**  
 Kroker, M: B1-3-TuM-6, **13**  
 Krsek, V: B1-2-MoA-5, 9  
 Kruis, E: F2-2-ThA-9, 41  
 Krülle, T: B1-2-MoA-6, **9**  
 Kruppe, N: BP-ThP-23, 43  
 Kubart, T: B3-2-MoA-7, 9  
 Kuczyk, M: TS1-2-WeA-1, **32**  
 Kulczyk-Malecka, J: A1-1-TuM-4, 13; F3-TuA-  
 3, **20**  
 Kumar, N: F1-TuM-4, 15  
 Kups, T: TS1-2-WeA-4, 32  
 Kus, P: BP-ThP-3, 43  
 Kuyel, B: F4-2-WeA-11, **31**  
 Kuzminova, A: F1-TuM-1, 15  
 Kvetkova, L: B3-2-MoA-8, 9  
 Kylian, O: D2-TuA-10, 19; F1-TuM-1, **15**  
 — L —  
 Lai, G: GP-ThP-17, 46  
 Lai, X: B3-2-MoA-9, 9; C3+C2+C1-ThM-11, 36  
 Lai, Y: G2-FrM-6, 49  
 Lamberti, A: TS3+4-2-MoA-9, 11  
 Lance, M: A2-1-ThM-3, 35; A2-2-ThA-4, **39**  
 Landälv, L: F4-2-WeA-7, **31**  
 Larangeira, J: CP-ThP-23, 44  
 Largeau, L: H1-1-TuM-6, 16  
 Lasanta Carrasco, M: A1-1-TuM-8, 13; A1-3-  
 WeM-2, 24; A3-WeA-6, 29  
 Laska, N: B1-3-TuM-2, 13  
 Latarius, J: BP-ThP-37, **44**  
 Lau, S: H1-2-TuA-8, 21  
 Laugel, N: A1-2-TuA-9, 18; G4+G5+G6-ThA-3,  
**42**  
 Lavenstein, S: H2-1-MoM-1, 7  
 Lavery, N: TSP-ThP-4, 46  
 Lazzari, R: H1-2-TuA-11, 21; HP-ThP-7, 46  
 Lechner, A: H1-1-TuM-7, 16  
 Lee, C: CP-ThP-1, **44**  
 Lee, D: A1-3-WeM-12, 24  
 Lee, J: B4-3-WeM-11, 24; B6-ThM-4, 35; D1-  
 2-MoA-1, **10**; DP-ThP-7, **44**; F2-2-ThA-7, 41;  
 G1+G3-ThM-12, 37; TS1-1-WeM-6, 27; TS1-  
 2-WeA-6, 32  
 Lee, K: A2-1-ThM-10, **35**; A2-1-ThM-8, 35; B4-  
 2-TuA-2, 18  
 Lee, S: H1-2-TuA-9, 21; H3-1-WeM-5, **26**  
 Legros, M: H1-1-TuM-2, 16  
 Lei, C: DP-ThP-5, **44**  
 Lemmer, O: B2-2-FrM-10, 48  
 Lengaigne, J: TS2-ThM-11, 38; TS2-ThM-3, **38**;  
 TSP-ThP-2, 46  
 Lenis, J: DP-ThP-4, **44**; E2-2-TuA-3, **20**  
 Lepple, M: A2-1-ThM-11, **35**  
 Leson, A: B1-2-MoA-6, 9; TS1-2-WeA-1, 32  
 Letzig, D: D1-2-MoA-6, 10  
 Levi, C: A2-1-ThM-11, 35  
 Lewin, E: TS1-1-WeM-3, **27**  
 Lewis, S: H1-2-TuA-8, 21  
 Leyendecker, T: B2-2-FrM-10, 48; G1+G3-  
 ThM-2, 37  
 Leyens, C: B1-2-MoA-6, 9; TS1-2-WeA-1, 32  
 Li, C: D1-1-MoM-6, 7; D1-2-MoA-4, 10; F4-1-  
 WeM-5, **26**  
 Li, F: HP-ThP-11, 46  
 Li, H: BP-ThP-31, 43  
 Li, K: H3-2-WeA-7, 31  
 Li, Q: EP-ThP-16, 45  
 Li, S: BP-ThP-33, **44**; F4-1-WeM-10, **26**  
 Li, X: C3+C2+C1-ThM-11, **36**  
 Li, Y: A1-1-TuM-9, **13**; BP-ThP-42, 44; E2-2-  
 TuA-8, 20  
 Liang, T: BP-ThP-4, 43  
 Liao, E: F3-TuA-4, 20  
 Liao, M: B6-ThM-10, 35; C2-WeA-9, **30**;  
 C3+C2+C1-ThM-10, 36  
 Lider, A: H3-2-WeA-4, 31  
 Lien, S: GP-ThP-21, 46  
 Lilova, K: A2-1-ThM-11, 35  
 Limbeck, A: BP-ThP-34, 44  
 Lin, C: B5-1-ThA-9, **40**; D1-2-MoA-1, 10; DP-  
 ThP-11, **44**; HP-ThP-8, 46  
 Lin, J: B1-1-MoM-6, **6**  
 Lin, K: C3+C2+C1-ThM-4, **36**; CP-ThP-31, **44**;  
 G4+G5+G6-ThA-6, 42  
 Lin, M: A1-1-TuM-9, 13; E1-4-WeA-2, **30**; E2-  
 2-TuA-9, **20**  
 Lin, S: BP-ThP-2, 43; BP-ThP-31, 43; EP-ThP-  
 16, 45  
 Lin, T: DP-ThP-7, 44  
 Lin, Y: B4-3-WeM-11, **24**; BP-ThP-14, **43**; CP-  
 ThP-1, 44; F1-TuM-3, **15**  
 Lin, Z: B4-3-WeM-13, **24**; E1-3-FrM-7, 49  
 Lindahl, E: B2-2-FrM-8, 48; BP-ThP-20, 43  
 Liskiewicz, T: E1-4-WeA-2, 30; H3-2-WeA-2,  
 31  
 List-Kratochvíl, E: TS4-1-MoM-5, 8

## Author Index

- Liu, B: B4-3-WeM-12, 24  
 Liu, C: A2-1-ThM-4, **35**; C2-WeA-11, 30; F4-1-WeM-1, 26; H3-2-WeA-7, 31  
 Liu, D: G2-FrM-6, **49**  
 Liu, H: A1-1-TuM-4, 13; B5-2-FrM-8, 48  
 Liu, J: TS2-ThM-7, 38; TSP-ThP-6, 46  
 Liu, Q: D1-2-MoA-4, 10  
 Liu, S: GP-ThP-21, 46  
 Liu, Y: B4-3-WeM-12, **24**; B4-3-WeM-13, 24; E1-3-FrM-7, **49**; GP-ThP-13, **46**; H1-1-TuM-2, 16  
 Liu, Z: B2-1-ThA-8, **39**  
 Lo, W: B6-ThM-4, **35**; BP-ThP-15, **43**  
 Lobmaier, L: B6-ThM-5, 35  
 Lofaj, F: B3-2-MoA-8, **9**  
 Lomello, F: A1-1-TuM-3, 13  
 Lopes Dias, N: B3-1-MoM-3, **6**  
 Lopez Perrasquia, N: EP-ThP-11, 45; HP-ThP-4, **46**  
 Lopez-Suero, D: B4-1-TuM-5, 14  
 Loquai, S: A1-3-WeM-10, 24; A1-3-WeM-3, 24  
 Lorin, G: GP-ThP-24, 46  
 Lou, B: D1-2-MoA-1, 10; DP-ThP-7, 44; F2-2-ThA-7, 41  
 Lourcing, S: E1-1-ThM-7, 36  
 Lousa, A: BP-ThP-36, **44**  
 Lu, G: B5-1-ThA-9, 40  
 Lu, J: B4-1-TuM-4, 14; F4-2-WeA-7, 31; G1+G3-ThM-4, 37  
 Lu, N: TS4-1-MoM-1, **8**  
 Lubaszka, P: AP-ThP-9, 43  
 Lucas, S: B7-TuA-1, 19  
 Luchtenberg, P: GP-ThP-7, **46**  
 Ludwig, A: H3-1-WeM-3, 26  
 Lümekemann, A: B1-2-MoA-5, 9; B4-3-WeM-3, 24; G4+G5+G6-ThA-5, 42  
 Lundin, D: B7-TuA-2, 19; B7-TuA-9, 19; F2-1-ThM-8, 37; FP-ThP-10, 45  
 Lusvarghib, L: TS1-2-WeA-3, 32  
 — M —  
 Ma, H: HP-ThP-3, 46  
 Macauley, C: A2-1-ThM-11, 35  
 Machado, I: E1-3-FrM-1, 49  
 Maeder, X: A2-2-ThA-3, 39; H2-1-MoM-4, 7; H2-2-MoA-4, 10  
 Makineni, S: H1-1-TuM-3, 16  
 Malik, G: GP-ThP-19, **46**  
 Mallick, M: D1-1-MoM-7, **7**  
 Marcel, C: F2-2-ThA-4, 41  
 Marchand, B: AP-ThP-3, 43  
 Marquez Herrera, A: GP-ThP-18, 46  
 Martinez-Trinidad, J: B4-1-TuM-5, 14; E1-1-ThM-3, 36  
 Martins, R: F4-1-WeM-3, 26  
 Martinu, L: A1-3-WeM-10, 24; A1-3-WeM-3, 24; EP-ThP-30, 45; H3-2-WeA-8, 31; TS2-ThM-11, 38; TS2-ThM-3, 38  
 Marugi, K: A1-3-WeM-5, 24; AP-ThP-13, 43  
 Maruko, T: BP-ThP-11, 43; BP-ThP-12, **43**; BP-ThP-13, 43  
 Maskrot, H: A1-1-TuM-3, 13  
 Mastail, C: H1-2-TuA-2, 21  
 Mathew, M: D2-TuA-5, 19; D3-TuM-7, **14**  
 Mathiasen, C: GP-ThP-11, 46  
 Matsuda, K: G2-FrM-3, 49; H1-2-TuA-9, **21**  
 Matthews, A: A1-1-TuM-9, 13; C3+C1-WeM-4, 25; C3+C2+C1-ThM-12, 36; CP-ThP-19, 44; E1-4-WeA-2, 30; G4+G5+G6-ThA-3, 42; GP-ThP-3, 46  
 Maurel, V: A2-1-ThM-1, **35**; AP-ThP-11, 43; AP-ThP-3, **43**  
 Maury, F: B2-2-FrM-5, 48; B2-2-FrM-6, **48**  
 Maus, J: B3-1-MoM-2, 6  
 Maus-Friedrichs, W: B3-1-MoM-3, 6  
 Mayr, P: A1-1-TuM-8, 13  
 Mayrhofer, P: B4-2-TuA-1, 18; B5-1-ThA-5, 40; B6-ThM-12, 35; B6-ThM-2, 35; B6-ThM-5, **35**; B6-ThM-9, 35; BP-ThP-18, **43**; BP-ThP-19, 43; BP-ThP-32, 44; BP-ThP-34, 44; BP-ThP-35, 44; E1-2-ThA-9, 41; F4-2-WeA-6, 31; FP-ThP-17, 45; FP-ThP-3, 45; TS1-1-WeM-10, 27  
 McKnight, R: G4+G5+G6-ThA-6, 42  
 McMaster, S: H3-2-WeA-2, 31  
 McNallan, M: D2-TuA-5, 19  
 Mehraban, S: TSP-ThP-4, 46  
 Meindlhuber, M: B4-4-WeA-2, **29**  
 Meissner, T: A3-WeA-3, 29  
 Mejia, H: D3-TuM-8, 14; DP-ThP-25, 45  
 Melih, A: EP-ThP-2, **45**  
 Melo-Máximo, D: E1-3-FrM-5, 49; E1-3-FrM-6, 49  
 Melo-Máximo, L: E1-3-FrM-6, 49  
 Mendala, B: A1-3-WeM-5, 24; AP-ThP-13, 43; AP-ThP-9, 43  
 Mendizabal, L: GP-ThP-5, 46  
 Mendoza, G: B4-2-TuA-2, 18  
 Meneses-Amador, A: B4-3-WeM-6, 24  
 Meng, W: H2-2-MoA-3, **10**  
 Mercier, F: B2-1-ThA-6, 39; B2-1-ThA-7, 39  
 Merle, B: H2-2-MoA-5, 10; H2-2-MoA-6, 10; H3-1-WeM-4, **26**  
 Meth, J: TS4-1-MoM-4, 8  
 Meyer, D: C2-WeA-5, 30  
 Meza, R: E1-4-WeA-6, 30  
 Mezlini, S: D2-TuA-1, 19  
 Michau, A: A1-1-TuM-3, 13; B2-2-FrM-5, 48; B2-2-FrM-6, 48  
 Michau, D: E3-WeM-10, 25  
 Michel, A: H1-2-TuA-2, 21  
 Michel, E: E2-1-TuM-4, 15  
 Michels, A: E1-2-ThA-11, 41  
 Michler, J: H2-2-MoA-4, 10  
 Mihut, D: BP-ThP-43, 44; DP-ThP-26, 45  
 Mikula, M: B5-2-FrM-6, 48; BP-ThP-3, 43; E1-3-FrM-2, 49  
 Milassin, G: TS3+4-2-MoA-8, 11  
 Milhet, X: H1-1-TuM-2, **16**  
 Millan-Ramos, B: D1-2-MoA-6, 10  
 Minea, T: B7-TuA-9, **19**; F2-1-ThM-3, 37; F2-1-ThM-6, 37; FP-ThP-10, 45; FP-ThP-7, 45  
 Mingo, B: C3+C2+C1-ThM-12, 36; CP-ThP-19, 44  
 Mischler, S: D1-1-MoM-4, 7  
 Missaoui, J: E1-2-ThA-6, **41**  
 Mitterer, C: B1-2-MoA-10, 9; B2-1-ThA-11, 39; B2-1-ThA-4, 39; B4-3-WeM-3, **24**; B4-4-WeA-2, 29; C4-ThA-7, 40; EP-ThP-6, 45; H1-1-TuM-7, 16; TS3+4-2-MoA-4, 11  
 Mizubayashi, M: G2-FrM-3, **49**  
 Mock, A: C2-WeA-1, **30**; C3+C2+C1-ThM-9, 36; CP-ThP-18, 44  
 Mocuta, C: E2-2-TuA-2, 20  
 Modes, T: B1-3-TuM-1, 13  
 Mohammadtaheri, M: BP-ThP-42, 44  
 Mojica-Villegas, A: B4-1-TuM-5, 14  
 Moldenhauer, H: EP-ThP-23, **45**  
 Molina Aldareguia, J: B3-2-MoA-5, 9  
 Monaghan, D: B1-2-MoA-2, 9; FP-ThP-9, 45  
 Monclus, M: B3-2-MoA-5, 9  
 Monsifrot, E: B2-2-FrM-5, 48; B2-2-FrM-6, 48  
 Monterrosa, A: H3-2-WeA-3, 31  
 Montes Ruiz-Cabello, F: TS2-ThM-4, 38  
 Montigaud, H: H1-1-TuM-6, 16; H1-2-TuA-11, 21; HP-ThP-7, 46  
 Mora, J: TS2-ThM-8, **38**  
 Moraes, V: B4-3-WeM-3, 24; B6-ThM-12, 35; B6-ThM-9, **35**; BP-ThP-34, **44**  
 Moreau, C: CP-ThP-27, 44; TS2-ThM-9, 38  
 Moreno Palmerin, J: GP-ThP-18, 46  
 Morgado-Gonzalez, I: AP-ThP-6, 43  
 Morstein, M: B4-3-WeM-3, 24  
 Moseler, M: E1-3-FrM-3, **49**  
 Moskovkin, P: B7-TuA-1, 19  
 Mosquera, M: A1-1-TuM-8, 13  
 Motalebzadeh, A: E2-2-TuA-10, 20; EP-ThP-5, 45  
 Motylenko, M: B4-3-WeM-4, 24; B4-4-WeA-6, 29  
 Mouftiez, A: B4-3-WeM-6, 24  
 Mourya, S: GP-ThP-19, 46  
 Mraz, S: B1-2-MoA-10, 9  
 Mu, Y: H2-2-MoA-3, 10  
 Muhl, S: D2-TuA-4, 19; E1-3-FrM-5, 49; E1-3-FrM-9, **49**  
 Mühlbacher, M: EP-ThP-6, 45  
 Müller, A: G2-FrM-7, 49  
 Munroe, P: TS1-1-WeM-1, 27  
 Muralidharan, G: A1-1-TuM-1, 13; A1-3-WeM-4, 24  
 Muratore, C: F3-TuA-5, 20; TS3+4-2-MoA-5, 11  
 Musil, J: B1-2-MoA-4, 9  
 Myoung, S: A2-2-ThA-7, **39**  
 — N —  
 N’Gom, M: C3+C2+C1-ThM-5, **36**  
 Nagaraj, R: D2-TuA-5, 19  
 Nahif, F: EX-TuEx-1, **17**  
 Nait-Ali, A: H1-1-TuM-2, 16  
 Najarian, V: E1-1-ThM-6, 36  
 Nakamura, H: B2-1-ThA-3, 39  
 Nakatani, T: B2-2-FrM-9, 48  
 Naraparaju, R: B1-3-TuM-2, 13  
 Narasimalu, S: A1-1-TuM-6, 13  
 Nass, K: B3-1-MoM-5, 6  
 Nauenburg, K: G1+G3-ThM-11, 37  
 Navabpour, P: AP-ThP-2, 43  
 Nava-Sánchez, J: B4-3-WeM-6, 24  
 Navrotsky, A: A2-1-ThM-11, 35  
 Neels, A: A2-2-ThA-3, 39  
 Nemcova, A: E1-4-WeA-2, 30  
 Němcova, A: C3+C2+C1-ThM-12, 36  
 Nemetz, A: B4-4-WeA-3, **29**  
 Nepal, N: C2-WeA-5, 30  
 Neumeier, S: H1-1-TuM-3, 16  
 Neuß, D: TS1-2-WeA-9, 32  
 Neville, A: H3-2-WeA-2, 31  
 Ngo, D: C3+C1-WeM-4, 25  
 Nicolai, J: E2-2-TuA-2, 20  
 Nicolini, P: E1-2-ThA-2, 41; E1-2-ThA-5, 41; E1-2-ThA-7, **41**  
 Nie, X: EP-ThP-27, **45**; G2-FrM-5, 49  
 Nielsen, L: E1-1-ThM-7, **36**; GP-ThP-11, **46**  
 Nii, H: B4-3-WeM-5, 24  
 Nikitin, D: F1-TuM-1, 15  
 Nimsch, U: TS1-2-WeA-1, 32  
 Nishimura, K: H1-2-TuA-9, 21  
 Nishiyama, K: TSP-ThP-8, 46  
 Noh, Y: GP-ThP-15, 46  
 Noma, M: G4+G5+G6-ThA-4, 42  
 Northam, M: A2-2-ThA-5, 39  
 Norymberczyk, L: H3-2-WeA-10, 31  
 Nose, M: G2-FrM-3, 49  
 Nyakiti, L: C2-WeA-5, 30  
 Nyholm, L: TS1-1-WeM-3, 27; TS1-1-WeM-5, 27  
 — O —  
 Obasi, G: A1-1-TuM-2, 13  
 Obrusnik, A: B1-3-TuM-6, 13; G1+G3-ThM-1, **37**  
 Oellers, T: H3-1-WeM-3, 26  
 Oh, J: B2-2-FrM-9, 48  
 Oh, S: C2-WeA-7, **30**  
 Öhman, S: B2-2-FrM-7, **48**

## Author Index

- Okamoto, N: B4-1-TuM-7, 14; B4-2-TuA-9, 18; BP-ThP-26, 43
- Okimoto, T: G1+G3-ThM-7, **37**; TSP-ThP-8, **46**
- Okle, P: H1-2-TuA-1, 21
- Okuno, S: B2-1-ThA-2, 39
- Olabi, A: CP-ThP-22, 44
- Oladoye, A: CP-ThP-22, **44**
- Olaya Florez, J: B4-1-TuM-6, 14
- Olejnicek, J: G4+G5+G6-ThA-7, 42
- Oliveira, J: B3-2-MoA-7, **9**; FP-ThP-6, **45**
- Oliver, W: H2-2-MoA-9, **10**
- Onofre, C: B5-2-FrM-4, 48
- Ortega-Aviles, M: E1-1-ThM-3, 36
- Ortiz-Domínguez, M: AP-ThP-6, 43; B4-2-TuA-8, 18
- Oseguera-Peña, J: B4-1-TuM-5, 14; B4-2-TuA-8, 18; E1-3-FrM-5, 49; E1-3-FrM-6, 49; E1-4-WeA-6, 30
- Oskay, C: A3-WeA-3, **29**
- Ougier, M: A1-1-TuM-3, **13**
- Özerinç, S: E2-2-TuA-10, **20**; EP-ThP-5, **45**
- P —
- Paliwal, A: C3+C2+C1-ThM-10, 36
- Pan, C: TS1-2-WeA-2, 32
- Pan, W: E2-2-TuA-9, 20
- Pandey, K: B5-2-FrM-9, 48
- Pang, X: E2-2-TuA-11, **20**
- Pantoya, M: F1-TuM-6, 15
- Panzarino, J: H2-1-MoM-6, 7
- Papa, F: B3-2-MoA-3, 9; F2-1-ThM-9, 37; G1+G3-ThM-8, **37**; TS3+4-2-MoA-10, 11
- Pardhasaradhi, S: H2-2-MoA-9, 10
- Pardo-Perez, A: D1-1-MoM-4, 7
- Park, H: G1+G3-ThM-12, 37
- Park, I: AP-ThP-10, **43**
- Park, J: CP-ThP-6, **44**
- Park, S: GP-ThP-15, **46**
- Park, T: CP-ThP-6, 44
- Paseuth, A: B2-1-ThA-2, 39
- Passerone, D: F4-2-WeA-8, 31; FP-ThP-5, 45
- Pathak, A: B5-2-FrM-9, 48
- Patnaik, P: B4-4-WeA-5, 29
- Paulus, M: BP-ThP-37, 44
- Paumier, F: CP-ThP-13, 44
- Pecerskis, A: H3-2-WeA-6, 31
- Pedersen, P: GP-ThP-11, 46
- Peng, L: B3-2-MoA-9, 9; C3+C2+C1-ThM-11, 36
- Peng, Z: H1-1-TuM-3, 16
- Pereira, A: GP-ThP-24, 46
- Pereira-Silva, P: F4-1-WeM-6, 26
- Pérez Mendoza, G: EP-ThP-11, 45
- Perez Pasten-Borja, R: B4-1-TuM-5, 14
- Pérez Trujillo, F: A1-3-WeM-2, **24**; A3-WeA-6, 29
- Perez, J: EP-ThP-12, 45
- Pérez-Alvarez, J: FP-ThP-11, 45
- Perry, D: FP-ThP-9, 45
- Peterson, R: C2-WeA-3, **30**
- Petrov, I: B4-1-TuM-4, 14; F2-1-ThM-8, 37; F2-2-ThA-5, 41; SIT2-WeSIT-1, **28**
- Pflug, A: B7-TuA-1, 19
- Pierron, O: H2-1-MoM-4, 7; H2-2-MoA-2, **10**; TS4-1-MoM-4, 8
- Pignedoli, C: F4-2-WeA-8, 31; FP-ThP-5, 45
- Pikul, J: E3-WeM-1, **25**
- Pillai, R: A1-1-TuM-1, **13**
- Pinheiro, R: BP-ThP-28, 43
- Pint, B: A2-1-ThM-3, 35; A2-2-ThA-4, 39
- Pippan, R: C4-ThA-7, 40
- Pleskunov, P: F1-TuM-1, 15
- Podraza, N: C3+C2+C1-ThM-13, **36**
- Poerschke, D: A2-2-ThA-1, **39**
- Pohler, M: B4-4-WeA-6, 29
- Polacek, M: B5-1-ThA-4, 40
- Polcar, T: B5-1-ThA-3, 40; B5-2-FrM-4, 48; E1-1-ThM-5, 36; E1-2-ThA-2, 41; E1-2-ThA-7, 41; E1-3-FrM-2, 49; H3-2-WeA-4, **31**
- Polcik, P: B4-3-WeM-3, 24; B6-ThM-12, 35; B6-ThM-9, 35; BP-ThP-34, 44; TS1-1-WeM-10, 27; TS1-2-WeA-9, 32
- Polop, C: E2-1-TuM-4, 15
- Polyakov, M: A2-2-ThA-3, 39
- Pone, A: H3-2-WeA-6, 31
- Pons, M: B2-1-ThA-6, 39; B2-1-ThA-7, 39; B2-2-FrM-5, 48
- Poruba, A: B7-TuA-11, 19
- Poulon-Quintin, A: E3-WeM-10, 25
- Praetzas, C: B4-4-WeA-3, 29
- Preuss, M: A1-1-TuM-2, 13
- Price, J: B1-2-MoA-2, 9
- Primetzhofner, D: BP-ThP-41, 44
- Przyaszny, V: D2-TuA-10, 19
- Puetz, W: B2-2-FrM-10, 48
- Pugh, M: TS2-ThM-9, 38
- Purandare, Y: A1-1-TuM-8, 13
- Pürstl, J: H2-2-MoA-4, 10
- Putz, B: TS3+4-2-MoA-8, **11**
- Pyclik, L: A1-3-WeM-5, 24; AP-ThP-13, **43**
- Q —
- Qiao, R: H1-2-TuA-8, 21
- Qiu, R: B2-2-FrM-8, 48; BP-ThP-20, 43
- Quintana, I: GP-ThP-5, 46
- R —
- Raabe, D: H1-1-TuM-3, 16
- Raadu, M: B7-TuA-9, 19; F2-1-ThM-8, 37
- Radny, T: G1+G3-ThM-11, 37
- Rafaja, D: B4-3-WeM-4, 24; B4-4-WeA-6, 29
- Raffield, C: BP-ThP-43, **44**
- Raghavan, S: A2-2-ThA-5, 39
- Rahman, M: A1-2-TuA-8, **18**
- Rahman, S: E1-3-FrM-10, **49**
- Rai, R: F3-TuA-5, **20**
- Raimondo, M: TS2-ThM-2, 38; TS2-ThM-5, **38**
- Rajagopalan, J: H1-2-TuA-3, 21; HP-ThP-1, 46
- Ramirez, G: E1-2-ThA-9, 41
- Ramirez, M: B3-1-MoM-5, 6
- Ramm, J: A2-2-ThA-3, 39
- Rao, S: D3-TuM-7, 14
- Rasmussen, P: H1-2-TuA-3, **21**; HP-ThP-1, **46**
- Ratayski, U: B4-3-WeM-4, **24**
- Ratova, M: F3-TuA-3, 20
- Rausch, M: B1-2-MoA-10, **9**; TS3+4-2-MoA-4, 11
- Rebello de Figueiredo, M: B1-3-TuM-4, 13
- Rebholz, C: C3+C1-WeM-4, 25; C4-ThA-7, **40**
- Redwing, J: B2-1-ThA-9, 39
- Řehák, P: B6-ThM-2, 35
- Reidy, R: A2-1-ThM-9, 35
- Reifsnnyder Hickey, D: B2-1-ThA-9, 39
- Remnev, A: G2-FrM-11, **49**
- Renault, P: CP-ThP-13, **44**; E2-2-TuA-2, **20**
- Renk, O: C4-ThA-7, 40
- Revel, A: F2-1-ThM-3, 37; F2-1-ThM-6, **37**; FP-ThP-7, **45**
- Rezek, B: E1-2-ThA-7, 41
- Ribelles, J: DP-ThP-4, 44
- Rico, P: DP-ThP-4, 44
- Riedl, H: B4-2-TuA-1, 18; B6-ThM-12, **35**; B6-ThM-9, 35; E1-2-ThA-9, 41; F4-2-WeA-6, 31; FP-ThP-17, 45; FP-ThP-3, **45**
- Riul, A: B4-3-WeM-2, 24
- Rivero, P: BP-ThP-22, 43
- Robledo, S: D1-2-MoA-5, 10
- Roch, T: B5-2-FrM-6, 48; BP-ThP-3, 43; E1-3-FrM-2, 49
- Rodil, S: B5-2-FrM-4, **48**; D1-2-MoA-6, 10
- Rodrigues, M: F4-1-WeM-6, 26
- Rodríguez Arevalo, S: B4-1-TuM-6, 14
- Rodríguez Ripoll, M: E1-2-ThA-9, 41
- Rodríguez Valverde, M: TS2-ThM-4, 38
- Rodríguez, R: BP-ThP-22, 43
- Rodríguez, S: A3-WeA-4, 29
- Rodríguez-Castro, G: B4-3-WeM-6, 24; E1-3-FrM-5, 49; E1-3-FrM-6, 49
- Rogers, J: PL-MoPL-3, **5**
- Rogov, A: GP-ThP-3, 46
- Rojas, C: B3-2-MoA-5, 9
- Rojo-Blanco, C: E1-3-FrM-9, 49
- Rollett, A: B1-2-MoA-3, 9
- Romanus, H: TS1-2-WeA-4, 32
- Ronkainen, H: E1-1-ThM-7, 36
- Rosén, J: B4-1-TuM-4, 14
- Rosenthal, M: B4-4-WeA-2, 29
- Rossmann, L: A2-2-ThA-5, **39**
- Rota, A: E1-2-ThA-7, 41
- Rougier, A: F2-2-ThA-4, 41
- Rowley-Neale, S: F3-TuA-3, 20
- Ruan, J: CP-ThP-31, 44; TS1-2-WeA-2, **32**
- Rudigier, H: TS1-1-WeM-4, 27
- Rueß, H: TS1-2-WeA-9, 32
- Ruiz-Rios, A: E1-1-ThM-3, 36
- Rupapara, H: TS1-2-WeA-4, 32
- Rupert, T: H2-1-MoM-5, 7; H2-1-MoM-6, 7
- Rupp, S: B3-1-MoM-2, 6
- Ryan, P: F2-1-ThM-11, 37
- Ryl, J: F3-TuA-11, 20
- S —
- Sabbadini, S: A1-3-WeM-5, 24
- Sáenz-Trevizo, A: C3+C2+C1-ThM-8, 36
- Saha, B: C3+C1-WeM-5, **25**
- Sainith, V: E1-1-ThM-4, **36**
- Saito, T: B4-1-TuM-7, **14**; B4-2-TuA-9, 18; BP-ThP-26, **43**
- Sakakita, H: EP-ThP-24, 45
- Sakalley, S: C3+C2+C1-ThM-10, 36
- Sakamoto, Y: BP-ThP-11, 43; BP-ThP-12, 43; BP-ThP-13, 43
- Sakuma, T: BP-ThP-13, 43
- Sakuragi, T: G2-FrM-3, 49
- Saldana Rovles, A: GP-ThP-18, 46
- Salem, A: D2-TuA-1, 19
- Sälker, J: H3-2-WeA-5, 31
- Salvador, P: B1-2-MoA-3, 9
- Sampaio, P: F4-1-WeM-6, 26
- Sampath, S: A2-2-ThA-4, 39
- Sanchette, F: A1-1-TuM-6, 13
- Sánchez Fuentes, L: HP-ThP-4, 46
- Sanchez Lara, S: BP-ThP-43, 44
- Sanchez Lopez, J: B3-2-MoA-5, 9
- Sanchez-Lara, S: BP-ThP-43, 44
- Sandlöbes, S: H3-1-WeM-1, 26
- Sangiovanni, D: B5-2-FrM-6, 48; B6-ThM-7, **35**
- Santiago Varela, J: B3-2-MoA-5, **9**; G1+G3-ThM-4, 37
- Santiago, F: E1-4-WeA-6, **30**
- Sari, F: CP-ThP-31, 44
- Saringer, C: H1-2-TuA-4, **21**
- Sarkar, R: HP-ThP-1, 46
- Sartory, B: H1-1-TuM-7, 16
- Satrapinskyy, L: BP-ThP-3, 43; E1-3-FrM-2, 49
- Sauques, L: F2-2-ThA-4, 41
- Savadkouei, K: HP-ThP-6, 46
- Scenini, F: A1-2-TuA-9, 18
- Schaaf, P: TS1-2-WeA-4, 32
- Schäfer, J: B4-4-WeA-3, 29
- Schäfer, R: G1+G3-ThM-11, **37**
- Schalk, N: B2-1-ThA-11, 39; B2-1-ThA-4, **39**; H1-1-TuM-7, 16; H1-2-TuA-4, 21
- Scheffel, B: B4-3-WeM-4, 24
- Scheu, C: H3-2-WeA-9, 31
- Schiffers, C: B2-2-FrM-10, 48; G1+G3-ThM-2, **37**
- Schlegel, M: A1-1-TuM-3, 13; A1-1-TuM-6, 13

## Author Index

- Schmid, U: B5-1-ThA-7, **40**  
 Schmidt, O: B3-2-MoA-1, 9  
 Schmitt, J: E1-1-ThM-6, 36; EP-ThP-30, 45  
 Schmitt, T: E1-1-ThM-6, **36**; EP-ThP-30, 45;  
 H3-2-WeA-8, 31  
 Schmutz, P: D1-1-MoM-4, 7  
 Schneider, J: B1-2-MoA-10, 9; BP-ThP-41, 44;  
 H1-1-TuM-5, 16; H3-2-WeA-5, 31; H3-2-  
 WeA-9, 31; TS1-2-WeA-9, **32**  
 Schneider, M: B5-1-ThA-7, 40  
 Schubert, E: C3+C2+C1-ThM-9, **36**; CP-ThP-  
 18, **44**  
 Schubert, M: C3+C2+C1-ThM-9, 36; CP-ThP-  
 18, 44  
 Schuler, J: H2-1-MoM-5, 7  
 Schulz, E: E1-2-ThA-10, 41  
 Schulz, U: B1-3-TuM-2, **13**  
 Schulz, W: A1-1-TuM-8, 13  
 Schuster, F: A1-1-TuM-3, 13; A1-1-TuM-6, 13;  
 B2-2-FrM-5, 48; B2-2-FrM-6, 48  
 Schütze, G: B3-2-MoA-1, 9  
 Schwarzer, N: EP-ThP-13, **45**; F4-1-WeM-11,  
**26**; H2-2-MoA-10, 10; HP-ThP-9, 46  
 Scopece, D: F4-2-WeA-8, 31; FP-ThP-5, 45  
 Sebastiani, M: H2-1-MoM-7, **7**  
 Sekine, T: TS4-1-MoM-3, 8  
 Sekora, D: C3+C2+C1-ThM-9, 36; CP-ThP-18,  
 44  
 Semprimoschnig, C: TS3+4-2-MoA-8, 11  
 Sen, S: H3-2-WeA-4, 31  
 Serpini, E: E1-2-ThA-7, 41  
 Serra, R: B3-2-MoA-7, 9  
 Seydoux, C: C3+C2+C1-ThM-7, 36  
 Sezemsky, P: D2-TuA-10, 19  
 Sha, C: TS1-1-WeM-1, **27**  
 Shang, H: A1-2-TuA-3, **18**  
 Shao, S: H2-2-MoA-3, 10  
 Shao, T: A1-2-TuA-3, 18; B6-ThM-11, **35**  
 Sharifi, N: TS2-ThM-11, 38; TS2-ThM-9, 38  
 Sharobem, T: A2-1-ThM-6, 35  
 Shelemin, A: F1-TuM-1, 15  
 Shen, Y: BP-ThP-33, 44; E2-1-TuM-1, **15**; F4-1-  
 WeM-10, 26  
 Shesadri, S: H1-2-TuA-8, 21  
 Shi, Q: BP-ThP-31, 43  
 Shi, W: B4-2-TuA-2, 18  
 Shin, C: G1+G3-ThM-12, 37  
 Shin, S: F2-2-ThA-3, 41  
 Shirani, A: E3-WeM-3, 25  
 Shiratani, M: B2-2-FrM-9, 48  
 Shishido, N: TS4-1-MoM-3, 8  
 Shore, D: GP-ThP-3, **46**  
 Signor, L: H1-1-TuM-2, 16  
 Silva, F: D3-TuM-7, 14  
 Silva-Bermudez, P: D1-2-MoA-6, **10**  
 SilviaAlvarez, D: GP-ThP-18, 46  
 Simmons, M: TS3+4-2-MoA-10, 11  
 Simonot, L: H1-2-TuA-2, 21  
 Singh, B: B2-1-ThA-1, 39  
 Singh, P: B2-1-ThA-1, 39  
 Sitnikov, N: B1-2-MoA-11, 9  
 Slim, M: E2-1-TuM-5, 15  
 Smietana, M: D2-TuA-10, 19  
 Smith, G: F3-TuA-3, 20  
 Smith, R: C3+C1-WeM-2, 25  
 Snure, M: TS3+4-2-MoA-5, 11  
 Snyders, R: TS3+4-2-MoA-6, **11**  
 Soares, P: GP-ThP-7, 46  
 Šob, M: B6-ThM-2, 35; BP-ThP-19, 43  
 Sobaszek, M: F3-TuA-11, 20  
 Sokolov, A: H3-2-WeA-6, 31  
 Solar, P: F1-TuM-1, 15  
 Soler, R: H3-2-WeA-9, 31  
 Solis-Romero, J: AP-ThP-6, 43; B4-2-TuA-8, **18**  
 Sologubenko, A: H1-2-TuA-1, **21**; HP-ThP-3,  
 46  
 Song, H: GP-ThP-2, **46**  
 Song, J: E1-3-FrM-10, 49  
 Sorour, A: E1-3-FrM-11, 49  
 Soucek, P: B1-3-TuM-6, 13; B5-1-ThA-4, **40**  
 Souza, J: D3-TuM-7, 14  
 Souza, R: E1-3-FrM-1, 49  
 Sparenberg, A: BP-ThP-37, 44  
 Spolenak, R: H1-2-TuA-1, 21; H3-2-WeA-7,  
 31; HP-ThP-3, 46; TS1-2-WeA-7, 32  
 Srinath, A: TS1-1-WeM-3, 27  
 Stamate, E: B7-TuA-4, **19**  
 Stangebye, S: H2-2-MoA-2, 10  
 Stangier, D: B3-1-MoM-3, 6; BP-ThP-37, 44;  
 EP-ThP-23, 45; F2-2-ThA-8, 41; F2-2-ThA-9,  
 41  
 Stark, A: H1-2-TuA-4, 21  
 Steinhoff, M: TS1-2-WeA-9, 32  
 Steinmann, P: DP-ThP-22, **44**  
 Stelzer, B: H3-2-WeA-5, **31**  
 Sternemann, C: BP-ThP-37, 44  
 Stokes, J: CP-ThP-22, 44  
 Stoyanov, P: E3-WeM-11, **25**  
 Stranak, V: D2-TuA-10, **19**; F3-TuA-11, 20;  
 G4+G5+G6-ThA-7, 42  
 Straub, T: AP-ThP-11, **43**; H2-1-MoM-3, **7**  
 Stripe, B: H1-2-TuA-8, 21  
 Stupavska, M: B5-1-ThA-4, 40  
 Stylianou, R: B2-1-ThA-4, 39  
 Su, J: B2-1-ThA-6, **39**; B2-1-ThA-7, 39  
 Su, Y: TS1-2-WeA-10, 32; TS1-2-WeA-2, 32  
 Subacius, A: C3+C1-WeM-4, **25**  
 Subedi, B: C3+C2+C1-ThM-13, 36  
 Subedi, D: A1-3-WeM-11, **24**  
 Sugiyama, H: TS4-1-MoM-3, 8  
 Sun, H: AP-ThP-2, **43**; C3+C2+C1-ThM-10, 36  
 Suresh, V: D2-TuA-2, 19  
 Surmeier, G: BP-ThP-37, 44  
 Suzuki, A: BP-ThP-13, 43  
 Suzuki, H: TSP-ThP-8, 46  
 Švec Jr., P: BP-ThP-3, 43; E1-3-FrM-2, 49  
 Svensson, J: A1-2-TuA-1, **18**  
 Swadzba, L: A1-3-WeM-5, 24; AP-ThP-13, 43;  
 AP-ThP-9, 43  
 Swadzba, R: A1-3-WeM-5, **24**; AP-ThP-13, 43;  
 AP-ThP-7, **43**; AP-ThP-9, 43  
 Sweet, M: A2-1-ThM-3, 35  
 Szkodo, M: F3-TuA-11, 20  
 — T —  
 Tada, D: DP-ThP-19, 44  
 Taiariol, T: B3-1-MoM-4, 6  
 Takamatsu, H: EP-ThP-22, 45  
 Takoudis, C: D3-TuM-7, 14  
 Talke, F: E1-2-ThA-3, **41**  
 Tan, S: B2-1-ThA-8, 39  
 Tanaka, C: B4-1-TuM-7, 14; B4-2-TuA-9, 18  
 Tanaka, K: B6-ThM-10, **35**; EP-ThP-22, 45  
 Tanaka, M: H1-2-TuA-9, 21  
 Tandiang, D: H1-1-TuM-2, 16  
 Tao, H: B4-3-WeM-11, 24  
 Tauchi, Y: TSP-ThP-8, 46  
 Tavakoli, A: HP-ThP-11, **46**  
 Terziyska, V: B4-3-WeM-3, 24; TS3+4-2-MoA-  
 4, 11  
 Teulé-Gay, L: E3-WeM-10, 25  
 Texier, D: AP-ThP-11, 43  
 Theveneau, M: AP-ThP-3, 43  
 Thiaudière, D: CP-ThP-13, 44; E2-2-TuA-2, 20  
 Thiex, M: BP-ThP-23, **43**; E3-WeM-4, **25**  
 Thorwarth, K: D1-1-MoM-4, 7; D1-2-MoA-8,  
 10; F4-2-WeA-8, 31; FP-ThP-5, 45  
 Tillmann, W: B3-1-MoM-3, 6; BP-ThP-37, 44;  
 EP-ThP-23, 45; F2-2-ThA-8, 41; F2-2-ThA-9,  
 41  
 Ting, I: A1-1-TuM-7, **13**  
 Ting, J: B1-1-MoM-5, 6; BP-ThP-33, 44; CP-  
 ThP-31, 44; F4-1-WeM-10, 26; TS1-2-WeA-  
 10, **32**; TS1-2-WeA-2, 32  
 Tkadletz, M: B2-1-ThA-11, 39; B2-1-ThA-4,  
 39; B4-3-WeM-3, 24; C4-ThA-7, 40; H1-1-  
 TuM-7, **16**; H1-2-TuA-4, 21  
 Todt, J: B4-4-WeA-2, 29  
 Todt, M: B5-1-ThA-5, 40; BP-ThP-35, 44  
 Togni, A: TS1-2-WeA-3, 32  
 Tolan, M: BP-ThP-37, 44  
 Toledo-Romo, F: E1-3-FrM-6, **49**  
 Tonneau, R: B7-TuA-1, **19**  
 Torp, B: G4+G5+G6-ThA-5, **42**  
 Torres San Miguel, C: EP-ThP-11, 45; HP-ThP-  
 4, 46  
 Torres, R: GP-ThP-7, 46  
 Totik, Y: B6-ThM-1, 35; BP-ThP-30, 43  
 Toyoda, H: TSP-ThP-8, 46  
 Tracz, J: A1-3-WeM-5, 24; AP-ThP-13, 43  
 Trant, M: F4-2-WeA-8, 31; FP-ThP-5, 45  
 Trava-Airoldi, V: B3-1-MoM-4, 6; B3-1-MoM-  
 5, 6; BP-ThP-28, **43**  
 Treadwell, L: H3-2-WeA-3, 31  
 Truchlý, M: B5-2-FrM-6, 48; BP-ThP-3, **43**; E1-  
 3-FrM-2, 49  
 Trujillo, J: A1-1-TuM-8, 13  
 Tsai, M: GP-ThP-17, **46**  
 Tsai, P: GP-ThP-17, 46  
 Tsai, Y: GP-ThP-1, 45  
 Tseng, I: GP-ThP-17, 46  
 Tseng, Y: HP-ThP-8, **46**  
 Tsikata, S: F2-1-ThM-3, **37**; FP-ThP-7, 45  
 Tsou, H: DP-ThP-6, 44  
 Tsuchiya, T: H1-2-TuA-9, 21  
 Tudhope, A: B3-2-MoA-3, 9; G1+G3-ThM-8,  
 37  
 Tunes, M: TS1-2-WeA-5, 32  
 Tvarog, D: B7-TuA-11, 19  
 — U —  
 Ukraintsev, E: E1-2-ThA-7, 41  
 Ulrich, S: G1+G3-ThM-11, 37  
 Unocic, K: A1-1-TuM-1, 13  
 Urabe, K: G4+G5+G6-ThA-4, 42  
 Ushakov, S: A2-1-ThM-11, 35  
 — V —  
 Vachhani, S: B1-3-TuM-4, 13  
 Valeri, S: E1-2-ThA-7, 41  
 Van Campen, D: H1-1-TuM-2, 16  
 Van Paeppegem, W: TS3+4-2-MoA-9, 11  
 Vanderesse, N: H3-2-WeA-8, 31  
 Vasco, E: E2-1-TuM-4, **15**  
 Vasconcelos, G: B3-1-MoM-4, 6  
 Vasina, P: B1-3-TuM-6, 13; B5-1-ThA-4, 40;  
 B7-TuA-2, **19**  
 Vaz, F: CP-ThP-23, **44**; F4-1-WeM-6, **26**  
 Vega-Morón, R: E1-3-FrM-5, **49**; E1-3-FrM-6,  
 49  
 Velic, D: B2-1-ThA-4, 39  
 Vereschaka, A: B1-2-MoA-11, **9**  
 Vernhes, L: E1-1-ThM-6, 36  
 Vernon, E: A1-1-TuM-2, 13  
 Veronesi, F: TS2-ThM-2, 38; TS2-ThM-5, 38  
 Vetter, J: E3-WeM-5, 25; G2-FrM-7, **49**  
 Victor, J: F2-2-ThA-4, **41**  
 Victoria-Hernandez, J: D1-2-MoA-6, 10  
 Villaboa, C: BP-ThP-36, 44  
 Villanueva, J: D3-TuM-7, 14  
 Villardi de Oliveira, C: A1-1-TuM-6, **13**  
 Villarroel, R: GP-ThP-6, 46  
 Viloin, R: F2-1-ThM-8, 37  
 Vincent, B: F2-1-ThM-3, 37; FP-ThP-7, 45  
 Vishnyakov, V: AP-ThP-2, 43; TS1-2-WeA-5,  
**32**  
 Viswanathan, V: A2-2-ThA-5, 39



## Author Index

- Vitelaru, C: B3-2-MoA-7, 9  
 Vo, H: B1-3-TuM-4, 13  
 Voevodin, A: E1-4-WeA-2, 30; E3-WeM-3, **25**  
 Volpi, M: H1-2-TuA-1, 21  
 Volu, R: BP-ThP-28, 43  
 Voronkoff, J: H1-1-TuM-6, **16**  
 — **W** —  
 Wachesk, C: B3-1-MoM-4, 6; DP-ThP-19, 44  
 Wagner, A: B5-1-ThA-5, **40**; BP-ThP-35, **44**  
 Wagner, N: C4-ThA-5, **40**  
 Wain, R: A1-2-TuA-9, 18  
 Walls, J: C3+C1-WeM-2, 25  
 Walton, S: C2-WeA-5, 30  
 Wang, A: TS1-2-WeA-4, **32**  
 Wang, C: B5-1-ThA-6, **40**; CP-ThP-2, 44; FP-ThP-16, **45**; TS1-1-WeM-6, 27; TS1-2-WeA-6, 32  
 Wang, D: B5-2-FrM-8, 48; BP-ThP-27, 43  
 Wang, J: DP-ThP-7, 44; F2-2-ThA-7, 41; TS2-ThM-7, 38  
 Wang, Q: EP-ThP-19, 45  
 Wang, S: B4-3-WeM-13, 24; E1-3-FrM-7, 49; F1-TuM-3, 15  
 Wang, W: BP-ThP-31, 43  
 Wang, Y: B6-ThM-10, 35; C2-WeA-9, 30; F2-2-ThA-3, 41  
 Wardini, J: H2-1-MoM-5, 7  
 Warnk, T: B3-1-MoM-2, 6  
 Warrior, N: TSP-ThP-1, 46  
 Watanabe, N: G2-FrM-3, 49  
 Watanabe, S: EP-ThP-2, 45  
 Wei, B: A2-1-ThM-5, **35**; A2-1-ThM-9, 35  
 Wei, C: BP-ThP-31, 43; EP-ThP-16, **45**  
 Wei, R: G4+G5+G6-ThA-6, 42  
 Wei, W: TS1-2-WeA-6, 32  
 Weick, S: A3-WeA-5, 29  
 Weißmantel, S: B3-1-MoM-2, **6**; B3-2-MoA-2, 9  
 Welters, M: BP-ThP-4, **43**; F4-2-WeA-5, **31**  
 Weng, S: B6-ThM-3, 35  
 Wennberg, A: B3-2-MoA-5, 9; F2-1-ThM-9, 37; G1+G3-ThM-4, 37; TS3+4-2-MoA-10, **11**  
 Wheeler, J: H3-2-WeA-7, 31; HP-ThP-3, **46**; TS1-2-WeA-7, **32**  
 Wheeler, R: F3-TuA-5, 20  
 Wheeler, V: C2-WeA-5, **30**  
 Wheelis, S: D3-TuM-3, **14**  
 Widrig, B: A2-2-ThA-3, 39  
 Wieclaw, G: AP-ThP-9, 43  
 Winkler, J: B1-2-MoA-10, 9; TS3+4-2-MoA-4, 11  
 Wisnivesky, D: B4-3-WeM-2, 24  
 Witala, B: A1-3-WeM-5, 24; AP-ThP-13, 43; AP-ThP-9, 43  
 Wittel, B: G4+G5+G6-ThA-5, 42  
 Wittig, A: EP-ThP-23, 45  
 Woda, M: B2-2-FrM-10, **48**  
 Wojcik, T: B6-ThM-12, 35; FP-ThP-3, 45  
 Wolfe, M: TS4-1-MoM-4, 8  
 Wong, M: B4-1-TuM-2, **14**; BP-ThP-6, **43**  
 Wu, C: A2-2-ThA-6, **39**  
 Wu, F: B4-3-WeM-13, 24; E1-3-FrM-7, 49; TSP-ThP-7, 46  
 Wu, G: CP-ThP-25, **44**  
 Wu, H: EP-ThP-19, 45  
 Wu, P: DP-ThP-5, 44  
 Wu, S: B1-1-MoM-4, 6; DP-ThP-10, 44; DP-ThP-9, 44  
 Wu, W: GP-ThP-21, **46**  
 Wunderlich, R: TSP-ThP-4, 46  
 Wüstefeld, C: B4-4-WeA-6, **29**  
 — **X** —  
 Xia, A: B1-3-TuM-4, 13; TS1-2-WeA-3, **32**  
 Xiao, P: A1-1-TuM-4, **13**; A2-1-ThM-4, 35  
 Xiao, Y: HP-ThP-3, 46; TS1-2-WeA-7, 32  
 Xie, Z: TS1-1-WeM-1, 27  
 Xing, P: TS2-ThM-3, 38  
 Xu, F: TSP-ThP-1, 46  
 Xu, S: CP-ThP-2, 44  
 — **Y** —  
 Yalamanchili, K: TS1-1-WeM-4, **27**  
 Yamada, K: EP-ThP-2, 45  
 Yamamoto, K: B4-3-WeM-5, **24**  
 Yamashita, M: G4+G5+G6-ThA-4, 42  
 Yanagisawa, K: B2-1-ThA-3, **39**  
 Yang, B: A2-2-ThA-7, 39  
 Yang, F: GP-ThP-1, 45  
 Yang, Q: B4-4-WeA-5, **29**; BP-ThP-42, 44; E2-2-TuA-8, 20  
 Yang, S: AP-ThP-2, 43  
 Yang, X: H1-2-TuA-8, 21  
 Yang, Y: B6-ThM-3, **35**; D1-2-MoA-1, 10; DP-ThP-7, 44; F2-2-ThA-7, 41; GP-ThP-13, 46  
 Yavas, H: B5-1-ThA-3, 40; H3-2-WeA-4, 31  
 Yeh-Liu, L: B6-ThM-4, 35  
 Yeo, C: E1-3-FrM-10, 49  
 Yerokhin, A: A1-2-TuA-9, 18; C3+C2+C1-ThM-12, **36**; CP-ThP-19, **44**; E1-4-WeA-2, 30; E3-WeM-3, 25; G4+G5+G6-ThA-3, 42; GP-ThP-3, 46  
 Yi, P: B3-2-MoA-9, 9; C3+C2+C1-ThM-11, 36  
 Yi, S: D1-2-MoA-6, 10  
 Yoo, R: CP-ThP-6, 44  
 Yun, W: H1-2-TuA-8, **21**  
 — **Z** —  
 Zabinski, J: E3-WeM-3, 25  
 Zabransky, L: B1-3-TuM-6, 13; B5-1-ThA-4, 40  
 Zagonel, L: B4-3-WeM-2, 24  
 Zaid, H: B6-ThM-10, 35  
 Zálešák, J: B4-4-WeA-2, 29; BP-ThP-19, 43  
 Zambrano, D: GP-ThP-6, **46**  
 Zangrossi, F: TSP-ThP-1, **46**  
 Zauner, L: B6-ThM-9, 35; F4-2-WeA-6, 31; FP-ThP-3, 45  
 Zehnder, C: H3-1-WeM-1, 26  
 Zeman, P: B1-3-TuM-5, 13; F4-2-WeA-6, 31; FP-ThP-17, 45  
 Zemlicka, R: B1-2-MoA-5, 9  
 Zendejas Medina, L: TS1-1-WeM-5, **27**  
 Zeng, Y: BP-ThP-11, **43**  
 Zenker, R: G4+G5+G6-ThA-9, 42  
 Zgheib, E: E2-1-TuM-5, **15**  
 Zha, W: EP-ThP-27, 45  
 Zhang, D: B3-2-MoA-9, **9**  
 Zhang, L: CP-ThP-2, 44  
 Zhang, W: FP-ThP-16, 45  
 Zhang, X: A1-1-TuM-4, 13; H2-2-MoA-3, 10  
 Zhang, Z: A1-1-TuM-4, 13; B6-ThM-2, 35  
 Zhao, C: EP-ThP-27, 45; G2-FrM-5, 49  
 Zhao, L: B4-4-WeA-5, 29  
 Zheng, T: B4-4-WeA-1, 29  
 Zheng, Y: BP-ThP-7, 43; TS2-ThM-7, 38  
 Zhou, X: G4+G5+G6-ThA-11, 42  
 Zhou, Z: TS1-1-WeM-1, 27  
 Zhu, H: A1-2-TuA-4, 18  
 Zhu, X: CP-ThP-2, 44  
 Zikan, P: B1-3-TuM-6, 13; G1+G3-ThM-1, 37  
 Zimmer, O: B1-2-MoA-6, 9; TS1-2-WeA-1, 32  
 Zimmermann, M: TS1-2-WeA-1, 32  
 Zitek, M: B1-3-TuM-5, 13  
 Zubizarreta, C: GP-ThP-5, 46  
 Zywitzki, O: B1-3-TuM-1, 13