ICMCTF 2024 Program Key

CM Advanced Characterization, Modelling and Data Science for Coatings and Thin Films
EX Exhibitors Keynote Lecture
FTS Focused Topic Session
IA Surface Engineering - Applied Research and Industrial Applications
KYL Keynote Lectures
MA Protective and High-temperature Coatings
MB Functional Thin Films and Surfaces
MC Tribology and Mechanics of Coatings and Surfaces
MD Coatings for Biomedical and Healthcare Applications
PL Plenary Lecture
PP Plasma and Vapor Deposition Processes
TS Topical Symposium on Sustainable Surface Engineering
- **TS1** Coatings for Batteries and Hydrogen Applications
- **TS2** Sustainable Processing and Materials Selection for Surface Solutions
- **TS3** Solar Thermal Conversion
- **TS4** Coatings and Surfaces for Thermoelectrical Energy Conversion and (Photo)electrocatalysis
- **TS5** Circular Strategies for Surface Engineering

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 2024 Program Overview

Room /Time	Golden State Ballroom	Palm 1-2	Palm 3-4	Palm 5-6	Town & Country A	Town & Country B	Town & Country C	Town & Country D
MoPL					PL-MoM: Plenary Lecture			
MoM		MC1-1-MoM: Friction, Wear, Lubrication Effects, and Modeling I	CM1-1-MoM: Spatially-resolved & In-Situ Char of TF and Engineered Surfaces I	PP6-MoM: Microfabrication Techniques with Lasers and Plasmas	MB4-MoM: 2D Materials: Synthesis, Characterization, and Applications	TS1-1-MoM: Coatings for Batteries and Hydrogen Applications I	CM4-1-MoM: Simulations, Mach Learning & Data Sci. for Matls Des. and Discovery I	MA3-1-MoM: Hard and Nanostructured Coatings I
MoKYL					KYL1-MoA: Keynote Lecture			
MoA		MC1-2-MoA: Friction, Wear, Lubrication Effects, and Modeling II	CM2-1-MoA: Advanced Mech Testing of Surf, TF, Coatings and Small Volumes I	MA2-1-MoA: Thermal and Environmental Barrier Coatings	MB1-MoA: Thin Films and Surfaces for Optical Applications	TS1-2-MoA: Coatings for Batteries and Hydrogen Applications II	IA1-MoA: Advances in App Driven Research & Hybrid Syst, Proc and Coatings	MA3-2-MoA: Hard and Nanostructured Coatings II
TuM	EXHIBITION	MA1-1-TuM: Coatings to Resist High-temp Oxidation, Corr, and Fouling I	CM2-2-TuM: Adv Mech Testing of Surf, TF, Coatings & Small Vol II: Fracture & Fatigue	CM4-2-TuM: Simulations, Mach Learning & Data Sci. for Matls Des. & Discovery II	PP1-1-TuM: PVD Coating Technologies I	TS1-3-TuM: Coatings for Batteries and Hydrogen Applications III	IA2-1-TuM: Surface Modif of Components in Auto, Aero & Manuf. Apps I	MA3-3-TuM: Hard and Nanostructured Coatings III
TuEx					EX-TuM: Exhibition Keynote Lecture			
TuA		MA1-2-TuA: Coatings to Resist High-temp Oxidation, Corr, and Fouling II	CM1-2-TuA: Spatially-resolved and In-Situ Char. of TF & Engineer Surfaces II	TS2-TuA: Sustainable Proc. & Matls Selection for Surface Solutions	PP1-2-TuA: PVD Coating Technologies II	MC2-1-TuA: Mechanical Properties and Adhesion I	IA2-2-TuA: Surface Mod of Components in Auto, Aero & Manuf. Apps II	
WeM		MA1-3-WeM: Coatings to Resist High-temp Oxidation, Corr., and Fouling III	PP3-WeM: CVD Coating Technologies	IA3-WeM: Innov Surf Eng for Adv Cutting and Forming Applications	PP4-1-WeM: Deposition Technologies for Carbon-based Coatings I	MC2-2-WeM: Mechanical Properties and Adhesion II	MA4-1-WeM: High Entropy and Other Multi-principal-element Materials I	MB2-1-WeM: Thin Films for Electronic Devices I
WeA			MD1-1-WeA: Surf Coatings & Surf Modifications in Biological Environments I	TS5-WeA: Circular Strategies for Surface Engineering	PP4-2-WeA: Deposition Technologies for Carbon-based Coatings II	MC3-1-WeA: Tribology of Coatings & Surf for Industrial Applications I	MA4-2-WeA: High Entropy and Other Multi-principal-element Materials II	MB2-2-WeA: Thin Films for Electronic Devices II
ThM		MB3-1-ThM: Nanomaterial-based Thin Films and Structures I	MD1-2-ThM: Surf Coatings & Surf Modifications in Biological Environments II		PP2-1-ThM: HiPIMS, Pulsed Plasmas and Energetic Deposition I	MC3-2-ThM: Tribology of Coatings & Surf for Industrial Applications II	MA5-1-ThM: Boron-containing Coatings I	TS4-1-ThM: Coati & Surf for Thermoelect Energy Conv & (Photo)elect I
ThL							FTS-ThL: Focused Topic Session	
ThA		CM3-1-ThA: Accel TF Dev: Hi-throughput Synth, Automated Char, & Data Analysis I	MD2-ThA: Medical Devices: Bio-Tribo-Corrosion, Diagnostics, 3D Printing		PP2-2-ThA: HiPIMS, Pulsed Plasmas and Energetic Deposition II	MB3-2-ThA: Nanomaterial-based Thin Films and Structures II	MA5-2-ThA: Boron-containing Coatings II	TS4-2-ThA: Coatings & Surf for Thermoelect Energy Conv & (Photo)elect II
ThP	POSTER SESSIONS							
FrM		CM3-2-FrM: Accel TF Dev: Hi-through-put Synth, Auto Char, & Data Anal II	MD3-FrM: Bioactive Surfaces			PP5-FrM: Pla Surf Int & Diag/PP7-FrM: Mod & Dat-Driv Meth for Proc Des, Anal & Cont.	TS3-FrM: Solar Thermal Conversion	IA2-3-FrM: Surface Modif of Components in Auto, Aero & Manuf. Apps III

Monday Morning, May 20, 2024

Plenary Lecture
Room Town & Country A - Session PL-MoM
Plenary Lecture
Moderator: Johanna Rosen, Linköping University, Sweden

8:00am	Welcome and Opening Remarks	
8:20am	**INVITED: PL-MoM-2** Engineering 2D MXene Surfaces for Functional Films and Coatings*,* ***Yury Gogotsi****,* Drexel University, USA	
8:40am		

Monday Morning, May 20, 2024

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 3-4 - Session CM1-1-MoM** **Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces I** **Moderators: Damien Faurie**, Univ. Sorbonne Paris Nord, France, **Barbara Putz**, Empa, Switzerland	**Advanced Characterization, Modelling and Data Science for Coatings and Thin Films** **Room Town & Country C - Session CM4-1-MoM** **Simulations, Machine Learning and Data Science for Materials Design and Discovery I** **Moderator:** **Davide G. Sangiovanni**, Linköping University, Sweden
10:00am	**INVITED: CM1-1-MoM-1** Exploring Nanostructure Behavior and Ordering Dynamics Through Advanced Electron Microscopy, ***Lilian Vogl***, University of California at Berkeley, USA; *P. Schweizer,* Lawrence Berkeley Lab, University of California at Berkeley, USA; *J. Michler,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *A. Minor,* University of California at Berkeley, USA	**INVITED: CM4-1-MoM-1** High-Throughput Rapid Experimental Alloy Development (HT-READ)), ***Kenneth Vecchio,*** University of California at San Diego, USA
10:20am		
10:40am	**CM1-1-MoM-3** Autonomous Health Tracking in Self-Reporting MAX and MAB Phases, ***Peter Pöllmann***[1], *S. Lellig, D. Bogdanovski, A. Navid Kashani, M. Hans,* Materials Chemistry RWTH Aachen University, Germany; *P. Schweizer,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *D. Holzapfel, C. Azina, P. Zöll,* Materials Chemistry RWTH Aachen University, Germany; *D. Primetzhofer,* Department of Physics and Astronomy, Uppsala University, Sweden; *S. Kolozsvári, P. Polcik,* Plansee Composite Materials GmbH, Germany; *J. Michler,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *J. Schneider,* Materials Chemistry RWTH Aachen University, Germany	**CM4-1-MoM-3** Fundamental Investigation for Film Quality Prediction Based on Zone Model in Magnetron Sputtering, ***Kohei Kuroshima***, *I. Ikeda,* Osaka Vacuum, Ltd., Japan; *Y. Gotoh,* Department of Electronic Science and Engineering, Kyoto University, Japan; *M. Iguchi, S. Sugimoto,* Osaka Vacuum, Ltd., Japan
11:00am	**CM1-1-MoM-4** Correlation of Laser-Reflection and Thermionic Emission of Thermally Loaded Coatings Under UHV Conditions, ***Lukas Wimmer***, Vienna University of Technology, Austria; *C. Bienert, R. Schiftner,* PLANSEE SE, Austria; *C. Eisenmenger-Sittner,* Vienna University of Technology, Austria	**INVITED: CM4-1-MoM-4** Are ML Potentials Useful to Understand Deformation and Fracture of Ceramics?, ***Nikola Koutná***,, *S. Lin,* TU Wien, Austria; *L. Hultman,* Linköping University, Sweden; *P. Mayrhofer,* TU Wien, Austria; *D. Sangiovanni,* Linköping University, Sweden
11:20am	**INVITED: CM1-1-MoM-5** Bill Sproul Award and Honorary ICMCTF Lecture: When Stressed Condensed Matter Reveals Its Ultimate Secrets: Thin Film Growth Dynamics Probed by Real-Time Diagnostics, ***Gregory Abadias***[2], Institut PPrime - CNRS - ENSMA - Université de Poitiers, France; *K. Solanki,* Institut PPrime - CNRS - ENSMA - Université de Poitiers, France; *M. Kaminski,* Karlsruhe Institute of Technology (KIT), Germany; *A. Michel,* Institut PPrime - CNRS - ENSMA - Université de Poitiers, France; *A. Vlad, A. Resta, A. COATI,* Synchrotron SOLEIL, France; *B. Krause,* Karlsruhe Institute of Technology (KIT), Germany; *D. Babonneau,* Institut PPrime - CNRS - ENSMA - Université de Poitiers, France	
11:40am		**CM4-1-MoM-6** Impact of TM Elements on Structural, Thermodynamic and Mechanical Properties of CrN, ***David Holec***, Montanuniversität Leoben, Austria; *P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria
12:00pm		**CM4-1-MoM-7** Machine-Learning Potential for Accurate Predictions of Elastic Properties in Amorphous W-B-C, ***Pavel Ondracka***, *J. Ženíšek,* Masaryk University, Czechia; *G. Nayak,* RWTH Aachen University, Germany; *D. Holec,* Montanuniversität Leoben, Austria; *P. Vašina,* Masaryk University, Czechia

[1] **Graduate Student Award Finalist**

[2] **Bill Sproul Awardee**

Monday Morning, May 20, 2024

	Functional Thin Films and Surfaces **Room Town & Country A - Session MB4-MoM** **2D Materials: Synthesis, Characterization, and Applications** **Moderators: Chih-Yen Chen**, National Sun Yat-sen Univ., Taiwan, **Ying-Hao Chu**, National Tsing Hua University, Taiwan	**Plasma and Vapor Deposition Processes** **Room Palm 5-6 - Session PP6-MoM** **Microfabrication Techniques with Lasers and Plasmas** **Moderators:** **Carles Corbella**, George Washington University, **Uros Cvelbar,** Jozef Stefan Institute, Slovenia
10:00am	**MB4-MoM-1** Influence of Plasmonic Coupling and Size Effect on Photocatalysis of MoS_2/Au Hybrid Nanostructures for Water Splitting, ***Yi-Hsueh Chen****, J. Ruan,* NCKU, Taiwan	**INVITED: PP6-MoM-1** Laser Bioprinting: From the Breast Tumor Microenvironment to Migration in Wound Healing Assays, ***Doug Chrisey****,* Tulane University, USA
10:20am	**MB4-MoM-2** Sputter Deposition of Hexagonal Boron Nitride Films, ***Minsuk Seo****, L. Bayu Aji,* Lawrence Livermore National Laboratory, USA*; Y. Tzeng, S. Kim,* Stanford University, USA*; Y. Zhou, L. Wan, C. Kim, B. Wang, T. Heo, L. Zepeda-Ruiz,* Lawrence Livermore National Laboratory, USA*; S. Chu,* Stanford University, USA*; S. Kucheyev,* Lawrence Livermore National Laboratory, USA	
10:40am	**INVITED: MB4-MoM-3** Advancing 2D Materials for Future Electronics: Selective Synthesis, Transferring Processes, and Device Integration, ***Ching Yuan Su****,* National Central University, Taiwan	**INVITED: PP6-MoM-3** Plasma-Assisted Nanofabrication of Advanced Nanoplasmonic Surfaces for SERS Applications, ***Uros Cvelbar****,* Jozef Stefan Institute, Slovenia
11:00am		
11:20am	**MB4-MoM-5** Reduced Electrocatalytic potential of Nitrate to Ammonia through MoS_2 Deposited Carbon Felt based Flexible Electrode, ***Prateek Sharma****, C. Liao, Y. Chang, D. Huang, W. Hsu, J. Huang, Y. Lai,* Ming Chi University of Technology, Taiwan	**PP6-MoM-5** Enhancing Tribological Performance of Carbon-Based Coatings Through Pulsed Lasertexturation, ***Constant Boris Rieille****, S. LeCoultre,* Berner Fachhochschule BFH, Switzerland
11:40am		**PP6-MoM-6** Designing Chiral Micropatterns via Ion Beam Colloidal Lithography, *S. Portal,* ***Carles Corbella****,* George Washington University, USA*; O. Arteaga,* University of Barcelona, Spain*; A. Martin, T. Mandal,* New York University, USA*; V. Dinca,* National Institute for Laser, Plasma, and Radiation Physics, Romania*; B. Kahr,* New York University, USA
12:00pm		

Monday Morning, May 20, 2024

	Protective and High-temperature Coatings **Room Town & Country D - Session MA3-1-MoM** **Hard and Nanostructured Coatings I** **Moderators: Marcus Günther**, Robert Bosch GmbH, Germany, **Rainer Hahn**, TU Wien, Institute of Materials Science and Technology, Austria, **Stanislav Haviar**, University of West Bohemia, Czechia, **Fan-Yi Ouyang**, National Tsing Hua University, Taiwan	**Topical Symposium on Sustainable Surface Engineering** **Room Town & Country B - Session TS1-1-MoM** **Coatings for Batteries and Hydrogen Applications I** **Moderator:** **Nazlim Bagcivan**, Schaeffler Technologies GmbH & Co. KG, Germany
10:00am	**INVITED: MA3-1-MoM-1** Nitride and Carbide Layers: Point Defects, Interfaces, Mechanical Properties, ***Daniel Gall,*** Rensselaer Polytechnic Institute, USA	**INVITED: TS1-1-MoM-1** New Coating Methods for New Electrolyzer Technologies for PEM Electrolyzer and AEM Electrolyzer, ***Thomas Kolbusch,*** Coatema, Germany
10:20am		
10:40am	**MA3-1-MoM-3** The Influence of the Carbon Source on the Mechanical and Electrical Properties of Magnetron-Sputtered Titanium Carbonitride Coatings, ***Juliana Kessler,*** Uppsala University, Angstrom Laboratory, Sweden	**TS1-1-MoM-3** Dual Doped Two-dimensional Carbon Supported Single Atomic Iron for Oxygen Reduction Reaction in Alkaline-Exchange Membrane Fuel Cells, ***Afandi Yusuf,*** *F. T. D. Wijaya, H. Hsin-Chih, C. Wang,* National Taiwan University of Science and Technology, Taiwan
11:00am	**MA3-1-MoM-4** A Strategic Design Approach Controlling the B-Solubility in Transition Metal Nitride-Based Thin Films, ***Rebecca Janknecht,*** *K. Weiss, N. Koutná,* Institute of Materials Science and Technology, TU Wien, Austria; *E. Ntemou,* Department of Physics and Astronomy, Uppsala University, Sweden; *P. Polcik, S. Kolozsvári,* Plansee Composite Materials GmbH, Germany; *D. Primetzhofer,* Department of Physics and Astronomy, Uppsala University, Sweden; *P. Mayrhofer,* Institute of Materials Science and Technology, TU Wien, Austria; *R. Hahn,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria	**TS1-1-MoM-4** CO_2 Laser Processed Nickel Catalyzed Graphene Coating for Electrocatalytic Water Splitting and Energy Storage Applications, ***Suparna Saha,*** TCG CREST (RISE), India; *S. Hiwase,* IISER PUNE, India; *S. Ogale,* IISER PUNE, TCG-CREST(RISE), India
11:20am	**MA3-1-MoM-5** The Influence of Bilayer Periods and Ratios on Mechanical and Tribological Properties of TiN/MoN Superlattice Thin Films, *Z. Gao, J. Buchinger, R. Hahn,* TU Wien, Institute of Materials Science and Technology, Austria; *Z. Chen, Z. Zhang,* Austrian Academy of Sciences, Austria; ***Paul Mayrhofer,*** TU Wien, Institute of Materials Science and Technology, Austria	**TS1-1-MoM-5** Bimetal Phosphide (NiCoP)/Graphitic Carbon Nitride(g-C_3N_4) Composites for Hydrogen Evolution Reaction in Alkaline Electrolyte, ***Yu-Hsuan Kao,*** National Cheng Kung University, Taiwan; *S. Wang,* Southern Taiwan University of Science and Technology, Taiwan; *J. Huang,* National Cheng Kung University, Taiwan; *Y. Shen,* Hierarchical Green-Energy Material (Hi-GEM) Research Center, Taiwan
11:40am	**MA3-1-MoM-6** TiN/CrN and TiSiN/CrN Multilayer Coatings Deposited in an Industrial–scale HiPIMS System, ***Neus Sala,*** IQS School of Engineering - Universitat Ramon Llull, Spain; *M. Abad,* IQS School of Engineering - Universitat Ramon LLull, Spain; *C. Colominas,* FLUBETECH, S.L., Spain; *R. Franz, C. Kainz, M. Rebelo de Figueiredo,* Montanuniversität Leoben, Austria; *C. Rojas, J. Sánchez-López,* CSIC-Universidad de Sevilla, Spain	**TS1-1-MoM-6** Hybrid Inorganic-Organic Nanolayered Thin Films Based on Zns-Ethylenediamine for the Photocatalytic Production of Hydrogen, *L. Cerezo,* Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México; *K. Valencia,* Instituto de Ingenieria, Universidad Nacional Autónoma de México; *M. Bizarro,* ***Sandra E. Rodil,*** *A. Hernández-Gordillo,* Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México
12:00pm	**MA3-1-MoM-7** Residual Stress Measurement and Effective Deformation Thickness of Metal Interlayer in Multilayer Hard Coatings - Using TiN/Ti/TiN/Ti as a Model Architecture, ***I-Sheng Ting,*** *J. Huang,* National Tsing Hua University, Taiwan	**TS1-1-MoM-7** One-pot Synthesis of $NiFeCo(OH)_x$@FeOOH@$(NiFeCo)S_x$ Electrocatalyst for Urea Oxidation Reaction, ***Thi Xuyen Nguyen,*** *Z. Wei, J. Ting,* National Cheng Kung University, Taiwan

Tribology and Mechanics of Coatings and Surfaces
Room Palm 1-2 - Session MC1-1-MoM
Friction, Wear, Lubrication Effects, and Modeling I
Moderators:
Carsten Gachot, Vienna University of Technology, Austria,
Giovanni Ramírez, Zeiss Industrial Quality Solutions

10:00am	**INVITED: MC1-1-MoM-1** Modern Analytical Methods for Characterizing Wear Surfaces and Subsurfaces*,* ***Thomas Scharf****,* The University of North Texas, USA	
10:20am		
10:40am	**MC1-1-MoM-3** Wear-Protection Performance and Durability of *in-Situ*-Deposited Carbon TribofilmsDerived from Intrinsically Strained Cycloalkane Molecules as Lubricant Additives*, Z. Al Hassan, H. Wise, T. Martin, S. Liu, Q. Wang,* ***Y. W. Chung****,* Northwestern University, USA*; S. Berkebile,* US Army Research Laboratory, USA	
11:00am	**MC1-1-MoM-4** Lubricant Interaction of Triboactive CrAlMoCuN Coatings in Steel Contacts*, K. Bobzin, C. Kalscheuer,* ***Max Philip Möbius****,* Surface Engineering Institute - RWTH Aachen University, Germany	
11:20am		
11:40am		
12:00pm		

Keynote Lectures
Room Town & Country A - Session KYL1-MoA
Keynote Lecture
Moderator: Johanna Rosen, Linköping University, Sweden

1:00pm	**INVITED: KYL1-MoA-1** Engineered Functional Coatings for Clean Energy and Sustainability Applications, ***Satishchandra Ogale,*** Research Institute for Sustainable Energy, TCG-CREST, Indian Institute of Science Education and Research, India	
1:20pm		

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 3-4 - Session CM2-1-MoA** **Advanced Mechanical Testing of Surfaces, Thin Films, Coatings and Small Volumes I** **Moderators: Thomas Edwards**, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland, **Olivier Pierron**, Georgia Institute of Technology, USA	**Functional Thin Films and Surfaces** **Room Town & Country A - Session MB1-MoA** **Thin Films and Surfaces for Optical Applications** **Moderators:** **Jörg Patscheider**, Evatec AG, Switzerland, **Juan Antonio Zapien**, City University of Hong Kong
1:40pm	**INVITED: CM2-1-MoA-1** Micromechanics During Hydrogen Charging and the Study of Hydrogen Barrier Coatings, ***Maria Jazmin Duarte***, *H. Gopalan, J. Rao, C. Scheu, G. Dehm,* Max-Planck Institut für Eisenforschung GmbH, Germany	**INVITED: MB1-MoA-1** Improvements to Multilayer Dielectric Coatings to Enable Internal Confinement Fusion at the National Ignition Facility (NIF), ***Colin Harthcock,*** Lawrence Livermore Laboratory, USA
2:00pm		
2:20pm	**CM2-1-MoA-3** The Micromechanical Behavior of Magnetron Sputtered TiN/Nb Multilayers, *S. Kagerer, N. Koutná,* Institute of Materials Science and Technology, TU Wien, Austria; *L. Zauner,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; *T. Wójcik,* Institute of Materials Science and Technology, TU Wien, Austria; *G. Habler,* Department of Lithospheric Research, University of Vienna, Austria; *P. Polcik, S. Kolozsvári,* Plansee Composite Materials GmbH, Germany; *O. Hunold,* Oerlikon Surface Solutions AG, Liechtenstein; *H. Riedl,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; *P. Mayrhofer,* Institute of Materials Science and Technology, TU Wien, Austria; ***Rainer Hahn,*** Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria	**MB1-MoA-3** Investigating Thin Ito Films for Light Detectors at Cryogenic Temperatures, ***Giorgio Keppel,*** *O. Azzolini, C. Pira, A. Kotliarenko, M. El Idrissi, D. Ford,* Legnaro National Laboratories, Italian National Institute for Nuclear Physics, Italy
2:40pm	**CM2-1-MoA-4** Deformation Behaviour and Plasticity in FCC-BCC High Entropy Alloy Nanolaminate Structures, *S. Tsianikas,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *C. Tian,* EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland; *C. Guerra-Nuñez,* Swiss Cluster AG, Thun, Switzerland; *J. Michler, X. Maeder,* ***Amit Sharma,*** EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland	**MB1-MoA-4** Key Success Factor of Solid-Phase Crystallization Through Postannealing Under Atmospheric Conditions on Amorphous Conductive W-Doped In_2O_3 Ultra-Thin Films with Thicknesses of Less Than 10 Nm, ***Rajasekaran Palani,*** *T. Yamamoto,* Kochi University of Technology, Research Institute, Japan; *M. Maehara, Y. Okada, K. Kinoshita,* Sumitomo Heavy Industries, Ltd., Industrial Equipment Division, Japan
3:00pm	**INVITED: CM2-1-MoA-5** Characterisation of Hydrogen in Coatings and Thin Films Using Atom Probe and TDMS, ***Peter Felfer,*** Friedrich-Alexander University, Germany	
3:20pm		
3:40pm	**BREAK**	**BREAK**
4:00pm	**CM2-1-MoA-8** Analysis of Stress Field in Nickel Borides Layer Produced by Vickers Indentation Tests in Cross Section: Finite Element Method, ***T. N. Cabrera-Yacuta,*** *G. Rodríguez-Castro, A. Meneses-Amador, I. Arzate-Vázquez,* Instituto Politécnico Nacional, Mexico; *O. Morales-Contreras,* Universidad Autónoma de Baja California, Mexico; *I. Campos-Silva, M. Melo-Pérez,* Instituto Politécnico Nacional, Mexico	**MB1-MoA-8** Multifunctional Bragg-Reflector-Enhanced Electrochromic Devices with Adjustable Optical Performance, *M. Crouan, B. Baloukas, O. Zabeida, J. Klemberg-Sapieha,* ***Ludvik Martinu,*** Polytechnique Montréal, Canada
4:20pm		Quantitative Strong Optical Nearfield Enhancement by Coupling Bloch Surface Wave Packet and Localized Surface Plasmon of Aunp for Surface-Enhanced Raman Spectroscopy, *M. Phoo, A. Adesina, Y. Foo,* City University of Hong Kong; *M. Zerrad,* CNRS, Central Marseille, France; *C. Amra,* CNRS, Centrale Marseille, France; ***Juan Antonio Zapien,*** City University of Hong Kong
4:40pm		**MB1-MoA-10** Strongly Thermochromic VO_2-Based Smart Coatings for Room-Temperature Applications Prepared on Glass, ***Michal Kaufman,*** *J. Vlček, J. Houška, S. Farrukh,* University of West Bohemia, Czechia
5:00pm		**MB1-MoA-11** Nanostructured Metal Thin Films with Enhanced Mechano-Optical Properties for Solar Radiation Isolation, *A. Xomalis,* NTNU Trondheim, Norway; ***Barbara Putz,*** Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *X. Zheng,* KU Leuven, Belgium; *A. Groetsch,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *G. Vandenbosch,* KU Leuven, Belgium; *J. Michler, J. Schwiedrzik,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland
5:20pm		

Monday Afternoon, May 20, 2024

	Protective and High-temperature Coatings **Room Palm 5-6 - Session MA2-1-MoA** **Thermal and Environmental Barrier Coatings** **Moderator:** **Pantcho Stoyanov**, Concordia University, Canada	**Protective and High-temperature Coatings** **Room Town & Country D - Session MA3-2-MoA** **Hard and Nanostructured Coatings II** **Moderators: Marcus Günther**, Robert Bosch GmbH, Germany, **Rainer Hahn**, TU Wien, Institute of Materials Science and Technology, Austria, **Stanislav Haviar**, University of West Bohemia, Czechia, **Fan-Yi Ouyang**, National Tsing Hua University, Taiwan
1:40pm 2:00pm	**INVITED: MA2-1-MoA-1** Oxygen Permeability, Degradation and Failure Analysis Formulated by Artificial Intelligence of Environmental Barrier Coatings under Adverse Environments Environments, ***Kuiying Chen***, National Research Council of Canada; *K. Lee,* NASA Glenn Research Center, USA	**INVITED: MA3-2-MoA-1** In Operando Studies of Hard Coatings Using High-Energy X-Ray Diffraction, ***Lina Rogström***, Linköping University, IFM, Sweden
2:20pm	**MA2-1-MoA-3** Effect of Thermal Barrier Coatings on the Thermal Management of a Jet Engine Combustion Chamber, ***Rodrigue Beaini***, Polytechnique Montréal, Canada	**MA3-2-MoA-3** Exploring High Temperature Decomposition and Age Hardening in Wurtzite $Ti_{1-X}Al_XN_Y$ (X=0.75 to 0.98, Y=0.82 to 1) Thin Films, ***Janella Mae Rosario Salamania***, Seco Tools AB, Sweden; *F. Bock,* Linköping University, Sweden; *L. Johnson, K. Calamba Kwick, I. Schramm,* Sandvik Coromant, Sweden; *A. Farhadizadeh,* Linköping University, Sweden; *T. Hsu,* Sandvik Coromant, Sweden; *F. Tasnadi, I. Abrikosov, L. Rogström, M. Odén,* Linköping University, Sweden
2:40pm	**MA2-1-MoA-4** Elevated Temperature Micro-Scale Impact Testing of Thermal Barrier Coatings for Erosion Simulation, ***Ben Beake***, *J. Roberts,* Micro Materials Ltd, UK; *L. Isern, C. Chalk, J. Nicholls,* Cranfield University, UK	**MA3-2-MoA-4** Enhancing the Thermal Stability of $V_{0.25}Al_{0.25}N_{0.50}$ by Oxygen Incorporation, ***Matej Fekete***, *D. Neuß, M. Hans, G. Nayak,* RWTH Aachen University, Germany; *Z. Czigány,* Center for Energy Research, Hungary; *S. Karimi Aghda,* RWTH Aachen University, Germany; *D. Primetzhofer,* Uppsala University, Sweden; *J. Sälker, J. Schneider,* RWTH Aachen University, Germany
3:00pm	**MA2-1-MoA-5** Influence of Coating Variables on the Steam Oxidation of Modified Si / $Yb_2Si_2O_7$ Environmental Barrier Coatings, ***Kang Lee***, *R. Webster, J. Stuckner, A. Garg, L. Wilson,* NASA Glenn Research Center, USA	**MA3-2-MoA-5** Interplay of Substrate Template Effects and Bias Voltage Regarding the Microstructure of Cathodic Arc Evaporated fcc-$Ti_{0.5}Al_{0.5}N$ Coatings, ***Michael Tkadletz***, *N. Schalk, H. Waldl,* Montanuniversität Leoben, Austria; *B. Sartory, J. Wosik,* Materials Center Leoben Forschung GmbH, Austria; *J. Keckes, J. Todt,* Montanuniversität Leoben, Austria; *M. Burghammer,* European Synchrotron Radiation Facility, France; *C. Czettl,* CERATIZIT Austria GmbH, Austria; *M. Pohler,* Ceratizit Austria GmbH, Austria
3:20pm	**MA2-1-MoA-6** Effect of Pre-Oxidation on the Growth of Thermally Grown Oxide and High Temperature Durability of Thermal Barrier Coatings, ***Do Hyun Kim***, *Y. Kang, H. Kwon, Y. Yoo, Y. Park, S. Lee,* Korea Institute of Materials Science, Republic of Korea	**MA3-2-MoA-6** Decomposition of Single Crystal $Hf_{1-X}Al_XN$ Films Grown at High Temperatures and the Effect on Mechanical Properties, ***Marcus Lorentzon***, Linköping Univ., IFM, Thin Film Physics Div., Sweden; *T. Zhu,* Nagoya University, Japan, China; *N. Takata,* Nagoya University, Japan; *S. Nayak, J. Palisaitis, G. Greczynski,* Linköping Univ., IFM, Thin Film Physics Div., Sweden; *J. Rosen,* Linköping University, IFM, Sweden; *J. Birch, N. Ghafoor,* Linköping Univ., IFM, Thin Film Physics Div., Sweden
3:40pm	**BREAK**	**BREAK**
4:00pm	**MA2-1-MoA-8** Correlative Microscopy and AI-assisted Image Analysis Synergetic Approach on High Temperature Applications Coatings, ***Hugues Francois-Saint-Cyr***, Thermo Fisher Scientific, USA; *A. Scarpellini,* Thermo Fisher Scientific, Netherlands; *B. Winiarski,* Thermo Fisher Scientific, Czechia; *J. Yorston, R. Pelapur,* Thermo Fisher Scientific, USA	**MA3-2-MoA-8** Influence of the Thickness of TiAlSiN on the Thermal Properties as Input Parameter for FEM–Simulation, *K. Bobzin, C. Kalscheuer,* ***Nina Stachowski***, Surface Engineering Institute (IOT) - RWTH Aachen University, Germany; *B. Breidenstein, B. Bergmann, F. Grzeschik,* Institute of Production Engineering and Machine Tools (IFW) - Leibniz Universität Hannover, Germany
4:20pm	**MA2-1-MoA-9** Characterization of SiO_2 Thermally Grown Oxide Kinetics and Stress Evolution of EBCs with Al-Containing Dopants, ***Michael Lance***, *M. Ridley, B. Pint,* Oak Ridge National Laboratory, USA	**MA3-2-MoA-9** Non-Reactive Magnetron Sputtering of Ti-Al-N Coatings, ***Balint Hajas***, *S. Bermanschläger, T. Wojcik,* TU Wien, Institute of Materials Science and Technology, Austria; *D. Primetzhofer,* Uppsala University, Angstrom Laboratory, Sweden; *S. Kolozsvari,* Plansee SE, Germany; *P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria
4:40pm	**MA2-1-MoA-10** Promising SiOxNyCz Coatings for Glass Protection in Aggressive Chemical Media, ***Farah Inoubli***, *B. Diallo,* CNRS/Université D'Orleans, France; *K. Topka,* Air Liquide Laboratories, Japan; *T. Sauvage,* CNRS/Université D'Orleans, France; *R. Laloo, V. Turq,* CNRS-CIRIMAT, France; *B. Caussat,* CNRS, France; *N. Pellerin,* CNRS/Université D'Orleans, France	**MA3-2-MoA-10** nc-Sic/a-C Coating for Industrial Applications, ***Mojmir Jilek***, *O. Zindulka,* SHM sro, Czechia; *Z. Studeny,* University of Defence, Czech Republic
5:00pm	**MA2-1-MoA-11** Influence of Gas Composition on the Growth Behavior of CVD Processed HfC Coatings for Ultra-high Temperature Application, ***Byung-Hyuk Jun***, *J. Lee, D. Kim, H. Lee,* Korea Atomic Energy Research Institute, Republic of Korea	**MA3-2-MoA-11** Synthesis and Investigation of Crystalline $(Ta,Al)B_2$ and AlB_2 Thin Films, ***Chun Hu***[1], *S. Lin,* Institute of Materials Science and Technology, TU Wien, Austria; *P. Pöllmann, S. Mráz,* RWTH Aachen University, Germany; *T. Wojcik,* Institute of Materials Science and Technology, TU Wien, Austria; *J. Schneider,* RWTH Aachen University, Germany; *N. Koutná, P. Mayrhofer,* Institute of Materials Science and Technology, TU Wien, Austria
5:20pm	**MA-2-1-MoA-12** Tribological Insights of Nickel – and Cobalt – Based Alloys in Extreme Conditions, ***Pantcho Stoyanov***, Concordia University, Canada	**MA3-2-MoA-12** Tribocorrosion and Biocompatibility Analysis of Carbide-derived Carbon (CDC) Surface Modification for Hip Implants, ***Yani Sun***[1], *H. Kanniyappan, M. Karunanidhi, M. Daly, M. McNallan, M. Mathew,* University of Illinois at Chicago, USA

[1] **Graduate Student Award Finalist**

	Surface Engineering - Applied Research and Industrial Applications **Room Town & Country C - Session IA1-MoA** **Advances in Application Driven Research and Hybrid Systems, Processes and Coatings** **Moderators: Ladislav Bardos**, Uppsala University, Sweden, **Vikram Bedekar**, Timken Company, USA, **Hana Barankova**, Uppsala University, Sweden	**Topical Symposium on Sustainable Surface Engineering** **Room Town & Country B - Session TS1-2-MoA** **Coatings for Batteries and Hydrogen Applications II** **Moderator:** **Nazlim Bagcivan**, Schaeffler Technologies GmbH & Co. KG, Germany
1:40pm	**INVITED: IA1-MoA-1** PVD Thin Film Coating Materials in Semiconductors and Impact of CHIPS Act, ***Shlok Sundaresh,*** Tosoh SMD, Inc., USA	
2:00pm		**TS1-2-MoA-2** Effect of Atomic Layer Deposited Films on Three-Dimensional Electrodes for Lithium-Ion Batteries, *P. Lin,* National Chung Hsing University, Taiwan; ***Chih-Liang Wang,*** National Tsing Hua University, Taiwan
2:20pm	**IA1-MoA-3** Production and Characterization of Coating-Substrate Combinations for Ceramic Data Storage Media, ***Erwin Peck,*** TU Wien, Institute of Materials Science and Technology, Austria; *B. Hajas,* TU Wien, Austria; *A. Kirnbauer, L. Kreuziger,* TU Wien, Institute of Materials Science and Technology, Austria; *C. Pflaum,* Ceramic data solutions holding GmbH, Germany; *G. Liedl,* TU Wien, Austria; *P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria	**TS1-2-MoA-3** Effects of Additives on Electrochemical Performance of Sodium Ion Batteries, ***Ting Ching Lin,*** *J. Huang,* National Cheng Kung University (NCKU), Taiwan; *C. Chang,* National University of Tainan, Taiwan
2:40pm	**INVITED: IA1-MoA-4** Microstructure Tuning of MXene ($Ti_3C_2T_x$) Systems for Device Applications, ***Sangeeta Kale,*** *S. Kale, D. Sable,* Defence Institute of Advanced Technology, India	**TS1-2-MoA-4** Effect of SiOx/RGO via Phosphorus Doping as Anode Materials for Lithium-Ion Batteries, ***Wen-Feng Lin,*** *J. Huang, S. Brahma,* National Cheng Kung University (NCKU), Taiwan; *Y. Shen,* Hierarchical Green-Energy Materials Research Center (Hi-GEM), Taiwan
3:00pm		**TS1-2-MoA-5** The Research of Different Pre-Lithiation Methods to Enhance Coulombic Efficiency of SnO_2 Modified TiO_2 as Anode Material in Lithium-Ion Battery, ***Cheng-Hsun Ho,*** *J. Huang,* National Cheng Kung University (NCKU), Taiwan; *Y. Shen,* Hierarchical Green-Energy Materials Research Center (Hi-GEM), Taiwan
3:20pm	**IA1-MoA-6** Decorative Coatings in Watch Making Industry: From Laboratory to Industry, ***Joël Matthey,*** Positive Coating SA, Switzerland; *O. Banakh,* Haute Ecole Arc Ingénierie, Switzerland; *L. Steinmann,* Positive Coating SA, Switzerland	**TS1-2-MoA-6** Study on the Characteristics of Garnet-Type Solid Electrolytes in Lithium Metal Solid-State Batteries with Multilayer Interfaces, ***Hung-Ju Chen,*** *J. Hung, S. Lin,* National Cheng Kung University (NCKU), Taiwan
3:40pm	**BREAK**	**BREAK**
4:00pm	**INVITED: IA1-MoA-8** Real-Time Particle Detection for Enhanced Coating Deposition Processes, ***Sylvain LeCoultre,*** *C. Rieille,* Berner Fachhochschule ALPS, Switzerland	
4:20pm		**TS1-2-MoA-9** Investigation of Y-doped $Li_7La_3Zr_2O_{12}$(Y-LLZO) Coatings by Colloidal Coating Process for the Electrolyte of all Solid-state Battery, ***Yen-Yu Chen,*** *G. Yao,* National Pingtung University of Science and Technology, Taiwan; *X. Yan,* Chinese Culture University, Taiwan
4:40pm	**IA1-MoA-10** Microscopic Characterization of Optical Properties and Film Thickness Using Imaging Spectroscopic Ellipsometry, ***Hanaul Noh,*** Park Systems, USA	**TS1-2-MoA-10** Technological and Economical Aspects of Precious Metal Sputtering on Full-Size PEM Electrolyzer Components, ***Alexander Wemme,*** *R. Stock,* VON ARDENNE GmbH, Germany; *C. Simons,* Materion Advanced Materials, Germany; *S. Kennedy,* Materion Corporation, USA
5:00pm	**IA1-MoA-11** Plasma PVD by Small Spiral Ta Hollow Cathode, *H. Baránková, N. Suntornwipat,* ***Ladislav Bardos,*** Uppsala University, Angstrom Laboratory, Sweden	
5:20pm	**IA1-MoA-12** Improvement of Surface Adhesion of Fluoropolymer Using Linear Ion Beam Source, ***Sunghoon Jung,*** *J. Yang, E. Byeon, D. Kim, S. Lee, J. Park,* Korea Institute of Materials Science, Republic of Korea	

Tribology and Mechanics of Coatings and Surfaces
Room Palm 1-2 - Session MC1-2-MoA
Friction, Wear, Lubrication Effects, and Modeling II
Moderators:
Carsten Gachot, Vienna University of Technology, Austria,
Giovanni Ramírez, Zeiss Industrial Quality Solutions

1:40pm	**INVITED: MC1-2-MoA-1** Thermally Sprayed Hardmetal Coatings - Strategies for Replacement of WC-Co(Cr), ***Lutz-Michael Berger****, J. Pötschke, S. Conze,* Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany	
2:00pm		
2:20pm	**MC1-2-MoA-3** Tribological Properties of Metallic Surfaces Obtained by 3D Additive Manufacturing (Laser Metal Deposition Process), for Repairing Applications*, T. ZURCHER, E. CHARKALUK,* Ecole Polytechnique, France*;* ***Vincent FRIDRICI****,* Ecole Centrale de Lyon - LTDS, France	
2:40pm	**MC1-2-MoA-4** Improved Anti-Friction of Diamond-Like Carbon Incorporating Titanium*,* ***Jae-Il Kim****, Y. Jang, J. Kim,* Korea Institute of Materials Science (KIMS), Republic of Korea*; N. Umehara,* Nagoya University, Japan	
3:00pm	**MC1-2-MoA-5** Tribological Study of Magnetron Spurrered W-S-(C) Thin Films Sliding Against Aluminium at High Temperatures*,* ***Todor Vuchkov****, S. Jahan Sunny, A. Cavaleiro,* University of Coimbra, Portugal	
3:20pm		
3:40pm	**BREAK**	
4:00pm	**MC1-2-MoA-8** Understanding the Tribological Mechanisms of TiO_2 Thin Layers: The Role of Composition and Structure of the Oxide Layer on Wear in Relation to Color Variation*,* ***Sarah Marion****, M. LENCI,* Mines Saint-Etienne, Université de Lyon, CNRS, France*; C. MINFRAY, V. FRIDRICI,* Laboratoire de Tribologie et Dynamique des Systèmes, Université de Lyon, Ecole Centrale de Lyon, France*; L. DUBOST,* IREIS, HEF group, France*; J. FAUCHEU, R. CHARRIERE,* Mines Saint-Etienne, Université de Lyon, CNRS, France	
4:20pm	**MC1-2-MoA-9** Tribocorrosion Behaviours of TiZrNbTaFeC High Entropy Carbide Coatings by Superimposed HiPIMS and MF System*,* ***Ismail Rahmadtulloh****, C. Wang,* National Taiwan University of Science and Technology, Taiwan*; B. Lou,* Chang Gung University, Taiwan*; J. Lee,* Ming Chi University of Technology, Taiwan	
4:40pm	**MC1-2-MoA-10** Friction and Wear of a-C:H and a-C:H:Si Coatings Sliding Against Different Counterpart Materials Under Dry and Moist Environments*,* ***Francisco A. Delfin****,* National University of Technology, Regional Faculty of Concepción del Uruguay (UTN – FRCU), Argentina*; J. Jeoffrey,* Universiti Teknologi Petronas, Malaysia*; M. Schachinger, C. Forsich,* University of Applied Sciences Upper Austria*; S. Brühl,* National University of Technology, Regional Faculty of Concepción del Uruguay (UTN – FRCU), Argentina*; D. Heim,* University of Applied Sciences Upper Austria	
5:00pm	**MC1-2-MoA-11** Evaluation of the Sliding Wear Performance of Binary CrN and Nanocomposite CrSiCN Coatings in Arctic Environments*, N. D'Attilio,* ***Forest Thompson****, N. Madden,* South Dakota School of Mines and Technology, USA*; E. Asenath-Smith,* US Army Corps of Engineers Cold Regions Research and Engineering Laboratory, USA*; G. Crawford,* South Dakota School of Mines and Technology, USA	
5:20pm		

Tuesday Morning, May 21, 2024

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 3-4 - Session CM2-2-TuM** **Advanced Mechanical Testing of Surfaces, Thin Films, Coatings and Small Volumes II: Fracture and Fatigue** **Moderator:** **Matteo Ghidelli**, CNRS, France	**Advanced Characterization, Modelling and Data Science for Coatings and Thin Films** **Room Palm 5-6 - Session CM4-2-TuM** **Simulations, Machine Learning and Data Science for Materials Design and Discovery II** **Moderators: Po-Liang Liu**, National Chung Hsing Univ., Taiwan, **Ferenc Tasnadi**, Linköping University, Sweden
8:00am		**INVITED: CM4-2-TuM-1** DFT + ML + Calphad: From Qualitative to Quantitative Phase Stability Predictions, ***Moritz to Baben****, P. Keuter, C. Früh, B. Reis, F. Tang,* GTT-Technologies, Germany
8:20am		
8:40am	**CM2-2-TuM-3** Approaches for Circumventing FIB Artefacts in Small Scale Fracture Testing, ***Eloho Okotete****, S. Lee, S. Brinckmann, C. Kirchlechner,* Karlsruhe Institute of Technology, Germany	**CM4-2-TuM-3** Cu-Zr-Al Thin Film Metallic Glasses in a Wide Range of Compositions and Growth Conditions, ***Jiri Houska****, P. Zeman,* University of West Bohemia, Czechia
9:00am	**CM2-2-TuM-4** Influence of Annealing-Induced Substrate Element Diffusion on the Microstructure and Mechanical Properties of TiN/TiCN Coatings Synthesized using Chemical Vapor Deposition, ***Fabian Konstantiniuk****, M. Schiester,* Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, Austria*; M. Tkadletz,* Department of Materials Science, Montanuniversität Leoben, Austria*; C. Czettl,* CERATIZIT Austria GmbH, Austria*; N. Schalk,* Christian Doppler Laboratory for Advanced Coated Cutting Tools at the Department of Materials Science, Montanuniversität Leoben, Austria	**CM4-2-TuM-4** Transformation Plasticity and Fracture in MB_2 (M=Ti, Ta, W, Re) Diborides via Ab-Initio and Machine-Learning-Potential Molecular Dynamics, ***Shuyao Lin,*** TU Wien, Institute of Materials Science and Technology, Austria*; T. Leiner,* Montanuniversität Leoben, Leoben, Austria*; Z. Chen,* Austrian Academy of Sciences, Austria*; R. Janknecht,* TU Wien, Institute of Materials Science and Technology, Austria*; F. Tasnadi,* Linköping University, Sweden*; Z. Zhang,* Austrian Academy of Sciences, Austria*; L. Hultman,* Linköping University, Sweden*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria*; D. Holec,* Montanuniversitat Leoben, Austria*; D. Sangiovanni,* Linköping University, Sweden*; N. Koutná,* TU Wien, Institute of Materials Science and Technology, Austria
9:20am	**CM2-2-TuM-5** Mechanical Properties of Thin Films Deposited by HiPIMS onto Flexible Substrates, ***Tereza Kosutova****,* Uppsala University, Department of Electrical Engineering, Sweden*; M. Tavares da Costa,* Karlstad University, Sweden*; K. Gamstedt,* Uppsala University, Department of Materials Science and Engineering, Sweden*; D. Drozdenko,* Charles University, Czechia*; T. Kubart,* Uppsala University, Department of Electrical Engineering, Sweden	**CM4-2-TuM-5** Fracture Toughness: Atomistic Understanding of Directional and Temperature Dependence for the case of $Ti_{1-x}Al_xN_y$, ***Davide Sangiovanni,*** Linköping University, Sweden
9:40am	**CM2-2-TuM-6** Fatigue-Induced Abnormal Grain Growth in Metallic Thin Films*, Q. Li,* Georgia Institute of Technology, USA*; A. Barrios,* Colorado School of Mines, USA*; Y. Yang,* Georgia Institute of Technology, USA*; M. Jain,* Sandia National Laboratories, USA*; Y. Liu,* Georgia Institute of Technology, USA*; B. Boyce,* Sandia National Laboratories, USA*; T. Zhu,* ***Olivier Pierron****,* Georgia Institute of Technology, USA	**CM4-2-TuM-6** Exploring Surface Energy and Work Function Changes in ZnGa2O4(111) via Ab Initio Studies, ***Po-Liang Liu****, Y. Lin,* National Chung Hsing University, Taiwan
10:00am	**CM2-2-TuM-7** Nanoscale Fatigue Measurements on Diamond-Like Carbon Coatings, ***Joshua Vetter****, M. Günther, P. Hofmann, S. Grosse,* Robert Bosch GmbH, Germany*; S. Schmauder,* University of Stuttgart, Germany	
10:20am		

Tuesday Morning, May 21, 2024

	Plasma and Vapor Deposition Processes **Room Town & Country A - Session PP1-1-TuM** **PVD Coating Technologies I** **Moderators:** **Christian Kalscheuer**, RWTH Aachen University, Germany, **Vladimir Pankov**, National Research Council of Canada	**Protective and High-temperature Coatings** **Room Palm 1-2 - Session MA1-1-TuM** **Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling I** **Moderators:** **Francisco Javier Pérez Trujillo,** Universidad Complutense de Madrid, Spain
8:00am	**INVITED: PP1-1-TuM-1** Discharges Modes Relevant to Plasma-Based Coatings: an Analysis of Their Physics and Economics, ***Andre Anders,*** Leibniz Inst. of Surface Eng. (IOM), Germany	
8:20am		**INVITED: MA1-1-TuM-2** Tunable Aluminide Coatings for Surface Finish and Improved Oxidation and Hot Corrosion Behaviour of Additive Manufactured Ni-Based Superalloys, ***Fernando Pedraza****, D. PIEL, T. KEPA,* La Rochelle University, France
8:40am	**PP1-1-TuM-3** Design of an Innovative Cathodic Arc Source with High Deposition Rate and Low Macroparticles Generation, ***Raül Bonet****,* Eurecat Technological Center of Catalonia, Spain*; L. Carreras,* Tratamientos Térmicos Carreras S.A, Spain*; J. Orrit-Prat, J. Caro,* Eurecat Technological Center of Catalonia, Spain	
9:00am	**PP1-1-TuM-4** TaB_X Thin Film Synthesis from an Industrial-Sized DC Vacuum Arc Source, ***Igor Zhirkov****, A. Petruhins, A. Shamshirgar,* Materials Design Division, IFM, Linköping University, Sweden*; S. Kolozsvári, P. Polcik,* PLANSEE Composite Materials GmbH, Germany*; J. Rosen,* Materials Design Division, IFM, Linköping University, Sweden	**MA1-1-TuM-4** Application of Machine Learning Algorithms to Characterize Aluminide Diffusion Coatings and to Predict their Ageing Behavior, ***Vladislav Kolarik****, M. Juez Lorenzo,* Fraunhofer Institute for Chemical Technology ICT, Germany*; P. Praks,* IT4Innovations National Supercomputing Center, VSB - Technical University of Ostrava, Czechia*; R. Praksova,* IT4Innovation National Supercomputing Center, VSB - Technical University of Ostrava, Czechia
9:20am	**INVITED: PP1-1-TuM-5** Plasma Enhanced Magnetron Sputtering and Its Applications in Industry, ***Jianliang Lin****,* Southwest Research Institute, USA	**MA1-1-TuM-5** Pack-Aluminizing Mechanisms in Stainless Steel Additively Manufactured, *E. B. Varela,* PGMEC-Universidade Federal do Paraná, Brazil*; H. Abreu-Castillo,* PIPE - Universidade Federal do Paraná, Brazil*; G. Prass, J. Pacheco,* Instituto SENAI de Inovação em processamento a laser,, Brazil*;* ***Ana Sofia C. M. D'Oliveira****,* Universidade Federal do Paraná, Brazil
9:40am		**MA1-1-TuM-6** Synthesis of Novel Multi-Element TM-Aluminides by Multilayer Magnetron Sputtering, ***Vincent Ott****, M. Duerrschnabel, U. Jaentsch, M. Klimenkov, S. Ulrich, M. Stueber,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany
10:00am	**PP1-1-TuM-7** Sustainable and Economical Production of High-Quality HIPIMS Coatings, ***Stephan Bolz****, B. Mesic, O. Lemmer, C. Schiffers,* CemeCon AG, Germany	**MA1-1-TuM-7** Structural Evolution and Oxidation Resistance of Al/Si Alloyed Transition Metal Carbide Thin Films, ***Sophie Richter,*** Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria*; E. Ntemou, D. Primetzhofer,* Department of Physics and Astronomy, Uppsala University, Sweden*; 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,* Institute of Materials Science and Technology, TU Wien, Austria
10:20am	**PP1-1-TuM-8** Increasing the Metal Ion Flux Fraction in Industrial Conditions, ***Peter Klein****, J. Hnilica,* Masaryk University, Czechia*; V. Sochora,* SHM s.r.o., Czechia*; P. Vašina,* Masaryk University, Czechia	**MA1-1-TuM-8** Hot Corrosion of Arc Evaporated $Ti_{1-x}Al_xN$ on Ni-Cr-Co Based Superalloys, *O. Hudak, A. Scheiber, P. Kutrowatz, T. Wojcik,* 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*;* ***Helmut Riedl****,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria
10:40am	**PP1-1-TuM-9** Unraveling the Dynamics of Reactive Magnetron Sputtering: Insights into Feedback Control, Metastable Conditions, and Long-term Stability, ***Josja Van Bever****, K. Strijckmans, D. Depla,* Ghent University, Belgium	**MA1-1-TuM-9** Characterization of Li-rich Corrosion Products Formed onto Aluminized and Uncoated Steels after Molten Carbonates Exposure, *P. Audigié, S. Rodríguez,* ***Alina Agüero****,* Instituto Nacional de Técnica Aeroespacial (INTA), Spain

	Protective and High-temperature Coatings **Room Town & Country D - Session MA3-3-TuM** **Hard and Nanostructured Coatings III** **Moderators: Marcus Günther**, Robert Bosch GmbH, Germany, **Rainer Hahn**, TU Wien, Institute of Materials Science and Technology, Austria, **Stanislav Haviar**, University of West Bohemia, Czechia, **Fan-Yi Ouyang**, National Tsing Hua University, Taiwan	**Surface Engineering - Applied Research and Industrial Applications** **Room Town & Country C - Session IA2-1-TuM** **Surface Modification of Components in Automotive, Aerospace and Manufacturing Applications I** **Moderators:** **Jan-Ole Achenbach**, KCS Europe GmbH, Germany,
8:00am		**IA2-1-TuM-1** Influence of Plasma Carburizing on Corrosion Behavior and Interfacial Contact Resistance of Austenitic Stainless Steels, ***Phillip Marvin Reinders****, P. Kaestner, G. Bräuer,* Technische Universität Braunschweig, Germany
8:20am	**MA3-3-TuM-2** Magnetron Sputtered $Cr_{1-x}Ta_x$ Coatings, ***Jan-Ove Söhngen****, V. Ott, S. Ulrich, M. Stueber,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany	
8:40am	**INVITED: MA3-3-TuM-3** Overview and Trends in Application Driven Developments of Wear Resistant Coatings, ***Denis Kurapov****,* Oerlikon Surface Solutions AG Pfäffikon, Zweigniederlassung Balzers, Liechtenstein	**IA2-1-TuM-3** Tribological and Corrosion Behaviour of Crn and AlCrn Coatings over Nitrided Medium Alloy Steel, *J. Maskavizan, E. Dalibon,* National University of Technology (UTN), Argentina*;* ***Sonia Brühl****,* National UNiversity of Technology (UTN), Argentina
9:00am		**IA2-1-TuM-4** Influence of the Cathodic Bias Parameters on Corrosion Resistance in the Micro-Arc Oxidation Coating of AZ31B Magnesium Alloy, ***Shih-Yen Huang****, Y. Lee, Y. Chu,* National Taiwan University, Taiwan
9:20am	**MA3-3-TuM-5** Enhancing the Thermal Stability and Cutting Performance of fcc-AlCrN by Oxygen Incorporation*, A. Michau,* Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein*;* ***Tomasz Wojcik****, P. Kutrowatz,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria*; D. Kurapov,* Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein*; H. Riedl,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria	**INVITED: IA2-1-TuM-5** Nanolubricants: Pioneering Sustainable Solutions for the Lubrication Industry, ***Anirudha Sumant****,* Argonne National Laboratory, USA
9:40am	**MA3-3-TuM-6** Enhancing Toughness in Nanocomposite AlCrSiN Thin Films by Crack Deflection at Sublayers: Correlating Microstructure and Micromechanical Properties, ***Kevin Kutlesa****, M. Meindlhumer,* Montanuniversität Leoben, Austria*; A. Lassnig,* Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria*; R. Daniel,* Montanuniversität Leoben, Austria*; A. Medjahed,* ESRF, France*; J. Keckes,* Montanuniversität Leoben, Austria	
10:00am	**MA3-3-TuM-7** Mechanical Properties and Tribological Performance of AlCrMoN/TiSiN Nanostructured Multilayer Coatings, ***Ming-Xun Yang****, Y. Chang,* National Formosa University, Taiwan	**IA2-1-TuM-7** Structural – Tribological Performance Evaluation of Ti-6Al-4V ELI Alloy after Sequential Surface Treatments, ***Daniel Toboła****, P. Chandran,* Łukasiewicz Research Network – Krakow Institute of Technology, Poland*; J. Morgiel,* Institute of Metallurgy and Materials Science of Polish Academy of Sciences, Poland
10:20am	**MA3-3-TuM-8** Influence of Deposition Pressure and Gas Mixture on the Microstructure and Phase Composition of Arc Evaporated TiSiN Coatings, ***Nina Schalk****, Y. Moritz, G. Nayak, D. Holec,* Montanuniversität Leoben, Austria*; C. Hugenschmidt,* Technical University of Munich, Germany*; V. Burwitz,* Technical University Munich, Germany*; L. Mathes,* Technical University of Munich, Germany*; C. Saringer,* Montanuniversitat Leoben, Austria*; C. Czettl, M. Pohler,* CERATIZIT Austria GmbH, Austria*; M. Tkadletz,* Montanuniversitat Leoben, Austria	**IA2-1-TuM-8** Wear Particle Emission Influenced by Surface Conditions of an Alumina-Coated Cast Iron Disc, ***Ran Cai****, X. Nie,* University of Windsor, Canada*; Y. Lyu,* Lund University, Sweden
10:40am	**MA3-3-TuM-9** Enhanced Mechanical Properties and Thermal Stability of Novel Nanocrystalline AlNi / Al_2O_3 Multi-layered Coatings Deposited by a Combined Physical Vapour Deposition and Atomic Layer Deposition Approach, ***Hendrik Constantin Jansen****, B. Putz, A. Sharma,* EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland*; M. Hans,* RWTH Aachen University, Germany*; S. Lellig,* EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland, RWTH Aachen University, Germany*; J. Schneider,* RWTH Aachen University, Germany*; J. Schwiedrzik, J. Michler,* EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland*; T. Edwards,* NIMS (National Institute for Materials Science), Japan	**IA2-1-TuM-9** Metal Coated Carbon Fiber EMI Shielding Material*, Y. Li,* National United University, Taiwan*; H. Chen,* Michigan State University, USA*; S. Chen,* National Yang Ming Chiao Tung University, Taiwan*; S.-Y. Chen, H. Yang, Z. Hsieh,* ***Chien-Chon Chen****,* National United University, Taiwan

	Topical Symposium on Sustainable Surface Engineering **Room Town & Country B - Session TS1-3-TuM** **Coatings for Batteries and Hydrogen Applications III** **Moderators: Nazlim Bagcivan**, Schaeffler Technologies GmbH & Co. KG, Germany, **Chen-Hao Wang**, National Taiwan University of Science and Technology, Taiwan	
8:00am	**INVITED: TS1-3-TuM-1** Oxygen Vacancy in Atomic Metal Oxide Clusters Demonstrate Outstanding Electrochemical Activity, ***Tsan-Yao Chen,*** National Tsing Hua University, Taiwan*; K. Wang,* National Central University, Taiwan	
8:20am		
8:40am	**TS1-3-TuM-3** Grazing Magnetron Sputtering of Cu_xO-MoS_2 Electrodes for Hydrogen Production*, J. Castro, D. Cavaleiro,* University of Coimbra, Portugal*; M. Lima,* University of Minho, Portugal*; **Albano Cavaleiro**, S. Carvalho,* University of Coimbra, Portugal	
9:00am		

Exhibitors Keynote Lecture
Room Town & Country A - Session EX-TuM
Exhibition Keynote Lecture
Moderator:
Jyh-Wei Lee, Ming Chi University of Technology, Taiwan

11:00am	**INVITED: EX-TuM-1** Material Innovations and Challenges of Thin Films and Plasma Applications for 3 nm Node and Beyond, ***Samuel Chiu***, Applied Materials, Taiwan	
11:20am		

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 3-4 - Session CM1-2-TuA** **Spatially-resolved and In-Situ Characterization of Thin Films and Engineered Surfaces II** **Moderators: Naureen Ghafoor**, Linköping University, Sweden, **Michael Tkadletz**, Montanuniversität Leoben, Austria	**Plasma and Vapor Deposition Processes** **Room Town & Country A - Session PP1-2-TuA** **PVD Coating Technologies II** **Moderators:** **Christian Kalscheuer**, RWTH Aachen University, Germany, **Vladimir Pankov**, National Research Council of Canada
1:40pm	**INVITED: CM1-2-TuA-1** Structural Evolution of Nanoparticles Under Realistic ConditionsObserved with Bragg Coherent X-Ray Imaging, ***Marie-Ingrid Richard,*** CEA Grenoble, France	**INVITED: PP1-2-TuA-1** Use of van der Waals Layers and Ultrahigh Vacuum Environment to Control Composition and Crystallinity in Sputter-Deposited Thin Films, ***Suneel Kodambaka,*** Virginia Tech, USA; *K. Tanaka, A. Deshpande, P. Arias, A. Aleman, H. Zaid, M. Liao,* University of California at Los Angeles, USA; *C. Ciobanu,* Colorado School of Mines, US; *M. Goorsky,* University of California at Los Angeles, USA
2:00pm		
2:20pm	**CM1-2-TuA-3** Grain Boundary Segregation/Complexions in MT-CVD Ti(C,N) Thin Hard Coatings Analyzed by Nano-SIMS and Atom Probe Tomography, ***Idriss El Azhari,*** *J. Barrirero,* Saarland University, Germany; *N. Valle,* Luxembourg Institute of Science and Technology (LIST), Luxembourg; *J. García,* Sandvik Coromant, Sweden; *C. Pauly, F. Soldera,* Saarland University, Germany; *L. Llanes,* Universitat Politècnica de Catalunya, Spain; *F. Mücklich,* Saarland University, Germany	
2:40pm		**PP1-2-TuA-4** Generating Spokes in Direct Current Magnetron Sputtering Discharges by an Azimuthal Strong-to-Weak Magnetic Field Strength Transition, ***Martin Rudolph,*** *W. Diyatmika,* Leibniz Institute of Surface Engineering (IOM), Germany; *O. Rattunde, E. Schuengel,* Evatec AG, Switzerland; *D. Kalanov,* Leibniz Institute of Surface Engineering (IOM), Germany; *J. Patscheider,* Evatec AG, Switzerland; *A. Anders,* Leibniz Institute of Surface Engineering (IOM), Germany
3:00pm		**PP1-2-TuA-5** the Surface Temperature of a 2" Water-Cooled Ti Target Measured During DC Magnetron Sputtering, ***Stephen Muhl,*** *J. Cruz, A. Garzon,* Universidad Nacional Autonoma de Mexico
3:20pm	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
3:40pm		
4:00pm	**INVITED: CM1-2-TuA-8** *In situ* Studies of Nucleation and Growth by High Energy X-Ray Scattering, ***Jens Birch,*** *N. Ghafoor, F. Eriksson,* Linköping University, Sweden; *S. Stendahl,* Uppsala University, Sweden; *S. Dorri, S. Nayak,* Linköping University, Sweden; *L. Rogström,* Uppsala University, Sweden	**PP1-2-TuA-8** Black Metal Thin Films Deposited on Cooled Substrates by Sputtering, ***Midori Kawamura,*** *H. Iino, H. Mori, Y. Otomo, T. Kiba, Y. Abe,* Kitami Institute of Technology, Japan; *M. Ueda,* Hokkaido University, Japan; *M. Micusik,* Slovak Academy of Sciences, Slovakia; *M. Hruska, M. Novotny, P. Fitl,* University of Chemistry and Technology, Czechia
4:20pm		**PP1-2-TuA-9** Advanced Process Control for PVD Coating Technologies in Production Lines, ***Thomas Schütte,*** *J. Urbach, P. Neiß, M. Radloff,* PLASUS GmbH, Germany
4:40pm	**CM1-2-TuA-10** Multidimensional Elemental and Molecular Analysis for Surface & Interface Studies, ***Kayvon Savadkouei,*** HORIBA, USA; *P. Chapon, A. Stankova,* HORIBA, France	

Tuesday Afternoon, May 21, 2024

	Protective and High-temperature Coatings **Room Palm 1-2 - Session MA1-2-TuA** **Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling II** **Moderators:** **Vladislav Kolarik**, Fraunhofer Institute for Chemical Technology ICT, Germany **Francisco Javier Pérez Trujillo,** Universidad Complutense de Madrid, Spain	**Surface Engineering - Applied Research and Industrial Applications** **Room Town & Country C - Session IA2-2-TuA** **Surface Modification of Components in Automotive, Aerospace and Manufacturing Applications II** **Moderators:** **Vikram Bedekar**, Timken Company, USA, **Satish Dixit**, Plasma Technology Inc., USA
1:40pm	**MA1-2-TuA-1** Fabrication, Characterisation and Fretting Wear Testing of Magnetron Sputtered Cr and CrN Coated Zr Alloy Cladding for Enhanced Accident Tolerance in Light Water Reactors, *T. Rachid Netto,* Manchester Metropolitan University, Brazil; *A. Evans,* ***Peter Kelly,*** Manchester Metropolitan University, UK; *D. Goddard, J. Cooper,* National Nuclear Laboratory, UK	
2:00pm	**MA1-2-TuA-2** Fuel-cladding Thermochemical Interaction Study of Cr_2O_3 Coating Deposited by DLI-MOCVD on Zircaloy-2 Substrate, ***Kenza Zougagh,*** Université Paris-Saclay, CEA, Service de Recherche en Matériaux et procédés Avancés, France; *R. Chanson, A. Quaini, F. Rouillard, S. Gossé,* Université Paris-Saclay, CEA, Service de recherche en Corrosion et Comportement des Matériaux, France	**INVITED: IA2-2-TuA-2** Impact of Novel Thermal Spray Material Solutions for Future Aerospace Applications and the Impact on Sustainability for the Environment and Business, ***Matthew Gold,*** Rolls-Royce North America
2:20pm	**MA1-2-TuA-3** Evaluation of Wear and Corrosion Resistance in Acidic and Chloride Solutions of Pvd-Crn Coatings on Untreated and Plasma Nitrided Aisi 4140 Steel, *A. Maskavizan, E. Dalibon,* National University of Technology (UTN), Faculty of Concepción del Uruguay, Argentina; *S. Farina,* CNEA and CONICET, Buenos Aires, Argentina; *J. Quintana,* CNEA (CAC), Buenos Aires, Argentina; ***Sonia P. Brühl,*** National University of Technology (UTN), Faculty of Concepción del Uruguay, Argentina	
2:40pm	**MA1-2-TuA-4** Deposition using CHC-PVD Method and High Temperature Oxidation of TiAlCrYSi Coatings on TiAl, ***Radoslaw Swadzba,*** Lukasiewicz Research Network – Uppersilesian Institute of Technology, Poland; *B. Mendala, L. Swadzba,* Silesian University of Technology, Poland; *U. Schulz, N. Laska, P. Bauer,* German Aerospace Center (DLR), Germany	**IA2-2-TuA-4** Evaluation of Thick Erosion-Resistant TiCrN Coating Deposited on Engine Impellers, *Q. Wang,* The University of British Columbia; Aurora Scientific Corp, Canada; *L. Hsu,* Aurora Scientific Corp, Canada; ***Da-Yung Wang,*** The University of British Columbia, Canada; Aurora Scientific Corp, Canada; SurfTech Corp, Taiwan;, Canada
3:00pm		
3:20pm	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
3:40pm		
4:00pm	**MA1-2-TuA-8** Investigations of Water Vapor Enhanced Oxidation on TiAl-Based Alloys: Evaluation of Protective Coating Systems, ***Ronja Anton,*** *N. Laska,* German Aerospace Center (DLR), Germany	**INVITED: IA2-2-TuA-8** Next Generation of Compositions & Coatings for Netzero & Sustainable Aviation, ***Tanvir Hussain,*** University of Nottingham, UK
4:20pm	**MA1-2-TuA-9** Effect of Duty Cycle and N_2 Flow Rate on Structure and Oxidation Behavior of VN Coatings Deposited by High Power Impulse Magnetron Sputtering, ***Ruo-Syuan Chen,*** *J. Huang,* National Tsing Hua University, Taiwan	
4:40pm	**MA1-2-TuA-10** Surface Modification of Copper by Electrical Discharge Coating using 3D-Printed SUS -420 Steel Electrodes, ***Siddanna Awarasang,*** National Central University,Taiwan; *J. Hung,* National Central University, Taiwan	**IA2-2-TuA-10** Improved High Temperature Tribology for Aero-Engine Components by PVD Coatings, ***A.O. M. Eriksson,*** Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein; *T. Middlemiss,* Oerlikon Balzers Coating UK Ltd., UK; *C. Jerg, E. Vaziri Beiraghdar, P. Kaller,* Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein; *T. Stelzig,* Oerlikon Balzers Coating Germany GmbH, Germany; *J. Ramm,* Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein
5:00pm		**IA2-2-TuA-11** Development of Environmentally Friendly Solid Carburizing for Improving Fatigue Properties of AISI 4118 Steel, ***Tomofumi Aoki,*** *D. Kasai,* Graduate School of Science and Technology, Keio University, Japan; *M. Hayama,* Keio University, Japan; *S. Takesue,* Kyoto Institute of Technology, Japan; *M. Tsukahara, Y. Misaka,* Neturen Co., Ltd., Japan; *J. Komotori,* Keio University, Japan

	Topical Symposium on Sustainable Surface Engineering **Room Palm 5-6 - Session TS2-TuA** **Sustainable Processing and Materials Selection for Surface Solutions** **Moderators: Denis Kurapov**, Oerlikon Surface Solutions AG Pfäffikon, Liechtenstein, **Fan-Bean Wu**, National United University, Taiwan	**Tribology and Mechanics of Coatings and Surfaces** **Room Town & Country B - Session MC2-1-TuA** **Mechanical Properties and Adhesion I** **Moderators:** **Jazmin Duarte**, MPI für Eisenforschung GMBH, Germany, **Bo-Shiuan Li**, National Sun-Yat Sen University, Taiwan
1:40pm	**INVITED: TS2-TuA-1** Microplasma-Enabled Upcycling for Nanomaterials Synthesis and Applications, ***Wei-Hung Chiang,*** National Taiwan University of Science and Technology, Taiwan	**INVITED: MC2-1-TuA-1** Boosting Mechanical Properties of Metallic Thin Films Through Advanced Nanoengineered Design Strategies, *B. Francesco,* LSPM-CNRS, France*; A. Brognara,* Max-Planck-Institut für Eisenforschung, Germany*; P. Djemia, D. Faurie,* LSPM-CNRS, France*; A. Li Bassi,* Politecnico di Milano, Italy*; G. Dehm,* Max-Planck-Institut für Eisenforschung, Germany*;* ***Matteo Ghidelli,*** Laboratoire des Sciences des Procédés et des Matériaux (LSPM), CNRS, France
2:00pm		
2:20pm	**TS2-TuA-3** Enhancing Hydrogen Production in 2D Materials via Surface Modifications: An Atomistic Study, *N. Khossossi, S. Sagar,* ***Poulumi Dey,*** TU Delft, Netherlands	**MC2-1-TuA-3** The Evolution of Residual Stress in the Immiscible Cr-W Alloy System, ***Tong Su,*** Brown University, USA*; J. Robinson, G. Thompson,* University of Alabama, USA*; E. Chason,* Brown University, USA
2:40pm	**TS2-TuA-4** Surface Wettability Modification of Polymers for Use in Electrocaloric Heat Pumps, ***Maria Barrera,*** Fraunhofer FEP, Germany*; D. Pinkal, M. Wegener,* Fraunhofer IAP, Germany*; F. Fietzke,* Fraunhofer FEP, Germany	**MC2-1-TuA-4** Adhesion and Friction-wear Characterization of W-doped Hydrogenated Diamond-like Carbon (a-C:H) Coatings, ***Ihsan Efeoglu,*** *Y. Totik, G. Gulten, B. Yaylali, M. Yesilyurt,* Atatürk University, Turkey*; R. Gunay, G. Kara, B. Altintas,* TUSAS ENGINE INDUSTRIES (TEI), Turkey
3:00pm	**TS2-TuA-5** High Volume Coating of Metallic Plates for Hydrogen Applications–A Challenge for Coating Machine Builders, ***Philipp Immich,*** *R. Bosch, K. Fuchigami, R. Jacobs, T. Karla, P. Broekx,* IHI Hauzer Techno Coating B.V., Netherlands*; T. Hurkmans, J. Ummels, F. Schuivens,* IHI Ionbond AG, Netherlands	**MC2-1-TuA-5** Numerical and Experimental Evaluation of Cyclic Contact Loads on Titanium Borides, *A. MENESES AMADOR, G. RODRIGUEZ CASTRO,* ***Hugo Alberto Pérez Terán,*** *M. Melo-Pérez,* Instituto Politécnico Nacional, Mexico
3:20pm	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
3:40pm		
4:00pm	**TS2-TuA-8** Iron Aluminide-Based Coatings as Sustainable Alternative for High Temperature Wear Protection, *H. Rojacz, K. Pichelbauer, M. Rodriguez Ripoll,* AC2T Research GmbH, Austria*; G. Piringer,* University of Applied Sciences Burgenland, Austria*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria; ***Carsten Gachot,*** Vienna University of Technology, Austria	**MC2-1-TuA-8** Mechanical Characterization of Nb-doped MoS_2 Coatings Deposited on H13 Tool Steel using Nb-based Interlayers, ***Miguel Rubira Danelon,*** *N. Kyioshi Fukumasu,* University of São Paulo, Brazil*; A. Alves Carvalho,* Aeronautic Institute of Technology, Brazil*; R. Rodrigo Rego,* Aeronautics Institute of Technology, Brazil*; I. Fernanda Machado, R. Martins de Souza, A. Paulo Tschiptschin,* University of São Paulo, Brazil
4:20pm		**MC2-1-TuA-9** Mechanical Properties and Adhesion of Al Thin Films with Al_2O_3 Interlayers on Flexible Substrates, ***Johanna Byloff,*** Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland*; P. Renault,* University of Poitiers, France*; D. Faurie,* Université Paris-Saclay, France*; S. Husain,* University of Poitiers, France*; D. Casari, T. Edwards, B. Putz,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland
4:40pm		**MC2-1-TuA-10** Buckling Structures, a Relevant Signature of the Mechanical Properties of Film/Substrate Systems, ***Christophe COUPEAU,*** Institut Pprime - CNRS - ENSMA - Université de Poitiers, France*; G. PARRY,* SIMAP, Grenoble-INP, CNRS, France*; J. DURINCK,* Institut Pprime - CNRS - ENSMA - Université de Poitiers, France
5:00pm		

Wednesday Morning, May 22, 2024

	Functional Thin Films and Surfaces **Room Town & Country D - Session MB2-1-WeM** **Thin Films for Electronic Devices I** **Moderators:** **Klaus Boebel,**, Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein, **Panos Patsalas**, Aristotle University of Thessaloniki, Greece, **Jörg Patscheider**, Evatec AG, Switzerland	**Plasma and Vapor Deposition Processes** **Room Palm 3-4 - Session PP3-WeM** **CVD Coating Technologies** **Moderators:** **Hiroki Kondo**, Kyushu University, Japan, **Frederic Mercier**, University of Grenoble Alpes, France
8:00am	**MB2-1-WeM-1** N-Doped Ba(Ti,Zr,Ta,Hf,Mo)O_3 Films Based Thin Film Transistors for UV Sensing, ***Van Dung Nguyen,*** National Cheng Kung University (NCKU), Taiwan, Viet Nam*; K. Chang,* National Cheng Kung University (NCKU), Taiwan	**INVITED: PP3-WeM-1** Area-Selective Deposition of DLC Using Optoelectronic-Controlled Plasma CVD Method, ***Susumu Takabayashi,*** National Institue of Technology, Ariake College, Japan
8:20am	**MB2-1-WeM-2** Electrical Properties Based on 2D GaSe Nanobelts on the Metal-Semiconductor-Metal Photodetector*,* ***Bo-Lin He****, C. Wang,* National Taiwan University of Science and Technology, Taiwan	
8:40am	**INVITED: MB2-1-WeM-3** Strain-Induced Self-Rolled-Up Thin Films for Extreme Miniaturization and Integration of Passive Electronic Components*,* ***Xiuling Li,*** The University of Texas at Austin, USA	
9:00am		**PP3-WeM-4** Microstructure and Mechanical Properties of TiZrN and TiZrCN Coatings Grown by Chemical Vapor Deposition*,* ***Akihiro Murakami****, M. Okude,* Mitsubishi Materials Corporation, Japan
9:20am	**MB2-1-WeM-5** Electrolyte Gated Transistors for Neuromorphic Signal Processing and Biosensing, ***Luke Sylvander****, P. Le, C. Tan, H. Tran,* RMIT University, Australia*; D. McKenzie,* University of Sydney, Australia*; D. McCulloch, J. Partridge,* RMIT University, Australia	
9:40am		
10:00am	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
10:20am		
10:40am		
11:00am		**INVITED: PP3-WeM-10** New Perspectives of Atmospheric Pressure Dielectric Barrier Discharges for the Deposition of Thin Films : From Uncontrolled Amorphous Plasma-Polymer Layers to Chemically Patterned and Crystalline (in)Organic Coatings, ***François Reniers****,* Université libre de Bruxelles, Belgium
11:20am	**MB2-1-WeM-11** Tracking the Metal-Insulator Transition at $YTiO_3$/$LaTiO_3$ Interfaces Grown by the Soft Chemical Method*,* ***Alexandre Simoes****,* UNESP, Brazil	
11:40am	**MB2-1-WeM-12** Adsorbing Chiral Molecules on High Entropy Iron Vanadate ($FeVO_3$) for Biomolecule Detection and Photoelectrochemical Cell Applications*,* ***Amit Kumar Sharma****, Y. Su,* National Cheng Kung University (NCKU), Taiwan	**PP3-WeM-12** Novel Metal Boride Coatings in the System Zr-Hf-Ti-B by LPCVD*,* ***Mandy Höhn****, M. Krug, S. Höhn, B. Matthey,* Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany
12:00pm		

Wednesday Morning, May 22, 2024

	Plasma and Vapor Deposition Processes **Room Town & Country A - Session PP4-1-WeM** **Deposition Technologies for Carbon-based Coatings I** **Moderators:** **Ivan Kolev**, IHI Hauzer Techno Coating B.V., Netherlands, **Biplab Paul**, PLATIT AG, Switzerland	**Protective and High-temperature Coatings** **Room Palm 1-2 - Session MA1-3-WeM** **Coatings to Resist High-temperature Oxidation, Corrosion, and Fouling III** **Moderators:** **Francisco Javier Pérez Trujillo,** Universidad Complutense de Madrid, Spain **Vladislav Kolarik**, Fraunhofer Institute for Chemical Technology ICT, Germany
8:00am	**INVITED: PP4-1-WeM-1** Molecular Dynamics Study of Interfacial Phenomena in Diamond-Like Carbon Films, ***Kwang-Ryeol Lee,*** Korea Institute of Science and Technology (KIST), Republic of Korea*; X. Li,* Chinese University of Mining and Technology, China	**MA1-3-WeM-1** Characterization and Evaluation of Physical-Chemical Properties of Novel Ternary and Quaternary Molten Salts and Their Economic and Environmental Impact in Parabolic Trough Technology: Corrosion Effects*, M. Lambrecht, D. Maria Teresa, L. Maria Isabel, G. G. Martin, J. Chaves,* ***Francisco Javier Pérez Trujillo,*** Universidad Complutense de Madrid, Spain*; P. Audigie, A. Aguero,* INTA, Spain
8:20am		**MA1-3-WeM-2** Influence of the BN Content on the Microstructure and the Mechanical Properties of Cr_3C_2-NiCr-BN Composite Coatings Prepared by a Novel HVOF Process Using Ethanol as a Fuel*, S. Liu,* UTBM, France*; M. Arab Pour Yazdi,* ***Pavel Sedmak,*** *J. Nohava,* Anton Paar, Switzerland*; M. Moliere, H. Liao,* UTBM, France
8:40am	**PP4-1-WeM-3** Study of ta-C Thick Film Deposition Using FCVA-Based Hybrid Coating System*,* ***Jongkuk Kim****, J. Kim, J. Jang, Y. Jang,* Korea Institute of Materials Science, Republic of Korea	**MA1-3-WeM-3** Oxidation Behavior of Si-Based Coatings on Refractory Multi-Principal Element Alloys*,* ***Brady Bresnahan****, D. Poerschke,* University of Minnesota, USA
9:00am	**PP4-1-WeM-4** Diamond-Like Films of Tetrahedral Amorphous Carbon Deposited by Anodic Arc Evaporation of Graphite*,* ***Bert Scheffel****, O. Zywitzki,* Fraunhofer FEP, Germany	**MA1-3-WeM-4** Multifunctional Nanostructured ZrN-Cu Coating for Maritime Applications*,* ***José D. Castro****,* University of Coimbra, Portugal*; M. Lima, I. Carvalho,* University of Minho, Portugal*; J. Sánchez-López,* Instituto de Ciencia de Materiales de Sevilla (ICMS), Spain*; R. Escobar-Galindo,* University of Sevilla, Spain*; C. Rojas,* Instituto de Ciencia de Materiales de Sevilla (ICMS), Spain*; S. Carvalho,* University of Coimbra, Portugal
9:20am	**PP4-1-WeM-5** Constitution and Properties of TiC1-x:H/a-C:H Nanocomposite Thin Films Prepared by HiPIMS Processes at Low and Elevated Temperature*,* ***Sven Ulrich****, C. Poltorak,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany*; H. Sternschulte, J. Grau,* Technical University of Applied Sciences Augsburg, Germany*; J. Julin, T. Sajavaara,* RADIATE, University of Jyväskylä, Finland*; A. Bergmaier,* University of the Bundeswehr Munich, Germany*; K. Seemann, M. Dürrschnabel, M. Stüber,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany	**MA1-3-WeM-5** New Black Ceramic Coating on LZ91 Magnesium Alloys by Micro-Arc Oxidation*,* ***Hung-Chi Chen****, S. Jian,* Ming Chi University of Technology, Taiwan
9:40am	**PP4-1-WeM-6** Effect of Deposition Temperature and Nitrogen Concentration on Highly Conductive a-C:H:N Films Obtained by Means of DC PACVD*,* ***Manuel Schachinger****,* University of Applied Sciences Upper Austria*; F. Delfin,* University of Applied Sciences Upper Austria, Argentina*; C. Forsich, D. Heim,* University of Applied Sciences Upper Austria*; B. Rübig, T. Müller, C. Dipolt,* Rubig GmbH & Co KG, Austria	
10:00am	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
10:20am		
10:40am		
11:00am		**MA1-3-WeM-10** Study on the Characterization of Adding CeO_2 Particles on Micro-arc Oxidation Coated AZ91D Magnesium Alloys*,* ***Po-Wei Lien****,* MING Chi University of Technology, Taiwan
11:20am		**MA1-3-WeM-11** Characteristics Of High-temperature Resistant Coating Prepared By the Liquid Spray Technique*,* ***Yan-Rui Chen****,* National Taipei University of Technology, Taiwan*; T. Wu,* Researcher of National Chung-Shan Institute of Science & Technology, Taoyuan city, Taiwan*; Y. Yang,* Distinguished professor of National Taipei University of Technology, Taiwan*; Y. Wu,* Professor of National Taipei University of Technology, Taiwan
11:40am		**MA1-3-WeM-12** Development of Tantalum Bond Coating for Thermal Barrier Coating by the Cold Spray*,* ***Wei-Che Hung****,* National Taipei University of Technology, Taiwan*; W. Li, Y. Chung,* Researcher of National Chung-Shan Institute of Science & Technology, Taiwan*; Y. Yang, Y. Wu,* National Taipei University of Technology, Taiwan
12:00pm		**MA1-3-WeM-13** Protection Against Heavy Oil Fouling and Sulfidation: Comparison of PVD and Thermal Sprayed Coatings*,* ***Fellipy Rocha****,* Polytechnique Montréal, Canada*; L. Vernhes, F. Khelfaoui,* Velan, Canada*; G. Patience, J. Klemberg-Sapieha, L. Martinu,* Polytechnique Montréal, Canada

Wednesday Morning, May 22, 2024

	Protective and High-temperature Coatings **Room Town & Country C - Session MA4-1-WeM** **High Entropy and Other Multi-principal-element Materials I** **Moderators:** **Erik Lewin**, Uppsala University, Sweden, **Jean-François Pierson**, IJL - Université de Lorraine, France	**Surface Engineering - Applied Research and Industrial Applications** **Room Palm 5-6 - Session IA3-WeM** **Innovative Surface Engineering for Advanced Cutting and Forming Applications** **Moderators: Stefan Bolz**, CemeCon AG, Germany, **Denis Kurapov,** Oerlikon Surface Solutions AG Pfäffikon, Liechtenstein
8:00am		**INVITED: IA3-WeM-1** How to Design a Coating for Metal Sheet Deformation Starting from Cutting Tools, ***Alessandro Bertè***, *P. Colombi,* Lafer Spa, Italy
8:20am		
8:40am	**INVITED: MA4-1-WeM-3** Growth and Properties of Epitaxial High-Entropy Alloy Thin Films, ***Thomas Seyller,*** Chemnitz University of Technology, Germany	**IA3-WeM-3** Effect of Current Density on the Pulsed-DC Powder-Pack Boriding Process (PDCPB), *I. Campos-Silva,* ***J.L. Rosales-Lopez****, M. Olivares-Luna, K. Chaparro-Pérez, E. Hernández-Ramírez,* Instituto Politécnico Nacional, Mexico*; A. Contreras-Hernández,* Tecnológico Nacional de México/Instituto Tecnológico de Tuxtepec, Mexico
9:00am		**INVITED: IA3-WeM-4** Challenges Dealing with Industrial Coating Development and Tailor-Made Production, ***Klaus Pagh Almtoft****, B. Christensen,* Danish Technological Institute, Denmark
9:20am	**MA4-1-WeM-5** Effect of Elemental Additions (X: Pt, Al, Ti, and Ag) on the Microstructure and Electrical Properties of CrMnFeCoNiX-Based High-Entropy Alloy Thin Films, ***Salah-eddine Benrazzouq****, J. Ghanbaja, S. Migot, A. Nominé, J. Pierson, V. Milichko,* Institut Jean Lamour - Université de Lorraine, France	
9:40am	**MA4-1-WeM-6** Property Evaluation of Nd Doped NiCoFeAlTi Non-equiatomic High Entropy Alloy Films and the Influence of Post-annealing Treatment, ***Chia-Lin Li,*** Center for Plasma and Thin Film Technologies, Ming Chi University of Technology, Taiwan	**IA3-WeM-6** a Comprehensive Study of HiPIMS Coated Tool and Microtool Performance: From Edge Preparation to Micro-Machining Tests, ***Pablo Díaz Rodríguez****, J. Santiago,* Nano4Energy, Spain*; A. García,* Nano4Energy, Colombia*; I. Fernández, A. Wennberg,* Nano4Energy, Spain*; P. Collignon,* PD2i, France*; Á. Guzmán, D. Sanmartín, J. Molina-Aldeguia,* Universidad Politécnica de Madrid, Spain*; M. Monclus,* IMDEA Materiales, Spain
10:00am	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**
10:20am		
10:40am		
11:00am		**IA3-WeM-10** Effect of Phase Separation in the Anticorrosion Performance of AlCrFeNi High-Entropy Alloy, ***Chih-Chen Lee****, I. Tasi,* National Yang-Ming Chiao Tung University, Taiwan*; H. Chen,* Michigan State University, Taiwan*; C. Chen,* National United University, Taiwan*; S. Chen,* National Yang-Ming Chiao Tung University, Taiwan
11:20am	**MA4-1-WeM-11** Effect of Substrate Temperature on Properties and Microstructure of High Entropy Alloy Thin Films Deposited by Magnetron Sputtering Systems, ***Yi-Jun Yan****, F. Ouyang,* National Tsing Hua University, Taiwan	**IA3-WeM-11** Surface Conditioning and New Applications Using Advanced Plasma Etching Technology, ***Dominic Stangier****,* Am Boettcherberg 30-38, Germany
11:40am	**MA4-1-WeM-12** A Combinatorial Approach to Developing Sputter-Deposited AuBiTaW High-Entropy Alloy Films for Inertial Confinement Fusion Applications, ***Daniel Goodelman****, D. Strozzi, S. Kucheyev, L. Bayu Aji,* Lawrence Livermore National Laboratory, USA	**IA3-WeM-12** Advances in Microhard Machining: From Etching-based Asymmetrical Cutting Edge Preparation to Cutting Performance of TiAlN-based Thin Films, ***Nelson Filipe Lopes Dias****, A. Meijer, C. Jäckel, D. Biermann, W. Tillmann,* TU Dortmund University, Germany
12:00pm		

Tribology and Mechanics of Coatings and Surfaces
Room Town & Country B - Session MC2-2-WeM
Mechanical Properties and Adhesion II
Moderators:
Jazmin Duarte, MPI für Eisenforschung GMBH, Germany,
Bo-Shiuan Li, National Sun-Yat Sen University, Taiwan

8:00am	**INVITED: MC2-2-WeM-1** *In Situ* Micromechanical Characterization of Thin Films: Strain Rate, Size and Microstructure Related Experiments in the SEM, ***Szilvia Kalacska,*** CNRS LGF, Mines St. Etienne, France*; L. Petho,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland*; G. Kermouche,* Mines St. Etienne, France*; J. Michler,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland*; P. Ispanovity,* Eötvös Loránd University, Hungary	
8:20am		
8:40am	**MC2-2-WeM-3** Assessing Brittleness of Indium Tin Oxide Layers on Glass Substrates with Nanoindentation, ***Kurt Johanns,*** *S. Varma, J. Hay, B. Crawford,* KLA-Tencor, USA	
9:00am	**MC2-2-WeM-4** The Effect of Nitrogen Flow Rate and Deposition Power on the Mechanical Properties and Microstructure of TiN Thin Film Deposited by HCD-IP Method, ***Ching-Cheng Chen,*** *K. Lan,* National Tsing Hua University, Taiwan	
9:20am	**MC2-2-WeM-5** Effect of Metal Interlayers on Stress Relief of Mo_2N/Mo and Mo_2N/Ti Bilayer Coatings on Si Substrate by High Power Impulse Magnetron Sputtering, ***Yun-Yang Sun,*** *J. Huang,* National Tsing Hua University, Taiwan	
9:40am	**MC2-2-WeM-6** Microstructure and Mechanical Behavior of Magnetron Co-Sputtering Mo-Ta-N Coatings, ***JIA-YI HSU,*** *F. Wu,* Department of Materials Science and Engineering, National United University, Miaoli , Taiwan	
10:00am	**COMPLIMENTARY REFRESHMENTS IN EXHIBIT HALL**	
10:20am		
10:40am		
11:00am	**MC2-2-WeM-10** Function of Mo Metal Interlayer in γ-Mo_2N/Mo Bilayer Coatings on D2 Steel Deposited by High Power Pulsed Magnetron Sputtering, *Y. Fang,* ***Jia-Hong Huang,*** National Tsing Hua University, Taiwan	
11:20am	**MC2-2-WeM-11** Micro-Arc Oxidation of Commercially Pure Titanium Subjected to Hydrostatic Extrusion, ***Lukasz Maj,*** Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Poland*; F. Muhaffel,* Istanbul Technical University, Turkey*; A. Jarzebska, A. Trelka, D. Wojtas, K. Trembecka,* Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Poland*; J. Kawalko,* AGH University of Science and Technology, Poland*; M. Kulczyk,* Unipress Extrusion, Poland*; M. Bieda,* Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Poland*; H. Cimenoglu,* Istanbul Technical University, Turkey	
11:40am	**MC2-2-WeM-12** Effect of Ultrasonic-Assisted Machining for Surface Functionalization of Innovative Work-Hardening Multi-Principal-Element Alloys, ***Marcel Giese,*** *D. Schroepfer, M. Rhode,* Bundesanstalt für Materialforschung und -prüfung, Germany*; B. Preuss, T. Lindner, N. Hanisch, T. Lampke,* Institute of Materials Science and Engineering (IWW), Chemnitz University of Technology, Germany	
12:00pm	**MC2-2-WeM-13** Metal/Oxide Nanolaminates of Al/Al2O3 by PVD-ALD: Understanding & Maximising Strength-Ductility, ***Thomas Edwards,*** NIMS (National Institute for Materials Science), Japan*; B. Putz, T. Xie, L. Vogl, H. Jansen, A. Groetsch, M. Watroba, J. Michler,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland	

Wednesday Afternoon, May 22, 2024

	Coatings for Biomedical and Healthcare Applications **Room Palm 3-4 - Session MD1-1-WeA** **Surface Coatings and Surface Modifications in Biological Environments I** **Moderators:** **Mathew T. Mathew**, University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA,	**Functional Thin Films and Surfaces** **Room Town & Country D - Session MB2-2-WeA** **Thin Films for Electronic Devices II** **Moderators:** **Klaus Boebel,** Oerlikon Balzers, Oerlikon Surface Solution AG, Liechtenstein, **Panos Patsalas**, Aristotle University of Thessaloniki, Greece
2:00pm	**MD1-1-WeA-1** Synergistic Antibacterial Activity and Ion Release of Ag-Cu and Ag-Cu-Mg Coatings, ***Serdar Sonay Ozbay***, *G. Rajmohan,* Deakin University, Australia; *A. Cobley,* Coventry University, UK; *J. Sharp,* Deakin University, Australia; *G. Azar,* Coventry University, UK	**INVITED: MB2-2-WeA-1** Electro-optic Thin Film Switch for Silicon Photonics Quantum Computer, ***Vimal Kamineni***, PsiQuantum Ltd., USA
2:20pm	**INVITED: MD1-1-WeA-2** Iridium Oxide Based Electrodes for Bio-Interface Applications, ***Po-Chun Chen***, National Taipei University of Technology, Taiwan	
2:40pm		**MB2-2-WeA-3** The Path to Deterministic Chaos in Resistively Switching $Hf_{0.5}Zr_{0.5}O_2$ Thin Films via Period-Doubling Bifurcations, ***Sebastian Obernberger***, *K. Kohlmann,* Institut national de la recherche scientifique - Centre Énergie Matériaux Télécommunications, Canada; *A. Sarkissian,* Plasmionique Inc., Canada; *P. Antici,* Institut national de la recherche scientifique - Centre Énergie Matériaux Télécommunications, Canada; *C. Schindler,* Munich University of Applied Sciences, Germany; *A. Ruediger,* Institut national de la recherche scientifique - Centre Énergie Matériaux Télécommunications, Canada
3:00pm	**MD1-1-WeA-4** An Electrochromic IrOx Nanofibrous Film for Multifunctional Bio-Interface Sensing Applications, ***Yu-Jen Tao***, *P. Chen,* National Taipei University of Technology, Taiwan	**MB2-2-WeA-4** Stoichiometric Engineering of Rotary Metal Oxide Targets for Thin Film Applications: A Focus on Zinc Oxide Based Alternatives, ***Jing Yang***, SCI Engineered Materials, Inc., USA
3:20pm	**MD1-1-WeA-5** Bespoke Atmospheric Pressure Plasma Polymerization Process with an Acrylic Acid-Based Hybrid Precursor on Polylactic Acid Nonwoven for Antibacterial Scaffolds, ***Wei-Yu Chen***, *Y. Chiang, T. Chu, L. Chang, J. Lee,* Ming Chi University of Technology, Taiwan	**MB2-2-WeA-5** Few-layered Multi-transition Metal Dichalcogenide Alloy Absorber for High-performance Photodetector, ***I-Hsi Chen***, *T. Nguyen, J. Ting,* National Cheng Kung University (NCKU), Taiwan
3:40pm		**MB2-2-WeA-6** Growth of Nanostructured Molybdenum Disulfide (Mos_2) Thin Film for the Application of Electronic Materials, *I. Giwa, K. Qian, F. Sanchez, E. Mawire, S. Dong, E. Smith, Q. Yuan,* ***Zhigang Xiao***, Alabama A&M University, USA
4:00pm		**MB2-2-WeA-7** $BaTiO_3$ Epitaxial Thin Films Integrated on Si by Pulsed Laser Deposition for Electro-Optic Modulators, ***Heungsoo Kim***, *S. Mathews,* Naval Research Laboratory, USA; *A. Posadas, A. Demkov,* The University of Texas at Austin, USA; *A. Piqué,* Naval Research Laboratory, USA
4:20pm		
4:40pm		
5:00pm		

Wednesday Afternoon, May 22, 2024

	Plasma and Vapor Deposition Processes **Room Town & Country A - Session PP4-2-WeA** **Deposition Technologies for Carbon-based Coatings II** **Moderators:** **Ivan Kolev**, IHI Hauzer Techno Coating B.V., Netherlands, **Biplab Paul**, PLATIT AG, Switzerland	**Protective and High-temperature Coatings** **Room Town & Country C - Session MA4-2-WeA** **High Entropy and Other Multi-principal-element Materials II** **Moderators: Erik Lewin**, Uppsala University, Sweden, **Jean-François Pierson**, IJL - Université de Lorraine, France
2:00pm	**INVITED: PP4-2-WeA-1** DLC-Coating Against the Backdrop of High Economic Requirements, ***Jens Emmerlich***, *D. Tiedemann,* Robert Bosch Manufacturing Solutions GmbH, Germany; *V. Gupta,* Robert Bosch Manufacturing Solutions GmbH, India; *K. Boebel,* Robert Bosch Manufacturing Solutions GmbH, Germany	**MA4-2-WeA-1** Effect of Bilayer Periodic Thickness Ratios on the Mechanical Properties and Corrosion Resistance of TiZrNbTaFeN/TiN High Entropy Alloy Nitride Multilayer Thin Films, ***Sheng-Yuan Hung***, Ming Chi University of Technology, New Taipei, Taiwan; *B. Lou,* Chang Gung University, Taoyuan, Taiwan; *J. Lee,* Ming Chi University of Technology, New Taipei, Taiwan
2:20pm		**MA4-2-WeA-2** Enhanced Mechanical Properties of Nitrogen-Supersaturated High-Entropy Alloys via Phase Manipulation, ***Yujie Chen***, University of Adelaide, Australia
2:40pm	**PP4-2-WeA-3** Comparison of Performance Parameters of Carbon Coatings by Different PVD Methods, ***Martin Kopte***, *J. Walther, B. Gebhardt, H. Proehl,* VON ARDENNE GmbH, Germany	**MA4-2-WeA-3** Mechanical and Anticorrosive Properties of Laminated (NbTaMoW)N_x Films, ***Yan-Zhi Liao***, *Y. Chen,* National Taiwan Ocean University, Taiwan
3:00pm	**PP4-2-WeA-4** Carbon-Based Coatings with Tailorable Properties as a Function of sp^3:sp^2 Hybridization, ***Biplab Paul***, *G. Wahli, J. Kluson, H. Bolvardi, A. Lümkemann,* PLATIT AG, Switzerland	**MA4-2-WeA-4** Structure and Mechanical Properties of (Al,B,Cr,Si,Ti)-based Thin Films, ***Alexander Kirnbauer***, *P. Konecny,* TU Wien, Institute of Materials Science and Technology, Austria; *R. Hahn,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria; *S. Kolozsvari,* Plansee Composite Materials GmbH, Germany; *P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria
3:20pm	**INVITED: PP4-2-WeA-5** Atmospheric Pressure Plasma Functionalization of Diamond Particles for Use as Quantum Sensors, *G.E. McGuire,* Rivis, Inc., USA; *M. Torelli,* ***Nikolas Nunn***, *O. Shenderova,* Adámas Nanotechnologies, Inc., USA	**MA4-2-WeA-5** Synthesis and Characterization of High Entropy Ceramic Coatings from Cr-Hf-Mo-Ta-W Refractory Metal System, *S. Debnárová, T. Stasiak, V. Buršíková,* Masaryk University, Czechia; *Z. Czigány, K. Balázsi,* HUN-REN Centre for Energy Research, Hungary; *S. Lin, N. Koutná,* Technische Universität Wien, Austria; ***Pavel Souček***, Masaryk University, Czechia
3:40pm		**MA4-2-WeA-6** Mechanical and Oxidation Properties Evaluation of Equimolar and Non-Equimolar High Entropy Alloy Boron Carbonitride Coatings, ***Igamcha Moirangthem***, National Taiwan University of Science and Technology, Taiwan; *B. Lou,* Chang Gung University, Taiwan; *C. Wang,* National Taiwan University of Science and Technology, Taiwan; *J. Lee,* Ming Chi University of Technology, Taiwan
4:00pm	**PP4-2-WeA-7** Quantification of the sp^3 Content in DLC Films Deposited by HiPIMS Using EELS and NEXAFS, ***João Carlos Oliveira***, University of Coimbra, Portugal; *A. Vahidi,* University of Coimbra, Pakistan; *R. Serra,* University of Coimbra, Portugal	**MA4-2-WeA-7** Research on the Effects of Various Acetylene Contents on the Mechanical Properties of TiZrNbTaFeBCN High Entropy Alloy Films, ***Meng-Hsueh Chuang***, National Taiwan University of Science and Technology, Taiwan; *B. Lou,* Chang Gung University, Taiwan; *J. Lee,* Ming Chi University of Technology, Taiwan; *C. Wang,* National Taiwan University of Science and Technology, Taiwan
4:20pm		

	Topical Symposium on Sustainable Surface Engineering **Room Palm 5-6 - Session TS5-WeA** **Circular Strategies for Surface Engineering** **Moderators:** **Marcus Hans**, RWTH Aachen University, Germany, **Nina Schalk**, Montanuniversität Leoben, Austria	**Tribology and Mechanics of Coatings and Surfaces** **Room Town & Country B - Session MC3-1-WeA** **Tribology of Coatings and Surfaces for Industrial Applications I** **Moderators: Nazlim Bagcivan**, Schaeffler Technologies GmbH & Co. KG, Germany, **Stephan Tremmel**, University of Bayreuth, Germany, **Martin Welters**, KCS Europe GmbH, Germany
2:00pm	**INVITED: TS5-WeA-1** Coated Cemented Carbides – Tooling a Sustainable Future, ***Uwe Schleinkofer***, *C. Czettl,* CERATIZIT Austria GmbH, Austria	**INVITED: MC3-1-WeA-1** Tribological Coatings to meet Future Requirements for Green Mobility, ***Steffen Hoppe***, Tenneco Powertrain, Product & Technology, Germany
2:20pm		
2:40pm	**TS5-WeA-3** Designing Selective Stripping Processes for Al-Cr-N Hard Coatings on WC-Co Cemented Carbides, *A. Kretschmer*, ***V. Jaszfi***, *V. Dalbauer,* TU Wien, Institute of Materials Science and Technology, Austria; *V. Schott, S. Benedikt, A. Eriksson,* Oerlikon Balzers, Liechtenstein; *A. Limbeck,* TU Wien, Austria; ***Paul Mayrhofer,*** TU Wien, Institute of Materials Science and Technology, Austria	**MC3-1-WeA-3** Current-Induced Friction and Graphitization Effects in Amorphous and Tetrahedral Amorphous Carbon Coatings on M2 Steel: An Electro-Tribological Investigation, *A.M. Khodadadi Behtash,* ***Ahmet T. Alpas***, University of Windsor, Canada
3:00pm	**INVITED: TS5-WeA-4** Perspectives on Sustainability of Coated Metal Cutting Tools, ***Lars Johnson***, Sandvik Coromant R&D Materials and Processes, Sweden	**MC3-1-WeA-4** Compositionally Graded MoS_2-WC Spray Coatings for Robust Tribological Protection in Low Viscosity Fuels, ***Euan Cairns***, *J. Decker,* University of North Texas, USA; *S. Dixit,* Plasma Technology Inc., USA; *S. Berkebile,* Army Research Laboratory, USA; *D. Berman, S. Aouadi, A. Voevodin,* University of North Texas, USA
3:20pm		**MC3-1-WeA-5** Tribological Behavior of DLC Coatings: Wear Map of Oil Lubricated Contacts in a Three-Pins-on-Disc Test Configuration, *J. Keraudy, N. Manninen, F. Rovere,* ***Klaus Boebel,*** Oerlikon Surface Solutions AG, Liechtenstein
3:40pm	**TS5-WeA-6** Towards Responsible Surface Engineering, ***Marcus Hans***, *J. Schneider,* RWTH Aachen University, Germany; *A. Matthews,* University of Manchester, UK; *C. Mitterer,* Montanuniversität Leoben, Austria	**MC3-1-WeA-6** Structural and Tribo-mechanical Properties of AlCrVYON Thin Films with Varying O Contents Sputtered from Either AlCrVY or AlCrY and V Targets, *W. Tillmann,* ***Finn Ontrup***, *D. Aubry,* TU Dortmund University, Germany; *E. Schneider, M. Paulus, C. Sternemann,* Fakultät Physik/DELTA, TU Dortmund University, Germany; *N. Lopes Dias,* TU Dortmund University, Germany
4:00pm	**INVITED: TS5-WeA-7** Reprocessing High Performance Cutting Tools – Performance Plus with Dedicated Coating Solutions, ***Dominik Blösch***, *C. Krieg,* PLATIT AG, Switzerland; *J. Kluson,* PLATIT a.s., Czechia; *H. Bolvardi, A. Lümkemann,* PLATIT AG, Switzerland; *B. Torp,* PLATIT Inc., Switzerland	**MC3-1-WeA-7** Development and Process Optimization of Suspension Plasma Spray Coating to Enhance the Frictional Properties and Wear Resistance, ***Yong-Jin Kang***, *Y. Yoo, S. Lee, D. Kim,* Korea Institute of Materials Science, Republic of Korea
4:20pm		**MC3-1-WeA-8** Excellent Mechanical, Tribological and Anticorrosive Properties of Nanocomposite Coating Based on Polyvinyl Alcohol/MXene/Tannic Acid, ***Dieter Rahmadiawan***, National Cheng Kung University (NCKU), Taiwan, Indonesia; *S. Chen Shi,* National Cheng Kung University (NCKU), Taiwan
4:40pm		**MC3-1-WeA-9** Effects of Various Al/Cr Composition and Deposition Conditions on Surface Properties, Mechanical and Tribological Properties of AlCrN Coatings, ***SHINICHI TANIFUJI***, *M. NAKAMURA, R. TAKEI, S. KUJIME, T. TAKAHASHI,* Kobe Steel, Ltd., Japan
5:00pm		**MC3-1-WeA-10** Effect of Multilayer Architecture on Mechanical Properties and Cutting Performance of AlTiBN/AlCrBN Coatings, ***Chung-En Chang***, *Y. Chang,* National Formosa University, Taiwan
5:20pm		

Wednesday Afternoon, May 22, 2024

Awards Ceremony and Honorary Lecture
Room Town & Country A - Session HL-WeHL
Bunshah Award Honorary Lecture

5:45pm		
6:05pm	**INVITED: HL-WeHL-2** R.F. Bunshah Award and ICMCTF Lecture Invited Talk: Making More Wear-Resistant Surfaces via Tribochemistry – from Cutting Tools to Flying Things, ***Yip-Wah Chung***[1], Northwestern University, USA	
6:25pm		

[1] **R.F. Bunshah Awardee**

	Coatings for Biomedical and Healthcare Applications Room Palm 3-4 - Session MD1-2-ThM Surface Coatings and Surface Modifications in Biological Environments II **Moderators:** **Mathew T. Mathew**, University of Illinois College of Medicine at Rockford and Rush University Medical Center, USA,	Functional Thin Films and Surfaces Room Palm 1-2 - Session MB3-1-ThM Nanomaterial-based Thin Films and Structures I **Moderators:** **Ondřej Kylián**, Charles University, Prague, Czechia, **Jörg Patscheider**, Evatec AG, Switzerland,
8:00am		**INVITED: MB3-1-ThM-1** Dual Scale Structures Based on Nanocolumns and Nanoparticles, ***Lidia Martinez,*** ICMM-CSIC, Spain*; J. García-Martín,* IMN-CSIC, Spain*; Y. Huttel,* ICMM-CSIC, Spain
8:20am		
8:40am		**MB3-1-ThM-3** MGA Nanoparticle Thin Films for Enhanced Hydrogen Gas Sensing: Synthesis, Modeling, and Characterization, ***Stanislav Haviar****, T. Kozák, K. Shaji,* University of West Bohemia, Czechia*; T. Košutová,* Charles University, Czechia*; B. Prifling, V. Schmidt,* Ulm University, Germany*; J. Čapek,* University of West Bohemia, Czechia
9:00am		**MB3-1-ThM-4** Enhanced Dimer Sputtering and Production of Nanoparticles by Pulsed Magnetron Discharge*, P. Čurda,* University of South Bohemia, Czechia*; R. Hippler,* University of Greifswald, Germany*; M. Cada,* Institute of Physics, Czech Academy of Sciences, Czechia*;* ***Ondřej Kylián****,* Charles University, Czechia*; Z. Hubicka,* Institute of Physics, Czech Academy of Sciences, Czechia*; V. Stranak,* University of South Bohemia, Czechia
9:20am		**MB3-1-ThM-5** Plasma Polymer - Ag Nanocomposites: Is the Gas Aggregation Source of Nanoparticles an Appropriate Technique for Their Synthesis?, ***Zdenek Krtous****, T. Kosutova, P. Pleskunov,* Charles University, Prague, Czech Republic*; B. Baloukas, L. Martinu,* Polytechnique Montréal, Canada
9:40am		**MB3-1-ThM-6** Fabrication of Ag-modified $BaTiO_3$ Nanorod Arrays and their Properties of Piezo-Photoelectric Catalysis, ***Yu-Han Hsu****, K. Chang, Y. Chiu,* National Cheng Kung University (NCKU), Taiwan
10:00am	**BREAK**	**BREAK**
10:20am	**MD1-2-ThM-8** The Biocompatibility of Thermal Sprayed Bioactive Glass Hydroxyapatite Composited Coatings, ***Pin-Jie Chen****, C. Wu, R. Chung, Y. Yang,* National Taipei University of Technology, Taiwan	**MB3-1-ThM-8** Combinatorial Approach of Zr-Ti-Al Thin Films: Understanding Glass-Forming Behavior, Morphological Changes, and Thermal Stability, ***Zil Fernández-Gutiérrez****, D. Pilloud, S. Bruyère, S. Hupont, J. Pierson,* Institut Jean Lamour - Université de Lorraine, France
10:40am	**MD1-2-ThM-9** SERS Substrates Based on Self-Organized Dimple Nanostructures on Polyethylene Naphthalate Films Produced via Oxygen Ion Beam Sputtering*,* ***S. Lee****,* KIMS, Republic of Korea*;* ***Jun-Yeong Yang****,* Korea institute of materials science, Republic of Korea	**MB3-1-ThM-9** The Impact of Laser Annealing on Electrical Resistivity and Mechanical Properties in Highly(111)-Oriented Nanotwinned Ag Thin Films, ***Tsai-Shaun Kuo****, C. Yang, F. Ouyang,* National Tsing Hua University, Taiwan
11:00am	**MD1-2-ThM-10** Design and Fabrication of a Hybrid IrOx/Polydopamine Thin Film via a Co-Electrodeposition Process as a Bendable Bio-Interface Microelectrode Array, ***Hung-Yu Chen****, M. Tsou,* National Taipei University of Technology, Taiwan*; K. Tso, K. Sasagwa, J. Ohta,* Nara Institute of Science and Technology, Japan*; P. CHEN,* National Taipei University of Technology, Taiwan	**MB3-1-ThM-10** Stainless-steel Nano-Pyramid Structure Coating to Enhance Oil/Water Separation, ***Helmi Son Haji****, J. P. Chu,* National Taiwan University of Science and Technology, Taiwan
11:20am		**MB3-1-ThM-11** Study of Interfacial Reactions in Artificially Nanolayered Mg-Mo-N Thin Films*, B, Julien****, Andriy Zakutayev****,* National Renewable Energy Laboratory, USA
11:40am		

Thursday Morning, May 23, 2024

	Plasma and Vapor Deposition Processes **Room Town & Country A - Session PP2-1-ThM** **HiPIMS, Pulsed Plasmas and Energetic Deposition I** **Moderators:** **Martin Rudolph**, Leibniz Inst. of Surface Eng. (IOM), Germany, **Tetsuhide Shimizu**, Tokyo Metropolitan University, Japan	**Protective and High-temperature Coatings** **Room Town & Country C - Session MA5-1-ThM** **Boron-containing Coatings I** **Moderators:** **Martin Dahlqvist**, Linköping University, Sweden, **Anna Hirle**, TU Wien, Austria
8:00am		
8:20am		**INVITED: MA5-1-ThM-2** Study of W and Zr Interdiffusion in the WB_2 – ZrB_2 System, ***Yue Zhou***, *S. Filipovic, D. Lipke, W. Fahrenholtz, G. Hilmas,* Missouri University of Science and Technology, USA
8:40am		
9:00am	**INVITED: PP2-1-ThM-4** Metal-Ion Synchronized HiPIMS of AlN and AlScN for Piezoelectric Applications, *J. Patidar,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *S. Bette,* aixACCT systems GmbH, Aachen, Germany; *O. Pshyk,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *R. Kessels,* aixACCT Systems GmbH, Aachen, Germany; ***Sebastian Siol,*** Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	**MA5-1-ThM-4** W-Based Thin Film Metallic Glasses Doped with Ni, Zr and B for Industrial Applications, ***Antonin Kubicek***, *V. Sochora,* SHM, s.r.o., Czechia; *Z. Studeny,* University of Defence, Czech Republic; *P. Soucek,* Masaryk University, Czechia; *Z. Pokorny,* University of Defence, Czech Republic; *T. Schmidtova, J. Zenisek,* Masaryk University, Czechia
9:20am		**MA5-1-ThM-5** Effect of Ti and Effect of Ti Contents on the Microstructure, Mechanical Properties, and Corrosion Resistance of WTixB Boride Thin Films, ***Wei-Xiang Fang***, Ming Chi University of Technology, Taiwan; *B. Lou,* Chang Gung University, Taiwan; *J. Lee,* Ming Chi University of Technology, Taiwan
9:40am	**PP2-1-ThM-6** Optimization of Deposition Parameters of Titanium Oxide Films by Taguchi Method, ***Shih-Yang Hsu***, Department of Materials and Mineral Resources Engineering, Institute of Materials Science and Engineering, National Taipei University of Technology, Taipei, Taiwan; *B. Lou,* Chemistry Division, Center for General Education, Chang Gung University, Taoyuan, Taiwan; *J. Lee,* Department of Materials Engineering, Ming Chi University of Technology, New Taipei, Taiwan; *Y. Yang,* Department of Materials and Mineral Resources Engineering, Institute of Materials Science and Engineering, National Taipei University of Technology, Taipei, Taiwan	**MA5-1-ThM-6** Influence of Spatial Heterogeneity on Mechanical Properties in Multilayered Coatings, ***Marek Gocník***, Montanuniversität Leoben, Austria; *M. Vidiš, T. Fiantok,* Comenius University Bratislava, Slovakia; *P. Švec, Jr.,* Institute of Physics, Slovak Academy of Sciences, Slovakia; *Š. Nagy,* Institute of Materials and Machine Mechanics, Slovak Academy of Sciences, Slovakia; *M. Truchlý, V. Izai, T. Roch, L. Satrapinskyy, V. Šroba,* Comenius University, Bratislava, Slovakia; *M. Meindlhumer,* Montanuniversität Leoben, Austria; *B. Grančič, P. Kúš,* Comenius University, Bratislava, Slovakia; *J. Kečkéš,* Montanuniversität Leoben, Austria; *M. Mikula,* Comenius University, Slovak Academy of Sciences, Slovakia
10:00am	**BREAK**	**BREAK**
10:20am	**PP2-1-ThM-8** Phase Transformation of Boron Carbon Nitride Coatings Deposited by High-Power Impulse Magnetron Sputtering, *H. Nagakura, H. Komiya,* Tokyo Metropolitan University, Japan; *Y. Touta,* Tokyo Metropolitan Industrial Technology Research Institute, Japan; *I. Fernandez,* Nano4Energy, Spain; *R. Boyd, U. Helmersson, D. Lundin,* Linköping University, Sweden; ***Tetsuhide Shimizu,*** Tokyo Metropolitan University, Japan	**MA5-1-ThM-8** Self-Formation of Dual-Phase Nanocomposite Coatings Within Ternary Zr-Cu-B System, *D. Thakur, M. Cervena, J. Houska, S. Haviar, R. Cerstvy,* ***Petr Zeman***, University of West Bohemia, Czechia
10:40am	**PP2-1-ThM-9** Thick and Smooth Nanostructured Cr Coatings with Enhanced HiPIMS Ionization, ***Ricardo Serra***, University of Coimbra, Portugal; *S. Adebayo,* University of Coimbra, Nigeria; *J. Oliveira,* university of coimbra, Portugal	**MA5-1-ThM-9** High-Rate Deposition of Ultrathick Boron Carbide Coatings for Inertial Confinement Fusion, ***J. B. Merlo***, *K. Kawasaki, J. Forien, S. Gonzalez, G. Taylor, S. Shin, L. Bayu Aji, S. Kucheyev,* Lawrence Livermore National Laboratory, USA
11:00am	**PP2-1-ThM-10** Implementation of HiPIMS Technology in Different Industrial Sectors, ***IVAN FERNANDEZ,*** NANO4ENERGY SL, Spain	**MA5-1-ThM-10** Taking Advantage of Unique Lattice Sites – How to Find New Boron-Based Materials Through Large-Scale Stability Predictions, ***Martin Dahlqvist***, *A. Carlsson, J. Rosen,* Linköping University, IFM, Materials Design, Sweden
11:20am	**PP2-1-ThM-11** Impact of Energetic Film-Forming Particles in Ion Beam Sputter Deposition of Epitaxial Ga_2O_3 Thin Films, ***Dmitry Kalanov***, *Y. Unutulmazsoy, J. Gerlach, A. Lotnyk, J. Bauer, A. Anders, C. Bundesmann,* Leibniz Institute of Surface Engineering (IOM), Germany	
11:40am	**PP2-1-ThM-12** Quantification of the Negative Oxygen Ion Yield, ***Diederik Depla***, Ghent University, Belgium	

Thursday Morning, May 23, 2024

	Topical Symposium on Sustainable Surface Engineering **Room Town & Country D - Session TS4-1-ThM** **Coatings and Surfaces for Thermoelectrical Energy Conversion and (Photo)electrocatalysis I** **Moderators:** **Clio Azina**, RWTH Aachen University, Germany, **Carlos Tavares**, University of Minho, Portugal	**Tribology and Mechanics of Coatings and Surfaces** **Room Town & Country B - Session MC3-2-ThM** **Tribology of Coatings and Surfaces for Industrial Applications II** **Moderators: Nazlim Bagcivan**, Schaeffler Technologies GmbH & Co. KG, Germany, **Stephan Tremmel**, University of Bayreuth, Germany, **Martin Welters**, KCS Europe GmbH, Germany
8:00am	**INVITED: TS4-1-ThM-1** Inorganic Thermoelectric Films for Harvesting Waste Heat Near Room Temperature: Opportunities and Challenges, ***Rui Shu,*** Linkoping University, Sweden, USA	**INVITED: MC3-2-ThM-1** Interactions between Coatings/Surfaces and Lubricants: How to Manage the Tribochemical Wear in ZDDP-lubricated DLC Coatings?, ***Maria Isabel De Barros,*** Laboratory of Tribology and System Dynamics Ecole Centrale de Lyon, France
8:20am		
8:40am	**TS4-1-ThM-3** Retaining Crystallinity of as-deposited Thermoelectric Fe_2VAl-based Thin Films Grown from DCMS and HiPIMS, ***Ludwig Enzlberger,*** TU Wien, Institute of Materials Science and Technology, Austria*; S. Kolozsvari,* Plansee SE, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria	**MC3-2-ThM-3** Coating of Plastic Parts with Tetrahedral Amorphous Carbon for Wear Protection Using Laser-Arc Technology, *B. Gebhardt, M. Holzherr, M. Kopte, H. Pröhl, R. Seifert,* ***Marc Tobias Wenzel,*** VON ARDENNE, Germany*; F. Kaulfuß, F. Härtwig,* Fraunhofer IWS, Germany
9:00am	**TS4-1-ThM-4** Thermoelectrical Investigations of TaC-Based Superlattice Protective Coatings, ***Barbara Schmid,*** *S. Lin, T. Schöngruber, N. Koutná,* TU Wien, Institute of Materials Science and Technology, Austria*; S. Bühler-Paschen,* TU Wien, Austria*; L. Mitterhuber,* Materials Center Leoben, Austria*; D. Ingerle,* TU Wien, Austria*; S. Kolozsvari,* Plansee SE, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria	**MC3-2-ThM-4** Investigation of the Mechanical and Tribological Properties of TiBCN Thin Films, ***Cennet Yıldırım,*** Turkish Energy, Nuclear and Mineral Research Agency – Boron Research Institute / Istanbul Technical University, Türkiye, Turkey*; Ö. Kısacık, H. Doyuran, C. Eseroğlu,* Turkish Energy, Nuclear and Mineral Research Agency – Boron Research Institute, Türkiye, Turkey*; E. Kaçar,* Hakkari University, Türkiye, Turkey
9:20am	**INVITED: TS4-1-ThM-5** Exploring the Potential and Challenges of Solution-Processed Inorganic Thermoelectric Materials*, M. Ibáñez,* Institute of Science and Technology Austria (ISTA), Austria*;* ***Tobias Kleinhanns,*** Institute of Science and Technology, Austria	**MC3-2-ThM-5** Investigating the Influence of B, C, and N on the Tribo-mechanical Properties of the Chemically Complex TiSiBCN Thin Film using Design of Experiments*, W. Tillmann,* ***Julia Urbanczyk,*** *A. Ebady, A. Thewes, G. Bräuer, N. Lopes Dias,* TU Dortmund University and TU Braunschweig University, Germany
9:40am		**MC3-2-ThM-6** Effect of Alloy Modification on the Wear Protection Coatings Made of Ni- and Co-Based Materials and Surface Machinability via Ultrasonic Milling Process, ***Maraike Gräbner,*** Clausthal University of Technology, Institute of Welding and Machining, Germany*; M. Giese,* Federal Institute for Materials Research and Testing, Germany*; K. Treutler,* Clausthal University of Technology, Intitute of Welding and Machining, Germany*; S. Lorenz, V. Wesling,* Clausthal University of Technology, Institute of Welding and Machining, Germany*; D. Schröpfer, T. Kannengießer,* Federal Institute for Materials Research and Testing, Germany
10:00am	**BREAK**	**BREAK**
10:20am	**TS4-1-ThM-8** 3D Nanoscale Spatial Imaging of Doped ZnO and TiO_2 Transparent Thermoelectric Thin Films*, J. Ribeiro, F. Correia, H. Faria,* University of Minho, Portugal*; A. Welle, T. Boll,* Karlsruhe Institute of Technology (KIT), Germany*;* ***Carlos Jose Tavares,*** University of Minho, Portugal	**MC3-2-ThM-8** An Alternative Thermal Route to Improve an Aluminum Alloy Mechanical and Tribological Properties through Deposition of NiP Coating*, R. Davies,* Pontificia Universidade Católica do Parana, Brazil*; M. Soares,* Universidade Tecnologica Federal do Parana, Brazil*; F. Amorim, P. Soares, C. Neitzke,* ***Ricardo Torres,*** Pontificia Universidade Católica do Parana, Brazil
10:40am	**TS4-1-ThM-9** Ni-B-based Polyalloy Electrocatalyst Coatings Deposited by MSPVD for Efficient Oxygen Evolution Reaction*,* ***Kubilay Sahin,*** Institute for Clean Growth and Future Mobility, Coventry University, Department of Metallurgy, University of Mons (UMONS), UK*; V. Vitry,* Department of Metallurgy, University of Mons (UMONS), 23 Place du Parc, B-7000 Mons, Belgium., Belgium*; A. Cobley,* Institute for Clean Growth and Future Mobility, Coventry University, Priory St, Coventry, CV1 5FB, UK.*; J. Graves, G. Pourian Azar,* Institute for Clean Growth and Future Mobility, Coventry University, UK	**MC3-2-ThM-9** High-Temperature Tribology of Cathodic Arc Deposited Altin Protective Coating*,* ***Aljaž Drnovšek,*** *P. Šumandl,* Jožef Stefan Institute, Slovenia*; Ž. Gostenčnik,* jožef Stefan Institute, Slovenia*; J. Kovač, M. Čekada,* Jožef Stefan Institute, Slovenia
11:00am	**TS4-1-ThM-10** Role of Grain Boundaries in the Stress Corrosion Cracking of Nanoporous Gold Thin Films*,* ***Aparna Saksena,*** Max-Planck Institut für Eisenforschung GmbH, Germany*; A. El-Zoka,* Imperial College London, UK*; A. Saxena, E. Hatipoglu,* Max-Planck Institut für Eisenforschung GmbH, Germany*; J. Schneider,* RWTH Aachen University, Germany*; B. Gault,* Max-Planck Institut für Eisenforschung GmbH, Germany	**MC3-2-ThM-10** Nanomechanical and Tribological Properties of Conversion Coatings for Railway Rolling Bearing Applications*,* ***Esteban Broitman,*** *A. Ruellan,* SKF - Research and Technology Development, Netherlands*; R. Meeuwenoord,* SKF Research and Technology Development, Netherlands*; D. Nijboer, V. Brizmer,* SKF - Research and Technology Development, Netherlands
11:20am	**TS4-1-ThM-11** Metal/Oxide Heterostructure as Hydrogen Evolution Reaction Electrocatalyst*,* ***Thi Y Phung Nguyen,*** National Cheng Kung University (NCKU), Taiwan, Viet Nam*; J. Ting,* National Cheng Kung University (NCKU), Taiwan	**MC3-2-ThM-11** Impact of Fiber Orientation and Oxidation on Wear Performance of Carbon-Carbon Composites*,* ***Hamid Mohseni,*** *X. Fang, L. Dawag, C. Winder,* Pratt & Whitney, USA
11:40am	**TS4-1-ThM-12** Copper-Based Porous Surfaces for Electrocatalytic CO_2 Reduction*,* ***Maria José Lima,*** *S. Viana,* University of Minho, Portugal*; J. Castro, S. Carvalho,* University of Coimbra, Portugal	
12:00pm		**MC3-2-ThM-13** Cr Doping Modification for Tribological Behavior of Cr/a-C Multilayer Coatings Against PEEK Under Diverse Operational Conditions*,* ***Xiaohui Zhou,*** Key Laboratory of Marine Materials and Related Technologies, Zhejiang Key Laboratory of Marine Materials and Protective Technologies, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

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

12:20pm **FTS-ThL-1** The World of Scientific Publishing: A Publisher's Perspective*,*
Biswanath Dutta, Elsevier, Netherlands

12:40pm

1:00pm

Thursday Afternoon, May 23, 2024

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 1-2 - Session CM3-1-ThA** **Accelerated Thin Film Development: High-throughput Synthesis, Automated Characterization, and Data Analysis I** **Moderators: Davi Marcelo Febba**, NREL, USA, **Sebastian Siol**, Empa, Switzerland, **Andriy Zakutayev**, NREL, USA	**Coatings for Biomedical and Healthcare Applications** **Room Palm 3-4 - Session MD2-ThA** **Medical Devices: Bio-Tribo-Corrosion, Diagnostics, 3D Printing** **Moderators:** **Hamdy Ibrahim**, University of Tennessee at Chattanooga, USA
1:20pm		
1:40pm	**INVITED: CM3-1-ThA-2** Collaborative Intelligence in Thin Film Research for Clean Energy Technologies*,* ***Shijing Sun****,* University of Washington, USA	
2:00pm		**MD2-ThA-3** Corrosion Risk Analysis of CoCrMo alloy as a Function of Microstructure: Biomedical Applications*,* ***Maansi Thapa****,* University of Illinois at Chicago, USA*; Y. Sun, B. Keaty, M. Mathew, C. Takoudis, M. Daly, D. Ozevin,* University of Illinois - Chicago, USA
2:20pm	**CM3-1-ThA-4** Discovery and Design of a New Functional Amorphous Nitride: Y-W-N*,* ***Oleksandr Pshyk****, S. Zhuk, J. Patidar, A. Wieczorek,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*; A. Sharma, J. Michler,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland*; C. Cancellieri,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*; V. Stevanovic,* Colorado School of Mines, USA*; S. Siol,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	**MD2-ThA-4** Comparative Study of Composite Coatings on Magnesium for Biomedical Devices*, V. Patil,* University of Tennessee at Chattanooga, USA*; B. Williams,* University of Arkansas, USA*; J. Rich,* University of Tennessee at Chattanooga, USA*; M. Elsaadany,* University of Arkansas, USA*;* ***Hamdy Ibrahim****,* University of Tennessee at Chattanooga, USA
2:40pm	**CM3-1-ThA-5** Deposition of Highly Crystalline AlScN Films Using Synchronized HiPIMS – From Combinatorial Screening to Piezoelectric Devices*,* ***Jyotish Patidar****,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*; S. Bette,* aixACCT Systems GmbH, Germany*; O. Pshyk, K. Thorwarth,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*; R. Kessels,* aixACCT Systems GmbH, Germany*; S. Siol,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	**INVITED: MD2-ThA-5** Laser-Induced Graphene Coatings on Polymers for Biomedical Devices*,* ***Mostafa Bedewy****,* University of Pittsburgh, USA
3:00pm	**CM3-1-ThA-6** Advancing Metallic Glasses for Biomedical Applications: A Comprehensive Study on CuAgZr Alloys Using Combinatorial Synthesis, High-Throughput Characterization, and Machine Learning*,* ***Krzysztof Wieczerzak****,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory of Mechanics of Materials and Nanostructures, Switzerland	
3:20pm		**MD2-ThA-7** Microfluidic Device for the Isolation, Detection, and Purification of Exosomes Based on Metallic Nanostructure Arrays*,* ***Alfreda Krisna Altama****, Y. Hsiao, C. Chen,* National Taiwan University of Science and Technology, Taiwan*; R. Haliq,* National Taiwan University of Science and Technology, Indonesia*; P. Yiu,* Ming Chi University of Technology, Taiwan*; P. Wu, J. Chu,* National Taiwan University of Science and Technology, Taiwan
3:40pm	**BREAK**	
4:00pm	**INVITED: CM3-1-ThA-9** Accelerating Materials Discovery by Combining Combinatorial Synthesis of Thin-Film Libraries, High-Throughput Characterization and Data Science*,* ***Alfred Ludwig****,* Ruhr University Bochum, Germany	
4:20pm		
4:40pm	**CM3-1-ThA-11** Autonomous Sputter Synthesis and Data Management for Nitride Thin Films*,* ***Davi Febba****, K. Talley, K. Johnson, S. Schaefer, S. Bauers, J. Mangum, R. Smaha, A. Zakutayev,* National Renewable Energy Laboratory, USA	

Thursday Afternoon, May 23, 2024

	Functional Thin Films and Surfaces **Room Town & Country B - Session MB3-2-ThA** **Nanomaterial-based Thin Films and Structures II** **Moderators:** **Ondrej Kylian**, Charles University, Prague, Czechia, **Vladimir Popok**, Aalborg University, Denmark	**Plasma and Vapor Deposition Processes** **Room Town & Country A - Session PP2-2-ThA** **HiPIMS, Pulsed Plasmas and Energetic Deposition II** **Moderators:** **Simizu Tetuhide**, Tokyo Metropolitan University, Japan, **Martin Rudolph**, Leibniz Inst. of Surface Eng. (IOM), Germany
1:20pm		
1:40pm		
2:00pm		**INVITED: PP2-2-ThA-3** Strategies for Low Temperature Reactive Deposition of Crystalline TiO_2 Thin Films, ***Tomas Kubart***, Uppsala University, Department of Electrical Engineering, Sweden
2:20pm		
2:40pm	**MB3-2-ThA-5** AFM-SEM Imaging for TEM Grid Mounted Nanomaterials, ***Kerim Arat***, *S. Spagna,* Quantum Design Inc., USA	**PP2-2-ThA-5** Plasma Dynamics of Individual HiPIMS Pulses Investigated by High-Frame-Rate Camera, ***Matjaz Panjan***, Jozef Stefan Institute, Slovenia
3:00pm	**MB3-2-ThA-6** Sputtering onto Liquids: Towards the Synthesis of Ultra-Fine Nanoparticles, *H. Lasfargues, L. Freymann, S. Shankar, M. Momma, T. Schneider,* ***Clio Azina***, RWTH Aachen University, Germany	**PP2-2-ThA-6** PowerFlex 500CG: A New HiPIMS Machine for Microtools Coating, ***Tommaso Ceccatelli Martellini***, Protec Surface Technologies, USA; *G. Coletta,* Protec Surface Technologies, Italy
3:20pm	**MB3-2-ThA-7** Superhard Hexagonal TiB_2/Hf Single Crystal Superlattices for Toughness Enhancement, ***Naureen Ghafoor***, Linköping University, Sweden; *N. Koutná, S. Lin,* TU Wien, Austria; *F. Angáy, M. Lorentzon, F. Eriksson, L. Hultman, J. Birch,* Linköping University, Sweden	**PP2-2-ThA-7** Toward Decoupling the Effects of Kinetic and Potential Ion Energies: Ion Flux Dependent Structural Properties of Thin (V,Al)N Films Deposited by Pulsed Filtered Cathodic Arc, ***Yeliz Unutulmazsoy***, *D. Kalanov, K. Oh,* Leibniz Institute of Surface Engineering (IOM), Germany; *S. Karimi Aghda,* RWTH Aachen University, Germany; *J. Gerlach, N. Braun,* Leibniz Institute of Surface Engineering (IOM), Germany; *F. Munnik,* Helmholtz-Zentrum Dresden - Rossendorf, Germany; *A. Lotnyk,* Leibniz Institute of Surface Engineering (IOM), Germany; *J. Schneider,* RWTH Aachen University, Germany; *A. Anders,* Leibniz Institute of Surface Engineering (IOM), Germany
3:40pm	**BREAK**	**BREAK**
4:00pm	**MB3-2-ThA-9** Study on Improving the Performance of Zinc Oxide Piezoelectric Pressure Sensor by Doping Vanadium, ***Heng-Chi Chu***, *S. Brahma, J. Huang,* National Cheng Kung University (NCKU), Taiwan	
4:20pm	**MB3-2-ThA-10** Glancing Deposited Wide Band Gap Zirconia Nanohelical Metamaterial Platforms:Unveiling Broad-Band UV-Active Chirality, ***Ufuk Kilic***, University of Nebraska - Lincoln, USA; *M. Hilfiker,* Onto Innovation Inc., USA; *S. Wimer,* University of Nebraska - Lincoln, USA; *C. Argyropoulos,* Pennsylvania State University, USA; *E. Schubert, M. Schubert,* University of Nebraska - Lincoln, USA	**PP2-2-ThA-10** Tough Plasmonic Titanium Nitride Films Deposited by High Power Impulse Magnetron Sputtering, *E. Muir,* Sheffield Hallam University, UK; *R. Bower, P. Petrov,* Imperial College of Science, Technology and Medicine, UK; ***Arutiun P. Ehiasarian***, Sheffield Hallam University, UK
4:40pm		

Thursday Afternoon, May 23, 2024

	Protective and High-temperature Coatings **Room Town & Country C - Session MA5-2-ThA** **Boron-containing Coatings II** **Moderators:** **Martin Dahlqvist**, Linköping University, Sweden, **Anna Hirle**, TU Wien, Austria	**Topical Symposium on Sustainable Surface Engineering** **Room Town & Country D - Session TS4-2-ThA** **Coatings and Surfaces for Thermoelectrical Energy Conversion and (Photo)electrocatalysis II** **Moderators: Clio Azina**, RWTH Aachen University, Germany, **Carlos Tavares**, University of Minho, Portugal
1:20pm	**MA5-2-ThA-1** Tuning Oxidation Resistance and Mechanical Properties of Diborides by Transition Metal Alloying Deposited by Combination of Magnetron Sputtering and Cathodic ARC Evaporation, ***Daniel Karpinski***, *P. Karvankova, C. Krieg,* PLATIT AG, Switzerland; *H. Joost, H. Frank,* Gesellschaft für Fertigungstechnik und Entwicklung Schmalkalden e.V., Germany; *A. Lümkemann,* PLATIT AG, Switzerland	**TS4-2-ThA-1** Two-Dimensional Ruddlesden–Popper Phase of B-site substituted $Ca_{n-1}Mn_{n-3}Nb3O_{3n+12-}$ (n=4,5,6) Perovskite Nanosheets Integration with Chlorella vulgaris for Electrochemical Water Splitting, ***Yao-Yuan Chang***, *C. Chang, Y. Su,* National Cheng Kung University (NCKU), Taiwan
1:40pm	**MA5-2-ThA-2** Coherent Coexistence of Crystalline Phases Enabled by Planar Defect Formation in Annealed $V_{1-x}W_xB_{2-\delta}$Films, ***Katarína Viskupová***, *B. Grančič,* Comenius University in Bratislava, Slovakia; *P. Švec Jr.,* Slovak Academy of Sciences, Slovakia; *T. Roch, M. Truchlý, V. Šroba, L. Satrapinskyy, M. Mikula, P. Kúš, T. Fiantok,* Comenius University in Bratislava, Slovakia	**INVITED: TS4-2-ThA-2** Multifunctional Materials for Emerging Technologies, ***Federico Rosei***, University of Trieste, Italy
2:00pm	**MA5-2-ThA-3** Powder Synthesis and Application of Atmospheric Plasma Spraying Zirconium Diboride Coating, ***Ching Lee***, National Taipei University of Technology, Taiwan; *Y. Chen,* Researcher of National Chung-Shan Institute of Science & Technology, Taiwan; *Y. Chung,* Researcher of National Chung-Shan Institute of Science & Technology, Taoyuan city, Taiwan; *Y. Yang,* National Taipei University of Technology, Taiwan	
2:20pm	**MA5-2-ThA-4** Annealing Twins in Sputtered Tantalum Boride Coatings, ***Branislav Grančič***, *K. Viskupová, T. Fiantok,* Comenius University in Bratislava, Slovakia; *P. Švec Jr.,* Slovak Academy of Sciences, Slovakia; *V. Šroba, V. Izai, T. Roch, M. Truchlý, M. Mikula,* Comenius University in Bratislava, Slovakia	**TS4-2-ThA-4** Enhanced Photoelectrochemical Water Splitting on $ZnCo_2O_4$ Electrodes in Chloroplasts Driven by Spin Injection, ***Chien-Yu Lin***, *Y. Su,* National Cheng Kung University (NCKU), Taiwan
2:40pm	**MA5-2-ThA-5** Constitution, Microstructure and Properties of Magnetron Sputtered CrB_2-TiB_2 and CrB_2-ZrB_2 Thin Films, *V. Ott,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; *H. Riedl, T. Wojcik,* Vienna University of Technology, Austria; *S. Ulrich,* Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany; *P. Mayrhofer,* Vienna University of Technology, Austria; ***Michael Stueber***, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany	**TS4-2-ThA-5** Piezoelectricity-Assisted Photocatalyst of BiOBr-Based Composites on a Flexible Substrate, ***Thi Nghi Nhan Nguyen***, *K. Chang,* National Cheng Kung University (NCKU), Taiwan
3:00pm	**MA5-2-ThA-6** Fracture Characteristics of Si Containing Ternary and Quaternary Transition Metal Diborides, ***Anna Hirle***, *A. Bahr, O. Beck, R. Hahn,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria; *S. Kolozsvári, P. Polcik,* Plansee Composite Materials GmbH, Germany; *O. Hunold,* Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein; *H. Riedl,* Institute of Materials Science and Technology, TU Wien, Austria	**TS4-2-ThA-6** Hydrothermal Synthesis of p-Ag_2O/n-$BaTiO_3$ Heterojunctions for Visible-light Photocatalytic Application, ***Yen-Lun Chiu***, *K. Chang, S. Han,* National Cheng Kung University (NCKU), Taiwan
3:20pm	**MA5-2-ThA-7** Yttrium Tetraboride Thin Films – Thermal Evolution of the Nanostructure and Mechanical Properties, ***Marek Vidiš***, *M. Truchlý, V. Izai, T. Fiantok, T. Roch, L. Satrapinskyy,* Comenius University Bratislava, Slovakia; *Š. Nagy,* Slovak Academy of Sciences, Slovakia; *M. Mikula,* Comenius University Bratislava, Slovakia	**TS4-2-ThA-7** Advances in Piezo-Photothermal Effect Enhanced Photocatalytic Activities of Heterostructure Composites, ***Van Ty Tran***, *D. Chen,* National Cheng Kung University (NCKU), Taiwan
3:40pm	**BREAK**	**BREAK**
4:00pm		**TS4-2-ThA-9** Photoelectrochemical Properties of Chlorophyll Coating on Cu_2O Photocatalyst by Mediating Charge Transfer Characteristic, ***Yu-Teng Wu***, *Y. Su,* National Cheng Kung University (NCKU), Taiwan
4:20pm		**TS4-2-ThA-10** Ligand Modified Bimetallic Metal-Organic Frameworks Electrocatalysts for Urea Oxidation Reaction, ***Hui Chuan Chen***, National Cheng Kung University (NCKU), Taiwan; *T. Nguyen,* National Cheng Kung University (NCKU), Taiwan, Viet Nam; *J. Ting,* National Cheng Kung University (NCKU), Taiwan

Advanced Characterization, Modelling and Data Science for Coatings and Thin Films
Room Golden State Ballroom - Session CM-ThP
Advanced Characterization, Modelling and Data Science for Coatings and Thin Films (Symposium CM) Poster Session
5:00 – 7:00pm

CM-ThP-1 Localized Surface Plasmon Resonance of Silver Nanoparticle Thin Films on Moissanite: Simulation, Fabrication, and Characterization, ***Tsung-Jen Wu***, *S. Song, W. Chen,* National Taiwan University, Taiwan*; W. Lin,* National Taiwan University of Science and Technology, Taiwan*; M. Phan,* National Taiwan University, Taiwan*; S. Tseng,* National Synchrotron Radiation Research Center, Taiwan

CM-ThP-2 Greybox-Models to Describe the Wear Behavior of Coated Cutting Tools*, K. Bobzin, C. Kalscheuer,* ***Nina Stachowski,*** Surface Engineering Institute (IOT) - RWTH Aachen University, Germany

CM-ThP-3 Flow Curve Determination of TiAlSiN Coatings Using Nanoindentation and Iterative FEM Simulations*, K. Bobzin,* ***Christian Kalscheuer****, X. Liu,* Surface Engineering Institute - RWTH Aachen University, Germany

CM-ThP-4 Material Property Distributions of Sputter-Deposited Thin Films on a Two-Dimensional Diagram with Incident Particle Energy and Substrate Temperature*,* ***Ichiro Ikeda****, K. Kuroshima,* Osaka Vacuum, Ltd., Japan*; Y. Gotoh,* Department of Electronic Science and Engineering, Kyoto University, Japan*; M. Iguchi, S. Sugimoto,* Osaka Vacuum, Ltd., Japan

CM-ThP-5 AI-Enabled Construction and Prediction of Atomic Models for Thin-Film Heterostructures via Materials Genome Approach*,* ***Po-Liang Liu****, J. Dai,* National Chung Hsing University, Taiwan

CM-ThP-8 In-Situ Characterization of the Crystallization Kinetics of Sputtered TiO_2 Thin Films*,* ***Daniel Félix Fernandes****,* Department of Electrical Engineering, Division of Solid-State Electronics, The Ångström Laboratory, Uppsala University, SE-751 03 Uppsala, Sweden*; J. Hérnandez,* Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience), Ciudad Universitaria de Cantoblanco, C/ Faraday 9, 28049 Madrid, Spain*; J. Martínez,* ALBA Synchrotron, Carrer de la Llum 2-26, 08290 Cerdanyola del Vallés, Barcelona, Spain*; T. Kubart,* Department of Electrical Engineering, Division of Solid-State Electronics, The Ångström Laboratory, Uppsala University, SE-751 03 Uppsala, Sweden, Spain

CM-ThP-9 On the Utility of SiMTra Analysis for Forecasting Atomistics of Confocal Deposition of Bimetal Alloys*,* ***Kyle Dorman****, R. Kothari, N. Bianco, M. Kalaswad, C. Sobzcak, R. Dingreville, D. Adams,* Sandia National Laboratories, USA

CM-ThP-10 Investigation of Lithium-Ion Battery Cathodes as a Function of Drying*,* ***Tatyana Kravchuk****, S. Peczonczyk, T. Misovski, M. Trought, B. Emley, A. Straccia,* Ford Motor Company, USA

CM-ThP-11 Actually Measuring Thin Film Elastic Constants by Combined X-ray Microdiffraction and Micromechanical Testing*,* ***Rebecca Janknecht****,* Institute of Materials Science and Technology, TU Wien, Austria*; R. Hahn,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria*; N. Koutná,* Institute of Materials Science and Technology, TU Wien, Austria*; J. Todt, M. Meindlhumer,* Department Materials Science, Montanuniversität Leoben, Austria*; A. Davydok,* Helmholtz-Zentrum Hereon, Institut für Werkstoffphysik, Germany*; P. Polcike, S. Kolozsvári,* Plansee Composite Materials GmbH, Germany*; J. Keckes,* Department Materials Science, Montanuniversität Leoben, Austria*; H. Riedl,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria*; P. Mayrhofer,* Institute of Materials Science and Technology, TU Wien, Austria

CM-ThP-12 The Influence of Cantilever Geometry on the Measured Fracture Toughness of Hard Coatings*,* ***Rainer Hahn****,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria*; S. Kolozsvari, P. Polcik,* Plansee Composite Materials GmbH, Germany*; C. Jerg,* Oerlikon Surface Solution AG, Liechtenstein*; H. Riedl,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria

CM-ThP-13 e-Poster Presentation: Finite-Temperature Shear Deformation and Phase Transformations of Transition Metal Diborides MB_2 (M=Ti, Ta, W, Re) via Machine-Learning-Potential Molecular Dynamics*,* ***Shuyao Lin****,* TU Wien, Institute of Materials Science and Technology, Austria*; D. Holec,* Montanuniversität Leoben, Austria*; D. Sangiovanni, L. Hultman,* Linköping Univ., IFM, Thin Film Physics Div., Sweden*; P. Mayrhofer, N. Koutná,* TU Wien, Institute of Materials Science and Technology, Austria

CM-ThP-14 Angle-Resolved XPS Characterisation of Thin Films Using Hard X-Rays*,* ***Tom Swift****, J. Counsell,* Kratos Analytical Limited, UK*; C. Tupei, Y. Li,* Nanyang Technological University, Singapore

Coatings for Biomedical and Healthcare Applications
Room Golden State Ballroom - Session MD-ThP
Coatings for Biomedical and Healthcare Applications (Symposium MD) Poster Session
5:00 – 7:00pm

MD-ThP-1 Investigation of Silver/Copper Diffusions in the Matrix of Amorphous Carbon Thin Films Produced by Magnetron Sputtering*,* ***Hailin Sun****,* Teer Coatings Ltd, UK

MD-ThP-5 Catastrophic Corrosion in Metal Guitar Strings with or Without DLC Films Using Artificial Sweat*, C. Andrés Velásquez Andrade,* Universidade do Vale do Paraiba, Brazil*; N. Pereira Alves Granado,* IGTPAN, Brazil*;* ***Lucia Vieira****,* Universidade do Vale do Paraíba - Univap, Brazil

Functional Thin Films and Surfaces
Room Golden State Ballroom - Session MB-ThP
Functional Thin Films and Surfaces (Symposium MB) Poster Session
5:00 – 7:00pm

MB-ThP-2 Porous Metal/Metal-Oxide Nanostructured Coatings Produced Using Gas Aggregation Sources of Nanoparticles as Recyclable SERS-Active Platforms*, A. Hanková, D. Novák, N. Khomiakova, E. Kočišová, M. Procházka,* ***Ondřej Kylián****,* Charles University, Prague, Czech Republic

MB-ThP-4 A Carbon Nanotubes-Based Microwave Resonator for Ammonia Gas Sensing*,* ***Hsuan-Ling Kao****, Y. Tsai,* Chang Gung University, Taiwan

MB-ThP-5 Investigating 2D-Materials Using Correlative Spectroscopy & Microscopy*, T. Nunney,* Thermo Fisher Scientific, UK*;* ***James Lallo****,* Thermo Fisher Scientific, USA*; P. Mack, R. Simpson, H. Tseng,* Thermo Fisher Scientific, UK

MB-ThP-6 $CsPbI_3$-Based Perovskite Thin Film Using All Vacuum Deposition Process*,* ***HYO SIK CHANG****, M. Jeong, j. Park,* Chungnam National University, Republic of Korea

MB-ThP-7 Synthesis and Characterization of AlCrTiZrSiW High Entropy Alloy Coating by High-Power Impulse Magnetron Sputtering*, C. Chang,* Ming Chi University of Technology, Taiwan*; J. Tang,* Lunghwa University of Science and Technology, Taiwan*;* ***Bo-Ruei Lu****, J. Tsao, M. Lin,* Ming Chi University of Technology, Taiwan*; F. Yang,* National Taiwan University of Science and Technology, Taiwan

MB-ThP-8 Increasing the Sensitivity of ZnO Piezoelectric Pressure Sensor by Vanadium Doping*,* ***Heng-Chi Chu****, S. Brahma, J. Huang,* National Cheng Kung University (NCKU), Taiwan

MB-ThP-9 Location-Dependent Super-amphiphobic Nano-Structured Films Deposited by Tubular Microwave Plasma*,* ***Ta-Chin Wei****, Y. Shen,* Chung Yuan Christian University, Taiwan

MB-ThP-10 Enhancing Oxygen Evolution Reaction Performance with Sputter-Deposited High Entropy Alloy Thin Film Electrocatalysts*,* ***Siang-Yun Li****, T. Nguyen, Y. Su, Y. Shen, C. Liu, J. Ruan, K. Chang, J. Ting,* National Cheng Kung University, Taiwan

MB-ThP-11 Transition Metal Nitride Anti-Reflective Coatings*,* ***Barbara Schmid****, B. Hajas, N. Koutná,* TU Wien, Institute of Materials Science and Technology, Austria*; J. Blaschke,* TU Wien, Austria*; P. Polcik,* Plansee SE, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria

MB-ThP-12 Enabling Robust Chemical State Analysis of Sn-Based Perovskites *via* Auger Parameter Analysis in XPS*, A. Wieczorek,* ***Sebastian Siol****,* Empa – Swiss Federal Laboratories for Materials Science and Technology, Switzerland

MB-ThP-13 Pvd Deposition of Tin Based Antimultipacting Thin Films for Applications in Particle Accelerators*,* ***Yanis Pisi,*** CNRS, Université Paris-Sud, France

MB-ThP-14 Influence of Oxygen Partial Pressure and Temperature on the Optical and Electrical Properties of NiO_x Thin Films obtained by r.f. Sputtering*, E. Osorio-Urquizo,* ***Francisco David Mateos-Anzaldo****, M. Curiel-Alvarez, R. Nedev, O. Pérez-Landeros, B. Valdez-Salas, N. Nedev,* Instituto de Ingeniería-Universidad Autónoma de Baja California, Mexico

MB-ThP-17 Effect of the R.F. Power and Thermal Annealing on the Properties of NiO_X Thin Films*,* ***Roumen Nedev****, F. Mateos-Anzaldo, M. Curiel-Alvarez, O. Pérez-Landeros, E. Osorio-Urquizo, B. Valdez-Salas, N. Nedev,* Instituto de Ingeniería-Universidad Autónoma de Baja California, Mexico

MB-ThP-20 Nano Indentation Pop-in Response on Basal Plane of 4H Hexagonal SiC Surface*,* ***Jacob C. Huang****,* National Sun Yat-sen University, Taiwan

MB-ThP-21 2D Chemical Mapping of Nanoscale Functional Material using Soft X-ray STXM, ***Namdong Kim,*** Pohang Accelerator Laboratory, Republic of Korea

MB-ThP-23 Exploring HiPIMS-Deposited TixN and TixAlyN Films for Oxygen Evolution Reaction (OER) Catalysis, ***Wan-Yu Wu,*** National United University, Taiwan*; J. Ting,* National Cheng Kung University (NCKU), Taiwan*; Y. Tsai,* National United University, Taiwan*; S. Li,* National Cheng Kung University (NCKU), Taiwan*; Y. Lin,* National Chung Hsing University, Taiwan

MB-ThP-24 Characterization of Protective AlCrON Thin Films for Application on Sensor Thin Films in Fused Layer Modeling Processes, *W. Tillmann,* ***Julia Urbanczyk,*** *M. Mainz, P. Bengfort, N. Lopes Dias,* TU Dortmund University, Germany

MB-ThP-25 Synthesis of Highly-Textured Wurtzite AlN Thin Films on Nitrogen-Terminated Metal Surfaces, ***Oleksandr Pshyk,*** *J. Patidar, S. Zhuk, S. Siol,* EMPA (Swiss Federal Laboratories for Materials Science and Technology), Switzerland

MB-ThP-26 Synthesis of Epitaxial a-Ga_2O_3 Thin Films on Sapphires by Pulsed Laser Deposition, ***Heungsoo Kim,*** *M. Mastro, A. Piqué,* Naval Research Laboratory, USA

MB-ThP-27 High Responsivity GaS Nanobelt Metal-Semiconductor-Metal Photodetector with Ni Contact, ***Chun-Yi Lin,*** *C. Wang,* National Taiwan University of Science and Technology, Taiwan

MB-ThP-29 The Effect of the Precursors and Chemical Vapor Deposition Process on the Synthesis of Two-Dimensional Molybdenum Nitride Nanomaterials, *C. Peng, B. Lin, H. Chen, L. Chen,* ***Sheng-Kuei Chiu,*** Feng Chia University, Taiwan

MB-ThP-30 Optical Properties of Nanoscale Multi-Layered Ti/taC Thin Films, *K. Oh,* ***JiWon Park,*** Korea Aerospace University, Republic of Korea*; J. Kim,* KIMS, Republic of Korea*; Y. Kim,* Yonsei University, Republic of Korea*; S. Lee,* Korea Aerospace University, Republic of Korea

MB-ThP-31 Vernier Ellipsometry Sensing with Ultralow Limit-of-Detection and Large Dynamic Range by Tuning of Zero-Reflection Points, *Y. Zhang,* ***M. Thawda Phoo, F. Yishu, X. Li, Y. Lam, Juan Antonio Zapien,*** City University of Hong Kong

MB-ThP-32 Optical and Protective Coatings Synthesized by Magnetron Sputtering, *E. Aubry,* FEMTO-ST (UMR CNRS6174)/UTBM, France*;* ***Pascal Briois,*** FEMTO-ST (UMR CNRS 6174)/UTBM, France

MB-ThP-33 Seeding Growth of High-Crystallinity MoS_2 Directly on Dielectric Substrate, ***Jen-Chien Lin,*** *C. Su,* National Central University, Taiwan

Plasma and Vapor Deposition Processes
Room Golden State Ballroom - Session PP-ThP
Plasma and Vapor Deposition Processes (Symposium PP)
Poster Session
5:00 – 7:00pm

PP-ThP-2 Modeling and Synthesis of Long Scale Coherence Time Vacancy Defects in Silicon Carbide via Pulsed Uv Laser and Photonic Curing for Industrial Scale Qubit Manufacturing, *N. Khatoon, S. Khalili,* ***Douglas Chrisey,*** Tulane University, USA

PP-ThP-5 Recyclable Thin Coatings Deposited by Means of Plasma-Assisted Techniques on Polymer Foils for Food Packaging Applications, ***Francisco A. Delfin,*** *C. Forsich, M. Schachinger, S. Augl,* University of Applied Sciences Upper Austria*; S. Brühl,* National University of Technology, Regional Faculty of Concepción del Uruguay (UTN – FRCU), Argentina*; C. Burgstaller, D. Heim,* University of Applied Sciences Upper Austria

PP-ThP-6 Design and Manufacturing of Low-Cost Atomic Layer Deposition System to obtain Semiconductor and Dielectric Thin Films, *J. Navarro-Rodríguez, F. Mateos-Anzaldo,* Instituto de Ingeniería-Universidad Autónoma de Baja California, Mexico*;* ***Jesús Román Martínez-Castelo,*** Facultad de Ingeniería, Mexicali-Universidad Autónoma de Baja California, Mexico*; A. Pérez-Sánchez, J. Ruiz-Ochoa,* Facultad de Ciencias de la Ingeniería y Tecnología, Valle de las Palmas-Universidad Autónoma de Baja California, Mexico*; A. Gaytán-Pérez,* Facultad de Ciencias de la Ingeniería y Tecnología-Valle de las Palmas-Universidad Autónoma de Baja California, Mexico*; H. Tiznado-Vázquez,* Centro de Nanociencias y Nanotecnología, Universidad Nacional Autónoma de México*; N. Nedev,* Instituto de Ingeniería-Universidad Autónoma de Baja California, Mexico

PP-ThP-7 Neon Addition to the Plasma for Enhanced Ionization in the Deposition of Cr films by HiPIMS-DOMS, ***João Carlos Oliveira,*** University of Coimbra, Portugal*; S. Adebayo,* University of Coimbra, Nigeria*; R. Serra,* University of Coimbra, Portugal

PP-ThP-9 Mechanical Properties Thermal Stabilities of Multilayered AlCrBN/AlTiSiN Hard Coatings, ***Chung-En Chang,*** *T. Tsai, H. Feng, M. Yang, Y. Chang,* National Formosa University, Taiwan

PP-ThP-10 CVD Equipment: Yesterday, Today and Tomorrow, ***Anne Zhang,*** *H. Strakov,* IHI Bernex AG, Switzerland

PP-ThP-11 Target Erosion Simulation in Full 3D for Optimization of Target Utilization in Magnetron Sputtering, ***Kryštof Mrózek,*** *P. Zikán, A. Obrusník,* PlasmaSolve s.r.o., Czechia

PP-ThP-12 Synthesis and Characterization TiAlZrTaNbN Coatings Obtained by High-power Impulse Magnetron Sputtering, *I. Gonzalez Avila, J. Gónzalez Lozano, O. Piamba Tulcan,* ***Jhon Jairo Olaya Florez,*** Departamento de Ingeniería Mecánica y Mecatrónica, Universidad Nacional de Colombia

PP-ThP-13 Residual Stress Analysis in 30 µm thick High-Speed PVD Coatings, *K. Bobzin,* surface Engineering Institute - RWTH Aachen University, Germany*; C. Kalscheuer,* ***Max Philip Moebius,*** *P. Hassanzadegan Aghdam,* Surface Engineering Institute - RWTH Aachen University, Germany

PP-ThP-14 Corrosion and Tribocorrosion Behavior of DlC/CNx/CrC/Cr Multilayers Deposited by Hipims in Synthetic Seawater, ***Martin Flores,*** *L. Flores, L. López,* Universidad de Guadalajara, Mexico*; A. González,* Unversidad Autónoma de Tamaulipas, Mexico

PP-ThP-15 Stable Hybrid HiPIMS/RF Sputtering Process on a Single Magnetron for arc-free Deposition of Compact Oxide Films, *A. Fromm,* Fraunhofer Institute for Mechanics of Materials IWM, Germany*; C. Adam,* Fraunhofer Institute for Mechanics of Materials IWM, MELEC GmbH, Kiel University, Germany*; F. Meyer,* Fraunhofer Institute for Mechanics of Materials IWM, Germany*;* ***Günter Mark,*** *J. Löffler,* MELEC GmbH, Germany*; M. Thomas, M. Wirth, F. Burmeister,* Fraunhofer Institute for Mechanics of Materials IWM, Germany

Protective and High-temperature Coatings
Room Golden State Ballroom - Session MA-ThP
Protective and High-temperature Coatings (Symposium MA)
Poster Session
5:00 – 7:00pm

MA-ThP-1 Predictive Modeling and Experimental Validation of Phase Formation in High-Entropy Alloys Thin Films, ***Salah-eddine Benrazzouq,*** *J. Ghanbaja, S. Migot, J. Pierson, V. Milichko,* Institut Jean Lamour - Université de Lorraine, France

MA-ThP-3 Optimizing Temperature Stability in Non-Reactively Sputtered (Hf,Ta,Ti,V,Zr)B-C-N Coatings by Design of the Non-Metal Sublattice, *A. Kretschmer,* ***Alexander Kirnbauer,*** TU Wien, Institute of Materials Science and Technology, Austria*; R. Frost, D. Primetzhofer,* Uppsala University, Sweden*; H. Rojacz, E. Badisch,* AC2T Research GmbH, Austria*; M. Hans, J. Schneider,* RWTH Aachen, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria

MA-ThP-4 Unravelling Diffusion Processes and Morphology Changes of Ternary and Quaternary Diborides During High-Temperature Oxidation, ***Sophie Richter,*** *A. Bahr, T. Glechner, T. Wojcik,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria*; S. Kolozsvári, P. Polcik,* Plansee Composite Materials GmbH, Germany*; O. Hunold, J. Ramm,* Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein*; D. Primetzhofer,* Department of Physics and Astronomy, Uppsala University, Sweden*; P. Felfer,* Department of Materials Science and Engineering, FAU Erlangen, Germany*; H. Riedl,* Institute of Materials Science and Technology, TU Wien, Austria

MA-ThP-5 Influence of Mo on DCMS and HiPIMS Deposited TiB_{2+z} Thin Films, ***Anna Hirle,*** *P. Dörflinger, R. Hahn, T. Wojcik,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria*; S. Kolozsvári, P. Polcik,* Plansee Composite Materials GmbH, Germany*; O. Hunold,* Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein*; H. Riedl,* Institute of Materials Science and Technology, TU Wien, Austria

MA-ThP-7 Impact of the B/Ti-ratio on Microstructure, Mechanical Properties, and Thermal Stability of DCMS and HiPIMS TiB_2 Thin Films, ***Ludwig Enzlberger,*** TU Wien, Institute of Materials Science and Technology, Austria*; M. Podsednik,* TU Wien, Austria*; S. Kolozsvari,* Plansee SE, Germany*; A. Limbeck,* TU Wien, Austria*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria

MA-ThP-8 Synthesis and Characterization of $AlMgB_{14}$ Thin Films, ***Erwin Peck,*** *A. Kirnbauer,* TU Wien, Institute of Materials Science and Technology, Austria*; S. Kolozsvari,* Plansee Composite Materials GmbH, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria

MA-ThP-9 Non-Reactive Magnetron Sputtering of Al-N Coatings, ***Balint Hajas,*** *A. Foki, T. Wojcik,* TU Wien, Institute of Materials Science and Technology, Austria*; D. Primetzhofer,* Uppsala University, Angstrom Laboratory, Sweden*; S. Kolozsvari,* Plansee SE, Germany*; P. Mayrhofer,* TU Wien, Institute of Materials Science and Technology, Austria

MA-ThP-10 Effects of the Modulation Period and Ratio on Mechanical Properties and Oxidation Resistance of WB_2/AlB_2 Superlattices, ***Chun Hu,*** Institute of Materials Science and Technology, TU Wien, Austria; *R. Hahn,* Christian Doppler Laboratory for Surface Engineering of High-performance Components, TU Wien, Austria; *T. Wojcik, R. Janknecht, N. Koutná, P. Mayrhofer,* Institute of Materials Science and Technology, TU Wien, Austria

MA-ThP-11 Effect of Preplaced Graphene and Graphite Films on Stellite 6 Metallurgical Coatings, *J. Sippel,* PG-MEC/ Universidade Federal do Paraná, Brazil; *W. de Oliveira,* Universidade Estadual de Ponta Grossa, Brazil; *J. Ribeiro da Cruz Alves,* Instituto Senai de Inovação - Sistema de manufatura e Processamento a laser, Brazil; ***Ana Sofia C. M. d'Oliveira,*** Universidade Federal do Paraná, Brazil

MA-ThP-12 Modified High Hardness Steel Coating for Biomass Combusion Boilers, ***Alina Agüero Bruna,*** Ctra. Ajalvir km 4, Spain; *M. Gutierrez, S. Rodríguez,* Instituto Nacional de Técnica Aeroespacial (INTA), Spain

MA-ThP-13 Effect of Austenite Stability on Pack Aluminizing of Stainless Steels, ***Bryant Hernandez,*** *C. Sullivan, L. Rodriguez, V. Ravi,* California State Polytechnic University, Pomona, USA

MA-ThP-14 Co-Deposition of Chromium and Silicon on Nickel, and Iron-Based Alloys, ***Catherine Sullivan,*** *B. Hernandez, L. Rodriguez, A. Coronado, V. Ravi,* California State Polytechnic University, Pomona, USA

MA-ThP-15 Corrosion Behavior of Galvanized Coils in Coastal Warehouse Environment, ***Baiyou Fang,*** Baosteel-NSC Automotive steel Sheets Co., Ltd, China

MA-ThP-16 Development of Zr-Ta Anticorrosion Coatings for Nuclear Applications Using PVD HiPIMS Technology, ***Cécile Marsal,*** Commissariat à l'Énergie Atomique et aux énergies alternatives Centre de Saclay, France

MA-ThP-17 Study on Physical Phenomena During Precise Cutting with Novel WCCo/cBN Composite Cutting Tools Equipped with Various Anti-Wear Coatings, ***Szymon Wojciechowski,*** *R. Talar, P. Zawadzki,* Poznan University of Technology, Poland

Surface Engineering - Applied Research and Industrial Applications
Room Golden State Ballroom - Session IA-ThP
Surface Engineering - Applied Research and Industrial Applications (Symposium IA) Poster Session
5:00 – 7:00pm

IA-ThP-1 Application and Practice of Surface Aluminization Treatment in Zinc Pot Equipment of Hot Dip Galvanizing Production Line, ***Lu Wang,*** BAOSTEEL, China

IA-ThP-5 e-Poster Presentation: Bismuth Thin Film Electrodes, *B. Frontana-Uribe, V. Ugalde-Saldivar, A. Hernandez-Gordillo, A. Vazquez,* Universidad Nacional Autónoma de Mexico; ***Sandra E. Rodil,*** Universidad Nacional Autonoma de Mexico

IA-ThP-6 Fabrication of TiO_2 Nanotube/SiNW Arrays Structure at Different Synthesis Parameters for Solar Cell Application, ***Ai-Huei Chiou,*** *Z. Lin,* National Formosa University, Taiwan

IA-ThP-7 Process-Awared Compact Modeling to Obtain Consistent Performance for Various Gate-All-Around Structures Due to Vertical Oxidation and Etching Process of 3D Charge Trapping Flash Memory, ***Sunghwan Cho,*** Samsung Electronics and Department of Semiconductor and Display Engineering, Sungkyunkwan University, Republic of Korea

IA-ThP-8 Disruption of Cell Wall Using Non-Thermal Plasma for Recovery of Intracellular Lipid to Be Used as Bio Lubricant, ***JOSÉ GERALDO PRADELLA,*** Universidade do Vale do Paraiba, Brazil

Topical Symposium on Sustainable Surface Engineering
Room Golden State Ballroom - Session TS1-ThP
Coatings for Batteries and Hydrogen Applications - TS1 Poster Session
5:00 – 7:00pm

TS1-ThP-2 Corrosion Stability and Electrical Conductivity of PVD Coated Electrolyzer Bipolar Plates, ***Martin Welters,*** KCS Europe GmbH, Germany; *N. Kruppe,* Schaeffler Technologies AG & Co. KG, Germany; *R. Cremer,* KCS Europe GmbH, Germany; *M. Öte, N. Bagcivan,* Schaeffler Technologies AG & Co. KG, Germany

TS1-ThP-3 PVD Core-Shell-Catalysts for Water Electrolysis, ***Jan-Ole Achenbach,*** KCS Europe GmbH, Germany; *M. Berger,* Institute of Technical and Macromolecular Chemistry, Germany; *M. Pilaski,* The Hydrogen and Fuel Cell Center - ZBT, Germany; *R. Cremer,* KCS Europe GmbH, Germany

TS1-ThP-4 Production of Cost-Effective Precious Metal Free Bipolar Plates for Future High Demand, ***Sijia Yang,*** KCS Europe GmbH, Germany; *J. Kapp, V. Lukassek,* The hydrogen and fuel cell center ZBT GmbH, Germany; *R. Cremer,* KCS Europe GmbH, Germany

TS1-ThP-5 Hydrogen Diffusion in Protective Coating Materials, *P. Rückeshäuser, A. Bahr, W. Zhao, R. Hahn, T. Wojcik,* Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria; *S. Kolozsvári, P. Polcik,* Plansee Composite Materials GmbH, D-86983 Lechbruck am See, Germany; *T. Stelzig, F. Rovere,* Oerlikon Balzers, Oerlikon Surface Solutions AG, 9496 Balzers, Liechtenstein; ***Helmut Riedl,*** Institute of Materials Science and Technology, TU Wien, Austria

Topical Symposium on Sustainable Surface Engineering
Room Golden State Ballroom - Session TS3-ThP
Solar Thermal Conversion - TS3 Poster Session
5:00 – 7:00pm

TS3-ThP-1 Tailoring the Structural, Optical and Electrical Properties in Perovskite Nickelates Through the Tilt Control of $Nd_{1-x}Sm_xNiO_3$ Thin Films, ***Zil Fernández-Gutiérrez,*** *T. Easwarakhanthan, S. Bruyère, D. Pilloud, S. Barrat, F. Capon,* Institut Jean Lamour - Université de Lorraine, France

TS3-ThP-2 Trigeneration Plants Based on Solar Selective Surfaces of Carbon, ***Jose L. Endrino Armenteros,*** *E. Valbuena Niño,* Universidad Loyola Andalucia, Spain; *F. Montero-Chacón,* Universidad Loyola Andalucía, Spain; *A. Sandoval, M. Zurita,* Universidad Loyola Andalucia, Spain

Topical Symposium on Sustainable Surface Engineering
Room Golden State Ballroom - Session TS4-ThP
Coatings and Surfaces for Thermoelectrical Energy Conversion and (Photo)electrocatalysis - TS4 Poster Session
5:00pm

TS4-ThP-1 Dopant-defect Engineering in SnS_2 Thin Films for Improved Gas-phase Photocatalytic CO_2 Reduction, ***Tadios Tesfaye Mamo,*** Department of Chemistry, National Taiwan University, Taiwan; *M. Qorbani,* Center for Condensed Matter Sciences, National Taiwan University, Taiwan; *A. Hailemariam,* Department of Applied Chemistry, National Yang-Ming Chiao Tung University, Taiwan; *A. Sabbah,* Center for Condensed Matter Sciences, National Taiwan University, Taiwan; *S. Kholimatussadiah,* Department of Physics, National Taiwan University, Taiwan; *C. Huang,* Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan; *L. Chen,* Center for Condensed Matter Sciences, National Taiwan University, Taiwan; *K. Chen,* Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan

TS4-ThP-2 e-Poster Prsentation: Copper-Based Coatings on Polylactic Acid for Electrocatalytic CO_2 Reduction, *M. Lima,* University of Minho, Portugal; *J. Castro,* ***Sandra Carvalho,*** University of Coimbra, Portugal

Tribology and Mechanics of Coatings and Surfaces
Room Golden State Ballroom - Session MC-ThP
Tribology and Mechanical Behavior of Coatings and Engineered Surfaces (Symposium MC) Poster Session
5:00 – 7:00pm

MC-ThP-1 Influence of Cobalt Content on the Adhesion of TiAlN and AlTiN/TiSiN Coatings on WC-Co Substrates, ***Bruna Michelle de Freitas,*** *R. Diego Torres, D. Stolle da Luz Weiss, P. Cesar Soares Junior, C. Augusto Henning Laurindo,* Pontificia Universidade Católica do Paraná, Brazil; *F. Lacerda Amorim,* Pontificia Universidade Catolica do Paraná, Brazil

MC-ThP-3 Application of *In Situ* Hydrogen Charging During Micromechanical Testing of Thin Films, ***Szilvia Kalacska,*** CNRS LGF, Mines St. Etienne, France

MC-ThP-4 Shrouding Gas Plasma Deposition Technique for Generating Wear Resistant ZnO/WS_2 Composite Films on PEEK, ***Dietmar Kopp,*** Leobner Straße 94a, Austria

MC-ThP-5 Wear and Corrosion Characterization and Parametric Optimization of Nb-doped Hydrogenated Diamond-like Carbon (a-C:H) Coatings, ***Ihsan Efeoglu,*** *Y. Totik, G. Gulten, B. Yaylali, M. Yesilyurt,* Atatürk University, Turkey; *R. Gunay, G. Kara, B. Altintas,* TUSAS ENGINE INDUSTRIES (TEI), Turkey

MC-ThP-6 Improving Tribological Properties of Al 7075 Alloy by Two-Step Soft Plasma Electrolytic Oxidation, ***Thiago de Lima Gontarski,*** *G. Caetano, J. dos Santos Junior, B. Leandro Pereira, R. Diego Torres, P. Soares,* Pontifical Catholic University of Paraná, Brazil

MC-ThP-8 Mechanical and Tribological Behavior of Nanolayered Sputtering MoN/MoWN Coatings, *W.-C. Hsu,* ***Fan-Bean Wu,*** Department of Materials Science and Engineering, National United University, Taiwan

MC-ThP-10 Influence of Carbon and Boron Additions on the Wear Resistance of Fe_3Al Based Laser Claddings, *H. Rojacz, K. Pichelbauer, M. Varga,* AC2T Research GmbH, Austria*;* ***Paul Mayrhofer,*** TU Wien, Institute of Materials Science and Technology, Austria

MC-ThP-11 Understanding Stress in Sputter-Deposited Ti-Zr-N Alloy Films, *E. Chason,* ***Tong Su,*** *Z. Rao,* School of Engineering, Brown University, USA

MC-ThP-12 Cyclic Laser Thermal Shock Resistance and Mechanical Properties of AlCrSiN/AlTiSiN Multilayer Hard Coatings, ***Ming-Xun Yang,*** National Formosa University, Taiwan*; C. Chang, B. Chang, Y. Chang,* National Formosa University, Taiwan

MC-ThP-13 Fracture Toughness of Borided AISI 1045 Steel with a Diffusion Annealing Process, *A. MENESES AMADOR,* Instituto Politécnico Nacional, Mexico*; A. OCAMPO RAMIREZ,* Universidad Veracruzana, Mexico*; A. Ballesteros-Arguello, J. Ceron Guerrero,* ***FELIPE NAVA LEANA,*** Instituto Politécnico Nacional, Mexico

MC-ThP-14 Influence of Cu Addition on Microstructure, Mechanical and Tribological Properties of Fe/NbC Coatings Produced on Tool Steel Using Laser Surface Alloying, ***Dariusz Bartkowski,*** Poznan University of Technology, Poland*; P. JURČI,* Slovak University of Technology in Bratislava, Slovakia*; A. BARTKOWSKA,* Poznan University of Technology, Poland*; P. GOGOLA,* Slovak University of Technology in Bratislava, Slovakia*; D. PRZESTACKI, A. PATALAS, M. ROGALEWICZ, P. POPIELARSKI, P. SIWAK,* Poznan University of Technology, Poland

MC-ThP-15 Microstructure, Mechanical and Tribological Behavior of Fe/Mo2c Coatings Produced by Laser Surface Alloying on Tool Steel, *D. BARTKOWSKI, A. BARTKOWSKA,* Poznan University of Technology, Poland*; P. JURČI, M. KUSY,* Slovak University of Technology in Bratislava, Slovakia*; D. PRZESTACKI,* ***Michał ROGALEWICZ****, P. SIWAK, P. POPIELARSKI,* Poznan University of Technology, Poland

MC-ThP-16 Mechanical Properties, Microstructure and Tribological Behavior of TaC Coatings Produced Using Laser Surface Alloying on Monel®400 Alloy, *A. BARTKOWSKA, D. BARTKOWSKI,* Poznan University of Technology, Poland*; P. JURČI,* Slovak University of Technology in Bratislava, Slovakia*; D. PRZESTACKI,* ***Paweł POPIELARSKI****, P. SIWAK, A. MIKLASZEWSKI, M. ROGALEWICZ,* Poznan University of Technology, Poland

MC-ThP-17 Influence of Differently Manufactured TiAl Targets on the Structural and Tribo-Mechanical Properties of Arc-Evaporated TiAlN Thin Films, ***Finn Ontrup,*** *N. Lopes Dias,* TU Dortmund University, Germany*; D. Stangier,* Oerlikon Balzers Coating Germany GmbH, Germany*; N. Denkmann,* TU Dortmund University, Germany*; A. Meijer, S. Jaquet,* TU Dortmund University, Germany*; J. Debus,* TU Dortmund University, Germany*; D. Biermann,* TU Dortmund University, Germany*; W. Tillmann,* TU Dortmund University, Germany

MC-ThP-18 Formation of TiB_2/TiB Layers on Ti_6Al_4V Alloy: Adhesion and Wear Resistance, *J. Escobar-Hernández, G. Rodríguez-Castro, J. López-Rodríguez, A. Meneses-Amador, A. Cruz-Ramírez,* ***T. N. Cabrera-Yacuta,*** Instituto Politécnico Nacional, Mexico

MC-ThP-19 Effect of MoS_2 Additive on Corrosion and Tribocorrosion Property of Plasma Electrolytic Oxidation Coating on Titanium, *N. Zheng,* National Taiwan University of Science and Technology, Taiwan*;* ***Chun-Wei Chang,*** Ming Chi University of Technology, Taiwan, Republic of China*; C. Wang,* National Taiwan University of Science and Technology, Taiwan*; C. Tseng,* Ming Chi University of Technology, Taiwan, Republic of China

MC-ThP-20 An Improved Statistical Nanoindentation Methodology, ***Esteban Broitman****, Y. Kadin, P. Andric,* SKF - Research and Technology Development, Netherlands

MC-ThP-21 Adhesive Strength and Diffusion Model for Borided Ti6Al4V Alloy, *A. MENESES AMADOR, G. RODRIGUEZ CASTRO,* Instituto Politécnico Nacional, Mexico*;* ***DIEGO ALONSO BAUTISTA ALVAREZ,*** INSTITUTO POLITECNICO NACIONAL, Mexico*; I. CAMPOS SILVA,* Instituto Politécnico Nacional, Mexico

MC-ThP-22 Influence of Ti Content on the Tribological Behavior of Ti:MoS_2 Coatings Under Reciprocating Electrified Contact Conditions, ***N.K. Fukumasu****, M. Danelon, A. Tschiptschin, I. Machado, R. Souza,* University of São Paulo, Brazil

Friday Morning, May 24, 2024

	Advanced Characterization, Modelling and Data Science for Coatings and Thin Films **Room Palm 1-2 - Session CM3-2-FrM** **Accelerated Thin Film Development: High-throughput Synthesis, Automated Characterization, and Data Analysis II** **Moderators:** **Davi Marcelo Febba**, NREL, USA, **Oleksandr Pshyk,** Empa, Switzerland, **Sebastian Siol**, Empa, Switzerland	**Coatings for Biomedical and Healthcare Applications** **Room Palm 3-4 - Session MD3-FrM** **Bioactive Surfaces** **Moderators:** **Valentim A.R. Barão**, University of Campinas (UNICAMP), Brazil, **Sandra E. Rodil**, Universidad Nacional Autónoma de México
8:00am		
8:20am	**CM3-2-FrM-2** Combinatorial Synthesis and High-Throughput Characterization of Cu-Ag and Ni-Pt Thin Films Fabricated by Confocal Magnetron Sputter Deposition, ***Kyle Dorman***, *R. Kothari, N. Bianco, M. Kalaswad, C. Sobzcak, S. Desai, J. Custer, S. Addamane, M. Jain, F. DelRio, B. Boyce, R. Dingreville, D. Adams,* Sandia National Laboratories, USA	**INVITED: MD3-FrM-2** Electrochemical Aspects of Interaction between Surface Engineered Metal Implants and Biological Environment, ***Aleksey Yerokhin,*** University of Manchester, UK
8:40am	**CM3-2-FrM-3** Combinatorial Screening of Al-Si-N-O Protective Coatings with Tunable Refractive Index, ***Stefanie Frick***, *A. Wieczorek, K. Thorwarth, O. Pshyk, J. Patidar, S. Siol,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
9:00am	**INVITED: CM3-2-FrM-4** From Automated to Autonomous Thin Film Deposition Experiments, ***Andriy Zakutayev***, NREL, USA	**MD3-FrM-4** New Approach for Controlling Peri-Implant Infections Integrates Multifunctional Photocatalytic Coating and Photodynamic Therapy – an in Vitro and in Vivo Study, ***Valentim A. R. Barão***, *B. Nagay, R. Costa, C. Dini, A. Santos,* University of Campinas (UNICAMP), Brazil*; L. Cintra,* Sao Paulo State University (UNESP), Brazil*; N. da Cruz, L. Faverani,* São Paulo State University (UNESP), Brazil*; J. van den Beucken,* Radboudumc, Netherlands
9:20am		
9:40am		
10:00am		
10:20am		
10:40am		

Friday Morning, May 24, 2024

	Room Town & Country B	
8:00am	**INVITED: PP5-FrM-1** The Role of Plasma in Plasma Enhanced Atomic Layer Deposition, ***Scott Walton****, D. Boris, M. Johnson, V. Wheeler,* US Naval Research Laboratory, USA*; M. Sales, P. Litwin,* NRC, USA*; J. Woodward,* US Naval Research Laboratory, USA*; S. Rosenberg,* Lockheed Martin Space Advanced Technology Center, USA*; J. Hite, D. Pennachio, M. Mastro,* US Naval Research Laboratory, USA	**Plasma and Vapor Deposition Processes** **Session PP5-FrM** **Plasma Surface Interactions and Diagnostics** **Moderator:** **Arutiun P. Ehiasarian**, Sheffield Hallam University, UK
8:20am		
8:40am	**PP5-FrM-3** Navigating the Complexity of Microwave Plasma-Assisted ALD During AlN and TiN Fabrication, ***Caroline Hain****, K. Maćkosz,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland*; C. Guerra,* Swiss Cluster AG, Switzerland*; T. Nelis,* BFH, Bern University of Applied Sciences, Switzerland*; J. Michler, I. Utke,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
9:00am	**PP5-FrM-4** Advanced Ion Energy Measurement Tools to Understand the Effect of Ion Energy on Film Properties, ***Thomas Gilmore****,* Impedans, Ireland	
9:20am	**INVITED: PP5-FrM-5** Plasma Polymerization Processes, ***Dirk Hegemann****,* Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland	
9:40am		
10:00am	**BREAK**	
10:20am	**INVITED: PP7-FrM-8** Insights on Plasma Processing from Multi-Scale Physical and Data-Driven Modeling, *L. Vialetto,* Stanford University, USA*; T. Gergs,* Kiel University, Germany*; I. Chaerony Siffa,* Leibniz Institute for Plasma Science and Technology (INP), Germany*; C. Stüwe,* Kiel University, Germany*; T. Mussenbrock,* Ruhr University Bochum, Germany*; M. Becker,* Leibniz Institute for Plasma Science and Technology (INP), Germany*;* ***Jan Trieschmann****,* Kiel University, Germany	**Plasma and Vapor Deposition Processes** **Session PP7-FrM** **Modeling and Data-Driven Methods for Process Design, Analysis and Control** **Moderator:** **Petr Zikán**, PlasmaSolve s.r.o., Czechia
10:40am		
11:00am	**PP7-FrM-10** Utilizing Digital Twin Technology for Automated Coating Recipe Development, ***Petr Zikan****, A. Obrusnik,* PlasmaSolve s.r.o., Czechia	
11:20am	**PP7-FrM-11** Open-Source Plasma Modelling for Thin-Film Technologies with the Simulation Tool PICLas, ***Paul Nizenkov****, A. Mirza, S. Copplestone, J. Beyer,* boltzplatz - numerical plasma dynamics GmbH, Germany	

Friday Morning, May 24, 2024

	Topical Symposium on Sustainable Surface Engineering **Room Town & Country C - Session TS3-FrM** **Solar Thermal Conversion** **Moderators:** **Telmo Echániz**, University of the Basque Country, Spain, **Marcus Hans**, RWTH Aachen University, Germany	**Surface Engineering - Applied Research and Industrial Applications** **Room Town & Country D - Session IA2-3-FrM** **Surface Modification of Components in Automotive, Aerospace and Manufacturing Applications III** **Moderator:** **Ta-Chin Wei,** Yuan Christian University, Taiwan
8:00am	**INVITED: TS3-FrM-1** Application of Surface Engineering Solutions in Concentrating Solar Power Key Components, ***Ramón Escobar-Galindo,*** University of Seville, Spain*; J. Sanchez-Lopez, T. Rojas,* CSIC-University Sevilla, Spain*; H. Barshilia,* CSIR-National Aerospace Laboratories, India*; M. Krause,* Helmholtz Zentrum Dresden-Rossendorf, Germany	**IA2-3-FrM-1** Study of Piezo-photocatalytic Performance of p-CoS-n-$NaNbO_3$ Junction Composite, ***Man-Yu Hsiao,*** *T. Nguyen, K.-S. Chang,* National Cheng Kung University (NCKU), Taiwan
8:20am		**IA2-3-FrM-2** Enhanced Metal Surface Finishing with EPPo: Innovative Strategies for Ti 6Al-4V Alloys, ***Nicolas Laugel****, A. Matthews, A. Yerokhin,* The University of Manchester, UK
8:40am	**INVITED: TS3-FrM-3** Development and Thermal Characterization of High-Temperature Coating Materials for Solar Thermal Energy Conversion, ***Renkun Chen,*** University of California, San Diego, USA	**IA2-3-FrM-3** Optimization of Plasma Electrolytic Polishing for 304 Stainless Steel Using Taguchi Method, ***Chun-Wei Chang****, N. Zheng, C. Tseng,* Ming Chi University of Technology, Taiwan, Republic of China
9:00am		**IA2-3-FrM-4** Structure Design and Degradation Mechanism of Amorphous Carbon Coatings on Metallic Bipolar Plates, ***Hao Li****, P. Guo, A. Wang,* Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China
9:20am	**INVITED: TS3-FrM-5** Smart Coatings for Concentrated Solar Thermal: from Optical Design and Plasma Synthesis to Performance and Durability Assessment, ***Audrey Soum-Glaude****, A. Diop,* PROMES-CNRS, France*; A. Mahammou, D. Ngoue,* PROMES-CNRS, Perpignan University, France*; A. Grosjean,* EPF Montpellier, France*; B. Plujat, S. Quoizola,* PROMES-CNRS, Perpignan University, France*; A. Bousquet, E. Tomasella,* University Clermont Auvergne, France*; L. Thomas,* PROMES-CNRS, Perpignan University, France	**IA2-3-FrM-5** Automated Laser Cleaning/Ablation as a Novel Tool in Aerospace Manufacturing, ***Dmitri Novikov****,* IPG Photonics, USA
9:40am		
10:00am	**BREAK**	
10:20am	**TS3-FrM-8** Controlling Infrared Emissivity of Thermochromic VO_2 Films via V_2N Precursor Thickness for Enhanced Solar Thermal Regulation*, A. Garcia-Wong, D. Pilloud, S. Bruyère, S. Migot, S. Hupont, F. Capon,* ***Jean-François Pierson****,* Institut Jean Lamour - Université de Lorraine, France	
10:40am	**TS3-FrM-9** Emissivity and Reflectivity Measurements of Coatings for Solar Applications, ***Telmo Echaniz****, I. Gonzalez de Arrieta, M. Sainz-Menchon, J. Gabirondo-Lopez, G. Lopez,* University of the Basque Country, Spain	

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