

# ICMCTF 2023 Program Key

- A** Coatings for Use at High Temperatures
- B** Hard Coatings and Vapor Deposition Technologies
- C** Functional Thin Films and Surfaces
- D** Coatings for Biomedical and Healthcare Applications
- E** Tribology and Mechanical Behavior of Coatings and Engineered Surfaces
- EX** Exhibitors Keynote Lecture
- F** New Horizons in Coatings and Thin Films
- FTS** Focused Topic Session
- G** Surface Engineering - Applied Research and Industrial Applications
- H** Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes
- HL** Awards Ceremony and Honorary Lecture
- PL** Plenary Lecture
- SIT** Special Interest Talks
- TS** Topical Symposia
  - TS1** Coatings for Energy Storage and Conversion - Batteries and Hydrogen Applications
  - TS2** Sustainable Surface Solutions, Materials, Processes and Applications
  - TS3** Processes of Materials for Printed and Flexible Film Technologies

**PROGRAM NUMBERS:** They are listed with the Symposium letter first, the session number second, the Day of the Week, Morning (M) or Afternoon (A) and the presentation slot (e.g., **B1-1-MoM6**).

# ICMCTF 2023 Program Overview

Room /Time	Golden State Ballroom	Pacific D	Pacific E	Pacific F-G	Town & Country A	Town & Country B	Town & Country C	Town & Country D
MoPL					PL-MoM: Plenary Lecture			
MoM		H1-1-MoM: Spatially-resolved and In-Situ Char of TF & Eng Surf I	A1-1-MoM: Coatings to Resist Hi-temp Oxid, Corr, & Fouling I	D1-1-MoM: Surface Coatings & Surf Mods in Bio Environments I	TS1-1-MoM: Coat for Energy Storage & Conv - Batteries & Hyd Apps I	F5-MoM: Machine Learning & Proc Mod for Coating Des & Production		B4-1-MoM: Props & Characterization of Hard Coatings and Surfaces I
MoSIT					SIT1-MoSIT: Special Interest Session I			
MoA		H1-2-MoA: Spatially-resolved and In-Situ Char of TF & Eng Surf II	A1-2-MoA: Coatings to Resist Hi-temp Oxid, Corr, & Fouling II	D1-2-MoA: Surface Coatings & Surf Mods in Bio Environments II	TS1-2-MoA: Coat for Energy Storage & Conv - Batteries & Hyd Apps II	B6-MoA: Computationally-aided Materials Design	B2-MoA: CVD Coatings and Technologies	B4-2-MoA: Props & Characterization of Hard Coatings and Surfaces II
TuM		H2-1-TuM: Adv Mech Testing of Surf, TF, Coat & Small Volumes I	A1-3-TuM: Coat to Resist H-temp Oxid, Corr, & Fouling III	D2-TuM: Medical Dev: Bio-Tribo-Corr, Diagnostics, 3D Printing	TS1-3-TuM: Coat for Energy Storage & Conv - Batteries & Hyd Apps III	E3-TuM: Tribology of Coatings & Surf for Industrial Applications		B4-3-TuM: Props & Characterization of Hard Coatings & Surfaces III
TuEx					EX-TuM: Exhibition Keynote Lecture			
TuA	<b>EXHIBITION</b>	D3-TuA: Bioints: Coat to Prom Cell Adh while Inhib Microbial Growth	A2-1-TuA: Thermal and Environmental Barrier Coatings I	TS2-TuA: Sustain Surf Solutions, Matls, Processes and Applications	H3-1-TuA: Char of Coatings & Small Vol in Extreme & Cyclic Conditions I	E1-1-TuA: Friction, Wear, Lubrication Effects, and Modeling I	F3-TuA: 2D Matls: Synthesis, Charterization, and Applications	B4-4-TuA: Props & Characterization of Hard Coatings & Surfaces IV
TuSIT					SIT2-TuSIT: Special Interest Session II			
WeM		H2-2-WeM: Adv Mech Testing of Surf, TF, Coat & Small Volumes II	A2-2-WeM: Thermal and Environmental Barrier Coatings II	C1-1-WeM: Optical Materials and Thin Films I	H3-2-WeM: Char of Coatings & Small Vol in Extreme & Cyclic Conditions II	E1-2-WeM: Friction, Wear, Lubrication Effects, and Modeling II	G1-WeM G4-WeM	G3-WeM: Innov Surf Engineering for Adv Cutting and Forming Tool Applications
WeSIT					SIT3-WeSIT: Special Interest Session III			
WeA		G2-WeA: Surface Mod of Comps in Auto, Aero & Mfg Applications	F4-1-WeA: Boron-Containing Coatings I	C1-2-WeA: Optical Materials and Thin Films II		TS3-WeA: Proc of Matls for Printed and Flexible Film Technologies		B8-1-WeA: HiPIMS, Pulsed Plasmas & Energy Deposition I
WeHL					HL-WeHL: Bunshah Award Honorary Lecture			
ThM			C3-1-ThM: Thin Films and Novel Surfaces for Energy I	F4-2-ThM: Boron-Containing Coatings II	B5-ThM: Hard and Multifunctional Nanostructured Coatings		E2-1-ThM: Mechanical Properties and Adhesion I	B1-1-ThM: PVD Coatings and Technologies I
ThL							FTS-ThL: Focused Topic Session	
ThA		B7-ThA: Plasma Surf Int, Diagnostics & Growth Processes	F2-ThA: High Entropy and Other Multi-principal-element Materials	C2-1-ThA: Thin Films for Electronic Devices I		E2-2-ThA: Mechanical Properties and Adhesion II	B1-2-ThA: PVD Coatings and Technologies II	
ThP	<b>POSTER SESSIONS</b>							
FrM		B3-FrM: Dep & Tech & Apps for Carbon-Based Coatings	F1-FrM: Nanomaterial-based Coatings and Structures	C2-2-FrM: Thin Films for Electronic Devices II		C3-2-FrM: Thin Films and Novel Surfaces for Energy II	B1-3-FrM: PVD Coatings and Technologies III	

# Monday Morning, May 22, 2023

Plenary Lecture  
Room Town & Country A - Session PL-MoM  
Plenary Lecture  
Moderator:  
Jyh-Wei Lee, Ming Chi University of Technology, Taiwan

8:00am **INVITED: PL-MoM-1** Plenary Lecture: Recent Trends in Artificial Photosynthesis: Atomistic/Surface Design and Probing of Nano-Photocatalysts, **Li-Chyong Chen**, National Taiwan University, Taiwan

8:20am

# Monday Morning, May 22, 2023

<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific D - Session H1-1-MoM</b>  <b>Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces I</b>  <b>Moderators:</b>  <b>Damien Faurie</b>, Université Sorbonne Paris Nord, France,  <b>Michael Tkadletz</b>, Montanuniversität Leoben, Austria</p>		<p><b>Coatings for Biomedical and Healthcare Applications</b>  <b>Room Pacific F-G - Session D1-1-MoM</b>  <b>Surface Coatings and Surface Modifications in Biological Environments I</b>  <b>Moderators: Mathew T. Mathew</b>, University of Illinois College of Medicine at Rockford and Rush Univ. Medical Center, USA,  <b>Phaedra Silva-Bermudez</b>, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico,  <b>Kerstin Thorwarth</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>
10:00am	<p><b>INVITED: H1-1-MoM-1</b> In-situ Imaging of Au Bicrystals and Hydrogen Charged Iron, <b>Wendy Gu</b>, Stanford University, USA; <b>M. Kiani</b>, Cornell University, USA; <b>A. Lee</b>, <b>A. Parakh</b>, Stanford University, USA</p>	<p><b>D1-1-MoM-1</b> Ion Release Study of Ag-Cu and Ag-Cu-Mg Coatings Deposited by Magnetron Sputtering, <b>Serdar Sonay Ozbay</b>, Deakin University, Coventry University, Australia; <b>G. Taghavi Pourian Azar</b>, Coventry University, UK; <b>J. Sharp</b>, <b>G. Rajmohan</b>, Deakin University, Australia; <b>A. Cobley</b>, Coventry University, UK</p>
10:20am		<p><b>D1-1-MoM-2</b> Effect of Pulsed DC Mode on the Surface Properties of Pure Magnesium Substrates Treated with PEO, <b>Cristian Esneider Peñuela Cruz</b>, <b>E. Hernández Rodríguez</b>, Universidad de Guanajuato, Mexico; <b>A. Herrera</b>, Universidad de Guanajuato, Campus DICIVA, Mexico</p>
10:40am	<p><b>H1-1-MoM-3</b> Thermal Stability, Microstructure, and Micro-Mechanical Properties of <math>Cu_{1-x}-Al_x</math> Solid Solution Multilayered with Thin <math>Al_2O_3</math> Barrier Layers, <b>Amit Sharma</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <b>S. Supakul</b>, Iowa State University, USA; <b>C. Tian</b>, <b>D. Casari</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <b>C. Guerra-Nuñez</b>, Swiss Cluster AG Feuerwerkerstrasse 39 3602 Thun, Switzerland; <b>J. Michler</b>, <b>X. Maeder</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</p>	<p><b>D1-1-MoM-3</b> Non-Stick Thin-Film Metallic Glasse (Tfmg) Coating for Reducing Trauma, <b>Helmi Son Haji</b>, <b>J. P. Chu</b>, National Taiwan University of Science and Technology, Taiwan; <b>P. Yiu</b>, Ming Chi University of Technology, Taiwan</p>
11:00am	<p><b>H1-1-MoM-4</b> Advanced Experimental Techniques Quantifying Thin Film Delamination at the Nano-Scale, <b>Alice Lassnig</b>, <b>C. Gammer</b>, <b>S. Zak</b>, <b>M. Cordill</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria</p>	<p><b>D1-1-MoM-4</b> Synthesis of Antimicrobial Surfaces by Glancing Angle Deposition with Natural Seeds, <b>Chuang Qu</b>, <b>J. Rozsa</b>, <b>M. Running</b>, <b>S. McNamara</b>, <b>K. Walsh</b>, University of Louisville, USA</p>
11:20am	<p><b>H1-1-MoM-5</b> High-Temperature Oxidation of Titanium Aluminium Nitride Coatings Visualized by Environmental Transmission Electron Microscopy, <b>O. Makgae</b>, <b>F. Lenrick</b>, <b>V. Bushlya</b>, Lund University, Sweden; <b>J. Andersson</b>, <b>R. M'Saoubi</b>, SECO Tools AB, Sweden; <b>Martin Ek</b>, Lund University, Sweden</p>	<p><b>INVITED: D1-1-MoM-5</b> FDA Regulatory Considerations for Performance Evaluation of Coatings in Medical Devices, <b>Nandini Duraiswamy</b>, U.S. Food and Drug Administration, USA</p>
11:40am	<p><b>H1-1-MoM-6</b> High-Throughput Surface Analysis for Accelerated Thin Film Materials Development, <b>S. Zhuk</b>, <b>A. Wiecezorek</b>, <b>K. Thorwarth</b>, <b>J. Patidar</b>, <b>Sebastian Siol</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>	
12:00pm	<p><b>H1-1-MoM-7</b> New Generation In Situ Process Control of Chemical Composition of Compound Materials and Superalloys During PVD Process, <b>George Atanasoff</b>, AccuStrata, Inc., USA</p>	

# Monday Morning, May 22, 2023

	<p><b>Coatings for Use at High Temperatures</b>  <b>Room Pacific E - Session A1-1-MoM</b>  <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling I</b>  <b>Moderators:</b>  <b>Sebastien Dryepondt</b>, Oak Ridge National Laboratory, USA,  <b>Gustavo García-Martín</b>, REP-Energy Solutions, Spain</p>	<p><b>Hard Coatings and Vapor Deposition Technologies</b>  <b>Room Town &amp; Country D - Session B4-1-MoM</b>  <b>Properties and Characterization of Hard Coatings and Surfaces I</b>  <b>Moderators: Naureen Ghafoor</b>, Linköping University, Sweden,  <b>Marcus Günther</b>, Robert Bosch GmbH, Germany,  <b>Fan-Yi Ouyang</b>, National Tsing Hua University, Taiwan</p>
10:00am	<p><b>INVITED: A1-1-MoM-1</b> Bill Sproul Award and Honorary ICMCTF Lecture: Strategies for the Development of Robust and Stable, but also Functional Ceramic Coatings, <b>Paul Mayrhofer</b><sup>1</sup>, TU Wien, Institute of Materials Science and Technology, Austria</p>	<p><b>B4-1-MoM-1</b> Effects of Al and Nd additions and Annealing on Microstructures and Mechanical Properties of CoCrNi Medium Entropy Alloy Films, <b>YI-LING WU</b>, C. Hsueh, National Taiwan University, Taiwan</p>
10:20am		<p><b>B4-1-MoM-2</b> Microstructures and Mechanical Properties of (CoCrNi)<sub>100-x-y</sub>Si<sub>x</sub>Nd<sub>y</sub> Medium Entropy Alloy Films, <b>Hui-Wen Peng</b>, C. Hsueh, National Taiwan University, Taiwan</p>
10:40am	<p><b>A1-1-MoM-3</b> Ti<sub>5</sub>Si<sub>3</sub>/TiAl<sub>3</sub> Multilayer Coatings as Oxidation Protection for γ-TiAl, <b>Peter-Philipp Bauer</b>, German Aerospace Center and Brandenburg University of Technology Cottbus, Germany; <b>R. Swadzba</b>, Łukasiewicz Research Network - Institute for Ferrous Metallurgy, Poland; <b>L. Klamann</b>, German Aerospace Center, Germany</p>	<p><b>INVITED: B4-1-MoM-3</b> Recent Developments Towards Reliable X-Ray Photoelectron Spectroscopy Analyses of Thin Films, <b>Grzegorz (Greg) Grzeczynski</b>, <b>L. Hultman</b>, Linköping Univ., IFM, Thin Film Physics Div., Sweden</p>
11:00am	<p><b>A1-1-MoM-4</b> Max-Phase Based PVD Coatings as Protection for Lightweight Materials in High Temperature Environments, <b>Nadine Laska</b>, <b>R. Anton</b>, German Aerospace Center, Germany; <b>R. Swadzba</b>, Łukasiewicz Research Network - Institute for Ferrous Metallurgy, Poland; <b>P. Nellessen</b>, German Aerospace Center, Germany</p>	
11:20am	<p><b>A1-1-MoM-5</b> Oxidation behaviors of (AlCrSiTi)N coatings on AISI 304 steel: A Combinatorial Study, <b>Sheng-Yu Hsu</b>, <b>S. Chang</b>, <b>J. Duh</b>, National Tsing Hua University, Taiwan</p>	<p><b>B4-1-MoM-5</b> Effect of Nitrogen Flow Rate on the Microstructure and Mechanical Properties of (V,Mo)N Thin Films, <b>Yiqun Feng</b>, National Tsing Hua University, Taiwan; <b>T. Chung</b>, National Yang Ming Chiao Tung University, Taiwan; <b>J. Huang</b>, National Tsing Hua University, Taiwan</p>
11:40am	<p><b>A1-1-MoM-6</b> Enhanced Pitting Resistance of Cathodic Arc Evaporated AlCrXN Coatings, <b>O. Hudak</b>, <b>F. Bohrn</b>, <b>P. Kutrowatz</b>, <b>T. Wojcik</b>, Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; <b>E. Ntemou</b>, Ion Physics Group, Department of Physics and Astronomy, Uppsala University, Sweden; <b>D. Primetzhofer</b>, Ion Physics Group, Department of Physics and Astronomy, Uppsala University, Austria; <b>L. Shang</b>, <b>O. Hunold</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>P. Polcik</b>, Plansee Composite Materials GmbH, Germany; <b>Helmut Riedl</b>, Institute of Materials Science and Technology, TU Wien, Austria</p>	
12:00pm	<p><b>A1-1-MoM-7</b> Novel Approaches for the PVD Synthesis of Advanced Aluminide Thin Films: The Example of Ruthenium-Aluminide, <b>Vincent Ott</b>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; <b>T. Wojcik</b>, TU Wien, Austria; <b>S. Ulrich</b>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; <b>S. Kolozsvári</b>, <b>P. Polcik</b>, Plansee Composite Materials GmbH, Germany; <b>P. Mayrhofer</b>, <b>H. Riedl</b>, TU Wien, Austria; <b>M. Stueber</b>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany</p>	

<sup>1</sup> Bill Sproul Awardee

# Monday Morning, May 22, 2023

	<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Town &amp; Country B - Session F5-MoM</b>  <b>Machine Learning and Process Modeling for Coating Design and Production</b>  <b>Moderators: Adam Obrusnik</b>, PlasmaSolve s.r.o., Czechia,  <b>Ferenc Tasnadi</b>, Linköping University, Sweden,  <b>Petr Zikán</b>, PlasmaSolve s.r.o., Czechia</p>	<p><b>Topical Symposia</b>  <b>Room Town &amp; Country A - Session TS1-1-MoM</b>  <b>Coatings for Energy Storage and Conversion - Batteries and Hydrogen Applications I</b>  <b>Moderators: Nazlim Bagcivan</b>, Schaeffler Technologies GmbH &amp; Co. KG, Germany,  <b>Klaus Böbel</b>, Bosch Manufacturing Solutions, Germany</p>
10:00am	<p><b>INVITED: F5-MoM-1</b> Thin Film Process Modeling at Different Scales - from Kinetic Simulation to Digital Twin, <b>Andreas Pflug</b>, Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany</p>	<p><b>TS1-1-MoM-1</b> The Effect of Microstructure on the Hydrogen Storage Capacity of <math>Ti_xZr_{1-x}</math> Thin Films, <b>Ido Zukerman</b>, <b>M. Buzaglo</b>, Division of Chemistry, NRCN, Israel; <b>S. Hayun</b>, Department of Materials Engineering, Ben Gurion University of the Negev, Israel</p>
10:20am		<p><b>TS1-1-MoM-2</b> Transition Metal – Doped Ni/YSZ Anode Functional Layers for Solid Oxide Fuel Cells Produced via Magnetron Sputtering, <b>K. Steier</b>, Manchester Metropolitan University, UK; <b>I. Jang</b>, <b>A. Hankin</b>, Imperial College London, UK; <b>P. Kelly</b>, <b>Justyna Kulczyk-Malecka</b>, Manchester Metropolitan University, UK</p>
10:40am	<p><b>F5-MoM-3</b> Coater-Scale Model of DC Magnetron Sputtering, <b>Andrej Roštek</b>, Masaryk University / PlasmaSolve s.r.o., Czechia; <b>P. Zikán</b>, PlasmaSolve s.r.o., Czechia; <b>J. Tungli</b>, Masaryk University, Czechia; <b>A. Obrusnik</b>, PlasmaSolve s.r.o., Czechia</p>	<p><b>TS1-1-MoM-3</b> Surface Modification of Graphite Felt Electrode for Vanadium Redox Flow Batteries by High Entropy Alloy Oxide Thin Films: Effect of Oxygen Gas Flow Ratios, <b>Krishnakant Tiwari</b>, <b>C. Wang</b>, National Taiwan University of Science and Technology, Taiwan; <b>B. Lou</b>, Chang Gung University of Technology, Taiwan; <b>J. Lee</b>, Ming Chi University of Technology, Taiwan</p>
11:00am	<p><b>F5-MoM-4</b> High-Throughput Simulations to Predict History Dependence of Feedback Control During Reactive Magnetron Sputtering, <b>Josja Van Bever</b>, <b>K. Strijckmans</b>, <b>D. Depla</b>, Ghent University, Belgium</p>	<p><b>TS1-1-MoM-4</b> Temperature Dependency of Specific Electrical Conductivity of DLC Coatings, <b>Simon Danningner</b>, University of Applied Sciences Upper Austria; <b>F. Delfin</b>, University of Applied Sciences Upper Austria, Argentina; <b>C. Forsich</b>, <b>D. Heim</b>, <b>M. Schachinger</b>, University of Applied Sciences Upper Austria; <b>B. Rübiger</b>, <b>C. Dipolt</b>, <b>T. Müller</b>, Rubig GmbH &amp; Co KG, Austria</p>
11:20am	<p><b>F5-MoM-5</b> Evatec Fabric – a Thin-Film Process and -Metrology Data Tracking System for Large-Scale, Automated Data Analysis in R&amp;D Labs, <b>Clemens Nyffeler</b>, <b>O. Rattunde</b>, <b>D. Jaeger</b>, <b>H. Zangerle</b>, <b>R. Gmuender</b>, Evatec AG, Switzerland</p>	<p><b>INVITED: TS1-1-MoM-5</b> High Efficiency of Metal Oxide Catalysts for Vanadium Redox Flow Battery, <b>Chen-Hao Wang</b>, National Taiwan University of Science and Technology, Taiwan</p>
11:40am	<p><b>F5-MoM-6</b> Predicting Reactive PVD Processes Using Global Process Modeling – a Physics-Based Alternative to Machine Learning, <b>Petr Zikán</b>, <b>A. Obrusnik</b>, PlasmaSolve s.r.o., Czechia</p>	
12:00pm	<p><b>F5-MoM-7</b> Structure and Crystallographic Properties of Multi-Material Coatings Deposited in a Combinatorial Sputter Plant Compared to Simulations from the Machine Level to Microstructure, <b>David Böhm</b>, TU Wien, Austria; <b>T. Schrefl</b>, Danube University Krems, Austria; <b>A. Eder</b>, MIBA High Tech Coatings GmbH, Austria; <b>C. Eisenmenger-Sittner</b>, TU Wien, Austria</p>	<p><b>TS1-1-MoM-7</b> Effect of Mg Doping on Characterization and Cycling Performance of <math>LiCoO_2</math> Thin Film Cathode for Lithium-Ion Batteries, <b>Tai-Yan Liu</b>, <b>J. Huang</b>, <b>C. Liu</b>, National Cheng Kung University (NCKU), Taiwan</p>

# Monday Afternoon, May 22, 2023

Special Interest Talks

Room Town & Country A - Session SIT1-MoSIT

Special Interest Session I

Moderator:

Jyh-Wei Lee, Ming Chi University of Technology, Taiwan

1:00pm

**INVITED: SIT1-MoSIT-1** Residual Stress Measurement on Hard Coatings and the Evaluation of Energy Relief Efficiency of Architected Coatings, **Jia-Hong Huang**, National Tsing Hua University, Taiwan

1:20pm

# Monday Afternoon, May 22, 2023

	<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific D - Session H1-2-MoA</b>  <b>Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces II</b>  <b>Moderators:</b>  <b>Damien Faurie</b>, Université Sorbonne Paris Nord, France,  <b>Michael Tkadletz</b>, Montanuniversität Leoben, Austria</p>	<p><b>Coatings for Biomedical and Healthcare Applications</b>  <b>Room Pacific F-G - Session D1-2-MoA</b>  <b>Surface Coatings and Surface Modifications in Biological Environments II</b>  <b>Moderators: Mathew T. Mathew</b>, University of Illinois College of Medicine at Rockford and Rush Univ. Medical Center, USA,  <b>Phaedra Silva-Bermudez</b>, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico,  <b>Kerstin Thorwarth</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland</p>
1:40pm	<p><b>INVITED: H1-2-MoA-1</b> Multimodal and <i>in Situ</i> Electron Microscopy to Understand Local Deformation Mechanics, <b>Josh Kacher</b>, Georgia Institute of Technology, USA</p>	<p><b>D1-2-MoA-1</b> Antibacterial Performance of DLC and Ag-doped DLC coatings with a Long Term Perspective, <b>Maneesha Rupakula</b>, Platit AG, Switzerland; <b>K. Sharma</b>, EPFL, Switzerland; <b>H. Bolvardi</b>, <b>B. Paul</b>, <b>G. Wahli</b>, Platit AG, Switzerland</p>
2:00pm		<p><b>D1-2-MoA-2</b> TiN/NbN Superlattice Coatings Deposited by High Power Impulse Magnetron Sputtering Potential Candidate to Protect Medical Grade CoCrMo Alloys, <b>Papken Hovsepian</b>, Sheffield Hallam University, UK; <b>A. Ehasarian</b>, <b>A. Sugumaran</b>, Sheffield Hallam University, United Kingdom; <b>I. Khan</b>, Zimmer- Biomet UK</p>
2:20pm	<p><b>H1-2-MoA-3</b> Nanomechanical Characterization and Residual Stress Analysis in Thin ALD Coatings on 3D Printed Nano-Ceramics, <b>Marco Sebastiani</b>, Università degli studi Roma Tre, Rome, Italy</p>	<p><b>INVITED: D1-2-MoA-3</b> 3D Printed Ceramics Reinforced Ti6Al4V: Structural and Nano-Mechanical Characterization, <b>Peter Apata Olubambi</b>, <b>T. Tshphe</b>, University of Johannesburg, South Africa</p>
2:40pm	<p><b>H1-2-MoA-4</b> <i>In-Situ</i> Monitoring of Stress Evolution in Hipims-Deposited Ti-Al-N Films: Effect of Substrate Bias and Temperature, <b>Pedro Renato Tavares Avila</b>, <b>O. Zabeida</b>, <b>L. Varela Jiménez</b>, <b>J. Klemberg-Sapieha</b>, <b>L. Martinu</b>, Polytechnique Montréal, Canada</p>	
3:00pm	<p><b>H1-2-MoA-5</b> High Strength and Deformability in 3D Interface Cu/Nb Nanolaminates Under Multiple Loading Orientations, <b>Justin Y. Cheng</b>, University of Minnesota, USA; <b>S. Xu</b>, University of Oklahoma, USA; <b>J. Baldwin</b>, Los Alamos National Laboratory, USA; <b>M. De Leo</b>, University of Minnesota, USA; <b>I. Beyerlein</b>, University of California Santa Barbara, USA; <b>N. Mara</b>, University of Minnesota, USA</p>	<p><b>D1-2-MoA-5</b> A Remote Atmospheric Pressure Plasma-Assisted Textile Functionalization Process on Polymeric Scaffolds for Bone Tissue Engineering, <b>Wei-Yu Chen</b>, <b>J. Lee</b>, <b>T. An</b>, Taiwan Textile Research Institute, Taiwan; <b>A. Matthews</b>, University of Manchester, UK</p>
3:20pm	<p><b>H1-2-MoA-6</b> Multiaxial Stress-Strain Transfer Across Indenter-Sample Interface During <i>in Situ</i> Indentation of Nanocrystalline Thin Films, <b>Michael Meindlhuber</b>, <b>J. Todt</b>, Montanuniversität Leoben, Leoben, Austria; <b>A. Medjahed</b>, ESRF, The European Synchrotron, Grenoble, France; <b>M. Burghammer</b>, ESRF, The European Synchrotron, France; <b>M. Zitek</b>, <b>R. Daniel</b>, Montanuniversität Leoben, Leoben, Austria; <b>D. Steinmüller-Nethl</b>, CarbonCompetence GmbH, Wattens, Austria; <b>J. Keckes</b>, Montanuniversität Leoben, Leoben, Austria</p>	<p><b>D1-2-MoA-6</b> Development of Modified Hydroxyapatite Composite Coating Prepared by the Thermal Spray, <b>Jo-Han Yu</b>, National Taipei University of Technology, Taipei Tech, Taiwan; <b>K. Feng</b>, Ming Chi University of Technology, Taiwan; <b>Y. Yang</b>, National Taipei University of Technology, Taipei Tech, Taiwan</p>
3:40pm	<p><b>H1-2-MoA-7</b> Atom Probe Tomography of TiSiN Hard Coatings Synthesized Utilizing Isotopic Substitution, <b>Saeideh Naghdali</b>, <b>M. Tkadletz</b>, Department of Materials Science, Montanuniversität Leoben, Austria; <b>H. Waldl</b>, Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, Austria; <b>M. Hans</b>, Materials Chemistry, RWTH Aachen University, Germany; <b>D. Primetzhofer</b>, Department of Physics and Astronomy, Uppsala University, Sweden; <b>N. Schalk</b>, (1)Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, (2)Department of Materials Science, Montanuniversität Leoben, Austria</p>	
4:00pm	<p><b>H1-2-MoA-8</b> Reactions of Metal-Tmhd Compounds in the Gas-Phase: Insights from Microreactor Studies Using Synchrotron Radiation, <b>Sebastian Grimm</b>, Institute for Combustion and Gas Dynamics, University of Duisburg-Essen, Germany; <b>P. Hemberger</b>, Paul Scherrer Institute, Switzerland; <b>B. Atakan</b>, Institute for Combustion and Gas Dynamics and CENIDE, University of Duisburg-Essen, Germany</p>	
4:20pm	<p><b>H1-2-MoA-9</b> How to Simultaneously Determine Absolute Thickness, Chemistry, and Other Properties of Crystalline Layers Using XRD, <b>Thomas Degen</b>, <b>M. Sadki</b>, <b>N. Norberg</b>, Malvern Panalytical, Netherlands; <b>N. Shin</b>, Deep Solution Inc., Korea (Democratic People's Republic of)</p>	
4:40pm	<p><b>H1-2-MoA-10</b> Dynamic Electrochemical Impedance Spectroscopy as a Tool for Online, in-Situ Monitoring of Adsorption Films Formation, <b>Jacek Ryl</b>, Gdańsk University of Technology, Poland</p>	

# Monday Afternoon, May 22, 2023

<b>Coatings for Use at High Temperatures</b> <b>Room Pacific E - Session A1-2-MoA</b> <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling II</b> <b>Moderators:</b> <b>Gustavo García-Martín</b> , REP-Energy Solutions, Spain, <b>Justyna Kulczyk-Malecka</b> , Manchester Metropolitan University,		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country C - Session B2-MoA</b> <b>CVD Coatings and Technologies</b> <b>Moderators:</b> <b>Raphaël Boichot</b> , Grenoble-INP/CNRS, France, <b>Hiroki Kondo</b> , Nagoya University, Japan	
1:40pm	<b>A1-2-MoA-1</b> Microstructural Changes of Yttria-Containing MMC-Coatings and Their Influence on Hot Corrosion, Wear and Mechanical Behavior, <b>Christoph Grimme</b> , <i>C. Oskay</i> , <i>M. Galetz</i> , DECHEMA-Forschungsinstitut, Germany	<b>INVITED: B2-MoA-1</b> Si and SiC-based CVD Coatings for High Temperature Structural Applications, <i>A. Le Doze</i> , <i>P. Drieux</i> , Laboratoire des Composites Thermostructuraux - CNRS, France; <i>S. Jacques</i> , Laboratoire de Composites Thermostructuraux - CNRS, France; <i>G. Couégnat</i> , <b>Georges Chollon</b> , Laboratoire des Composites Thermostructuraux - CNRS, France	
2:00pm	<b>A1-2-MoA-2</b> Surface Refinement by Aluminide Diffusion Coatings and Its Effect on the Oxidation Behavior and Creep Strength of Additively Manufactured Fe- and Ni-Based Alloys, <b>Ceyhan Oskay</b> , <i>L. Mengis</i> , DECHEMA-Forschungsinstitut, Germany; <i>A. Kulig</i> , <i>H. Daoud</i> , Neue Materialien Bayreuth GmbH, Germany; <i>M. Galetz</i> , DECHEMA-Forschungsinstitut, Germany; <i>U. Glatzel</i> , University of Bayreuth, Germany and Neue Materialien Bayreuth GmbH, Germany		
2:20pm	<b>INVITED: A1-2-MoA-3</b> Influence of High Temperatures on the Friction and Wear of Highly Stressed Exhaust Systems, <b>Martin Dienwiebel</b> , Institute for Applied Materials IAM - Karlsruhe Institute of Technology, Germany; <i>T. König</i> , Fraunhofer Institute for Mechanics of Materials IWM, Germany; <i>T. Kimpel</i> , Institute for Applied Materials IAM, Karlsruhe Institute of Technology, Germany; <i>D. Kuerten</i> , <i>A. Kailer</i> , Fraunhofer Institute for Mechanics of Materials IWM, Germany	<b>B2-MoA-3</b> Hybrid Nanocomposite CVD Coating Formations, <b>Zhenyu Liu</b> , Latrobe, USA	
2:40pm		<b>B2-MoA-4</b> Effect of the Substrate Treatment on the Microstructure of CVD Ti(C,N)/Al <sub>2</sub> O <sub>3</sub> Hard Coatings, <b>Christiane Wächtler</b> , <i>C. Wüstefeld</i> , TU Bergakademie Freiberg, Germany; <i>M. Šíma</i> , <i>J. Pikner</i> , Dormer Pramet, Czechia; <i>D. Rafaja</i> , TU Bergakademie Freiberg, Germany	
3:00pm	<b>A1-2-MoA-5</b> Surface Refinement of Additively Manufactured Components: Microstructure and Mechanical Properties, <b>Agata Kulig</b> , Neue Materialien Bayreuth GmbH, Germany; <i>C. Oskay</i> , <i>L. Mengis</i> , DECHEMA-Forschungsinstitut, Germany; <i>H. Daoud</i> , Neue Materialien Bayreuth GmbH, Germany; <i>M. Galetz</i> , DECHEMA-Forschungsinstitut, Germany; <i>U. Glatzel</i> , University of Bayreuth, Neue Materialien Bayreuth GmbH, Germany	<b>B2-MoA-5</b> Novel ZrB <sub>2</sub> and HfB <sub>2</sub> Metaldiboride Coatings by LPCVD, <b>Mandy Höhn</b> , <i>M. Krug</i> , <i>B. Matthey</i> , Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany	
3:20pm	<b>A1-2-MoA-6</b> Oxidation Behavior of Novel Cr-Si Diffusion Coatings Applied by the Slurry Technique, <b>Michael Kerbstadt</b> , DECHEMA, Germany; <i>E. White</i> , DECHEMA, USA; <i>M. Galetz</i> , DECHEMA, Germany	<b>B2-MoA-6</b> Diamond Coatings on Cutting Tools Applied to Super-Hard Workpiece Materials, <b>Michael Woda</b> , CemeCon AG, Germany; <i>J. Fuentes</i> , Hufschmied Zerspanungssysteme GmbH, Germany; <i>W. Puetz</i> , <i>M. Wegh</i> , <i>C. Schiffers</i> , <i>S. Bolz</i> , <i>O. Lemmer</i> , CemeCon AG, Germany	
3:40pm	<b>A1-2-MoA-7</b> Use of Machine Learning Algorithms to Optimize and Customize Aluminide Diffusion Coatings, <b>Vladislav Kolarik</b> , <i>M. Juez Lorenzo</i> , Fraunhofer Institute for Chemical Technology ICT, Germany; <i>P. Praks</i> , IT4Innovations National Computing Center, VSB - Technical University of Ostrava, Czechia	<b>INVITED: B2-MoA-7</b> Study on Small-Volume and Flow-Type Hard DLC Film Process Using Substrate-Surrounding Microwave Plasma, <b>Hiroyuki Kousaka</b> , Gifu University, Japan	
4:00pm			

# Monday Afternoon, May 22, 2023

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country D - Session B4-2-MoA</b> <b>Properties and Characterization of Hard Coatings and Surfaces II</b> <b>Moderators: Naureen Ghafoor, Linköping University, Sweden,</b> <b>Marcus Günther, Robert Bosch GmbH, Germany,</b> <b>Fan-Yi Ouyang, National Tsing Hua University, Taiwan</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country B - Session B6-MoA</b> <b>Computationally-aided Materials Design</b> <b>Moderators:</b> <b>David Holec, Montanuniversität Leoben, Austria,</b> <b>Davide G. Sangiovanni, Linköping University, Sweden,</b> <b>Wan-Yu Wu, National United University, Taiwan</b>	
1:40pm	<b>INVITED: B4-2-MoA-1</b> Amorphous Carbon Coatings for Tribological Applications in Hydrogen and Natural Gas Environments, <b>Thomas Gradt</b> , Bundesanstalt für Materialforschung und -prüfung (BAM), Germany	<b>INVITED: B6-MoA-1</b> Selection of Photosensitive Materials on Metal Oxide Surface by Using Machine Learning, <b>Yen-Hsun Su</b> , National Cheng Kung University, Taiwan	
2:00pm			
2:20pm	<b>B4-2-MoA-3</b> Effect of Bio-Lubricants on Wear and Friction of Borided Ti <sub>6</sub> Al <sub>4</sub> V Alloy, <b>A. Nieto-Sosa, G. Rodríguez-Castro, J. Escobar-Hernández, A. Meneses-Amador, José Arciniega-Martínez, H. Martínez-Gutierrez</b> , National Polytechnic Institute, Mexico	<b>B6-MoA-3</b> On the Modeling of Particle Growth in Film Deposition, <b>Rahul Basu</b> , JNTU, India	
2:40pm	<b>B4-2-MoA-4</b> Experimental and Numerical Evaluation of Multi-Pass Scratch on Borided Armco Iron, <b>Jesús Vidal-Torres</b> , SEPI ESIME Instituto Politécnico Nacional, Mexico; <b>A. Ocampo-Ramírez</b> , Universidad Veracruzana, Mexico; <b>G. Rodríguez-Castro, I. Campos-Silva, A. Meneses-Amador</b> , SEPI ESIME Instituto Politécnico Nacional, Mexico	<b>B6-MoA-4</b> First-Principles Investigations of the Physical Properties of Experimentally Feasible Novel Aluminum Nitride Polytypes, <b>Mowafaq Mohammad Al-Sardia</b> , Jejun University, Republic of Korea	
3:00pm	<b>B4-2-MoA-5</b> Microstructure and Tribological Characteristics of Binary Refractory Metal Nitride Coatings, <b>Yu-Hsien Liao, S. Hsu, F. Wu</b> , Dept. of Materials Science and Engineering, National United University, Taiwan	<b>INVITED: B6-MoA-5</b> Computational Supports to Identify Structural and Elastic Relationship of Metastable Crystalline And Amorphous Thin Films Alloys: MO <sub>1-x</sub> Ni <sub>x</sub> and MO <sub>1-x</sub> Si <sub>x</sub> Case Studies, <b>C. Li</b> , 1State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, China; <b>G. Abadias</b> , Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <b>Philippe Djemia</b> , LSPM UPR 3407, France	
3:20pm	<b>B4-2-MoA-6</b> Investigation of the Effect of Nitrogen Additions on the Microstructure, Mechanical and Tribological Properties of CoCrNiAlTi-Based High Entropy Alloy Coatings, <b>Fayeka Mansura, P. Munroe</b> , University of New South Wales, Australia		
3:40pm	<b>B4-2-MoA-7</b> Influence of Si Content on the Mechanical Properties, Microstructure and Tribological Behaviors of (AlCrNbSiTi)N Coatings, <b>Yun-Chen Chan, S. Hsu, P. Chen, J. Duh</b> , National Tsing Hua University, Taiwan	<b>B6-MoA-7</b> On the Quantification of Lattice Distortions and Their Correlation with Kinetics in High Entropy Sublattice Nitrides, <b>Ganesh Kumar Nayak</b> , Montanuniversität Leoben, Austria; <b>A. Kretschmer</b> , TU Wien, Austria; <b>J. Sälker</b> , RWTH Aachen University, Germany; <b>P. Mayrhofer</b> , TU Wien, Austria; <b>M. Hans, J. Schneider</b> , RWTH Aachen University, Germany; <b>D. Holec</b> , Montanuniversität Leoben, Austria	
4:00pm	<b>B4-2-MoA-8</b> Effect of CrMoN Addition on the Thermal Stability and Tribological Property of TiVN Coatings, <b>Y. Chang, He-Qian Feng</b> , National Formosa University, Taiwan	<b>B6-MoA-8</b> Machine-Learning Guided Ab-Initio Exploration of Thermal/Mechanical Properties in Transition Metal Nitrides, <b>Andreas Kretschmer</b> , TU Wien, Institute of Materials Science and Technology, Austria; <b>M. Fedrigo</b> , Oerlikon Digital Hub, Germany; <b>L. Lezuo</b> , TU Wien, Institute of Materials Science and Technology, Austria; <b>K. Yalamanchili, H. Rudigier</b> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>P. Mayrhofer</b> , TU Wien, Institute of Materials Science and Technology, Austria	
4:20pm		<b>B6-MoA-9</b> Descriptors Development for Stability Prediction of N-Doped High Entropy Alloy Coatings: A DFT Study, <b>Chih-Heng Lee</b> , National Tsing Hua University, Taiwan; <b>J. Lee</b> , Ming Chi University of Technology, Taiwan; <b>H. Chen</b> , National Tsing Hua University, Taiwan	
4:40pm			
5:00pm			

# Monday Afternoon, May 22, 2023

<b>Topical Symposia</b> <b>Room Town &amp; Country A - Session TS1-2-MoA</b> <b>Coatings for Energy Storage and Conversion - Batteries and Hydrogen Applications II</b> <b>Moderators: Nazlim Bagcivan, Schaeffler Technologies GmbH &amp; Co. KG, Germany,</b> <b>Klaus Böbel, Bosch Manufacturing Solutions, Germany</b>	
1:40pm	<b>TS1-2-MoA-1</b> Influence of Oxygen Content During the Deposition of Scandium Stabilized Zirconia Thin Films by Reactive High Power Impulse Magnetron Sputtering (R-HiPIMS), <b>Isabel Fernandez Romero</b> , Corporate Sector Research and Advance Engineering- Robert Bosch, Germany; <b>S. Klein, C. Engel</b> , Corporate Sector Research and Advance Engineering - Robert Bosch, Germany; <b>J. Fleig</b> , Technical University of Vienna, Austria
2:00pm	<b>TS1-2-MoA-2</b> Comparison of the Impacts of High Entropy Oxide/Alloy Coatings for Lithium-Sulfur Battery Separators, <b>Ming-Roe Wann, Y. Lin, S. Chung, J. Ting</b> , National Cheng Kung University (NCKU), Taiwan
2:20pm	<b>INVITED: TS1-2-MoA-3</b> Coatings and Surface Modifications for Hydrogen Storage Applications, <b>N. Kostoglou, C. Mitterer</b> , Montanuniversität Leoben, Austria; <b>Claus Rebholz</b> , University of Cyprus
2:40pm	
3:00pm	<b>TS1-2-MoA-5</b> BaCeZrYO <sub>3-δ</sub> Coatings Deposited by Solution Precursor Plasma Spray (SPPS) for Sustainable Energy Application, <b>Yen-Yu Chen, W. Zeng, C. Liu, G. Yao</b> , Chinese Culture University, Taiwan
3:20pm	<b>TS1-2-MoA-6</b> Aluminum-Doped Non-Stoichiometric Titanium Oxide (Al-TiO <sub>x</sub> ) for Anode in Lithium-Ion Batteries, <b>Guan-Bo Liao</b> , National Cheng Kung University (NCKU), Taiwan; <b>Y. Shen</b> , Hierarchical Green-Energy Materials (Hi-GEM) Research Center, Taiwan; <b>J. Huang</b> , National Cheng Kung University (NCKU), Taiwan
3:40pm	<b>TS1-2-MoA-7</b> Unveiling Capacitive and Diffusion-Limited Li-Ion Storage in Semiconducting 2d-MoS <sub>2</sub> Compositing with Aluminium Nitride Nanoflowers for Flexible Electrodes of Supercapacitors, <b>D. Kaur, Gagan Kumar Sharma</b> , Indian Institute of Technology Roorkee, India

# Tuesday Morning, May 23, 2023

	<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Pacific D - Session H2-1-TuM</b>  <b>Advanced Mechanical Testing of Surfaces, Thin Films, Coatings and Small Volumes I</b>  <b>Moderator:</b>  <b>Olivier Pierron, Georgia Institute of Technology, USA</b></p>	<p><b>Coatings for Biomedical and Healthcare Applications</b>  <b>Room Pacific F-G - Session D2-TuM</b>  <b>Medical Devices: Bio-Tribo-Corrosion, Diagnostics, 3D Printing</b>  <b>Moderators:</b>  <b>Hamdy Ibrahim, University of Tennessee at Chattanooga, USA,</b>  <b>Margaret Stack, University of Strathclyde, UK</b></p>
8:00am		<p><b>INVITED: D2-TuM-1</b> Empowering PVD-Coatings to Control the Time Dependent Chemical and Microstructural Coating Properties in Aqueous Electrolytes, <b>Holger Hoche</b>, Center for Structural Materials, TU-Darmstadt, Germany; <b>T. Ulrich</b>, Center for Structural Materials, TU Darmstadt, Germany; <b>P. Polcik</b>, Plansee Composite Materials, Germany; <b>M. Oechsner</b>, Center for Structural Materials, TU-Darmstadt, Germany</p>
8:20am		
8:40am	<p><b>INVITED: H2-1-TuM-3</b> Multifunctional Characterization of Nanomultilayers, <b>Andrea Maria Hodge</b>, University of Southern California, USA</p>	<p><b>D2-TuM-3</b> Early Detection of Fretting-Corrosion at the Hip Modular Junction Interface by Acoustic Emission Non-Invasive Technique, <b>Bill Keaty</b>, <b>Y. Sun</b>, University of Illinois at Chicago, USA; <b>M. Mathew</b>, University of Illinois - Chicago, USA; <b>D. Ozevin</b>, <b>J. Eapen</b>, <b>T. Zhang</b>, University of Illinois at Chicago, USA</p>
9:00am		<p><b>D2-TuM-4</b> Corrosion Evaluation of Plasma Electrolytic Oxidation Coatings on Titanium Alloys For Biomedical Implant Application, <b>E. Sondgeroth</b>, <b>K. Cheng</b>, <b>Y. Sun</b>, UIC School of Medicine at Rockford, USA; <b>C. Takoudies</b>, UIC School of Medicine, USA; <b>E. Vries</b>, Faculty of Engineering Technology , University of Twente, The Netherlands, USA; <b>D. Matthews</b>, <b>N. Bolink</b>, Faculty of Engineering Technology , University of Twente, The Netherlands; <b>A. Yerokhin</b>, Department of Materials, University of Manchester, United Kingdom; <b>Mathew Mathew</b>, UIC school of medicine at Rockford, USA</p>
9:20am		<p><b>D2-TuM-5</b> Large-Scale Metallic Nanotubes Array (MeNTA) with Plasmonic Nanoparticles for SERS Application, <b>Alfreda Krisna Altama, J. Chu</b>, National Taiwan University of Science and Technology, Taiwan; <b>P. Yiu</b>, Ming Chi University of Technology, Taiwan; <b>W. Chiang</b>, National Taiwan University of Science and Technology, Taiwan</p>
9:40am	<p><b>H2-1-TuM-6</b> Link between Cracking Mechanisms of Trilayer Films on Flexible Substrates and Electro-Mechanical Reliability Under Biaxial Loading, <b>Shuhel Altaf Husain</b>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <b>P. Kreiml</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; <b>P. Renault</b>, Institut Pprime - CNRS - ENSMA - Université de Poitiers, France; <b>C. Mitterer</b>, Montanuniversität Leoben, Leoben, Austria; <b>M. Cordill</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; <b>D. Faurie</b>, CNRS, France</p>	<p><b>D2-TuM-6</b> Carbide-derived Carbon (CDC) for Implant Application: Tribocorrosion Kinetics and Mechanisms, <b>Kyle Kinnerk</b>, Department of Biomedical Engineering, University of Illinois at Chicago, USA; <b>Y. Sun</b>, <b>M. Daly</b>, Department of Civil, materials, and Environmental Engineering, University of Illinois at Chicago, USA; <b>M. Wimmer</b>, Department of Orthopedic Surgery, Rush University Medical Center, USA; <b>M. McNallan</b>, Department of Civil, materials, and Environmental Engineering, University of Illinois at Chicago, USA; <b>M. Mathew</b>, Department of Biomedical Sciences, UIC College of Medicine at Rockford, USA</p>
10:00am	<p><b>H2-1-TuM-7</b> Effect of Nanometric Stacking on the Magneto-Mechanical Properties of Thin Films on Flexible Substrate, <b>H. Ben Mahmoud</b>, <b>Damien Faurie</b>, CNRS-LSPM, France; <b>P. Renault</b>, CNRS-Pprime, France; <b>F. Zighem</b>, CNRS-LSPM, France</p>	<p><b>D2-TuM-7</b> PEKK as Biomaterials Under Fretting Corrosion Solicitations: May This Biopolymer Be Considered as New Hip Implant Component?, <b>Jean Geringer</b>, <b>J. Monnatte</b>, Mines Saint-Etienne, France; <b>G. Planche</b>, EPIC sarl, France; <b>J. Porteus</b>, Oxford Polymers, USA</p>
10:20am	<p><b>H2-1-TuM-8</b> Influence of the Aspect Ratio of the Micro-Cantilever on the Determined Young's Modulus Using the Euler-Bernoulli Equation, <b>F. Konstantiniuk</b>, Montanuniversität Leoben, Austria; <b>M. Krobath</b>, <b>W. Ecker</b>, Materials Center Leoben Forschungs GmbH, Austria; <b>C. Czettl</b>, CERATIZIT Austria GmbH, Austria; <b>Nina Schalk</b>, <b>M. Tkadletz</b>, Montanuniversitat Leoben, Austria</p>	<p><b>D2-TuM-8</b> Fretting-corrosion (&lt;5µm) Performance of Carbide-derived Carbon (CDC) Surface Modification for Hip Implants, <b>Yani Sun</b>, <b>M. Daly</b>, <b>M. McNallan</b>, Department of Civil, Materials and Environmental Engineering, University of Illinois at Chicago, USA; <b>M. Mathew</b>, Department of Biomedical Sciences, UIC College of Medicine at Rockford, USA</p>
10:40am	<p><b>H2-1-TuM-9</b> Engineering Metal-MAX Phase Multilayered Nanolaminates for Tunable Strength and Toughness, <b>Skye Supakul</b>, <b>S. Pathak</b>, Iowa State University, USA; <b>K. Yaddanapudi</b>, University of California at Davis, USA</p>	

# Tuesday Morning, May 23, 2023

<b>Coatings for Use at High Temperatures</b> <b>Room Pacific E - Session A1-3-TuM</b> <b>Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling III</b> <b>Moderators:</b> <b>Gustavo García-Martín</b> , REP-Energy Solutions, Spain, <b>Justyna Kulczyk-Malecka</b> , Manchester Metropolitan University,		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country D - Session B4-3-TuM</b> <b>Properties and Characterization of Hard Coatings and Surfaces III</b> <b>Moderators: Naureen Ghafoor</b> , Linköping University, Sweden, <b>Marcus Günther</b> , Robert Bosch GmbH, Germany, <b>Fan-Yi Ouyang</b> , National Tsing Hua University, Taiwan	
8:00am	<b>A1-3-TuM-1</b> Excellent Tribological, Mechanical, and Anti-Corrosion Performance of Agro-Waste as Corrosion Inhibitor for Carbon Steel in an Acidic Environment, <b>Omatayo Sanni</b> , J. Ren, T. Jen, Department of Mechanical Engineering Science, University of Johannesburg, Cnr Kingsway and University Roads, Auckland Park, 2092, Johannesburg, South Africa		
8:20am	<b>A1-3-TuM-2</b> Study of Materials and Coatings for Use in High Temperature CO <sub>2</sub> Environments, <b>Jianliang Lin</b> , Southwest Research Institute, USA		
8:40am	<b>A1-3-TuM-3</b> Multi-Element Thin Film Deposition by Reactive HiPIMS for SOEC Interconnects Protection, <b>Théo Dejob</b> , F. Rouillard, A. Casadebaigt, CEA Saclay, France; K. Couturier, CEA LITEN Grenoble, France; F. Miserque, F. Lomello, CEA Saclay, France; F. Sanchette, Université de Technologie de Troyes, France	<b>B4-3-TuM-3</b> The Oxidation Behavior of VMoN Thin Films Deposited by High Power Pulsed Magnetron Sputtering, <b>Nan-Cheng Lai</b> , J. Huang, National Tsing Hua University, Taiwan	
9:00am	<b>A1-3-TuM-4</b> Characteristics and Resistance of CVD Hafnium Carbide Coating in Extreme Environments, <b>Hyeon-Geun Lee</b> , J. Lee, D. Kim, B. Jun, W. Kim, J. Park, Korea Atomic Energy Research Institute, Republic of Korea	<b>B4-3-TuM-4</b> Correlation Between Microstructure and Mechanical Properties of B <sub>4</sub> C Thin Films Deposited by Pulsed Laser Deposition, <b>Falko Jahn</b> , S. Weißmantel, Laserinstitut Hochschule Mittweida, Germany	
9:20am	<b>A1-3-TuM-5</b> High Temperature Corrosion Protection of Zirconium Fuel Rods in Nuclear Reactors by Nanocrystalline Diamond (Ncd) Layers, <b>Frantisek Fendrych</b> , Institute of Physics Academy of Sciences of the Czech Republic	<b>B4-3-TuM-5</b> Evaluation of Fracture Toughness of Borided Materials by Cross-Sectional Scratch Testing, F. Alfonso-Reyes, <b>André Ballesteros-Arguello</b> , J. Martínez-Trinidad, SEPI ESIME Instituto Politécnico Nacional, Mexico; A. Ocampo-Ramírez, Universidad Veracruzana, Mexico; G. Rodríguez-Castro, SEPI ESIME Zacatenco, Mexico; A. Meneses-Amador, SEPI ESIME Instituto Politécnico Nacional, Mexico	
9:40am	<b>A1-3-TuM-6</b> Effect of Vacuum Annealing on the Residual Stress of ZrN Thin Film deposited on Ni-based Superalloy Haynes 282, <b>Kuan-Che Lan</b> , C. Li, National Tsing Hua University, Taiwan; H. Tung, Institute of Nuclear Energy Research, Taiwan	<b>B4-3-TuM-6</b> Stress Evolution in Binary Metal Alloy Systems, <b>Tong Su</b> , Brown University, USA; J. Robinson, G. Thompson, The University of Alabama, USA; E. Chason, Brown University, USA	
10:00am		<b>INVITED: B4-3-TuM-7</b> Molecular Engineering of Inorganic Thin Film Interfaces for Accessing Multiple Novel Properties for Diverse Applications, <b>Ganpati Ramanath</b> , Rensselaer Polytechnic Institute, USA	
10:20am			

# Tuesday Morning, May 23, 2023

<p><b>Topical Symposia</b>  <b>Room Town &amp; Country A - Session TS1-3-TuM</b>  <b>Coatings for Energy Storage and Conversion - Batteries and Hydrogen Applications III</b>  <b>Moderators:</b>  <b>Nazlim Bagcivan</b>, Schaeffler Technologies GmbH &amp; Co. KG, Germany,  <b>Klaus Böbel</b>, Bosch Manufacturing Solutions, Germany</p>		<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room Town &amp; Country B - Session E3-TuM</b>  <b>Tribology of Coatings and Surfaces for Industrial Applications</b>  <b>Moderators: Nazlim Bagcivan</b>, Schaeffler Technologies GmbH &amp; Co. KG, Germany, <b>Rainer Cremer</b>, KCS Europe GmbH, Germany, <b>Philipp Grützmacher</b>, Institute of Engineering Design and Product Development, Austria</p>
8:00am	<p><b>TS1-3-TuM-1</b> rGo-SiOx Nanocomposite as Anode Material in Lithium Ion Battery, <b>Sheng Hsu</b>, <b>J. Huang</b>, National Cheng Kung University (NCKU), Taiwan; <b>B. Sanjaya</b>, National Cheng Kung University (NCKU), Taiwan, India</p>	<p><b>INVITED: E3-TuM-1</b> Carbon Based Coatings Deposited Over Aisi 4140 to Improve Wear Resistance in Machine Components, <b>F. Delfin</b>, UTN, Argentina; <b>D. Heim</b>, Upper University of Applied Sciences, Wels Campus, Austria; <b>Sonia Brühl</b>, UTN, Argentina</p>
8:20am	<p><b>TS1-3-TuM-2</b> High-Performance Rechargeable Zinc Ion Batteries: From Surface Modification of Zn Anode and Structural Engineered Cathode to Deep Eutectic Solvent (DES)-Based Electrolytes, <b>Yu-Lun Chueh</b>, National Tsing Hua University, Taiwan</p>	
8:40am	<p><b>TS1-3-TuM-3</b> Electrochemical Performances of LiNi0.8Co0.1Mn0.1O2 Synthesized by Hydroxide Coprecipitation Method, <b>Chia-Hsin Lo</b>, <b>J. Huang</b>, National Cheng Kung University (NCKU), Taiwan; <b>C. Chang</b>, National University of Tainan, Taiwan</p>	<p><b>E3-TuM-3</b> Tribological Behaviour of Diamond Coated Reaction-Bonded Silicon Carbide Under Dry and Seawater Environment, <b>R. Kannan</b>, <b>N. C.</b>, Indian Institute of Technology Madras, India; <b>R. Ganguly</b>, <b>S. Mandal</b>, <b>S. Rao</b>, Carborundum Universal Limited, Industrial Ceramic Division, India; <b>M.S Ramachandra Rao</b>, Indian Institute of Technology Madras, India</p>
9:00am	<p><b>TS1-3-TuM-4</b> Pb-Free Halide Perovskite/TiO<sub>2</sub> Heterostructure for Enhanced Solar-Driven PFC, <b>Yong Yu</b>, <b>T. Jyh-Ming</b>, National Cheng Kung University (NCKU), Taiwan</p>	<p><b>E3-TuM-4</b> Friend or Foe? The Role of Oxygen in the Tribological Performance of Solid Lubricant MoS<sub>2</sub>, <b>Andrey Bondarev</b>, <b>I. Ponomarev</b>, <b>T. Polcar</b>, Czech Technical University in Prague, Czechia</p>
9:20am	<p><b>TS1-3-TuM-5</b> Inline PVD Coating of Bipolar Plates for Electrochemical Energy Converters, <b>K. Böbel</b>, <b>Matthias Mueller</b>, Bosch Manufacturing Solutions, Germany; <b>D. Beisenherz</b>, <b>S. Huebner</b>, Singulus Technologies AG, Germany; <b>J. Jiao</b>, <b>S. Wetzel</b>, Bosch Automotive Products (Suzhou) Co., Ltd., Germany</p>	<p><b>E3-TuM-5</b> Friction and Wear Behavior of Electrostatically Developed Nanocomposite Coatings for High Performance Cutting Tool, <b>S. Ramanujam</b>, <b>Rakesh Kumar Gunda</b>, <b>K. Ramanjaneyulu</b>, <b>K. Sudhakar Reddy</b>, <b>K. Ankamma</b>, <b>A. Ramchandra Reddy</b>, Mahatma Gandhi Institute of Technology, India</p>
9:40am		<p><b>INVITED: E3-TuM-6</b> Modification of Diamond Like Carbon (DLC) to Improve Specific Tribological Characteristics for Automotive Applications, <b>Denis Romagnoli</b>, <b>F. Lavalle</b>, STS srl, Italy</p>
10:00am		
10:20am		<p><b>E3-TuM-8</b> Fabrication and Tribological Behaviors of DLC Coatings Embedded with Graphene Nanoplatelets, <b>Guizhi Wu</b>, <b>R. Brittain</b>, <b>A. Morina</b>, <b>E. Broitman</b>, <b>L. Yang</b>, University of Leeds, UK</p>
10:40am		<p><b>E3-TuM-9</b> Tribological Properties MoS<sub>2</sub>-WC Duplex Coatings in Low Viscosity Hydrocarbons, <b>Euan Cairns</b>, University of North Texas, USA; <b>S. Dixit</b>, Plasma Technology Inc., USA; <b>D. Berman</b>, <b>S. Aouadi</b>, <b>A. Voevodin</b>, University of North Texas, USA</p>

# Tuesday Morning, May 23, 2023

Exhibitors Keynote Lecture  
Room Town & Country A - Session EX-TuM  
Exhibition Keynote Lecture  
Moderator: Samir Aouadi, University of North Texas, USA

11:00am

**INVITED: EX-TuM-1** Future Requirements for Advanced Surface Modification and Coatings Technologies for Turbine Engine Applications, **David Furrer**, Pratt and Whitney, USA

11:20am

# Tuesday Afternoon, May 23, 2023

<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Town &amp; Country A - Session H3-1-TuA</b>  <b>Characterization of Coatings and Small Volumes in Extreme and Cyclic Conditions I</b>  <b>Moderators: Thomas Edwards</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland,  <b>Peter Hosemann</b>, University of California, Berkeley, USA,  <b>Barbara Putz</b>, Montanuniversität Leoben, Austria</p>		<p><b>Coatings for Biomedical and Healthcare Applications</b>  <b>Room Pacific D - Session D3-TuA</b>  <b>Biointerfaces: Coatings to Promote Cell Adhesion while Inhibiting Microbial Growth</b>  <b>Moderators:</b>  <b>Valentim A.R. Barão</b>, University of Campinas (UNICAMP), Brazil,  <b>Sandra E. Rodil</b>, Universidad Nacional Autónoma de México</p>	
1:40pm	<p><b>INVITED: H3-1-TuA-1</b> Local Deformation Mechanisms under Ambient and Non-Ambient Conditions Tested via Advanced Nanoindentation, <b>Verena Maier-Kiener</b>, Montanuniversität Leoben, Leoben, Austria</p>	<p><b>INVITED: D3-TuA-1</b> Chemical Vapor Deposition of Tantalum for Enhanced Cell Adhesion, <b>Jessica DeBerardinis</b>, Ultramet, USA</p>	
2:00pm			
2:20pm	<p><b>H3-1-TuA-3</b> Extracting High-Temperature Stress-Strain Curves and Assessing Transformation Pressures: The Spherical Indentation of Silicon, <b>Gerald Schaffar</b>, Montanuniversität Leoben, Austria; <b>D. Tscharnuter</b>, KAI Kompetenzzentrum Automobil- und Industrieelektronik GmbH, Austria; <b>V. Maier-Kiener</b>, Montanuniversität Leoben, Austria</p>	<p><b>D3-TuA-3</b> The Functionalization of N95 Masks Using Atomic Layer Deposited Silver Nano-Islands to Induce Antimicrobial Activity, <b>Harshdeep Bhatia</b>, <b>C. Takoudis</b>, University of Illinois, Chicago, USA</p>	
2:40pm	<p><b>H3-1-TuA-4</b> Micro-Impact Tests of Novel Thermal Barrier Coating Systems and &gt;1000C Nanoindentation on Ni-Base Superalloy, <b>Ben Beake</b>, Micro Materials Ltd, UK; <b>C. Chalk</b>, Cranfield University, UK; <b>S. Goodes</b>, <b>A. Harris</b>, Micro Materials Ltd, UK; <b>L. Isern</b>, <b>J. Nicholls</b>, Cranfield University, UK</p>	<p><b>INVITED: D3-TuA-4</b> Cold Atmospheric Plasma Jets Generated from Flexible Sources, <b>Carles Corbella</b>, <b>S. Portal</b>, <b>H. Solomon</b>, <b>M. McCraw</b>, <b>M. Keidar</b>, <b>S. Solares</b>, George Washington University, USA</p>	
3:00pm	<p><b>H3-1-TuA-5</b> Influence of Si on the Mechanical Properties and High-temperature Fracture Toughness of Cr-Si-B<sub>22z</sub> Coatings, <b>L. Zauner</b>, <b>Rainer Hahn</b>, CDL-SEC at TU Wien, Austria; <b>O. Hunold</b>, <b>J. Ramm</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>S. Kolozsvari</b>, <b>P. Polcik</b>, Plansee Composite Materials GmbH, Germany; <b>H. Riedl</b>, CDL-SEC at TU Wien, Austria</p>		
3:20pm	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	
3:40pm			
4:00pm	<p><b>INVITED: H3-1-TuA-8</b> Nanoindentation Measurements at Combined High Sustained Strain Rates and Elevated Temperatures, <b>Benoit Merle</b>, University of Kassel, Germany</p>	<p><b>D3-TuA-8</b> Multifunctional Coating Approach Integrating Visible-Light Driven Photodynamic Therapy and Photocatalytic Activity for Controlling Biofilm Accumulation and Reinforcing Wear Protection, <b>Bruna Nagay</b><sup>1</sup>, <b>C. Dini</b>, <b>R. Costa</b>, <b>A. Santos</b>, University of Campinas (UNICAMP), Brazil; <b>J. Cordeiro</b>, Centro Universitário das Faculdades Associadas de Ensino, Brazil; <b>B. Gomes</b>, University of Campinas (UNICAMP), Brazil; <b>E. Rangel</b>, <b>N. Cruz</b>, Sao Paulo State University, Brazil; <b>J. van den Beucken</b>, Radboud University Medical Center, Netherlands; <b>V. Barão</b>, University of Campinas (UNICAMP), Brazil</p>	
4:20pm			
4:40pm	<p><b>H3-1-TuA-10</b> Development of a New Test Method to Evaluate Local Adhesion Properties of Diamond-like Carbon (DLC) coating Using Vibration-Induced Cavitation, <b>Junaid Ul Hasnain</b>, Center for Structural Materials, Germany</p>		

<sup>1</sup> Graduate Student Award Finalist

# Tuesday Afternoon, May 23, 2023

<b>Coatings for Use at High Temperatures</b> <b>Room Pacific E - Session A2-1-TuA</b> <b>Thermal and Environmental Barrier Coatings I</b> <b>Moderators:</b> <b>Sabine Faulhaber</b> , University of California, San Diego, USA, <b>Kang N. Lee</b> , NASA Glenn Research Center, USA		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country D - Session B4-4-TuA</b> <b>Properties and Characterization of Hard Coatings and Surfaces IV</b> <b>Moderators: Naureen Ghafoor</b> , Linköping University, Sweden, <b>Marcus Günther</b> , Robert Bosch GmbH, Germany, <b>Fan-Yi Ouyang</b> , National Tsing Hua University, Taiwan	
1:40pm	<b>A2-1-TuA-1</b> Influence of Microstructure on Phase Transformation of Plasma Sprayed YSZ Coatings Under Thermal Gradient Cycling Conditions, <b>Simon Schöler</b> , D. Mack, Y. Sohn, Forschungszentrum Juelich GmbH, Germany; M. Rudolphi, DECHEMA, Germany; M. Adam, TU Darmstadt, Germany; R. Vassen, O. Guillon, Forschungszentrum Juelich GmbH, Germany		
2:00pm	<b>A2-1-TuA-2</b> A New Method to Diagnose Early Stages of CMAS Infiltration in Thermal Barrier Coatings, <b>Vladimir Pankov</b> , K. Chen, P. Patnaik, National Research Council of Canada	<b>B4-4-TuA-2</b> Corrosion and Electrical Insulation Properties of SiO <sub>x</sub> Thin Films Deposited by Microwave PECVD, <b>Atreya Danturthi</b> , R. Drummond Brydson, University of Leeds, UK; I. Kolev, Hauzer, Netherlands; L. Yang, G. Wu, University of Leeds, UK	
2:20pm	<b>A2-1-TuA-3</b> Mechanical Behavior of a Nial Coating: Effect of Thermal Aging on the Brittle-to-Ductile Transition Temperature, <b>Capucine Billard</b> , V. Maurel, Mines ParisTech, PSL Research University, France; D. Texier, Institut Clement Ader (ICA), France; D. Marquie, Safran Aircraft Engines, France; N. Bourhila, Safran aircraft engines, France; L. Marcin, Safran aircraft engines, France	<b>INVITED: B4-4-TuA-3</b> High-Throughput Methodology for The Realization of High-Entropy High-Dielectric-Constant Ba(Ti,Zr,Ta,Hf,Mo)O <sub>3</sub> Film-Based Metal-Oxide-Semiconductor-Related Devices, <b>kao-shuo chang</b> , National Cheng Kung University (NCKU), Taiwan; V. Nguyen, No.1, University Road, Taiwan; T. NAGATA, National Institute for Materials Science, Japan	
2:40pm	<b>INVITED: A2-1-TuA-4</b> Failure Mechanisms of Conventional Thermal Barrier Coatings and Development of Alternate Coating Systems for IGT Applications, <b>Prabhakar Mohan</b> , B. Cottom, Solar Turbines Inc., USA		
3:00pm		<b>B4-4-TuA-5</b> Effects of Nitrogen Flow Ratio on the Mechanical and Anticorrosive Properties of Co-sputtered (TiZrHfTa) <sub>N<sub>x</sub></sub> Films, <b>Ou Tzu-Yu</b> , National Taiwan Ocean University, Taiwan; C. Li-Chun, Ming Chi University of Technology, Taiwan; C. Yung-I, National Taiwan Ocean University, Taiwan	
3:20pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
3:40pm			
4:00pm	<b>A2-1-TuA-8</b> Manufacturing and Performance of a Three-Layer Environmental Barrier Coating System for SiC/SiC CMCs by Magnetron Sputtering, <b>Ronja Anton</b> , V. Leisner, U. Schulz, German Aerospace Center (DLR), Germany		
4:20pm	<b>A2-1-TuA-9</b> EBC Multi-Layer Coatings on SiC-CMC Substrates Synthesized in a Continuous Vacuum Deposition Process, <b>Xavier Maeder</b> , D. Casari, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; D. Chen, Oerlikon Metco (US) Inc., USA; K. Glaentz, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; J. Michler, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; H. Schoech, B. Widrig, J. Ramm, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein		
4:40pm	<b>A2-1-TuA-10</b> Developments of the Slag-Based Geopolymer Coatings by the Flame Spray, <b>Wan-Ting Huang</b> , I. Huang, W. Lee, Y. Yang, Department of Material and Mineral Resources Engineering, National Taipei University of Technology, Taipei, TAIWAN		
5:00pm	<b>A2-1-TuA-11</b> Thermal Spray Coating with Ceramic Microspheres for Acoustic Absorption Applications, <b>Ting-Ya Chuang</b> , W. Lee, Y. Yang, National Taipei University of Technology, Taiwan		

# Tuesday Afternoon, May 23, 2023

<b>New Horizons in Coatings and Thin Films</b> <b>Room Town &amp; Country C - Session F3-TuA</b> <b>2D Materials: Synthesis, Characterization, and Applications</b> <b>Moderators: Ying-Hao Chu, National Tsing Hua Univ., Taiwan ,</b> <b>Chih-Yen Chen, National Sun Yat-sen University, Taiwan ,</b> <b>Yi-Cheng Chen, National Tsing Hua University, Taiwan</b>		<b>Topical Symposia</b> <b>Room Pacific F-G - Session TS2-TuA</b> <b>Sustainable Surface Solutions, Materials, Processes and Applications</b> <b>Moderators: Joerg Vetter, Oerlikon Balzers Coating Germany GmbH, Germany,</b> <b>Fan-Bear Wu, National United University, Taiwan</b>	
1:40pm	<b>INVITED: F3-TuA-1</b> Tellurene Electronics and Sensors, <i>Wenzhuo Wu</i> , Purdue University, USA		
2:00pm		<b>TS2-TuA-2</b> Euro 7/VII – Challenges for Surface Solutions in ICEVs and EVs, <i>Joerg Vetter</i> , Oerlikon Balzers Coating Germany GmbH, Germany; <i>J. Becker</i> , JB, Germany; <i>M. Esselbach</i> , Oerlikon Surface Solutions AG, Liechtenstein	
2:20pm	<b>INVITED: F3-TuA-3</b> Phase/Structure-Engineered Two-Dimensional Layered Materials for Innovative Nanoelectronics, <i>Yu-Lun Chueh</i> , National Tsing Hua University, Taiwan	<b>INVITED: TS2-TuA-3</b> Surface Technology as a Key Technology for New Energy Systems, <i>Yashar Musayev</i> , <i>L. Dobrenizki</i> , Siemens Energy Global GmbH & Co. KG, Germany	
2:40pm			
3:00pm	<b>F3-TuA-5</b> Tellurene-Based Wearable Biosensor for Real-Time Longitudinal Monitoring of Neurotransmitters in Human Sweat, <i>Ruifang Zhang</i> , <i>W. Wu</i> , Purdue University, USA	<b>TS2-TuA-5</b> Enhancing Hydrogen Storage in 2d Materials via Surface Modifications: An Atomistic Study, <i>P. Habibi</i> , <i>S. Sagar</i> , <i>T. Vlugt</i> , <i>O. Moulτος</i> , <i>Poulumi Dey</i> , Delft University of Technology, Netherlands	
3:20pm	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
3:40pm			
4:00pm	<b>F3-TuA-8</b> A Two-Dimensional $Ti_3C_2Tx$ MXene/Mesochannel Ionic Diode Membrane for High-Performance Osmotic Energy Harvesting, <i>Wen-Hsin Hung</i> , National Taiwan University of Science and Technology, Taiwan; <i>C. Chu</i> , Feng Chia University, Taiwan; <i>L. Yeh</i> , National Taiwan University of Science and Technology, Taiwan	<b>INVITED: TS2-TuA-8</b> Progress on Piezoelectrocatalysis for Hydrogen Production and Environmental Science, <i>Jyh-Ming Wu</i> , National Tsing Hua University, Taiwan	
4:20pm	<b>F3-TuA-9</b> Discussion on the Growth Parameters and Oxygen Evolution Reaction Performance of Copper Sulfide, <i>Li-Wen Lin</i> , <i>C. Chen</i> , Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Taiwan		
4:40pm	<b>F3-TuA-10</b> Cation and Anion Co-Doped Iron Oxide Toward Efficient Hydrogen Peroxide Formation and Electro-Fenton Degradation of Organic Pollutant, <i>Yemima Purba</i> , <i>J. Ting</i> , National Cheng Kung University (NCKU) Tainan, Taiwan	<b>TS2-TuA-10</b> Visible Light Activated Photocatalytic Coatings by Reactive Magnetron Sputtering for Environmental Applications, <i>Peter Kelly</i> , John Dalton Building, Chester Street, UK; <i>M. Ratava</i> , <i>J. Redfern</i> , Manchester Metropolitan University, U.K.	
5:00pm	<b>F3-TuA-11</b> Molten Salt Synthesis of Highly Dispersible Hexagonal Boron Nitride Nanosheets for Ultrafiltration, <i>Neon Vicente III Rosell</i> , National Cheng Kung University (NCKU), Taiwan, Philippines; <i>K. Chang</i> , National Cheng Kung University (NCKU), Taiwan	<b>TS2-TuA-11</b> A Covalent Organic Framework-Based Ionic Diode Membrane for Ultrahigh Blue Energy Generation, <i>Yu-Chun Su</i> , <i>L. Yeh</i> , National Taiwan University of Science and Technology, Taiwan	

# Tuesday Afternoon, May 23, 2023

<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room Town &amp; Country B - Session E1-1-TuA</b>  <b>Friction, Wear, Lubrication Effects, and Modeling I</b>  <b>Moderators: Andreas Rosenkranz</b>, Universidad de Chile,  <b>Manel Rodriguez Ripoll</b>, AC2T Research GmbH, Austria,  <b>Noora Manninen</b>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein</p>		
1:40pm	<p><b>INVITED: E1-1-TuA-1</b> Chemistry and Mechanical Properties of 2D Transition Metal Carbides and Carbonitrides (MXenes), <b>Vadym Mochalin</b>, University of Missouri S&amp;T, USA</p>	
2:00pm		
2:20pm	<p><b>E1-1-TuA-3</b> Tribocorrosion Behaviours of VNbMoTaWCr High Entropy Alloy Coatings, <b>Ismail Rahmadtulloh</b>, <b>C. Wang</b>, <b>W. Wang</b>, National Taiwan University of Science and Technology, Taiwan; <b>B. Lou</b>, Chang Gung University, Taiwan; <b>J. Lee</b>, Ming Chi University of Technology, Taiwan</p>	
2:40pm	<p><b>E1-1-TuA-4</b> Fundamentals of Phototribology, <b>B. Perotti</b>, UCS, Brazil; <b>A. Cammarata</b>, Czech Technical University in Prague, Czech Republic; <b>F. Cemin</b>, Nantes Université, France; <b>S. Sales de Mello</b>, Université Grenoble Alpes, CNRS, France; <b>L. Leidens</b>, UCS, Brazil; <b>F. Echeverrigaray</b>, UNICAMP, Brazil; <b>T. Minea</b>, Université Paris-Saclay, France; <b>F. Alvarez</b>, UNICAMP, Brazil; <b>A. Michels</b>, UCS, Brazil; <b>T. Polcar</b>, University of Southampton, UK; <b>Carlos Figueroa</b>, UCS, Brazil</p>	
3:00pm	<p><b>E1-1-TuA-5</b> Ultra-thin nanotwinned (CoCrNi)<sub>100-x</sub>W<sub>x</sub> Medium Entropy Alloy Film: Role of Nanotwin in Mechanical and Tribology Behaviors, <b>Jhen-De You</b>, National Taiwan University, Taiwan; <b>P. Yiu</b>, Ming Chi University of Technology, Taiwan; <b>C. Hsueh</b>, National Taiwan University, Taiwan</p>	
3:20pm	<p><b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b></p>	
3:40pm		

# Tuesday Evening, May 23, 2023

Special Interest Talks

Room Town & Country A - Session SIT2-TuSIT

Special Interest Session II

Moderator:

Jyh-Wei Lee, Ming Chi University of Technology, Taiwan

7:00pm

**INVITED: SIT2-TuSIT-1** Functional Nitride and Oxide  
Thin Films – the Key to Our Digital World,  
**Joerg Patscheider**, Evatec AG, Switzerland

7:20pm

# Wednesday Morning, May 24, 2023

<b>Functional Thin Films and Surfaces</b> <b>Room Pacific F-G - Session C1-1-WeM</b> <b>Optical Materials and Thin Films I</b> <b>Moderators:</b> <b>Silvia Schwyn-Theony</b> , Evatec AG, Switzerland, <b>Juan Antonio Zapien</b> , City University of Hong Kong		<b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b> <b>Room Pacific D - Session H2-2-WeM</b> <b>Advanced Mechanical Testing of Surfaces, Thin Films, Coatings and Small Volumes II</b> <b>Moderator: James Gibson</b> , University of Oxford, UK	
8:00am	<b>INVITED: C1-1-WeM-1</b> Structural Colors and Flexible Transparent Conductors Based on Thin Film Technology, <i>L. Jay Guo</i> , The University of Michigan, USA		
8:20am			
8:40am	<b>C1-1-WeM-3</b> High-Rate Deposition of Calcium Fluoride Coatings Using Radio-Frequency Magnetron Sputtering, <i>Sharon Waichman, I. Zukerman, M. Buzaglo, S. Barzilai</i> , NRCN, Israel	<b>INVITED: H2-2-WeM-3</b> The Nature of Defects and their Dynamics Characterized using Scanning Electron Microscopy Approaches, <i>Dan S. Gianola</i> , University of California Santa Barbara, USA	
9:00am	<b>C1-1-WeM-4</b> Reactive Sputter Deposition of Nanoporous Black Zinc and White Zinc Oxide Coatings, <i>J. Zawadzki, Michał Borysiewicz</i> , Łukasiewicz Research Network - Institute of Microelectronics and Photonics, Poland		
9:20am	<b>C1-1-WeM-5</b> High Hall Mobility W-Doped In <sub>2</sub> O <sub>3</sub> Conductive Films with Thicknesses of Less Than 10 Nm Deposited on Glass Substrates, <i>Tetsuya Yamamoto, R. Palani, H. Makino</i> , Kochi University of Technology, Japan	<b>H2-2-WeM-5</b> Measurement of Hardness and Elastic Modulus by Depth Sensing Indentation: Improvements to the Technique Based on Continuous Stiffness Measurement, <i>Warren Oliver</i> , KLA-Tencor, USA; <i>P. Sudharshan</i> , ARCI, India; <i>G. Pharr</i> , Texas A&M University, USA	
9:40am	<b>C1-1-WeM-6</b> The Effects of Growth and Post-Annealing Temperatures on MoS <sub>2</sub> Thin Films Deposited by Magnetron Sputtering, <i>C. Chao</i> , National Dong Hwa University, Taiwan; <i>P. Tsai</i> , National Chung-Shan Institute of Science & Technology, Taiwan; <i>P. Wu</i> , Stone & Resource Industry R&D Center, Taiwan; <i>Ing-Song Yu</i> , National Dong Hwa University, Taiwan	<b>H2-2-WeM-6</b> Ultrasonically Induced Nanofatigue During Nanoindentation, <i>Antanas Daugela</i> , Nanometronix LLC, USA; <i>J. Daugela</i> , Johns Hopkins University, USA	
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>	
10:20am			
10:40am			
11:00am		<b>H2-2-WeM-10</b> Comparison of Electrical and Image-Based Sensing for Quantitative in Situ TEM Nanomechanical Testing, <i>S. Stangebye, L. Daza, X. Liu, J. Kacher, Olivier Pierron</i> , Georgia Tech, USA	
11:20am		<b>H2-2-WeM-11</b> Unraveling Deformation Localization in Thin Film Metallic Glasses During in-Situ Deformation Using 4D-STEM, <i>Christoph Gammner, L. Schretter, A. Lassnig, S. Fellner, J. Eckert</i> , Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria	

# Wednesday Morning, May 24, 2023

<p><b>Coatings for Use at High Temperatures</b>  <b>Room Pacific E - Session A2-2-WeM</b>  <b>Thermal and Environmental Barrier Coatings II</b>  <b>Moderators:</b>  <b>Vladislav Kolarik</b>, Fraunhofer Institute for Chemical Technology ICT, Germany,  <b>Pantcho Stoyanov</b>, Concordia University, Canada</p>		<p><b>Advanced Characterization Techniques for Coatings, Thin Films, and Small Volumes</b>  <b>Room Town &amp; Country A - Session H3-2-WeM</b>  <b>Characterization of Coatings and Small Volumes in Extreme and Cyclic Conditions II</b>  <b>Moderators: Thomas Edwards</b>, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland,  <b>Peter Hosemann</b>, University of California, Berkeley, USA,  <b>Barbara Putz</b>, Montanuniversität Leoben, Austria</p>	
8:00am	<p><b>A2-2-WeM-1</b> On the Suitability of MoNbTaW Based Thin Films to Act as Diffusion Barriers, <b>Georg C. Gruber</b><sup>1</sup>, Montanuniversität Leoben, Austria; <b>A. Lassnig</b>, <b>S. Zak</b>, Austrian Academy of Sciences, Austria; <b>M. Kirchmair</b>, Montanuniversität Leoben, Austria; <b>S. Wurster</b>, <b>C. Gammer</b>, <b>M. Cordill</b>, Austrian Academy of Sciences, Austria; <b>R. Franz</b>, Montanuniversität Leoben, Austria</p>	<p><b>INVITED: H3-2-WeM-1</b> Characterizing Interfacial Straining Mechanisms Using High Temperature <i>in situ</i> Tem, <b>Shen Dillon</b>, University of California Irvine, USA</p>	
8:20am	<p><b>INVITED: A2-2-WeM-2</b> Improvement of EBC Performance by Controlling Driving Forces for Mass Transfers in Oxides, <b>Satoshi Kitaoa</b>, JFCC, Japan; <b>T. Matsudaira</b>, <b>T. Ogawa</b>, <b>M. Wada</b>, Japan Fine Ceramics Center, Japan</p>		
8:40am			
		<p><b>H3-2-WeM-3</b> Quantitative <i>in situ</i> TEM Observations of a Grain-Boundary-Migration-Assisted, Radiation-Damage Healing Mechanism in Ultrafine Grained Au Thin Films, <b>Lina Daza</b>, <b>S. Stangebye</b>, <b>K. Ding</b>, <b>X. Liu</b>, <b>T. Zhu</b>, <b>J. Kacher</b>, <b>O. Pierron</b>, Georgia Tech, USA</p>	
9:00am	<p><b>A2-2-WeM-4</b> Steam Oxidation Kinetics of Si / Modified Yb<sub>2</sub>Si<sub>2</sub>O<sub>7</sub> Environmental Barrier Coatings on SiC/SiC Ceramic Matrix Composites at 1250 °C – 1350 °C, <b>Kang Lee</b>, <b>J. Stuckner</b>, <b>M. Presby</b>, <b>B. Pulio</b>, NASA Glenn Research Center, USA; <b>W. Jennings</b>, HX5, USA</p>		
9:20am	<p><b>A2-2-WeM-5</b> Oxygen Permeability, Failure Analysis and Life Prediction of Environmental Barrier Coatings Under Adverse Environments, <b>Prakash Patnaik</b>, Aerospace Research Centre, National Research Council Canada; <b>A. Kumar</b>, TECSIS Corporation, Canada; <b>K. Chen</b>, Aerospace Research Centre, National Research Council Canada</p>		
9:40am	<p><b>A2-2-WeM-6</b> Raman Spectroscopic Investigation of SiO<sub>2</sub> TGO Phase Transformation and Si and SiC Substrate Stress, <b>Michael J. Lance</b>, Oak Ridge National Laboratory, USA; <b>M. Ridley</b>, <b>T. Aguirre</b>, <b>B. Pint</b>, Oak Ridge National Laboratory, USA</p>		
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>		<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
10:20am			
10:40am			
11:00am	<p><b>INVITED: A2-2-WeM-10</b> Hot Section Coating Technology as an Enabler for Sustainable Propulsion, <b>Eli Ross</b>, Pratt &amp; Whitney, USA</p>		
11:20am			
11:40am	<p><b>A2-2-WeM-12</b> Internal Coating for Nuclear Cladding Deposited by DLI-MOCVD: Application to the Mitigation of Pellet-Cladding Interaction (PCI), <b>Kenza Zougagh</b>, <b>J. Brachet</b>, <b>R. Chanson</b>, <b>T. Guilbert</b>, <b>F. Lomello</b>, <b>A. Quaini</b>, <b>F. Rouillard</b>, <b>F. Schuster</b>, <b>S. Gossé</b>, CEA Saclay, France</p>		
12:00pm	<p><b>A2-2-WeM-13</b> Development of Tantalum Coating by the Cold Spray, <b>Zeng Sheng-Wei</b>, Department of Material and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan; <b>Y. Chung</b>, <b>W. Li</b>, National Chung Shan Institute of Science and Technology, Materials and Electro-Optics Research Division, Long-tan, Taiwan; <b>Y. Yang</b>, Department of Material and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan</p>		

# Wednesday Morning, May 24, 2023

Room Town & Country B	
8:00am	
8:20am	
8:40am	
9:00am	<b>E1-2-WeM-4</b> Catalytic Transformation of Lubricants to Wear-Protective Tribofilms on Selected Steel Surfaces During Sliding, <b>Yip-Wah Chung</b> , A. Khan, J. Ahmed, T. Martin, S. Liu, Northwestern University, USA; S. Berkebile, Army Research Laboratory, USA; Q. Wang, Northwestern University, USA
9:20am	<b>INVITED: E1-2-WeM-5</b> Aromatic Compounds as Sustainable Lubricants for Iron, <b>Sophie Loehlé</b> , TotalEnergies, France
9:40am	
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
10:20am	
10:40am	
11:00am	<b>INVITED: E1-2-WeM-10</b> How Efficient Is the Self Adaption Concept for Low Friction with TMD-Based Sputtered Coatings, <b>Albano Cavaleiro</b> , University of Coimbra, Portugal
11:20am	
11:40am	<b>E1-2-WeM-12</b> Self-Lubricating Titanium Alloys: Design and High Temperature Tribological Performance Up to 800 °C, H. Torres, K. Pichelbauer, S. Budnyk, AC2T Research GmbH, Austria; T. Schachinger, C. Gachot, TU Wien, Austria; <b>Manel Rodriguez Ripoll</b> , AC2T Research GmbH, Austria
12:00pm	<b>E1-2-WeM-13</b> Electrodeposited of Silver Nano-Particules Plant Based to Improve Lubrication of Composite Films, <b>Pierre-Antoine Gay</b> , Haute Ecole Arc Ingénierie, Switzerland; I. Markovic Milosevic, HEPIA Institut inSTI, Switzerland; T. Journal, HE ARC Ingénierie, Switzerland; J. Maurer, Faculty of Biology and Medicine. Clinical pharmacology, Switzerland

**Tribology and Mechanical Behavior of Coatings and Engineered Surfaces**  
**Session E1-2-WeM**  
**Friction, Wear, Lubrication Effects, and Modeling II**  
**Moderators:**  
**Michael Chandross**, Sandia National Laboratories, USA,  
**Andreas Rosenkranz**, Universidad de Chile  
**Noora Manninen**, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein

# Wednesday Morning, May 24, 2023

<b>Room Town &amp; Country C</b>	
8:00am	<p><b>G1-WeM-1</b> Designed for Impact: Successful Forming of 3<sup>rd</sup> Generation Advanced High Strength Steels in Electric Vehicles' Body-in-White, <i>Tobias Brögelmann, T. Hurkmans</i>, IHI Ionbond Netherlands B.V., Netherlands; <i>J. Owens-Mawson, G. Savva</i>, IHI Ionbond LLC, USA</p>
8:20am	<p><b>INVITED: G1-WeM-2</b> Passivation in a Wide Range of III-V Semiconductor Materials and Device Types, <i>Jouko Lång</i>, Comptek Solutions Oy, Finland</p>
8:40am	
9:00am	<p><b>G1-WeM-4</b> AlTiN Hard Coatings with AlN Cubic Phase, <i>Joern Kohlscheen, C. Bareiss</i>, Kennametal GmbH, Germany; <i>B. Macshane, A. Roy</i>, Kennametal, Inc., USA</p>
9:20am	<p><b>G1-WeM-5</b> High-Resolution Investigation of the Microstructural Features and Crystal Forms of Industrial Ti(C,N) CVD Thin Hard Coating, <i>Idriss El Azhari</i>, Saarland University, Germany; <i>J. García</i>, Sandvik Coromant R&amp;D Materials and Processes, Sweden; <i>C. Pauly, J. Barrirero, M. Engstler, F. Soldera</i>, Saarland University, Germany; <i>L. Llanes</i>, Universitat Politècnica de Catalunya, Spain; <i>F. Mücklich</i>, Saarland University, Germany</p>
9:40am	
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
10:20am	
10:40am	
11:00am	<p><b>G4-WeM-10</b> Water-Repellent and Low Emissivity Coatings on Fabric Prepared by Roll-to-Roll Hollow Cathode PECVD and Magnetron Sputtering, <i>Jerome Jolibois</i>, AGC Interpane Demonstration Center, Germany; <i>G. Arnault</i>, AGC Plasma Technology Solutions, Belgium; <i>N. Koyra</i>, AGC Interpane Demonstration Center, Germany; <i>J. Chambers</i>, AGC Plasma Technology Solutions, USA; <i>H. Weis</i>, AGC Interpane Demonstration Center, Germany; <i>H. Wiame</i>, AGC Plasma Technology Solutions, Belgium</p>
11:20am	<p><b>G4-WeM-11</b> Amorphous Carbon Coatings on Glass for High Voltage Protection, <i>Hana Barankova, L. Bardos</i>, Uppsala University, Sweden</p>
11:40am	<p><b>G4-WeM-12</b> Plasma Pretreatment of Small Parts and Granular Materials in Bulk Vacuum Coating, <i>Heidrun Klostermann, B. Krätzschmar, F. Fietzke</i>, Fraunhofer FEP, Germany</p>

**Surface Engineering - Applied Research and Industrial Applications**  
**Session G1-WeM**  
**Advances in Application Driven Research: New Methods, Materials, and Equipment for PVD, CVD, and PECVD Processes**  
**Moderators:**  
**Ladislav Bardos**, Uppsala University, Sweden,  
**Vikram Bedekar**, The Timken Company, USA

**Surface Engineering - Applied Research and Industrial Applications**  
**Session G4-WeM**  
**Hybrid Systems, Processes and Coatings**  
**Moderators:**  
**Hana Barankova**, Uppsala University, Sweden,  
**Sang-Yul Lee**, Korea Aerospace University, Republic of Korea

# Wednesday Morning, May 24, 2023

Room Town & Country D	
8:00am	<b>G3-WeM-1</b> A Novel AlCr-Based PVD Coating Design for Threading Operation of Super Duplex Stainless Steel, <b>Qianxi He</b> , <i>J. M. DePaiva, T. K. Filho</i> , McMaster University, Canada; <i>F. L. Amorim, R. D. Torres</i> , Pontificia Universidade Católica do Paraná, Brazil; <i>G. Fox-Rabinovich, S. C. Veldhuis</i> , McMaster University, Canada
8:20am	<b>G3-WeM-2</b> Property and Deposition Technology for Highly Al-Containing AlCrN Coatings by Arc Ion Plating, <b>Ryosuke Takei</b> , <i>T. Takahashi, S. Kujime</i> , Kobe Steel Ltd., Japan
8:40am	<b>INVITED: G3-WeM-3</b> Challenges and Target-Oriented Paths to Maintenance-Free High-Performance Progressive Dies Using HiPIMS-Coatings, <b>Martin Hess</b> , Robert-Bosch-Str., 5, Germany
9:00am	
9:20am	<b>G3-WeM-5</b> Oxidation and Wear Behavior of CrAlMoN with Varied Mo-content for Cutting TiAl <sub>6</sub> V <sub>4</sub> , <i>K. Bobzin, C. Kalscheuer, Nina Stachowski</i> , Surface Engineering Institute - RWTH Aachen University, Germany; <i>W. Hintze, J. Dege, C. Möller, P. Ploog</i> , Institute of Production Management and Technology - Hamburg University of Technology, Germany
9:40am	
10:00am	<b>COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL</b>
10:20am	
10:40am	
11:00am	<b>INVITED: G3-WeM-10</b> The Significance and Application Area of CVD TiCN/Al <sub>2</sub> O <sub>3</sub> based Coatings for Today's Cutting Tools, <b>Christoph Czettl</b> , CERATIZIT Austria Gesellschaft m.b.H., Austria; <i>M. Pohler</i> , CERATIZIT Austria GmbH, Austria; <i>N. Schalk, M. Tkadletz</i> , Montanuniversität Leoben, Austria; <i>F. Konstantiniuk</i> , Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, Austria
11:20am	
11:40am	<b>G3-WeM-12</b> Indentation and Sliding Contact Testing of Three Laser-textured and PVD-coated Cemented Carbide Tools, <b>Shiqi Fang</b> , Saarland University, Germany; <i>C. Colominas</i> , Flubetech, S.L., Spain; <i>C. Pauly</i> , Saarland University, Germany; <i>N. Salán, L. Llanes</i> , Universitat Politècnica de Catalunya, Spain

**Surface Engineering - Applied Research and Industrial Applications**  
**Session G3-WeM**  
**Innovative Surface Engineering for Advanced Cutting and Forming Tool Applications**  
**Moderators:**  
**Markus Esselbach**, Oerlikon Luxembourg,  
**Christoph Schiffers**, CemeCon AG, Germany

# Wednesday Afternoon, May 24, 2023

Special Interest Talks

Room Town & Country A - Session SIT3-WeSIT

Special Interest Session III

Moderator:

Jyh-Wei Lee, Ming Chi University of Technology, Taiwan

1:00pm

**INVITED: SIT3-WeSIT-1** Thin Film Sputtering Technologies Enabling Manufacturing of Functional Devices for Smart Society,  
**Koukou Suu**, ULVAC, Inc., USA

1:20pm

# Wednesday Afternoon, May 24, 2023

<b>Functional Thin Films and Surfaces</b> <b>Room Pacific F-G - Session C1-2-WeA</b> <b>Optical Materials and Thin Films II</b> <b>Moderators: Silvia Schwyn-Theony, Evatec AG, Switzerland,</b> <b>Juan Antonio Zapien, City University of Hong Kong</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country D - Session B8-1-WeA</b> <b>HiPIMS, Pulsed Plasmas and Energetic Deposition I</b> <b>Moderators: Tiberiu Minea, Université Paris-Saclay, France,</b> <b>Martin Rudolph, Leibniz Inst. of Surface Eng. (IOM), Germany</b>	
2:00pm		<b>INVITED: B8-1-WeA-1</b> Impact of Selective Acceleration of High-mass Ions - Low Temperature Growth of Stress-free Single Phase $\alpha$ -W Films, <b>Tetsuhide Shimizu</b> , Tokyo Metropolitan University, Japan; <b>H. Du</b> , Guizhou University, China; <b>R. Boyd, R. Viloan, D. Lundin</b> , Linköping University, IFM, Sweden; <b>M. Yang</b> , Tokyo Metropolitan University, Japan; <b>U. Helmersson</b> , Linköping University, IFM, Sweden	
2:20pm			
2:40pm	<b>C1-2-WeA-3</b> Studies on Sulfur Induced Binary Targets for the Formation of $\text{Cu}_2\text{ZnSnS}_4$ (CZTS) Absorber Layer Thin Films for the Fabrication of SLG/Mo/CZTS/Cds/GZO/Al Thin Film Solar Cells, <b>Balaji Gururajan</b> , Yuan Ze University, Taiwan; <b>B. Rangasamy, P. Sankaran</b> , PSG College of Technology, India; <b>L. Wei-Sheng</b> , Yuan Ze University, Taiwan; <b>D. McIlroy</b> , Oklahoma State University, USA; <b>E. Echeverria</b> , The Center for Bright Beams, Cornell University, USA; <b>S. Kaliappan</b> , PSG College of Technology, India; <b>D. Velauthapillai</b> , Western Norway University of Applied Sciences, Norway	<b>B8-1-WeA-3</b> Modeling of High Power Impulse Magnetron Sputtering Discharges with Tungsten Target, <b>Swetha Suresh Babu</b> , University of Iceland; <b>M. Rudolph</b> , Leibniz Institute of Surface Engineering (IOM), Germany; <b>D. Lundin</b> , Linköping University, Sweden; <b>T. Shimizu</b> , Tokyo Metropolitan University, Japan; <b>J. Fischer</b> , Linköping University, Sweden; <b>J. Bradley</b> , University of Liverpool, UK; <b>J. Gudmundsson</b> , University of Iceland	
3:00pm	<b>C1-2-WeA-4</b> Hysteresises on Voltage-Current Characteristics and Optical Responses of PEDOT:PSS/ZnO Nanorods/ZnO:Ga Heterojunctions, <b>Tomoaki Terasako</b> , Graduate School of Science and Engineering, Ehime University, Japan; <b>M. Yagi</b> , National Institute of Technology, Kagawa College, Japan; <b>T. Yamamoto</b> , Materials Design Center, Research Institute, Kochi University of Technology, Japan	<b>B8-1-WeA-4</b> Combinatorial Deposition of Highly Oriented AlScN Films Using Synchronized-HiPIMS for Piezoelectric Applications, <b>Jyotish Patidar</b> , S. Zhuk, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>A. Sharma</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <b>M. Ghosh, A. Wiczorek, K. Thorwarth, S. Siol</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
3:20pm	<b>C1-2-WeA-5</b> Effective Ways to Enhance the Performance of n-MoS <sub>2</sub> /p-CuO Heterojunction Based Self-Powered Photodetectors, <b>KRISHAN KUMAR, D. Kaur</b> , Indian Institute of Technology Roorkee, India	<b>B8-1-WeA-5</b> Fabrication of TiZrNbTaFeBN Coatings Using Superimposed HiPIMS-MF Systems: Mechanical and Chemical Properties Evaluation, <b>Igamcha Moirangthem, S. Chen, C. Wang</b> , National Taiwan University of Science and Technology, Taiwan; <b>B. Lou</b> , Chang Gung University, Taiwan; <b>J. Lee</b> , Ming Chi University of Technology, Taiwan	
3:40pm	<b>C1-2-WeA-6</b> Femtosecond Laser Ablation (FESLA) XPS – A Novel XPS Depth Profiling Technique for Optical/Electrical Thin Films and Multi-Layered Structures, <b>Mark Baker, S. Bacon, S. Sweeney</b> , University of Surrey, UK; <b>A. Bushell, T. Nunney, R. White</b> , Thermo Fisher Scientific, UK	<b>B8-1-WeA-6</b> Effect of Synchronous Bias Mode with Different Duty Cycles on Microstructure and Mechanical Properties of AlTiN Coatings Deposited by HiPIMS Process, <b>J. Tang</b> , Department of Electronic Engineering, Loughwa University of Science and Technology, Germany; <b>S. Huang, I-Hong Chen, G. Shen</b> , Department of Materials Engineering, Ming Chi University of Technology, Germany; <b>C. Chang</b> , Department of Materials Engineering, Center for Plasma and Thin Film Technologies, Ming Chi University, Germany	
4:00pm	<b>C1-2-WeA-7</b> 2-Dimensional Growth of GaS <sub>x</sub> Crystal by Low-Pressure Vapor Phase Deposition, <b>Yijia Chen</b> , National Dong Hwa University, Taiwan; <b>C. Huang</b> , National Dong Hwa University, Taiwan	<b>B8-1-WeA-7</b> Bipolar HiPIMS: A New Route to Deposit Advanced Coatings on 3D Complex Geometries, <b>IVAN FERNANDEZ, J. SANTIAGO-VARELA, P. DIAZ-RODRIGUEZ</b> , NANO4ENERGY SLNE, Spain; <b>L. MENDIZABAL, C. ZUBIZARRETA</b> , IKA TEKNIKER, Spain	
4:20pm		<b>B8-1-WeA-8</b> On the Control of the Composition of NbC Films Deposited by HiPIMS from a Compound Target: Plasma Diagnostics, <b>Tomáš Kozák, M. Farahani, A. Pajdarová</b> , University of West Bohemia, Czechia; <b>A. Bahr, R. Hahn, H. Riedl</b> , TU Wien, Austria; <b>P. Zeman</b> , University of West Bohemia, Czechia	

# Wednesday Afternoon, May 24, 2023

<b>New Horizons in Coatings and Thin Films</b> <b>Room Pacific E - Session F4-1-WeA</b> <b>Boron-Containing Coatings I</b> <b>Moderators: Marcus Hans, RWTH Aachen University, Germany,</b> <b>Helmut Riedl, TU Wien, Institute of Materials Science and</b> <b>Technology, Austria,</b> <b>Johanna Rosén, Linköping University, Sweden</b>		<b>Surface Engineering - Applied Research and Industrial Applications</b> <b>Room Pacific D - Session G2-WeA</b> <b>Surface Modification of Components in Automotive, Aerospace and Manufacturing Applications</b> <b>Moderator:</b> <b>Jan-Ole Achenbach, KCS Europe GmbH, Germany</b>	
2:00pm	<b>F4-1-WeA-1</b> Improving the Oxidation Resistance of TiB <sub>2</sub> Coatings by TM-silicide Alloying (TM = Ti, Ta, Mo), <b>Ahmed Bahr<sup>A</sup>, O. Beck, T. Glechner, A. Grimmer, T. Wojcik, P. Kutrowatz</b> , Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; <b>J. Ramm, O. Hunold</b> , Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <b>S. Kolozsvári, P. Polcik</b> , Plansee Composite Materials GmbH, Germany; <b>E. Ntemou, D. Primetzhofer</b> , Department of Physics and Astronomy, Uppsala University, Sweden; <b>H. Riedl</b> , Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria	<b>G2-WeA-1</b> Effect of Different Diffusion Treatments on the Surface Properties of Austenitic Stainless Steels, <b>Phillip Marvin Reinders, P. Kaestner, G. Bräuer</b> , Technische Universität Braunschweig, Germany	
2:20pm	<b>INVITED: F4-1-WeA-2</b> Quaternary CrTaBN: Experimental and Theoretical Insights Into a Novel Coating Material with Promising Mechanical Properties and Exceptional Thermal Stability, <b>Christina Kainz</b> , Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, Austria; <b>M. Tkadletz</b> , Department of Materials Science, Montanuniversität Leoben, Austria; <b>L. Patterer, D. Bogdanovski</b> , Materials Chemistry, RWTH Aachen University, Germany; <b>H. Krüger</b> , Institute of Mineralogy and Petrography, University of Innsbruck, Austria; <b>A. Stark, N. Schell</b> , Institute of Materials Physics, Helmholtz-Zentrum Hereon, Germany; <b>I. Letofsky-Papst</b> , Institute for Electron Microscopy and Nanoanalysis and Center for Electron Microscopy, Austria; <b>M. Pohler, C. Czetti</b> , Ceratizit Austria GmbH, Austria; <b>J. Schneider</b> , Materials Chemistry, RWTH Aachen University, Germany; <b>C. Mitterer</b> , Department of Materials Science, Montanuniversität Leoben, Austria; <b>N. Schalk</b> , Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Austria	<b>G2-WeA-2</b> Plasma Electrolytic Oxidation (PEO) for Production of High-Performance Coatings on Ti-Al Intermetallic Compounds, <b>Khaldon Munassar, B. Mingo, A. Yerokhin</b> , University of Manchester, UK	
2:40pm		<b>INVITED: G2-WeA-3</b> Fine-Tuning of PVD Conditions for Tools Used in Automotive and Manufacturing Applications, <b>Miha Cekada, A. Drnovsek, M. Drobnic, M. Panjan, P. Panjan</b> , Jozef Stefan Institute, Slovenia	
3:00pm	<b>F4-1-WeA-4</b> Transition Metal Diboride Superlattices: Combination of <i>Ab Initio</i> and Experimental Approach for Investigation of Ceramic Thin Films with Improved Ductility and Fracture Toughness, <b>Tomáš Fiantok</b> , Comenius University, Slovakia; <b>N. Koutná</b> , Linköping University, IFM, Sweden; <b>V. Šroba</b> , Comenius University, Slovakia; <b>M. Meindlhuber</b> , Austrian Academy of Sciences, Austria; <b>T. Roch, M. Truchlý, M. Vidiš, L. Satrapinskyy, M. Gocnik</b> , Comenius University, Slovakia; <b>D. G. Sangiovanni</b> , Linköping University, IFM, Sweden; <b>M. Mikula</b> , Comenius University, Slovakia		
3:20pm	<b>F4-1-WeA-5</b> Tissue Phase Affected Fracture Toughness of Nano-Columnar TiB <sub>2+2</sub> Thin Films, <b>Anna Hirle, C. Fuger, R. Hahn, T. Wojcik, P. Kutrowatz</b> , Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria; <b>M. Weiss</b> , Institute of Chemical Technologies and Analytics, TU Wien, A-1060 Vienna, Austria; <b>O. Hunold</b> , Oerlikon Balzers, Oerlikon Surface Solutions AG, 9496 Balzers, Liechtenstein; <b>P. Polcik</b> , Plansee Composite Materials GmbH, D-86983 Lechbruck am See, Germany; <b>H. Riedl</b> , Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria	<b>G2-WeA-5</b> Development of Al <sub>2</sub> O <sub>3</sub> -B <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> Glass for Space Shuttle Coating, <b>Jun-Yan Qiu, Y. Lee, C. You, G. Hung</b> , Ming Chi University of Technology, Taiwan; <b>R. Montecillo</b> , Ming Chi University of Technology, Taiwan, Philippines; <b>P. Chen, C. Tu, K. Feng</b> , Ming Chi University of Technology, Taiwan	
3:40pm	<b>INVITED: F4-1-WeA-6</b> Characterization of Ti-Al-La-B-N Hard Coating and Cutting Tool Application, <b>Shin Takayama, T. Ishigaki, M. Takahashi</b> , Mitsubishi Materials Corporation, Japan	<b>G2-WeA-6</b> Analysis of the Temperature Variation of Bizarre Thermal Barrier Coatings and Their Impacts on Engine, <b>Thirunavukkarasu Raja</b> , P.S.V College of Engineering and Technology, India; <b>P. Sivanandi</b> , Government College of Technology, Coimbatore, India; <b>S. Dhandabani, V. Murugan</b> , Sri Ramakrishna Institute of Technology, India	
4:00pm		<b>G2-WeA-7</b> Novel High-Entropy Alloy Powders and Their Thermal-Sprayed Coatings for High-Temperature Applications, <b>Shih-Hsun Chen</b> , NTUST, Taiwan	
4:20pm	<b>F4-1-WeA-8</b> Mechanical Properties and Thermal Stability of ZrBSiTaN Films, <b>Kuo-Hong Yeh</b> , National Taiwan Ocean University, Taiwan; <b>L. Chang</b> , Ming Chi University of Technology, Taiwan; <b>Y. Chen</b> , National Taiwan Ocean University, Taiwan	<b>G2-WeA-8</b> A Facile Fluoride Sealing Treatment to Improve Corrosion Resistance of Magnetism Alloy (AZ31B) Micro-arc Oxidation Layer, <b>C. Lee</b> , National Defense University, Republic of China; <b>J. Lee</b> , Lung Hwa University of Science and Technology, Taiwan; <b>S. Jian</b> , Ming Chi University of Technology, Taiwan; <b>Ming-Der Ger</b> , National Defense University, Republic of China	
4:40pm		<b>G2-WeA-9</b> Laser Shock Peening for Enhanced Surface Properties of Austempered Ductile Iron, <b>Ann Zammit, P. Subramaniyan, G. Cassar, P. Mollicone</b> , University of Malta; <b>D. Glaser</b> , Nelson Mandela University, South Africa; <b>P. Shukla</b> , The Manufacturing Technology Centre, UK; <b>R. Michalczewski</b> , Lukaszewicz Research Network - Institute for Sustainable Technologies, Poland	
5:00pm		<b>G2-WeA-10</b> Evolution of Microstructure And Composition of Superalloy Haynes 282 by Pulse Laser System, <b>Yan-Zhi Chen</b> , National Tsing Hua University, Taiwan	
5:20pm		<b>G2-WeA-11</b> Chemical Vapor Infiltration Technology for Coatings of Fibers and 3D Porous Bodies, <b>Dennis Zywitzki, H. Strakov</b> , IHI Bernex AG, Switzerland	

# Wednesday Afternoon, May 24, 2023

<b>Topical Symposia</b> <b>Room Town &amp; Country B - Session TS3-WeA</b> <b>Processes of Materials for Printed and Flexible Film Technologies</b> <b>Moderators: Panos Patsalas, Aristotle University of Thessaloniki, Greece,</b> <b>Demosthenes Koutsogeorgis, Nottingham Trent University, UK</b>		
2:00pm	<b>INVITED: TS3-WeA-1</b> Upscalable Nanomanufacturing of Thin-Film Electronics, <b>Thomas Anthopoulos</b> , King Abdullah University of Science and Technology (KAUST), Division of Physical Sciences and Engineering, Saudi Arabia	
2:20pm		
2:40pm	<b>TS3-WeA-3</b> Plasma Technologies for Sustainable Packaging Materials, <b>Glen West</b> , Manchester Metropolitan University, U.K.; <b>T. Cosnahan, C. Struller, N. Copeland</b> , Bobst Manchester Ltd., UK; <b>P. Kelly</b> , Manchester Metropolitan University, U.K.	
3:00pm	<b>TS3-WeA-4</b> Oxide-Based Nanostructured Thin Film Electrodes for High Performance Flexible Asymmetric Supercapacitor Application, <b>M. Sharma, R. Adalati, Ramesh Chandra</b> , Indian Institute of Technology Roorkee, India	
3:20pm	<b>TS3-WeA-5</b> Fully Inkjet-Printed Gas Sensing Antenna Based on Carbon Nanotubes for Wireless Communication Applications, <b>Hsuan-Ling Kao</b> , Chang Gung University, Taiwan; <b>L. Chang</b> , Ming Chi University of Technology, Taiwan; <b>Y. Tsai</b> , Chang Gung University, Taiwan	
3:40pm	<b>TS3-WeA-6</b> Characterization and Evaluation of PVD-Coatings on Bipolar Plates for PEMFC, <b>Julian Kapp, V. Lukasek, V. Mackert, J. Wartmann, H. Hoster</b> , ZBT Zentrum für BrennstoffzellenTechnik GmbH, Germany; <b>R. Cremer, P. Jaschinski</b> , KCS Europe GmbH, Germany	
4:00pm	<b>INVITED: TS3-WeA-7</b> Towards Large Area Scalable Organic Solar Cells using Solution Processing. <b>S. Ravi P. Silva</b> , Advanced Technology Institute, University of Surrey, UK	
4:20pm		
4:40pm	<b>TS3-WeA-9</b> Transition Metal Nitride Colloids: From PVD Targets to Laser-Ablated Nanoparticles, <b>N. Pliatsikas, S. Panos, I. Fekas, S. Kassavetis, Panos Patsalas</b> , Aristotle University of Thessaloniki, Greece	

# Wednesday Afternoon, May 24, 2023

**Awards Ceremony and Honorary Lecture**  
**Room Town & Country A - Session HL-WeHL**  
**Bunshah Award Honorary Lecture**  
**Moderator:**  
**Ivan G. Petrov**, University of Illinois at Urbana-Champaign, USA

5:45pm		
6:05pm	<p><b>INVITED: HL-WeHL-2</b> R.F. Bunshah Award and ICMCTF Lecture Invited Talk: What TEM, XRD, STM, AFM, HIM, LEED, 3DATP, DSC, Nanoindentation, DFT, and MD Tell You About Functional Nanostructured Ceramics, <b>Lars Hultman</b><sup>1</sup>, Linköping University, Sweden</p>	
6:25pm		

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

# Thursday Morning, May 25, 2023

<b>Functional Thin Films and Surfaces</b> <b>Room Pacific D - Session C3-1-ThM</b> <b>Thin Films and Novel Surfaces for Energy I</b> <b>Moderators:</b> <b>Clio Azina, RWTH Aachen University, Germany,</b> <b>Carlos Tavares, University of Minho, Portugal</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country C - Session B1-1-ThM</b> <b>PVD Coatings and Technologies I</b> <b>Moderators:</b> <b>Christian Kalscheuer, RWTH Aachen University, Germany,</b> <b>Vladimir Pankov, National Research Council of Canada</b>	
8:00am		<b>INVITED: B1-1-ThM-1</b> New Challenges and Opportunities for PVD Coatings in Metal Cutting Applications, <b>Aharon Insektor</b> , Carnegie Mellon University, USA	
8:20am			
8:40am	<b>INVITED: C3-1-ThM-3</b> Tailoring Surface Reactivity of Perovskite Oxides for Water Oxidation, <b>Kelsey Stoerzinger</b> , Oregon State University, USA	<b>B1-1-ThM-3</b> Custom-Fit Hipims Coatings for Cutting Tools Used in a Wide Variety of Machining Applications, <b>Stephan Bolz</b> , <b>B. Mesic</b> , <b>O. Lemmer</b> , <b>W. Kölker</b> , <b>C. Schiffrers</b> , CemeCon AG, Germany	
9:00am		<b>B1-1-ThM-4</b> Film Growth Control at Cutting Edges to Overcome Edge Rounding, <b>Otmar Zimmer</b> , <b>T. Litterst</b> , Fraunhofer Institute for Material and Beam Technology (IWS), Germany; <b>T. Kruelle</b> , Technical University Dresden, Germany	
9:20am	<b>C3-1-ThM-5</b> The Influence of Sb Doping on the Local Structure and Disorder in Thermoelectric ZnO:Sb Thin Films, <b>J. Ribeiro</b> , <b>F. Rodrigues</b> , <b>F. Correia</b> , University of Minho, Portugal; <b>A. Kuzmin</b> , University of Latvia; <b>E. Alves</b> , <b>N. Barradas</b> , University of Lisbon, Portugal; <b>O. Bondarchuk</b> , International Iberian Nanotechnology Laboratory, Portugal; <b>A. Welle</b> , Karlsruhe Institute of Technology (KIT), Portugal; <b>Carlos Jose Tavares</b> , University of Minho, Portugal	<b>B1-1-ThM-5</b> Computational Tool for Analyzing Stress in Thin Films, <b>Eric Chason</b> , <b>T. Su</b> , <b>Z. Rao</b> , Brown University, USA	
9:40am	<b>C3-1-ThM-6</b> An Economic Experimental Approach to Optimize the Microstructure and Thermoelectric Performance of ZnSe Thin Films, <b>Khalid Mahmood</b> , Department Of Physics, Government College University Faisalabad, Pakistan	<b>B1-1-ThM-6</b> Effect of CrAlN Coating Properties on Impact Fatigue of Tool Steel, <b>K. Bobzin</b> , <b>C. Kalscheuer</b> , <b>M. Carlet</b> , <b>Muhammad Tayyab</b> , Surface Engineering Institute - RWTH Aachen University, Germany	
10:00am	<b>INVITED: C3-1-ThM-7</b> Designing Thin Film for Li-Solid State Batteries, <b>Haemin Paik</b> , MIT, USA; <b>J. Rupp</b> , Technical University Munich, Germany	<b>B1-1-ThM-7</b> Toward Energy-efficient Physical Vapor Deposition: Routes Fordensification of $(\text{Ti}_{1-x}\text{Al}_x)_{1-x}\text{W}_x\text{N}$ Thin Films Grown with no External Heating, <b>Xiao Li</b> , <b>A. Pshyk</b> , <b>B. Bakhit</b> , Linköping Univ., IFM, Thin Film Physics Div., Sweden; <b>M. Johansson Jöesaar</b> , <b>J. Andersson</b> , SECO Tools AB, Sweden; <b>I. Petrov</b> , University of Illinois at Urbana, USA; <b>L. Hultman</b> , <b>G. Greczynski</b> , Linköping Univ., IFM, Thin Film Physics Div., Sweden	
10:20am		<b>B1-1-ThM-8</b> Effects of Nitrogen Contents on the Microstructure and Corrosion Resistant Evaluation of ZrTiNbSiFeN <sub>x</sub> High Entropy Alloy Coatings, <b>Chen Wei-Yang</b> , <b>K. Yu-Lin</b> , National Taiwan University of Science and Technology, Taiwan; <b>L. Bih-Show</b> , Chang Gung University, Taiwan; <b>L. Jyh-Wei</b> , Ming Chi University of Technology, Taiwan	
10:40am	<b>C3-1-ThM-9</b> Hydrothermal-Based Synthesis of Piezo-Composite Thin Films and Their Applications, <b>Thi Nghi Nhan Nguyen</b> , <b>K. Chang</b> , National Cheng Kung University, Taiwan	<b>B1-1-ThM-9</b> Development of a Multilayer Ti/TiN/TiAlN/ReN Coating System and Evaluation of their Microstructural, Mechanical and Tribological Properties, <b>Hernán Darío Mejía Vásquez</b> , <b>G. Bejarano Gaitán</b> , University of Antioquia, Colombia	
11:00am	<b>C3-1-ThM-10</b> A Comparative Study of the Thermochromic Performances of VO <sub>2</sub> Films Obtained by Air Oxidation of V and VN Precursors, <b>David Pilloud</b> , <b>A. Garcia-Wong</b> , <b>F. Capon</b> , <b>J. Pierson</b> , Institut Jean Lamour - Université de Lorraine, France	<b>B1-1-ThM-10</b> High-Power-Density Sputtering of Industrial-Scale Targets: Micromechanical Case Study of Al-Cr-N, <b>Fedor F. Klimashin</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>A. Lümke</b> , <b>PLATIT AG</b> , Switzerland; <b>J. Kluson</b> , <b>M. Učík</b> , <b>M. Jilek</b> , PLATIT a.s., Czechia; <b>J. Michler</b> , <b>T. Edwards</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
11:20am		<b>B1-1-ThM-11</b> Triboactive CrAlN+XS Coatings Deposited by Pulsed Arc PVD, <b>K. Bobzin</b> , <b>C. Kalscheuer</b> , <b>Max Philip Möbius</b> , Surface Engineering Institute - RWTH Aachen University, Germany	
11:40am		<b>B1-1-ThM-12</b> Mechanical and Electrochemical Properties of AlCrN/FexN Coating Deposited onto AISI 4140 Steel, <b>Omar Ramirez-Reyna</b> , National Polytechnic Institute, Mexico; <b>J. Pérez-Álvarez</b> , University of Guadalajara, Mexico; <b>G. Rodríguez-Castro</b> , National Polytechnic Institute, Mexico; <b>C. Rivera-Tello</b> , University of Guadalajara, Mexico; <b>A. Meneses-Amador</b> , National Polytechnic Institute, Mexico	
12:00pm		<b>B1-1-ThM-13</b> Mechanical and Electrochemical Properties for SiC <sub>x</sub> N <sub>y</sub> Coating as a Function of Nitrogen Content, <b>L. Chang</b> , <b>Pin-Feng Huang</b> , <b>B. Chen</b> , <b>S. Tsai</b> , Ming Chi University of Technology, Taiwan	

# Thursday Morning, May 25, 2023

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Pacific F-G - Session B5-ThM</b> <b>Hard and Multifunctional Nanostructured Coatings</b> <b>Moderators: Rainer Hahn, TU Wien, Institute of Materials Science and Technology, Austria,</b> <b>Tomas Kozak, University of West Bohemia, Czechia</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country D - Session B8-2-ThM</b> <b>HIPIMS, Pulsed Plasmas and Energetic Deposition II</b> <b>Moderators:</b> <b>Tiberiu Minea, Université Paris-Saclay, France,</b> <b>Martin Rudolph, Leibniz Inst. of Surface Eng. (IOM), Germany</b>	
8:00am			
8:20am	<b>B5-ThM-2</b> Development of TiB <sub>2</sub> Coatings in a New Generation Industrial Reactor Based on Hybrid DC-Pulsed and HIPIMS Magnetron Sputtering on HSS Steels – A Tribological Study, <b>Gonzalo Garcia Fuentes, J. Fernández, J. Fernández-Palacio</b> , AIN, Spain; <b>H. Gabriel</b> , PVT Vakuum Technik, Germany		
8:40am	<b>B5-ThM-3</b> Effect of Ion Density Flux Ratio on Properties of Protective Hard (Ti,V)B <sub>2</sub> Coatings Sputtered by Cylindrical Magnetron, <b>Daniel Karpinski, P. Karvankova, C. Krieg</b> , Platit AG, Switzerland; <b>J. Kluson</b> , Platit a.s., Czechia; <b>B. Torp</b> , Platit Inc., USA; <b>A. Lümekmann</b> , Platit AG, Switzerland		
9:00am	<b>INVITED: B5-ThM-4</b> High-Temperature Properties of Multicomponent Nitride Coatings Deposited by PVD, <b>Yuxiang Xu</b> , Guangdong University of Technology, China	<b>B8-2-ThM-4</b> Ion Beam Sputter Deposition of Epitaxial Ga <sub>2</sub> O <sub>3</sub> Thin Films, <b>Dmitry Kalanov, Y. Unutulmazsoy, J. Gerlach, A. Lotnyk, A. Anders, C. Bundesmann</b> , Leibniz Institute of Surface Engineering (IOM), Germany	
9:20am		<b>B8-2-ThM-5</b> Self-Sputtering Identification in Helium HiPIMS Discharge with Molybdenum Target, <b>Abderzak el-Farsy, E. Mmorel</b> , Laboratoire de Physique des Gaz et des Plasmas, France; <b>Y. Yoann Rozier</b> , SuperGrid Institute, Villeurbanne, France; <b>T. Minea</b> , Laboratoire de Physique des Gaz et des Plasmas, France	
9:40am	<b>B5-ThM-6</b> Microstructure and Mechanical Properties of Ta-Al-B Coatings, <b>Chun Hu, S. Lin</b> , TU Wien, Institute of Materials Science and Technology, Austria; <b>P. Pöllmann, S. Mráz, J. Schneider</b> , RWTH Aachen University, Germany; <b>N. Koutná, P. Mayrhofer</b> , TU Wien, Institute of Materials Science and Technology, Austria	<b>B8-2-ThM-6</b> On Working Gas Rarefaction in High Power Impulse Magnetron Sputtering, <b>Kateryna Barynova, S. Suresh Babu</b> , University of Iceland; <b>M. Rudolph</b> , Leibniz Institute of Surface Engineering (IOM), Germany; <b>J. Gudmundsson</b> , University of Iceland	
10:00am	<b>B5-ThM-7</b> The Effect of Water Uptake on the Mechanical Behavior of Hybrid Thin Films Fabricated by Sequential Infiltration Synthesis, <b>Shachar Keren</b> , Technion–Israel Institute of Technology, Israel; <b>C. Bukowski, M. Kim, A. Crosby</b> , University of Massachusetts, Amherst, USA; <b>N. Cohen, T. Segal-Peretz</b> , Technion–Israel Institute of Technology, Israel	<b>INVITED: B8-2-ThM-7</b> Spokes in HiPIMS: Help or Hindrance?, <b>Julian Held</b> , University of Minnesota, USA; <b>P. Maaß, M. George, W. Breilmann, S. Thiemann-Monjé, V. Schulz-von der Gathen, A. von Keudell</b> , Ruhr University Bochum, Germany	
10:20am	<b>INVITED: B5-ThM-8</b> Nanoporous/Nanocomposite Thin Films by Magnetron Sputtering Deposition in Helium and Other Light Gases: New Materials and Applications, <b>Asunción Fernández</b> , Instituto de Ciencia de Materiales de Sevilla (CSIC-US), Spain		
10:40am		<b>B8-2-ThM-9</b> Effect of Plasma Nitriding Pretreatment on the Mechanical and Wear Properties of Tungsten Carbide Substrate, and AlCrN Coating Deposited by High-Power Impulse Magnetron Sputtering, <b>F. Yang</b> , Department of Mechanical Engineering, National Taiwan University of Science and Technology, and Center for Plasma and Thin Film Technologies, Ming Chi University of Technology, Taiwan; <b>T. Liu, Guan-Lun Shen, J. Chen</b> , Department of Materials Engineering, Ming Chi University of Technology, Taiwan; <b>Y. Kuo</b> , Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan; <b>C. Chang</b> , Department of Materials Engineering, Ming Chi University of Technology, and Center for Plasma and Thin Film Technologies, Ming Chi University of Technology, Taiwan	
11:00am	<b>B5-ThM-10</b> Mechanical Properties of Epitaxial TiN(001)-TiC(001) Superlattices, <b>Moïshe Azoff-Slifstein</b> , Rensselaer Polytechnic Institute, USA; <b>S. Lee</b> , University of Connecticut, USA; <b>D. Gall</b> , Rensselaer Polytechnic Institute, USA	<b>B8-2-ThM-10</b> Highly Ionized Pulse Sputtering of Seed Layers for Through Silicon Vias, <b>Juergen Weichart</b> , Evatec AG, Switzerland	
11:20am	<b>B5-ThM-11</b> Tensile and Compressive Stress in Sputtered Cu/W Nanomultilayers: Correlation with Microstructure, Thermal Stability, and Thermal Conductivity, <b>Giacomo Lorenzin</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>M. bin Hoque</b> , University of Virginia, USA; <b>D. Ariosa</b> , Universidad de la Republica, Montevideo, Uruguay; <b>L. Jeurgens</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>E. Hoglund, J. Tomko, P. Hopkins</b> , University of Virginia, USA; <b>C. Cancellieri</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	<b>B8-2-ThM-11</b> Deposition Environment and Microstructure of Transition Metal Nitride Thin Films Deposited at CMOS-Compatible Temperatures for Tunable Optoelectronic and Plasmonic Devices, <b>Arutiun P. Eghasarian</b> , Sheffield Hallam University, UK; <b>R. Bower</b> , Imperial College London, UK; <b>D. Loch</b> , Sheffield Hallam University, UK; <b>A. Berenov, B. Zou</b> , Imperial College London, UK; <b>P. Hovsepian</b> , Sheffield Hallam University, UK; <b>P. Petrov</b> , Imperial College London, UK	
11:40am	<b>B5-ThM-12</b> Investigation of Thermal Properties of PECVD Ti-Si-C-N Nanocomposite Coatings, <b>Alexander Thewes, L. Broecker</b> , IOT TU Braunschweig, Germany; <b>H. Paschke, T. Brueckner</b> , Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany; <b>C. Sternemann, M. Paulus</b> , DELTA TU Dortmund, Germany	<b>B8-2-ThM-12</b> On the Connection between the Self-Sputter Yield and Deposition Rate in High Power Impulse Magnetron Sputtering Operation, <b>Jon Tomas Gudmundsson</b> , University of Iceland; <b>M. Rudolph</b> , Leibniz Institute of Surface Engineering (IOM), Germany; <b>K. Barynova</b> , University of Iceland; <b>J. Fischer</b> , Linköping University, Sweden; <b>S. Suresh Babu</b> , University of Iceland; <b>N. Brenning, M. Raadu</b> , KTH Royal Institute of Technology, Sweden; <b>D. Lundin</b> , Linköping University, Sweden; <b>H. Hajihoseini</b> , University of Twente, Netherlands	

# Thursday Morning, May 25, 2023

<p><b>New Horizons in Coatings and Thin Films</b>  <b>Room Pacific E - Session F4-2-ThM</b>  <b>Boron-Containing Coatings II</b>  <b>Moderators: Marcus Hans</b>, RWTH Aachen University, Germany,  <b>Helmut Riedl</b>, TU Wien, Institute of Materials Science and Technology, Austria,  <b>Johanna Rosén</b>, Linköping University, Sweden</p>		<p><b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b>  <b>Room Town &amp; Country B - Session E2-1-ThM</b>  <b>Mechanical Properties and Adhesion I</b>  <b>Moderators: Jazmin Duarte</b>, MPI für Eisenforschung GMBH, Germany, <b>Alice Lassnig</b>, Austrian Academy of Sciences, Austria,  <b>Bo-Shiuan Li</b>, National Sun-Yat Sen University, Taiwan</p>	
8:00am		<p><b>INVITED: E2-1-ThM-1</b> Residual Stress and Interfaces in Optical Coatings for Space Applications, <b>Chelsea Appleget</b>, <i>K. Folgner, V. Jiao, S. Dunscombe, S. Sitzman</i>, The Aerospace Corporation, USA; <i>D. White, A. Hodge</i>, University of Southern California, USA; <i>J. Barrie</i>, The Aerospace Corporation, USA</p>	
8:20am			
8:40am	<p><b>INVITED: F4-2-ThM-3</b> Ternary Tungsten Boride Coatings with Improved Mechanical Properties Deposited by High-Power Pulsed Magnetron Sputtering from One Spark Plasma Sintered Target, <b>Tomasz Mościcki</b>, Institute of Fundamental Technological Research of Polish Academy of Science, Poland; <i>R. Psiuk</i>, Institute of Fundamental Technological Research of Polish Academy of Science, Pawinskiego 5b St., 02-106 Warsaw, Poland; <i>J. Chrzanowska-Gizynska</i>, Institute of Fundamental Technological Research of Polish Academy of Science, Poland; <i>D. Garbicz</i>, Łukasiewicz Research Network – Poznań Institute of Technology, Poland</p>	<p><b>E2-1-ThM-3</b> Increased Adhesion of Mo Films on Polyimide Through Interface Modification, <b>Megan Cordill</b>, <i>P. Kreiml</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>M. Rausch, C. Mitterer</i>, Dept. of Materials Science, Montanuniversität Leoben, Austria</p>	
9:00am		<p><b>E2-1-ThM-4</b> Picosecond Acoustics as a Local and Quantitative Adhesion Technique, <b>Arnaud DEVOS</b>, <i>A. Vital-Juarez</i>, IEMN, France; <i>J. Desmarres</i>, CNES, France</p>	
9:20am	<p><b>F4-2-ThM-5</b> The Architectural Design of High-Temperature Protective Coatings: Improving the Oxidation Resistance of TMB<sub>2</sub> (TM = Hf, Ti, W) Thin Films, <b>Sophie Richter</b>, <i>T. Glechner, T. Wojcik</i>, Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; <i>B. Widrig, O. Hunold</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>S. Kolozsvári, P. Polcik</i>, Plansee Composite Materials GmbH, Germany; <i>J. Ramm</i>, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; <i>H. Riedl</i>, TU Wien, Institute of Materials Science and Technology, Austria</p>	<p><b>E2-1-ThM-5</b> Accurate Measurement of Thin Film Elastic Properties Using Thermal Loading, <b>Claus O. W. Trost</b>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences &amp; Dept. of Materials Science, Montanuniversität Leoben, 8700 Leoben, Austria; <i>S. Zak</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria; <i>M. Cordill</i>, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences &amp; Dept. of Materials Science, Montanuniversität Leoben, 8700 Leoben, Austria</p>	
9:40am	<p><b>F4-2-ThM-6</b> Stoichiometry, Structure, and Mechanical Properties of Superhard Zirconium Diboride Films Prepared by the High-Power Impulse Magnetron Sputtering, <b>Viktor Šroba</b>, <i>K. Viskupová, T. Roch, L. Satrapinskyy, M. Truchlý, T. Fiantok</i>, Comenius University, Bratislava, Slovakia; <i>Š. Nagy</i>, Institute of Materials and Machine Mechanics SAS, Slovakia; <i>B. Grančič, P. Kúš, M. Mikula</i>, Comenius University, Bratislava, Slovakia</p>	<p><b>E2-1-ThM-6</b> Mechanical Properties and Microstructure Evaluation of HiPIMS Cu/W and Cu/Cr bilayers with Different Thickness Ratios, <b>Tra Anh Khoa Nguyen</b>, <i>T. Zhang</i>, Graduate Institute of Precision Engineering, National Chung Hsing University, Taiwan; <i>H. Wang, H. Wu</i>, National Chung Hsing University, Taiwan; <i>M. Lin</i>, Graduate Institute of Precision Engineering, National Chung Hsing University, Taiwan</p>	
10:00am	<p><b>F4-2-ThM-7</b> Exploring Phase Evolution and its Consequences on Mechanical Properties of a Novel HfB<sub>2</sub>-AlB<sub>2</sub> Coating System, <b>Samyukta Shrivastav</b>, <i>D. Yun, K. Canova, J. Abelson, J. Krogstad</i>, University of Illinois at Urbana Champaign, USA</p>	<p><b>E2-1-ThM-7</b> Nanoengineered Thin Film Metallic Glasses with Mutual Combination of Large Yield Strength and Ductility, <i>F. Bignoli</i>, CNRS, France; <i>A. Brognara, J. Best</i>, Max-Planck Institut für Eisenforschung GmbH, Germany; <i>P. Djemia, D. Faurie</i>, CNRS, France; <i>A. Li Bassi</i>, Politecnico di Milano, Italy; <i>G. Dehm</i>, Max-Planck Institut für Eisenforschung GmbH, Germany; <b>Matteo Ghidelli</b>, CNRS, France</p>	
10:20am	<p><b>INVITED: F4-2-ThM-8</b> Challenges and Perspectives of Wear Resistant Boron-Containing Coatings, <b>Jose L Endrino</b>, Nano4energy SL, Spain; <i>J. Rao</i>, Cranfield University, UK; <i>T. Brzezinka</i>, Dell Technologies, UK; <i>A. Mendez, J. Santiago</i>, Nano4energy SL, Spain; <i>J. Molina</i>, Polytechnic University of Madrid, Spain</p>	<p><b>E2-1-ThM-8</b> Measurements and Simulation of Mechanical Behavior of Amorphous and Crystalline Zr(-Hf)-Cu Thin-Film Alloys, <b>Stanislav Haviar</b>, <i>T. Kozák</i>, University of West Bohemia, Czechia; <i>M. Meindlhuber</i>, Montanuniversität Leoben, Austria; <i>M. Zitek</i>, University of West Bohemia, Czechia; <i>J. Keckes</i>, Erich Schmid Institute of Materials Science, Austria; <i>P. Zeman</i>, University of West Bohemia, Czechia</p>	
10:40am		<p><b>E2-1-ThM-9</b> A Nanotwinned CoCrFeNi Medium Entropy Alloy with Ultrahigh Strength Over a Wide Range of Temperature, <b>Yun-Xuan Lin</b>, <i>J. Wang, C. Tsai, S. Chang, F. Ouyang</i>, National Tsing Hua University, Taiwan</p>	
11:00am		<p><b>INVITED: E2-1-ThM-10</b> Material Properties and Mechanics of Eggshells—Nature’s Survival Capsules, <b>Jia-Yang Juang</b>, National Taiwan University, Taiwan</p>	
11:20am			

# Thursday Lunch, May 25, 2023

Focused Topic Session  
Room Town & Country C - Session FTS-ThL  
Focused Topic Session

12:20pm

**FTS-ThL-1** How to Publish in a Scientific Journal,  
*Dutta Biswanath*, Elsevier, USA

12:40pm

1:00pm

# Thursday Afternoon, May 25, 2023

<b>Functional Thin Films and Surfaces</b> <b>Room Pacific F-G - Session C2-1-ThA</b> <b>Thin Films for Electronic Devices I</b> <b>Moderators: Julien Keraudy, Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein,</b> <b>Jörg Patscheider, Evatec AG, Switzerland</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country C - Session B1-2-ThA</b> <b>PVD Coatings and Technologies II</b> <b>Moderators:</b> <b>Christian Kalscheuer, RWTH Aachen University, Germany,</b> <b>Vladimir Pankov, National Research Council of Canada</b>	
1:20pm	<b>INVITED: C2-1-ThA-1</b> An Imperfect High k Dielectric (O Vacancies, Contamination) Can Give a Perfect MIM Device, <b>Christophe Vallee, N. Tokranova, K. Beckmann, SUNY College of Nanoscale Science and Engineering, USA; N. Cady, SUNY college of Nanoscale Science and Engineering, USA</b>		<b>B1-2-ThA-1</b> Contemporary Trends in the Decorative Coatings, <b>Ivan Kolev, A. Fuchs, P. Immich, H. Vercoulen, D. Barnholt, IHI Hauzer Techno Coating B.V., Netherlands</b>
1:40pm			<b>B1-2-ThA-2</b> Metallic Chromium Coatings with Different Thicknesses on Polycarbonate Surface, <b>Filipa Ponte, P. Sharma, N. Figueiredo, S. Carvalho, CEMMPRE, Department of Mechanical Engineering, University of Coimbra, Coimbra, Portugal</b>
2:00pm	<b>C2-1-ThA-3</b> Optoelectronic and Thermoelectric Properties of New Heterobilayers of Janus-Type Noble-Metal Chalcogenides Materials, <b>Mourad Boujnah, CINVESTAV-Unidad Queretaro, Mexico</b>		<b>B1-2-ThA-3</b> Effect of O <sub>2</sub> Addition During Magnetron Sputtering Deposition on the Growth and Chemistry of Ag Thin Films, <b>Ramiro Zapata, Laboratoire Surface du Verre et Interfaces UMR 125 / Institut de Nanosciences de Paris UMR 7588, France; R. Lazzari, Institut des Nanosciences de Paris UMR 7588, France; H. Montigaud, M. Balestrieri, I. Gozhyk, Laboratoire Surface du Verre et Interfaces UMR 125, France</b>
2:20pm	<b>C2-1-ThA-4</b> High-Entropy Ba(Ti,Zr,Ta,Hf,Mo)(on) <sub>3</sub> Gate Dielectric Films for Zn-Channel Thin Film Transistors, <b>Van Dung Nguyen, Department of Materials Science and Engineering, National Cheng Kung University (NCKU), Taiwan, Viet Nam; K. Chang, Department of Materials Science and Engineering, National Cheng Kung University (NCKU), Taiwan</b>		<b>B1-2-ThA-4</b> Cromatipic®: Additional Functionality with an Industrial Coating Solution, <b>Chinmay Trivedi, P. Immich, E. Cabeo, IHI Hauzer Techno Coating BV, Netherlands</b>
2:40pm	<b>C2-1-ThA-5</b> Hydrothermal Fabrication of The Heterojunction of BaTiO <sub>3</sub> Nanorod Arrays with Ag <sub>2</sub> O and their Applications, <b>Yen-Lun Chiu, K. Chang, National Cheng Kung University (NCKU), Taiwan</b>		<b>B1-2-ThA-5</b> Enhanced Adhesion and Thermal Stability of Thick (Al,Cr) <sub>2</sub> O <sub>3</sub> Coatings on Hot Work Steel, <b>K. Bobzin, C. Kalscheuer, Parisa Hassanzadegan Aghdam, RWTH Aachen University, Germany</b>
3:00pm	<b>C2-1-ThA-6</b> Toughening Mechanisms of Al Nanoparticles in Flexible Mo Thin Films Revealed by in-Situ Synchrotron Diffraction Experiments, <b>Barbara Putz, T. Edwards, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; P. Kreiml, Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; E. Huszar, L. Pethö, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; D. Töbrens, Helmholtz Zentrum Berlin, Germany; J. Michler, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland</b>		<b>B1-2-ThA-6</b> Combinatorial Synthesis of Novel Compositionally, Mechanically, and Structurally Heterogenous CuWCrTi Alloys with Unique Properties, <b>Michal Žitek, Montanuniversität Leoben, Austria; E. Rossi, Università degli Studi Roma Tre, Italy; G. Konstantopoulos, National Technical University of Athens, Greece; M. Sebastiani, Università degli Studi Roma Tre, Italy; J. Keckes, R. Daniel, Montanuniversität Leoben, Austria</b>
3:20pm	<b>C2-1-ThA-7</b> Fabrication of 5g sub-6 Ghz Antennas on Polyimide Substrates Using Laser Thermo-Responsive Polymer Silver Nanocatalysts, <b>Y. Chen, J. You, National Defense University, Republic of China; M. Youh, Ming Chi University of Technology, Taiwan, Republic of China; C. Lee, T. Chiang, Chang-Pin Chang, M. Ger, National Defense University, Republic of China</b>		<b>B1-2-ThA-7</b> Deposition Aspects of High Entropy Alloy Nitride Coatings with Arc-PVD, <b>Tim Krülle, M. Kuczyk, TU Dresden, Germany; M. Leonhardt, O. Zimmer, J. Kaspar, Fraunhofer Institute for Material and Beam Technology (IWS), Germany; C. Leyens, TU Dresden, Germany</b>
3:40pm	<b>C2-1-ThA-8</b> Vanadium Doped Zn Nanorod Array Piezoelectric Pressure Sensor, <b>Shu-Yu Lin, J. Huang, S. Brahma, National Cheng Kung University (NCKU), Taiwan</b>		<b>B1-2-ThA-8</b> Compositional Modulations in Coatings Synthesized by Cathodic Arc Deposition from a Multi-Element Target with Substrate Rotation, <b>Nicholas Bandiera, S. Veldhuis, McMaster University, Canada</b>
4:00pm	<b>C2-1-ThA-9</b> Metal-Semiconductor Amorphous Boron Carbide Contacts, <b>Vojislav Medic, N. Ianno, University of Nebraska - Lincoln, USA</b>		<b>B1-2-ThA-9</b> Modifications of Structure Tuning and Mechanical Properties on CoCrNi Medium-Entropy Alloys Films by Multiple Strengthening Mechanism, <b>Chia-lin Li, National Taiwan University, Taiwan</b>
4:20pm			<b>B1-2-ThA-10</b> Effect of Molybdenum Interlayer on Corrosion Resistance of Molybdenum Nitride-Coated Stainless Steel, <b>Te-Hsin Liu, J. Huang, National Tsing Hua University, Taiwan</b>
4:40pm			<b>B1-2-ThA-11</b> Hydrothermal Corrosion Behaviors of Cr-Based Alloy and Nitride Coated Nuclear Fuel Cladding, <b>Jung Ho Shin, S. Park, Daegu Mechatronics &amp; Materials Institute, Republic of Korea; D. Kim, J. Park, H. Kim, Korea Atomic Energy Research Institute, Republic of Korea</b>

# Thursday Afternoon, May 25, 2023

	<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Pacific D - Session B7-ThA</b> <b>Plasma Surface Interactions, Diagnostics and Growth Processes</b> <b>Moderators: Yin-Yu Chang</b> , National Formosa Univ., Taiwan, <b>Arutiu P. Ehiassarian</b> , Sheffield Hallam University, UK, <b>Yolanda Aranda Gonzalvo</b> , University of Minnesota, USA	<b>New Horizons in Coatings and Thin Films</b> <b>Room Pacific E - Session F2-ThA</b> <b>High Entropy and Other Multi-principal-element Materials</b> <b>Moderators:</b> <b>Erik Lewin</b> , Uppsala University, Sweden, <b>Jean-François Pierson</b> , IJL - Université de Lorraine, France
1:20pm	<b>INVITED: B7-ThA-1</b> On (simple) Measurement of Energy and Momentum Transport Between Process Plasmas and Substrates, <b>Holger Kersten</b> , T. Trottenberg, M. Klette, L. Hansen, IEAP, U Kiel, Germany; F. Schlichting, IAEP, U Kiel, Germany	<b>INVITED: F2-ThA-1</b> Data Driven Methods Enable Rational Design of High Entropy Materials for Hydrogen Storage, <b>Matthew Witman</b> , V. Stavila, M. Allendorf, Sandia National Laboratories, USA
1:40pm		
2:00pm	<b>B7-ThA-3</b> Chemical Stability of Sputter Deposited Silver Thin Films, <b>Diederik Depla</b> , Ghent University, Belgium	<b>F2-ThA-3</b> Effect of Mo Content on the Corrosion and Tribocorrosion Behavior of (CoCrFeNi) <sub>100-x</sub> Mo <sub>x</sub> HEA Thin Films Deposited by HiPIMS, <b>Alessandro Togni</b> , R. Tinazzi, Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, Italy; S. Deambrosio, E. Miorin, F. Montagner, C. Mortalò, V. Zin, Institute of Condensed Matter Chemistry and Technologies for Energy, National Research Council, Italy; G. Bolelli, L. Lusvardi, Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, Italy
2:20pm	<b>B7-ThA-4</b> Electron Drift and Electron Property Studies in HiPIMS by Incoherent Thomson Scattering, T. Dubois, S. Tsikata, CNRS-ICARE, France; <b>Tiberiu Minea</b> , Université Paris-Saclay, France	<b>F2-ThA-4</b> Corrosion Behavior of Sputter-Deposited CoCrNiFeAl High Entropy Alloy, A. Korra, University of Tennessee at Chattanooga, USA; H. Raji, Florida Institute of Technology, USA; <b>Hamdy Ibrahim</b> , University of Tennessee at Chattanooga, USA; S. Saedi, Florida Institute of Technology, USA
2:40pm	<b>B7-ThA-5</b> Engineered Phase Differences between HiPIMS Power and Substrate bias for Improved Mechanical Properties of TiN and CrN, <b>Ying-Xiang Lin</b> , P. Liu, National Chung Hsing University, Taiwan; D. Wu, National Chinan International University, Taiwan; W. Wu, National United University, Taiwan	<b>F2-ThA-5</b> Mechanical Properties of Low Density Ternary Titanium-rich Medium-entropy Alloy with Heterogeneous Structure, <b>Che-Wei Chang</b> , Department of Materials and Optoelectronic Science, National Sun Yat-sen University, Taiwan; P. Chen, S. Jang, Institute of Material Science and Engineering, National Central University, Taiwan; C. Chen, Department of Materials and Optoelectronic Science, National Sun Yat-sen University, Taiwan
3:00pm	<b>B7-ThA-6</b> Influence of Microwave Power and Substrate Biasing on the Structure and Properties of Zinc Tin Nitride Films Deposited via Microwave Plasma-Assisted R-HiPIMS, <b>Caroline Hain</b> , EMPA (Swiss Federal Laboratories for Materials Science and Technology), Swiss Cluster AG, Bern University of Applied Sciences, Switzerland; K. Wiczerzak, D. Casari, A. Sharma, A. Xomalis, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland; P. Sturm, Tofwerk AG, Switzerland; J. Michler, EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland; A. Hessler-Wyser, EPFL, Switzerland; T. Nelis, Bern University of Applied Sciences, Switzerland	<b>F2-ThA-6</b> Charge Transfer Effects in Multicomponent Materials – Shown by Ab-Initio Calculations and X-Ray Photoelectron Spectroscopy XPS, <b>Barbara Osinger</b> , Uppsala University, Angstrom Laboratory, Sweden; L. Casillas-Trujillo, Linköping University, Sweden; R. Lindblad, Uppsala University, Angstrom Laboratory, Sweden; B. Alling, Linköping University, Sweden; U. Jansson, Uppsala University, Angstrom Laboratory, Sweden; I. Abrisov, Linköping University, Sweden; E. Lewin, Uppsala University, Angstrom Laboratory, Sweden
3:20pm	<b>B7-ThA-7</b> Influence of Duty Cycle on Microstructure of TaN Coatings Prepared by High-Power Pulse Magnetron Sputtering Technique, <b>Yung-Chi Chang</b> , National United University, Taiwan; F. Wu, National United University, Taiwan	<b>F2-ThA-7</b> Toughness Estimation of High Entropy Nitride Coatings by Tensile Testing, <b>Martin Kuczyk</b> , T. Krülle, Technische Universität Dresden, Germany; M. Zawischa, M. Leonhardt, O. Zimmer, J. Kaspar, Fraunhofer IWS, Germany; C. Leyens, M. Zimmermann, Technische Universität Dresden, Germany
3:40pm	<b>B7-ThA-8</b> Synthesis of Vanadium Dioxide and Vanadium Pentoxide Nanoparticle Films Using Magnetron-Based Gas Aggregation Source, A. Kuzminova, N. Khomiakova, J. Prokes, T. Kosutova, M. Prochazka, <b>Ondrej Kylian</b> , Charles University, Prague, Czech Republic	<b>F2-ThA-8</b> Synthesis and Characterisation of (Gd,Hf,Sc,Ti,Zr)-Oxide Coatings, <b>Alexander Kirnbauer</b> , E. Peck, M. Derflinger, TU Wien, Institute of Materials Science and Technology, Austria; P. Polcik, Plansee Composite Materials GmbH, Germany; P. Mayrhofer, TU Wien, Institute of Materials Science and Technology, Austria
4:00pm	<b>B7-ThA-9</b> Diagnostics with an Optically Trapped Microparticle in the Sheath of an Asymmetric CCP, <b>Viktor Schneider</b> , J. Schleitzer, H. Kersten, Institute of Experimental and Applied Physics, Kiel University, Germany	<b>F2-ThA-9</b> Characterization and Surface Properties of Magnetron Sputtered Cr-Co-Nb-B Thin Film Metallic Glass, <b>Pak Man Yiu</b> , Ming Chi University of Technology, Taiwan; N. Bönninghoff, J. Chu, National Taiwan University of Science and Technology, Taiwan
4:20pm	<b>B7-ThA-10</b> Investigating the Plasma Physics of Plasma-Enhanced Pulsed Laser Deposition of Photocatalytic Thin Films, <b>Matthew Hill</b> , University of York, UK	<b>INVITED: F2-ThA-10</b> Functional Materials for Energy Applications, <b>Susan Sinnott</b> , Pennsylvania State University, USA
4:40pm	<b>B7-ThA-11</b> Thin Film Modification in a DC Microplasma – Understanding the Importance of Ions under Atmospheric Pressure Conditions for the Plasma Surface Interaction, <b>Luka Hansen</b> , Institute of Experimental and Applied Physics, Kiel University, Germany; N. Kohlmann, L. Kienle, Institute of Materials Science, Kiel University, Germany; H. Kersten, Institute of Experimental and Applied Physics, Kiel University, Germany	

# Thursday Afternoon, May 25, 2023

<b>Tribology and Mechanical Behavior of Coatings and Engineered Surfaces</b> <b>Room Town &amp; Country B - Session E2-2-ThA</b> <b>Mechanical Properties and Adhesion II</b> <b>Moderators: Jazmin Duarte</b> , MPI für Eisenforschung GMBH, Germany, <b>Alice Lassnig</b> , Austrian Academy of Sciences, Austria, <b>Bo-Shiuan Li</b> , National Sun-Yat Sen University, Taiwan		
1:20pm	<b>INVITED: E2-2-ThA-1</b> Scratching the Surface: Understanding Plasticity Associated with Microscale Asperity Contacts, <b>Anna Kareer</b> , University of Oxford, UK	
1:40pm		
2:00pm	<b>E2-2-ThA-3</b> Effect of Al/Ti ratio and Bias on Mechanical and Tribological Properties of AlTiN Coatings, <b>Jiri Nohava</b> , Anton Paar TriTec SA, Switzerland; <b>J. Sondor</b> , LISS, a.s., Czechia	
2:20pm	<b>E2-2-ThA-4</b> Effect of Nb and V Doped Elements on the Mechanical and Tribological Properties of CrYN Coatings, <b>Ihsan Efeoğlu</b> , <b>G. Gülten</b> , <b>B. Yaylali</b> , <b>Y. Totik</b> , Atatürk University, Turkey; <b>P. Kelly</b> , <b>J. Malecka</b> , Manchester Metropolitan University, U.K.	
2:40pm	<b>E2-2-ThA-5</b> Effect of Mo Interlayer on the Mechanical Properties and Tribology Behavior of Molybdenum Nitride Coatings Deposited by High Power Pulsed Magnetron Sputtering, <b>Yu-Che Fang</b> , <b>J. Huang</b> , National Tsing Hua University, Taiwan	
3:00pm	<b>E2-2-ThA-6</b> Effect of Nitrogen Flow Rate on Tribological Behavior of TiN Thin Film on Ti-6Al-4V Deposited by Ion Plating Method, <b>K. Lan</b> , <b>An-Jia Chen</b> , National Tsing Hua University, Taiwan	
3:20pm	<b>E2-2-ThA-7</b> Tailor the Tribological Behavior of TiN Coatings on D2 Steel by Adjusting Process Parameters during Deposition, <b>I-Sheng Ting</b> , <b>J. Huang</b> , National Tsing Hua University, Taiwan	
3:40pm	<b>E2-2-ThA-8</b> Micromechanics of Hydrogen Barrier Coatings During <i>in Situ</i> Hydrogen Charging, <b>Maria Jazmin Duarte Correa</b> , <b>H. Gopalan</b> , <b>J. Rao</b> , <b>P. Patil</b> , <b>C. Scheu</b> , <b>G. Dehm</b> , Max-Planck Institut für Eisenforschung, Germany	
4:00pm	<b>E2-2-ThA-9</b> Nano-Scale Mechanical Characteristics of Epitaxial Stabilization ZrTiN/NbN Superlattice Coatings, <b>Pin-Yuan Lai</b> , <b>T. Ku</b> , <b>S. Hsu</b> , <b>P. Chen</b> , <b>J. Duh</b> , National Tsing Hua University, Taiwan	

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

Room Golden State Ballroom - Session HP-ThP

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

**HP-ThP-1** Femtosecond Laser Ablation (FESLA) XPS – A Novel XPS Depth Profiling Technique for Thin Films, Coatings and Multi-Layered Structures, *Mark Baker, S. Bacon, S. Sweeney*, University of Surrey, UK; *A. Bushell, T. Nunney, R. White*, ThermoFisher Scientific, UK

**HP-ThP-2** Phase Transformation and Solid-State Dewetting of Precious Metal High Entropy Alloy Thin Films on a Sapphire Substrate, *Amit Sharma, P. Schweizer, J. Michler, X. Maeder*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

**HP-ThP-3** *In Situ* and Real-Time Measurements in Metallic Thin Film Research and Applications: The MISSTIC Experimental Setup, *Ramiro Zapata*, Laboratoire Surface du Verre et Interfaces UMR 125 / Institut des Nanosciences de Paris UMR 7588, France; *R. Lazzari*, Institut des Nanosciences de Paris UMR 7588, France; *H. Montigaud, M. Balestrieri, I. Gozhyk*, Laboratoire Surface du Verre et Interfaces UMR 125, France

**HP-ThP-4** Ultrasonic Contact Impedance Measurements at Nanometer Scale, *Jurgis Daugela*, Johns Hopkins University, USA; *A. Daugela*, Nanometronix LLC, USA

## Coatings for Biomedical and Healthcare Applications

Room Golden State Ballroom - Session DP-ThP

## Coatings for Biomedical and Healthcare Applications (Symposium D) Poster Session 5:00pm

**DP-ThP-1** Antibacterial Properties of Ag Doped Tetrahedral Amorphous Carbon Coatings Synthesized Using Hybrid Filtered Cathodic Vacuum Arc and Magnetron Sputtering System, *SangYul Lee, K.R. Oh, J.W. Park*, Korea Aerospace University, Republic of Korea; *D.Y. Kim, J.W. Kim*, KIMS, Republic of Korea

**DP-ThP-2** Adhesion, Corrosion Resistance, and Blood Compatibility of Mao-Pretreated Magnesium Alloy Coated with Graphene Oxide and Pyrolytic 1,8-Diaminooctane-Incorporated Oxidized Polydopamine, *Chau-Chang Chou, S. Chang, H. Lee*, National Taiwan Ocean University, Taiwan; *W. Chen*, Cheng Gung Memorial Hospital, Keelung, Taiwan

**DP-ThP-3** Surface Alloying for Antibacterial Martensitic Stainless Steel Fabrication, *Z. Chen, B. Liu, Wen-Ta Tsai*, National Cheng Kung University (NCKU), Taiwan; *C. Huang*, Tung Mung Development Co., Ltd., Taiwan

**DP-ThP-4** Enhancing the Surface Properties of Polymethylmethacrylate (PMMA) by Functionalizing with Atomic Layer Deposited Titanium(IV) Dioxide, *Harshdeep Bhatia, C. Takoudis*, University of Illinois, Chicago, USA

**DP-ThP-5** Diffusion-Based Plasma Nitriding for Surgical Needle, *Takao Yamauchi, P. Abraha*, Meijo University, Japan

**DP-ThP-6** Development of TiO<sub>2</sub>/Ag Multilayer Antibacterial Coatings Using Magnetron Sputtering Technique for Potential Applications in Non-Permanent Implants, *Sebastián Rodríguez Maya, M. Restrepo Posada, F. Bolívar Osorio, G. Bejarano Gaitán, J. Lenis Rodas*, Universidad de Antioquia, Colombia

**DP-ThP-7** Development of Multilayer SiO<sub>2</sub>/Ag Coatings Fabricated by Magnetron Sputtering for Potential Applications in Removable Implants, *Magali Restrepo Posada, S. Rodríguez Maya, J. Lenis Rodas, F. Bolívar Osorio*, Universidad de Antioquia, Colombia

## Coatings for Use at High Temperatures

Room Golden State Ballroom - Session AP-ThP

## Coatings for Use at High Temperatures (Symposium A) Poster Session 5:00pm

**AP-ThP-1** Thermal Stability of Thick  $\alpha$ - and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Coatings Deposited by High Speed PVD, *K. Bobzin, Christian Kalscheuer, M. Moebius, P. Hassanzadegan Aghdam*, RWTH Aachen University, Germany

**AP-ThP-2** Impeding the  $\gamma$ ' Depletion During the Interdiffusion between Bond Coatings and Superalloys via Introduction of Tantalum in Bond Coatings, *Xiaoyu Sun*, Linköping University, Sweden

**AP-ThP-3** High-Temperature Stability and Mechanical Properties of Non-Reactive PVD-Synthesized MoSi<sub>2</sub> Coatings, *Sophie Richter, A. Bahr, T. Wojcik*, Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; *O. Hunold*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *S. Kolozsvári, P. Polcik*, Plansee Composite Materials GmbH, Germany; *J. Ramm*, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *H. Riedl*, TU Wien, Institute of Materials Science and Technology, Austria

## Functional Thin Films and Surfaces

Room Golden State Ballroom - Session CP-ThP

## Functional Thin Films and Surfaces (Symposium C) Poster Session 5:00pm

**CP-ThP-1** Structural and Compositional Analysis of Titanium-Based PVD Coatings, *Celia Rojo-Blanco*, Sheffield University, UK, Mexico; *J. Qi*, Sheffield University, UK, China; *G. Wu, L. Yang*, University of Leeds, UK, China; *S. Creasey-Gray, A. Leyland*, Sheffield University, UK

**CP-ThP-2** Effect of Si Doping on the Optical and Mechanical Properties of Tetrahedral Amorphous Carbon Coatings, *SangYul Lee, K.R. Oh, J.W. Park*, Korea Aerospace University, Republic of Korea; *D. Kim*, Pusan National University, Republic of Korea; *Y. Jang*, Korea Institute of Materials Science, Republic of Korea; *J. Kim*, Korea Institute of Materials Science, Republic of Korea

**CP-ThP-3** Study of Spatial Distribution of Sputtered Al-Doped Zinc Oxide for Optoelectronic Applications, *Eduard Llorens, E. Stamate*, DTU, Denmark

**CP-ThP-4** Optical and Electrical Characterization of Thin NiO<sub>x</sub> Films Obtained by R.F. Sputtering, *Francisco David Mateos-Anzaldo, R. Nedeve, E. Osorio-Urquiza, M. Curiel-Alvarez, O. Perez-Landeros, J. Castillo-Saenz*, Universidad Autónoma de Baja California, Instituto de Ingeniería, Mexico; *A. Arias-Leon*, Universidad Autónoma de Baja California, Facultad de Ingeniería Mexicali, Mexico; *B. Valdez-Salas*, Universidad Autónoma de Baja California, Instituto de Ingeniería, Mexico; *N. Nedeve*, Universidad Autónoma de Baja California, Instituto de Ingeniería, Mexico

**CP-ThP-5** Deposition of Lanthanum-Doped Barium Stannate as Transparent conducting Oxides, *C. Liu, Y. Yan, S. Chen, Yijia Chen, M. Wong*, National Dong Hwa University, Taiwan

**CP-ThP-6** Electrical Evaluation of Micro Water Droplets During Solidification Process Using Galvanic Array with Micro to Nano Gaps, *K. Hirayama*, Chiba Institute of Technology, Japan; *M. Mekawy, J. Kawakita*, NIMS, Japan; *Y. Sakamoto*, Chiba Institute of Technology, Japan

**CP-ThP-7** Engineered Ionic Diode Membranes Based on Subnanochannel Metal-Organic Frameworks with High Space Charges for Boosted Lithium Ion Transport and Unprecedented Osmotic Energy Conversion in Organic Solution, *Amalia Rizki Fauziah, L. Yeh*, National Taiwan University of Science and Technology, Taiwan

**CP-ThP-8** Designing Experimental Determination of Sheet Resistance of a Titanium Self-Aligned Silicide Formation, *Jau-Shiung Fang, Y. Chang, Y. Kuo*, National Formosa University, Taiwan

**CP-ThP-9** Hybrid Structures of p-n junction for Improving Efficiency of Photovoltaic Devices, *Paweł Jarka, T. Tański*, Department of Engineering Materials and Biomaterials, Faculty of Mechanical Engineering, Silesian University of Technology, Poland; *B. Hajduk, H. Bednarski*, Centre of Polymer and Carbon Materials, Polish Academy of Sciences, Poland

**CP-ThP-10** The Investigation of Electro-Optical Properties of Hybrid Organic-Inorganic Thin Films, *Tomasz Tański*, Department of Engineering Materials and Biomaterials, Faculty of Mechanical Engineering, Silesian University of Technology, Poland

## Hard Coatings and Vapor Deposition Technologies

Room Golden State Ballroom - Session BP-ThP

## Hard Coatings and Vapor Deposition Technologies (Symposium B) Poster Session 5:00pm

**BP-ThP-1** Superhard Tungsten-tantalum Diboride (W,Ta)B<sub>2</sub> Coatings Prepared by High Power Impulse Magnetron Sputtering HIPIMS, *Rafał Psiuk, P. Denis*, Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; *Ł. Kurpaska*, National Centre for Nuclear Research, Poland; *T. Mościcki*, Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland

**BP-ThP-2** First Principles Calculation of Thermal Properties for an Aeronautic Ni Alloy, *Luis Dacal, M. Lima*, Instituto de Estudos Avançados (IEAv - DCTA), Brazil

**BP-ThP-3** Direct Deposition of Nano-crystalline Diamond Coating on Steel (SS 301), **Nikhil C.**, Indian Institute of Technology, Madras, India; **R. Kannan**, Indian Institute of Technology Madras, India; **R. Kannan**, P. **Bagaria**, Kapindra Precision Engineering Pvt. Ltd., India; **N. Arunachalam**, **M. Ramachandra Rao**, Indian Institute of Technology, Madras, India

**BP-ThP-4** Synergistic Effect of He for the Incorporation of Ne and Ar During Magnetron Sputtering Fabrication of Gas-Charged Silicon Films: A Microstructural and Chemical Characterization Study, **Asunción Fernández**, **V. Godinho**, Instituto de Ciencia de Materiales de Sevilla, CSIC-Univ. Seville, Spain; **J. Colaux**, Synthesis, Irradiation & Analysis of Materials (SIAM) Platform, Namur Institute of Structured Matter (NISIM), University of Namur, Belgium; **J. Ávila**, Synchrotron SOLEIL and Université Paris-Saclay, France; **J. López-Viejobuena**, **J. Caballero-Hernández**, **D. Hufschmidt**, **M. Jiménez de Haro**, Instituto de Ciencia de Materiales de Sevilla, CSIC-Univ. Seville, Spain; **S. Lucas**, Laboratoire d'Analyse par Réactions Nucléaires (LARN), Namur Institute of Structured Matter (NISIM), University of Namur, Belgium; **M. Asensio**, Madrid Institute of Materials Science (ICMM), CSIC, Cantoblanco, Spain

**BP-ThP-5** Custom Coating Solution for Coin Minting Dies, **Guillaume Wahli**, **J. Wehrs**, **S. Kaminski**, **A. Lümekemann**, PLATIT AG, Switzerland

**BP-ThP-6** Influence of the Period of a Multilayer TiN / TiAlN Coating System on its Microstructure and Electrochemical Behavior for Potential Applications in Hot Work Steel, **Hernán Dario Mejía Vásquez**, **G. Bejarano Gaitán**, University of Antioquia, Colombia

**BP-ThP-7** Diamond Synthesis on 2-Inch Si Substrates by Mode Conversion Type Microwave Plasma CVD, **Akira Inaba**, Chiba Institute of Technology, Japan

**BP-ThP-8** The Phase Transformation and Mechanical Properties of Magnetron Co-Sputtering (MoHf)N Coatings through Heat Treatment, **S. Hsu**, **Yu-Hsien Liao**, **F. Wu**, **Y. Chang**, Dept. of Materials Science and Engineering, National United University, Taiwan

**BP-ThP-9** Realistic Structural Properties of Amorphous Si<sub>n</sub> from Machine-Learning-Assisted Molecular Dynamics, **Ganesh Kumar Nayak**, Montanuniversität Leoben, Austria; **P. Srinivasan**, Universität Stuttgart, Germany, Austria; **J. Todt**, **R. Daniel**, **D. Holec**, Montanuniversität Leoben, Austria

**BP-ThP-10** Reactive Remote Plasma Sputtering of Titania Thin Films Using r.f. Substrate Biasing, **Joseph Lawton**, University of Surrey, UK; **S. Thornley**, Plasma Quest Limited, UK; **M. Baker**, University of Surrey, UK

**BP-ThP-11** Influence of Process Gas on Properties and Residual Stress State of TiAlCrSiN PVD Coatings, **K. Bobzin**, **C. Kalscheuer**, **M. Carlet**, **Muhammad Tayyab**, Surface Engineering Institute - RWTH Aachen University, Germany

**BP-ThP-12** Control of TiN Thin Film Properties by the Energy of Sputtered Atoms in DC Magnetron, **Abderzak el-Farsy**, LPGP - Université Paris Saclay, France; **J. Pierson**, **T. Gries**, **L. de Pouques**, IJL - Université de Lorraine, France; **J. Bougdira**, IJL - Université de Lorraine, France

**BP-ThP-13** Fabrication of TiN Coatings Using Superimposed HiPIMS and MF: Effect of Target Poisoning Ratios and MF Power, **Bih-Show Lou**, Chang Gung University, Taiwan; **W. Yang**, **J. Lee**, Ming Chi University of Technology, Taiwan, Republic of China

**BP-ThP-14** Adhesion of Hydrogenated DLC Coatings on Polymer Substrates, **Akira Chikamoto**, **P. Abraha**, Meijo University, Japan

**BP-ThP-15** Fabrication of Pt-Nanocluster Decorated Porous Ni/MoS<sub>2</sub> for Hydrogen Evolution Reaction Application, **Po-Chun Chen**, National Taipei University of Technology, Taiwan

## New Horizons in Coatings and Thin Films

### Room Golden State Ballroom - Session FP-ThP

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

#### Poster Session

5:00pm

**FP-ThP-1** Fabrication of Chemical Bath Deposited ZnO Nanorods Layer Based Ultraviolet Light Detectors and Their Device Properties: Influences of Solution Concentration and Thermal Annealing, **Tomoaki Terasako**, **T. Fujikawa**, **K. Hirota**, **K. Kobayashi**, Graduate School of Science and Engineering, Ehime University, Japan; **M. Yagi**, National Institute of Technology, Kagawa College, Japan; **T. Yamamoto**, Materials Design Center, Research Institute, Kochi University of Technology, Japan

**FP-ThP-2** Advances in Nanosynthesis by Atmospheric Pulsed Arc Discharges, **Carles Corbella**, **S. Portal**, George Washington University, USA; **M. Kundrapu**, Tech-X Corporation, USA; **M. Keidar**, George Washington University, USA

**FP-ThP-3** Structure, Mechanical Properties, and Thermal Stability of (Gd,Hf,Sc,Ti,Zr)-Nitride Thin Films, **Alexander Kirnbauer**, **M. Derflinger**, TU Wien, Institute of Materials Science and Technology, Austria; **P. Polcik**, Plansee Composite Materials GmbH, Germany; **P. Mayrhofer**, TU Wien, Institute of Materials Science and Technology, Austria

**FP-ThP-4** Demystifying the Entropy Forming Ability – The Role of Atomic Size Effects, **Andreas Kretschmer**, **P. Mayrhofer**, TU Wien, Institute of Materials Science and Technology, Austria

**FP-ThP-5** High-Temperature Oxidation Resistance of CrB<sub>2</sub> Coatings Alloyed by Transition Metal Disilicide Phases, **Ahmed Bahr**, **T. Glechner**, **T. Wojcik**, **P. Kutrowatz**, Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; **J. Ramm**, **O. Hunold**, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; **S. Kolozsvári**, **P. Polcik**, Plansee Composite Materials GmbH, Germany; **E. Ntemou**, **D. Primetzhofer**, Department of Physics and Astronomy, Uppsala University, Sweden; **H. Riedl**, Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria

**FP-ThP-6** The Photodetection of the in-, Sn-, and Te-Doped Bi<sub>2</sub>Se<sub>3</sub> Nanoplatelets, **Chih-Chiang Wang**, National Chin-Yi University of Technology, Taiwan; **H. Shih**, Chinese Culture University, Taiwan; **F. Shieu**, National Chung Hsing University, Taiwan; **A. Lo**, National Chin-Yi University of Technology, Taiwan

**FP-ThP-7** Metallic Zn and Mg Nanowire Coatings by Conventional Reactive DC Sputter Deposition, **Jakub Zawadzki**, **M. Borysiewicz**, **M. Wzorek**, Łukasiewicz Research Network - Institute of Microelectronics and Photonics, Poland

**FP-ThP-8** Synthesis and Electrical Properties of GasB Nanowires, **Tzai-Wei Chen**, **C. Wang**, National Taiwan University of Science and Technology, Taiwan

**FP-ThP-9** Spacing-controllable core@shell TiO<sub>2</sub>@Ru/RuOx Nanotube Array for Biocompatible Stimulating Electrode Applications, **Jia-Jun Li**, National Taipei University of Technology, Taiwan

**FP-ThP-10** Nickel Sulfide on Organic Framework for Efficient Hydrogen Evolution Reaction, **Yu-An Ji**, Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Taiwan; **T. Chang**, **C. Kung**, Department of Chemical Engineering, National Cheng Kung University, Taiwan; **C. Chen**, Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Taiwan

**FP-ThP-11** Research of The Growth Mechanism of Solvothermally Synthesized Sb<sub>2</sub>Te<sub>3</sub> Nanosheets, **Yen-Jen Lin**, **C. Chen**, Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Taiwan

## Surface Engineering - Applied Research and Industrial Applications

### Room Golden State Ballroom - Session GP-ThP

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

5:00pm

**GP-ThP-1** Enhanced Corrosion Resistance, Wear and Antibacterial Properties of TiO<sub>2</sub>-Incorporated Micro-Arc Oxidation on AZ31 Magnesium Alloy, **Wei-Hao Chen**, **Y. Lee**, **S. Huang**, **Y. Chu**, National Taiwan University, Taiwan

**GP-ThP-2** The Influence of the Pause Time on Microstructure and Corrosion Resistance of AZ31 Magnesium Alloy Micro-Arc Oxidation Coating, **Shih-Yen Huang**, **Y. Lee**, **Y. Chu**, National Taiwan University, Taiwan

**GP-ThP-3** Microstructure and Properties of HVOF Sprayed Coatings Remelted by Laser, **E. Jonda**, **Marek Sroka**, **W. Pakielna**, Silesian University of Technology, Poland; **T. Jung**, Łukasiewicz Research Network - Institute for Ferrous Metallurgy, Poland

**GP-ThP-4** Fabrication Feasibility Study on Cu and Cu Alloy Coating for Spent Fuel Canister of Deep Geological Disposal, **Yaung-Ho Lee**, **Y. Jung**, **D. Kim**, **S. Yoon**, **H. Kim**, Korea Atomic Energy Research Institute, Republic of Korea

**GP-ThP-5** Etching of B-doped Diamond Films Using RF Plasma, **Ryuhei UEDA**, Chiba Institute of Technology, Japan

**GP-ThP-6** Fabrication of Si/C/SiNW Arrays Sandwich Structure at Different Annealing Parameters for Solar Cell Application, **Ai-Huei Chiou**, **J. Wei**, National Formosa University, Taiwan

**GP-ThP-7** Barrier Properties Enhancement of Bio-Based Polymers by Means of Multilayer Coatings Applied by Pulsed DC PACVD, **C. Nicoletti**, **C. Forsich**, University of Applied Sciences Upper Austria; **F. Delfin**, University of Applied Sciences Upper Austria, Austria, National University of Technology, Concepción del Uruguay, Argentina; **S. Augl**, **S. Danningner**, University of Applied Sciences Upper Austria; **M. Schachinger**, (University of Applied Sciences Upper Austria; **C. Burgstaller**, **D. Heim**, **J. Weghuber**, University of Applied Sciences Upper Austria

**GP-ThP-8** Effect of Fluoride on Adhesion of Electroless Nickel–Phosphorus Coating on MAO-Coated AZ31B Magnesium Alloy, *J. Lee, C. Lee*, National Defense University, Republic of China; *J. Lee*, Lung Hwa University of Science and Technology, Taiwan; *S. Jian*, Ming Chi University of Technology, Taiwan, Republic of China; **Ming-Der Ger**, *A. Cheng*, National Defense University, Republic of China

**GP-ThP-9** Effect of Mechanical Stress on Electrical Characteristics of Low-Dielectric-Constant Dielectric Materials, *Yi-Lung Cheng*, National Chi-Nan University, Taiwan

**GP-ThP-10** Monolithic Integration of Lead Selenide Films via Surface Morphology Engineering, *Sejeong Park, J. Park*, Opto Diode Corporation, USA

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## Topical Symposia

### Room Golden State Ballroom - Session TS1P-ThP Coatings for Energy Storage and Conversion - Batteries and Hydrogen Applications - TS1 Poster Session 5:00pm

**TS1P-ThP-1** Bacezrybo<sub>3-5</sub> Coatings Deposited by Colloidal Coating Process for Sustainable Energy Application, *Chien-Ming Lei, P. Lin, Y. Chen*, Department of Chemical and Materials Engineering, Chinese Culture University, Taiwan

**TS1P-ThP-2** PVD Core-Shell-Catalysts for Use in Electrolyzers, *Jan-Ole Achenbach, S. Cremer, R. Cremer*, KCS Europe GmbH, Germany

**TS1P-ThP-3** Repressing Noble Metal Ruthenium Target to Reduce the Cost of Bipolar Plate Manufacture in Fuel Cells, *Jing Yang*, SCI Engineered Materials, inc, USA

**TS1P-ThP-4** Corrosion Protection of Bipolar Plates in Electrolysers, *M. Welters*, KCS Europe GmbH, Germany; *N. Kruppe*, Schaeffler Technologies GmbH & Co. KG, Germany; *Peter Jaschinski, T. Breuer, S. Yang, R. Cremer*, KCS Europe GmbH, Germany; *M. Öte, N. Bagcivan*, Schaeffler Technologies GmbH & Co. KG, Germany

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## Topical Symposia

### Room Golden State Ballroom - Session TS2P-ThP Sustainable Surface Solutions, Materials, Processes and Applications - TS2 Poster Session 5:00pm

**TS2P-ThP-1** The Study of Different Crystalline Moissanite: Nucleation and Growth of Nanoparticle Gold Coatings, *Tsung-Jen Wu, S. Song, W. Chen*, Institute of Geosciences, National Taiwan University, Taiwan; *W. Lin*, Department of Materials and Mineral Resources Engineering, National Taipei University of Technology, Taiwan

**TS2P-ThP-2** Multilayered Structure of PE-Based Polymer Film Composites, *Marcin Bilewicz*, Silesian University of Technology, Poland

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## Topical Symposia

### Room Golden State Ballroom - Session TS3P-ThP Processes of Materials for Printed and Flexible Film Technologies - TS3 Poster Session 5:00pm

**TS3P-ThP-1** Organic and Perovskite Solar Cells based on 3D-Printed Transparent Conducting Electrodes, *H. Lee, B. Tyagi, Jae-Wook Kang*, Jeonbuk National University, Republic of Korea

**TS3P-ThP-2** Development of a Microfluidic System for Oxygen Environment Detection in Cell Culture, *Wen-Cheng Kuo, L. Wu, J. Wang*, National Kaohsiung University of Science and Technology, Taiwan

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## Tribology and Mechanical Behavior of Coatings and Engineered Surfaces

### Room Golden State Ballroom - Session EP-ThP Tribology and Mechanical Behavior of Coatings and Engineered Surfaces (Symposium E) Poster Session 5:00pm

**EP-ThP-1** Combinatorial Study of Mo<sub>2</sub>N-Cu Coatings to Optimize Tribological Performance in Low Viscosity Fuel Environments, *Slater Caldwell, M. Dockins, E. Cairns*, University of North Texas, USA; *S. Berkebile*, US DEVCOM Army Research Laboratory, USA; *A. Voevodin, D. Berman, S. Aouadi*, University of North Texas, USA

**EP-ThP-2** Triboactive CrAlN Coatings for Wear and Friction Reduction under Grease Lubrication, *K. Bobzin*, Surface Engineering Institute - RWTH Aachen University, Germany; *C. Kalscheuer*, surface Engineering Institute - RWTH Aachen University, Germany; **Max Philip Möbius**, Surface Engineering Institute - RWTH Aachen University, Germany; *M. Rank*, Institute of Machine Elements, Gears and Tribology - TU Kaiserslautern, Germany; *M. Oehler, O. Koch*, Institute for Machine Elements, Gears and Tribology, Germany

**EP-ThP-3** Influence of Nb and Ta Added Elements on the Corrosion and Mechanical Properties of CrYN Coatings, **İhsan Efeoğlu**, *B. Yaylalı, G. Gülten, Y. Totik*, Atatürk University, Turkey; *P. Kelly, J. Malecka*, Manchester Metropolitan University, U.K.

**EP-ThP-4** Evaluation of the Adhesive Strength of a Nitrided Stainless Steel Under Cyclic Contact Loads, *D. Fernández-Valdés, Jesús Vidal-Torres*, SEPI ESIME Instituto Politécnico Nacional, Mexico; *A. López-Liévano*, Universidad Veracruzana, Mexico; *G. Rodríguez-Castro, A. Meneses-Amador*, SEPI ESIME Instituto Politécnico Nacional, Mexico

**EP-ThP-5** Effect of Annealing Treatment on Mechanical Properties of Nanostructured Metallic Films Deposited by Pulsed Laser Deposition, **Francesco Bignoli**, CNRS, France; *S. Rashid, E. Rossi*, Università degli studi Roma 3, Italy; *P. Djemia*, CNRS, France; *M. Sebastiani*, Università degli studi Roma 3, Italy; *A. Li Bassi*, Politecnico di Milano, Italy; *M. Ghidelli*, CNRS, France

# Friday Morning, May 26, 2023

	<b>Functional Thin Films and Surfaces</b> <b>Room Pacific F-G - Session C2-2-FrM</b> <b>Thin Films for Electronic Devices II</b> <b>Moderators: Julien Keraudy, Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein,</b> <b>Jörg Patscheider, Evatec AG, Switzerland</b>	<b>Functional Thin Films and Surfaces</b> <b>Room Town &amp; Country B - Session C3-2-FrM</b> <b>Thin Films and Novel Surfaces for Energy II</b> <b>Moderators:</b> <b>Clio Azina, RWTH Aachen University, Germany,</b> <b>Carlos Tavares, University of Minho, Portugal</b>
8:00am		
8:20am		
8:40am	<b>INVITED: C2-2-FrM-3</b> 3D Device Integration Technology for AI Computing, <i>S. Chang</i> , Powerchip Semiconductor, Taiwan; <i>Shou-Zen Chang</i> , Powerchip Semiconductor Manufacturing Corporation, Taiwan	<b>INVITED: C3-2-FrM-3</b> Survey for Ferroelectric/Antiferroelectric Films for Energy Storage, <i>Mitsuru Itoh, H. Takashima</i> , National Institute of Advanced Industrial Science and Technology/Tokyo institute of Technology, Japan
9:00am		
9:20am	<b>C2-2-FrM-5</b> Magnetic Nanolaminates Deposited by Magnetron Sputtering for Next Generation Electronic Devices, <i>Claudiu V. Falub, M. Bless, J. Richter, X. Zhao, H. Rohrmann, M. Tschirky, M. Padrun</i> , Evatec AG, Switzerland	<b>C3-2-FrM-5</b> First Attempt to Describe the Effect of the Substrate Temperature on the Depth Concentration Profile of Reactively Sputtered ZnGeN <sub>2</sub> Thin Films, <i>A. Virfeu, F. Alnjiman, A. Borroto, S. Migot, J. Ghanbaja, D. Mangin, D. Pilloud, Jean-Francois Pierson</i> , Institut Jean Lamour - Université de Lorraine, France
9:40am	<b>C2-2-FrM-6</b> Tungsten-Based Thin Film Metallic Glass as Diffusion Barrier between Copper and Silicon, <i>Pei-Yu Chen, J. You, C. Hsueh</i> , National Taiwan University, Taiwan	<b>C3-2-FrM-6</b> Effect of Oxygen Flow Rate on the Hydrogenation Resistance of ZrN <sub>x</sub> O <sub>y</sub> Thin Films on Zircaloy-4, <i>Yen-Ting Chen, K. Lan</i> , National Tsing Hua University, Taiwan; <i>H. Tung</i> , Institute of Nuclear Energy Research, Taiwan
10:00am	<b>C2-2-FrM-7</b> Investigation of Properties and Microstructures of Ag-Cu Alloy Thin Films by Co-sputtering and First-principles Calculations, <i>Yu-Chieh Wang, C. Chen, F. Ouyang, H. Chen</i> , National Tsing Hua University, Taiwan	<b>C3-2-FrM-7</b> Engineered Metal-Organic Framework-Based Heterogeneous Membranes with High Ionic Rectification for Ultrahigh Osmotic Power Generation from Organic Solutions, <i>Amalia Rizki Fauziah, L. Yeh</i> , National Taiwan University of Science and Technology, Taiwan
10:20am	<b>C2-2-FrM-8</b> Multi-Step Method for the Fabrication of High-Performance Continuous Ultra-Thin Silver Films for Energy Applications, <i>Phillip Rumsby, B. Baloukas, O. Zabeida, L. Martinu</i> , Polytechnique Montréal, Canada	<b>C3-2-FrM-8</b> CVD Process Development of Thin Film Triniobium-Tin on Copper SRF Cavities, <i>Mohamed A. Cheikh, S. McNeal, V. Arrieta</i> , Ultramet, USA
10:40am		

# Friday Morning, May 26, 2023

<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Town &amp; Country C - Session B1-3-FrM</b> <b>PVD Coatings and Technologies III</b> <b>Moderators:</b> <b>Christian Kalscheuer, RWTH Aachen University, Germany,</b> <b>Vladimir Pankov, National Research Council of Canada</b>		<b>Hard Coatings and Vapor Deposition Technologies</b> <b>Room Pacific D - Session B3-FrM</b> <b>Deposition Technologies and Applications for Carbon-Based Coatings</b> <b>Moderators:</b> <b>Konrad Fadenberger, Robert Bosch GmbH, Germany,</b> <b>Ivan Kolev, IHI Hauzer Techno Coating B.V., Netherlands</b>	
8:00am	<b>B1-3-FrM-1</b> Effect of Wettability Modification of Ti-Al-Based Thin Films on Heat Transfer Exchange During Water Drop Cooling, <b>Alexis Carlos Garcia Wong, G. Marcos</b> , Institut Jean Lamour - Université de Lorraine, France; <b>G. Castanet, O. Caballina, F. Lemoine</b> , Laboratoire d'Energétique et de Mécanique Théorique et Appliquée, France; <b>J. Pierson, T. Czerwiec</b> , Institut Jean Lamour - Université de Lorraine, France	<b>INVITED: B3-FrM-1</b> Molecular Dynamics Study of Interfacial Phenomena in Diamond-Like Carbon Films, <b>X. Li</b> , China University of Mining and Technology, China; <b>A. Wang</b> , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China; <b>Kwang-Ryeol Lee</b> , Korea Institute of Science and Technology (KIST), Republic of Korea	
8:20am	<b>B1-3-FrM-2</b> Rf-Bias Assisted, Combinatorial Sputtering of Conductive (TiZr)N Hard Coatings on Insulating Substrates, <b>Kerstin Thorwarth</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <b>M. Watroba</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <b>J. Sommerhaeuser, S. Zhuk, J. Patidar, A. Wieczorek, S. Siol</b> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland		
8:40am	<b>B1-3-FrM-3</b> The Microstructure and Properties of Highly (111)-Oriented Nano-Twinned Cu-Ag Thin Film Prepared by DC Sputtering System, <b>Ka-Chieh Hsueh</b> , National Tsing Hua University, Taiwan; <b>J. Lee, F. Ouyang</b> , National Tsing Hua University, Taiwan	<b>B3-FrM-3</b> ta-C by Magnetron Sputtering Using a Newly Designed Cylindrical Rotating Cathode with Significantly Enhanced Sputter Power Density, <b>Andreas Lümkmann</b> , Platit AG, Switzerland; <b>J. Kluson, M. Ucik</b> , Platit a.s., Czechia; <b>H. Bolvardi</b> , Platit AG, Switzerland	
9:00am	<b>B1-3-FrM-4</b> Titanium Chromium Nitride Thin Films Deposited by Direct Current, Mid-Frequency, and Inductively Coupled Plasma Assisted Magnetron Sputtering, <b>Sung-Yong Chun</b> , Mokpo National University, Republic of Korea	<b>B3-FrM-4</b> High Performance ta-C Coatings with Enhanced Temperature Stability for Industrial Applications, <b>Klaus Böbel</b> , Bosch Manufacturing Solutions, Germany; <b>S. Wetzel, J. Jiao</b> , Bosch Automotive Products, China	

# Friday Morning, May 26, 2023

<b>New Horizons in Coatings and Thin Films</b> <b>Room Pacific E - Session F1-FrM</b> <b>Nanomaterial-based Coatings and Structures</b> <b>Moderators: Ondrej Kylian, Charles University, Prague, Czechia,</b> <b>Vladimir Popok, Aalborg University, Denmark</b>		
8:00am		
8:20am		
8:40am	<b>INVITED: F1-FrM-3</b> Brain-Like Behaviour in Percolating Films of Nanoparticles, <b>Simon Brown</b> , The MacDiarmid Institute for Advanced Materials and Nanotechnology, School of Physical and Chemical Sciences, University of Canterbury, New Zealand	
9:00am		
9:20am	<b>F1-FrM-5</b> RBS Study of Silver/Copper Diffusions in the Matrix of Amorphous Carbon Coatings Produced by Magnetron Sputtering, <b>G. Sanzone</b> , Teer Coatings Ltd, UK; <b>M. Sharpe, P. Couture, J. England</b> , University of Surrey, UK; <b>S. Field, H. Sun, Jinlong Yin</b> , Teer Coatings Ltd, UK	
9:40am	<b>F1-FrM-6</b> C:H:N:O Plasma-polymer with Anchored LSPR Active Ag Nanoparticles for Detection of Borrelia Pathogen, <b>S. Kumar</b> , University of South Bohemia, Czechia; <b>H. Maskova</b> , University of South Bohemia, Biology Centre ASCR, Institute of Parasitology Branisovska, Czechia; <b>A. Kuzminova</b> , Charles University, Czechia; <b>R. Rego</b> , University of South Bohemia, Biology Centre ASCR, Institute of Parasitology Branisovska, Czechia; <b>J. Sterba</b> , University of South Bohemia, Czechia; <b>O. Kylian</b> , Charles University, Czechia; <b>Vitezslav Stranak</b> , University of South Bohemia, Czechia	
10:00am	<b>F1-FrM-7</b> Aln Nanostructures for Piezoelectric Nanogenerators, <b>Manohar Chirumamilla, M. Sandager, V. Popok, K. Pedersen</b> , Aalborg University, Denmark	
10:20am	<b>F1-FrM-8</b> Super-Amphiphobic Nano-Wall Structured Teflon Films Deposited by Microwave Plasma, <b>Ta-Chin Wei</b> , Chung Yuan Christian University, Taiwan	
10:40am	<b>F1-FrM-9</b> Diamond-Based Nanostructured Interfaces for Electrochemical Applications, <b>Robert Bogdanowicz</b> , Gdańsk University of Technology, Poland	
11:00am	<b>F1-FrM-10</b> Engineering Nanostructured Metallic Thin Films by Pulsed Laser Deposition with an Outstanding Combination of Mechanical Properties, <b>Francesco Bignoli, D. Faurie</b> , CNRS, France; <b>C. Gammer, A. Lassnig</b> , Austrian Academy of Sciences, Austria; <b>S. Lee, C. Aguiar Teixeira</b> , Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; <b>A. Li Bassi</b> , Politecnico di Milano, Italy; <b>M. Ghidelli</b> , CNRS, France	
11:20am	<b>F1-FrM-11</b> Preparation and Properties of Fluoroalkyl End-Capped Oligomer/Cellulose Nanofiber Composites, <b>Hideo Sawada, Y. Endo, Y. Oikawa</b> , Hirosaki University, Japan	
11:40am	<b>F1-FrM-12</b> Synthesis and Electrical Properties of Single Crystalline Cu <sub>3</sub> Ge Nanowires, <b>Chang Ting-Hsiang, L. Bo-Yan, W. Chiu-Yen</b> , National Taiwan University of Science and Technology, Taiwan	

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