

Monday May 8, 2023 | Daily Schedule

Welcome to the SVC's 2023 TechCon!

2023 is a very “dense” conference with something to do literally every second of the day. We are happy to present a handy reference guide that will help you plan your day. Please note that this schedule is accurate as of March 15, 2023, when this periodical went to press. Changes to the schedule will be posted in real time to our TechCon conference app (<https://svc.swoogo.com/techcon2023/home>). Abstracts for each presentation are also located there. We recommend that you bookmark the site on your mobile phone so that all TechCon 2023 information is at your fingertips. Be safe, enjoy your stay with us, and remember: *You are the SVC!*

Technical Program

7:00 A.M. | TECHNOLOGY FORUM BREAKFASTS

TFB: Manufacturing in Space Nick Franzer (Kurt J. Lesker Company)/Colin Quinn (Dynavac) <i>Magnolia 3 meeting room</i>	TFB: Optimizing Plasma Power Delivery to Control Thin-Film Properties Denis Shaw (Advanced Energy Industries, Inc.) Ivan Fernandez (Nano4Energy S.L.N.E.) <i>Azalea 1 meeting room</i>
TFB: Protective, Reflective, and Decorative Coatings Joshua Soper (Vergason Technology, Inc.) Robert Stabinsky (Valence Technologies, LLC) <i>Magnolia 2 meeting room</i>	TFB: Post-Processing of Vacuum-Coated Roll-to-Roll Products Andy Jack (Emerson and Renwick Ltd.)/ Chris Stoessel (Eastman Chemical Company) <i>Camellia 3 meeting room</i>
TFB: Fabrication and Performance of Optical Coatings Jay Anzellotti (IDEX-Life Science Optics)/Vivek Gupta (Meta) <i>Azalea 3 meeting room</i>	TFB: Surface Engineering for the Hydrogen Economy Ralf Bandorf (Fraunhofer IST) Philipp Immich (IHI Hauzer Techno Coating B.V.) Herbert Gabriel (PVT Plasma und Vakuum Technik GmbH) <i>Camellia 4 meeting room</i>
TFB: Transparent Conductive Materials (TCM) Clark Bright (Bright Thin Film Solutions, LLC)/Patrick Morse (Intevac) <i>Magnolia 1 meeting room</i>	TFB: Laser-based Metrology of Thermal Properties John Gaskins (Laser Thermal Analysis, Inc.) Patrick E. Hopkins (University of Virginia) <i>Maryland 4 meeting room</i>
TFB: Atmospheric Plasma Technology Hana Baránková (Uppsala University) Ladislav Bardos (Uppsala University) <i>Camellia 2 meeting room</i>	
TFB: Glass Cleaning Steve Steele (Billco Manufacturing, Inc.) Steve Rogers (Billco Manufacturing, Inc.) <i>Azalea 2 meeting room</i>	

8:30 A.M.	10 Minute Passing Break
8:40 A.M.	SVC Annual Business Meeting (30 minutes) <i>Maryland C Ballroom</i>
9:10 A.M.	10 Minute Passing Break
9:20 A.M.	10 Minute Conference Introduction (Program Director)
9:30 A.M.	Keynote Advanced Coating Technologies to Improve Life and Safety of Lithium Ion Battery for Automotive Applications (Dr. Khalil Amine Argonne National Laboratory) <i>Maryland C Ballroom</i>
10:10 A.M.	20 Minute Refreshment Break

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Maryland C Ballroom		Maryland A Ballroom	Maryland B Ballroom
10:30 A.M.	Tribo (TT1) Solution-Based Diamond-Like Carbon Coatings (Josh Mangum Southwest Research Institute)	Optical (OT1) Designing Very Narrow Band Absorbing and Blocking (Notch) Filters with No Transmittance (Ronald Willey Willey Optical, Consultants)	WebTech (WTinv1) Manufacturin of Flexible Lightweight Solar Modules – Challenges and Opportunities (Ayodhya N. Tiwari EMPA - Swiss Federal Laboratories for Material Testing and Research)
10:50 A.M.	Tribo (TT2) The Effects of Non-Metal Doping on the Deposition of Hard, Transparent, Wear Resistant, DLC Coatings Using Magnetron Sputtering (Patrick McCarthy Gencoa)	Optical (OT2) Antireflection Coatings for Quantum Optical Experiments (Ulrike Schulz Fraunhofer IOF)	
11:10 A.M.	Tribo (TT3) Evaluation of High Temperature Tribological Properties of Magnetron Sputtered Nanolayered TiAlN/TiSiN Coating on Cemented Carbide (Vladimir Terek University of Novi Sad, Faculty of Technical Sciences)	Optical (OTinv1) Advanced Al Mirrors Protected with LiF Overcoat to Realize Stable Mirror Coatings for Astronomical Telescopes (Manuel Quijada NASA-GSFC)	
11:30 A.M.	Tribo (TT4) Studies of Porosity in Ceramic Titanium Nitride Oxide PVD Coatings (Zhonghuai Wang Tanury Industries)		WebTech (WT2) Magnetically Enhanced Plasma Sources for Surface Preparation, Activation and Etching of Flexible Substrates (Dermot Monaghan Gencoa Ltd)
11:50 A.M.	Tribo (TTinv1) Low Friction and Wear Resistant Coating Solutions for the Automotive Industry Present Situation and Future Trends (André Hieke IHI Ionbond Netherlands BV)	Optical (OT3) The Design and Deposition of TCO Thin Films for Near IR Transmittance (Clark I. Bright Bright Thin Film Solutions LLC)	Energy (EN1) Semiconductor Thin Films under Vacuum for Solar Energy Applications (Nazar Shah COMSATS UNIVERSITY ISLAMABAD PAKISTAN)
12:10 P.M.		Optical (OT4) UV Coating Improvements Using Dual IBS (David Howe Veeco Instruments)	Energy (EN2) Features of NiOx Film Sputtered by Low Damage Used Four Targets Facing Sputtering Cathode on Perovskite Photovoltaic (Tetsuya Saruwatari KEIHIN RAMTECH)
12:30 P.M.	Tribo (TT5) Vacuum Deposition of an Aluminum Alloy with 1 µm/s on Different Types of Semi-Finished Products (Jens-Peter HeiB Fraunhofer FEP)	Optical (OT5) Techniques on Stress Compensation of Hafnia/Silica Stacked Filter Coating (Eyül DEMIR ASELSAN)	Energy (ENinv1) Vacuum Deposition of Novel Metal Halide Perovskite Semiconductors – The Role of Vacuum Coating for the Next Generation of Solar Cells (Juliane Borchert Fraunhofer ISE)
12:50 P.M.	Tribo (TT6) Influence of Gadolinium on the Mechanical and Corrosion Properties of PVD-TiMgN and PVD-TiMgGdN Sputtered by Multicomponent Powder Metallurgical Targets (Thomas Ulrich Technical University of Darmstadt)	Optical (OT6) Real Structure and Thermal Stability of Ag and Ag@TiOx Core-Shell Nanoparticle Films Prepared by Gas Aggregation Cluster Source (Tereza Kosutova Charles University)	
1:10 P.M.	10 Minute Passing Break		
1:20 P.M.	Don Mattox Tutorial Maryland C Ballroom Changing the Narrative: Fostering a Culture of Belonging in the Physical Sciences (Dr. Jovanni Spinner American Institute of Physics)		
2:00 P.M.	10 Minute Passing Break		
2:10 P.M.	Tribo (TT7) Coatings in Forming and Molding Applications (George Savva IHI IonBond)	Optical (OTinv2) Spatial Control of Thin-Film Thickness Through Fundamenta System Design and Analysis (James Oliver Vacuum Innovations)	Energy (EN3) Optimization of Indium Zinc Oxide TCOs with Serial Reactive Co-Sputtering for Perovskite-Silicon Tandem Solar Cell Applications (Volker Sittinger Fraunhofer IST)
2:30 P.M.	Tribo (TT8) Structure, Morphology, and Mechanical Properties of CrxNy Coatings Deposited by HiPIMS (Nassima Jaghar Mohammed VI Polytechnic University)		Energy (EN4) Ion Beam-Assisted Deposition of High Transparency and High Conductivity Tantalum Doped Tin Oxide at Room Temperature (Thanh Tran Michigan State University)
2:50 P.M.	Tribo (TTinv2) High-Performance PVD Targets: A Manufacturer's Look into the Past, a Pause at the Present, and a Peek into the Future (Paul Rudnick Plansee USA LLC)	Optical (OT7) Uniformity Control of Optical Precision Coatings on 2D and 3D Components (Chris Britze Fraunhofer IST)	Energy (EN5) Thermochromic Performance of Indium Tin Oxide (ITO) and Vanadium Dioxide (VO2) Thin Film Double Layer (Pandurang Ashrit - Université de Moncton)
3:10 P.M.		Optical (OT8) Optical Monitoring Systems for Deposition of Optical Coatings (Binyamin Rubin Veeco)	Energy (EN6) New Method for Production of Electrically Conductive DLC Coatings (Simon Danneringer University of Applied Sciences, Upper Austria, Campus Wels)
3:30 P.M.	Tribo (TT9) Influence of Gadolinium on the Mechanical and Corrosion Properties of PVD-TiMgN and PVD-TiMgGdN Sputtered by Multicomponent Powder Metallurgical Targets (Phillip Reinders Technische Universität Braunschweig)	Optical (OT9) General Approach to Deriving Index of Refraction Values of Optical Coating Layers from Transmittance Spectra (Ronald Willey Willey Optical, Consultants)	Energy (EN7) Preparation and Application of Reactive Sputtered Thin-Film GDC Buffer Layers for IT-SOFC (Fuyuan Liang - Harbin Institute of Technology (Shenzhen))
3:50 P.M.	Tribo (TT10) Particle Density Improvements for High Productive Industrial ta-C-Coatings (Barbara Gebhardt VTD Vakuumtechnik Dresden GmbH)	Optical (OT10) Adding Another Dimension to Dealing with Very Thin Optical Films (Ronald Willey Willey Optical, Consultants)	Energy (EN8) High Volume Magnetron Sputtering: Time and Cost Effective Technology to Manufacture Critical Components in PEMWE (Cristina Zubizarreta TEKNIKER)
4:10 P.M.	20 Minute Refreshment Break		
4:30 P.M.	Tribo (TT11) Amorphous Chromium Carbide (a-CrC) Deposited by Low Temperature Chemical Vapor Deposition for Corrosion and Wear Applications (Solomon Berman IBC Materials & Technologies, LLC)	E-Beam (EB1) Large-Area High-Rate Electron Beam Evaporation for Demanding Future Applications (Carsten Deus VON ARDENNE GmbH)	Energy (EN9) Thin Film Coating Solutions for Hydrogen Economy (Ralf Bendorf Fraunhofer IST)
4:50 P.M.		E-Beam (EB2) Investigation of Heat Load to Substrates during Electron Beam Physical Vapor Deposition Processes and Comparison to Magnetron Sputtering (Stefan Saager Fraunhofer FEP)	Energy (EN10) Introduction for Ramtech Low Damage Sputtering Cathode Technologies (SHOJI MATSUMOTO Keihin Ramtech Co.,Ltd.)
5:10 P.M.		E-Beam (EBinv1) More than 60 Years VON ARDENNE Electron Beam Technology – From the Roots to Today's Components and Applications. In Memoriam Dr. Robert Bakish (1926 - 2019) (Matthias Neumann VON ARDENNE GmbH)	Energy (ENInv2) Efficient Battery Anodes by High Power Impulse Magnetron Sputtering (M. Jones Alami Mohammed VI Polytechnic University)
5:50 P.M.		E-Beam (EB3) Particle-Based Simulation and Experimental Validation of the Beam Properties in Electron Beam Physical Vapor Deposition (Paul Nizenkov Boltzplatz Numerical Plasma Dynamics GmbH)	
6:00 - 9:0 P.M. – Networking Event SVC Foundation Casino Night Fundraiser POSE Rooftop Lounge			

Tuesday May 9, 2023 | Daily Schedule

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5:30 A.M. SVC Foundation | **5k Fun Run/Walk Packet Pick up**

6:00 A.M. SVC Foundation | **5k Fun Run/Walk Start Time**

Technical Program

7:00 A.M. | TECHNOLOGY FORUM BREAKFASTS

TFB: Industrial Challenges: Uptime, Yield, & Consistency
Nick Franzer (Kurt J. Lesker Company)/Colin Quinn (Dynavac)
Magnolia 1 meeting room

TFB: Leak Detection - Issues and Practices
Mike Ridenour (Leybold USA)/Jean-Pierre Deluca (BDL Redwood)
Maryland 4 meeting room

TFB: Coatings and Surface Engineering for Medical Applications
Jeff Hettinger (Rowan University)
Greg Taylor (Lawrence Livermore National Laboratory)
Camellia 4 meeting room

TFB: Magnetron Sputtering
Wilmert De Bosscher (Soleras Advanced Coatings)
Patrick Morse (Intevac)
Azalea 3 meeting room

TFB: Energy Conversion and Storage
Ric Shimshock (MLD Technologies, LLC)
Volker Sittinger (Fraunhofer-IST)
Magnolia 2 meeting room

TFB: High-Powered Electron Beam Technology
Mark Pellman (Pellman Technology, Inc.)
Stefan Saager (Fraunhofer-FEP)
Magnolia 3 meeting room

TFB: Process Monitoring & Control
Martynas Audronis (Nova Fabrica, Ltd.)
Edmund Schüngel (Evatech AG)
Azalea 2 meeting room

TFB: High Power Impulse Magnetron Sputtering (HIPIMS)
Arutiun P. Ehasarian (Sheffield Hallam University)
Ralf Bandorf (Fraunhofer-IST)
Azalea 1 meeting room

TFB: Tribological and Diamond-Like Coatings
Jolanta Klemberg-Sapieha (Polytechnique Montréal)
George Savva (HI Ionbond, Inc.)
Camellia 3 meeting room

EXHIBIT HALL OPEN 1:00 P.M. - 8:30 P.M.

B2B Coffee (Exhibitors Only) 12:00 P.M. - 1:00 P.M.

8:30 A.M. 10 Minute Passing Break

8:40 A.M. **Keynote | Robust Resistive and Mem-devices for Neuromorphic Circuits**
(Thirumalai Venkatesan | University of Oklahoma)
Maryland C Ballroom

9:20 A.M. 10 Minute Passing Break

Tuesday May 9, 2023 | Daily Schedule

	Maryland C Ballroom	Maryland A Ballroom	Maryland B Ballroom	Maryland D Ballroom
9:30 A.M.	HIPIMS (HP1) Bipolar HiPIMS: A New Route to Deposit Advanced Coatings on 3D Complex Geometries (Ivan Fernandez NANO4ENERGY SL)	Digital Xformation (DT1) Automated Analysis of Plasmas Using Machine Learning (Joe Brindley Gencoa Limited)	Automotive Coatings Panel Discussion (Colloquium)	Innovator Showcase (EIS1) Fabrication and Testing of Large Vacuum Containment Vessels (Lawrence Bower Joseph Oat Corporation)
9:50 A.M.	HIPIMS (HP2) Spatial, Temporal and Energy Resolved Diagnostics of a HiPIMS Discharge with Cathode Reversal (David Ruzic University of Illinois Urbana Champaign)	Digital Xformation (DT2) Digitalization of In-Situ Process Data – Selection and Preprocessing of Sensor Data (Thomas Schütte PLASUS GmbH)		Innovator Showcase (EIS2) Faster Cycle Times Boost Throughput and Profitability in Load Lock Processes (Stefan Laehn Flowserve SIHI GmbH)
10:10 A.M.	HIPIMS (HP3) HiPIMS Deposited Silver for Periprosthetic Join Antimicrobial Purpose (Ju-Liang He Feng Chia University)	Digital Xformation (DT3) Transferring, Troubleshooting and Predicting PVD Processes Using Global Process Modelling – A Data-Efficient Alternative to Machine Learning (Adam Obrusnik PlasmaSolve)		Innovator Showcase (EIS3) Ultra Low-Drift Contact-less Sheet Resistance Measurement (Martynas Audronis Nova Fabrica Ltd.)
10:30 A.M.	20 Minute Refreshment Break			
10:50 A.M.	HIPIMS Panel Discussion (Colloquium)	Digital Xformation (DT4) Optimized EC Thin Film Deposition through Digitalization of Reactive Magnetron Sputtering Process (Oihane Hernández-Rodríguez Tekniker)	Superconducting Thin Films (SCInv1) The Growing Fusion Energy Industry (Andrew Holland Fusion Industry Association)	Innovator Showcase (EIS4) Full Target Encapsulation Shutter Assembly for Magnetron Sputtering (Jason Hrebik Kurt J. Lesker)
11:10 A.M.		Digital Xformation (DT5) Digital Solutions for Efficient Large Area Coating (Harald Hagenström VON ARDENNE)		Innovator Showcase (EIS5) Multi-layer Compensation System for Optical Coatings (Sheldon Wayman Inficon)
11:30 A.M.		Digital Xformation (DTInv1) Real Time Data Acquisition and Analysis – the Key to Cost-effective Production of Complex Large Area Coating Products (Marcus Frank Bühler Alzenau GmbH)		Innovator Showcase (EIS6) Harsh Duty Vacuum Pump Applications (David Sempek Highvac Corporation)
11:50 A.M.				Innovator Showcase (EIS7) Vergason Technology Introduces the CatArc 3036 (Bruce Deiseroth Vergason Technology, Inc.)
12:10 P.M.		Digital Xformation (DT6) Toward a Virtual Coater by Fast Computer Modeling Algorithm (Stephane Lucas University of Namur)		Innovator Showcase (EIS8) Process & Coating Optimisation Using Dynamic Plasma Movement in Circular Magnetrons (Nessima Kaabeche Gencoa Ltd.)
12:30 P.M.		Digital Xformation (DT7) PVD-Deposition on 3d Substrates Tailored by a Digital Twin (Andreas Pflug Fraunhofer IST)		Innovator Showcase (EIS9) Get to Know the Leader in Precious Metal Sputtering Targets (Ed Wegener DHF Technical Products)
12:50 P.M.	HIPIMS (HP4) Highly Ionized Pulse Sputter Deposition for Through Silicon Vias Filling (Dominik Jaeger Evatec AG)	Digital Xformation (DT8) Toward A Digital Twin Approach of a Vacuum Deposition System Using the Einstein-Hilbert Action with a View of Complete Factory Health at a Glance (Troy vom Braucke GP Plasma LLC)		Innovator Showcase (EIS10) Solving the Unsolvable in HiPIMS Technology: Applying a Scientific Perspective to Achieve Real Industrial Breakthrough (Ivan Fernandez NANO4ENERGY SL)
1:10 P.M.	HIPIMS (HP5) Selective Ion Acceleration in Bipolar HiPIMS: A Case Study of (Al,Cr)2O3 Film Growth (Daniel Lundin Linköping University)			Innovator Showcase (EIS11) Advanced Surface Treatments for Corrosion and Wear Applications (Solomon Berman IBC Coatings Technologies, LTD)
1:30 P.M.	HIPIMS (HP6) Transition Metal Nitride Thin Films Deposited at CMOS Compatible Temperatures for Optoelectronic and Plasmonic Devices (Arutian Ehasarian Sheffield Hallam University)			
2:30 P.M.	POSTER SESSION Exhibit Hall POSTERS (P01) Barrier Properties Improvement of Biopolymers by Means of Bipolar Pulsed DC PACVD Coatings (Cecilia Nicoletti University of Applied Sciences Upper Austria) POSTERS (P02) Deposition Rate Measurement Technology for Arc Ion-Plating Process (Do-Hyun Jung Gyungbuk Technopark) POSTERS (P03) A Unique High Vacuum System to Mitigate the Backflow of Helium During Gas Analysis for Exhaust from Fusion Devices (Chris Marcus Oak Ridge National Laboratory) POSTERS (P04) Amorphous Si Thin Film As Negative Electrode for Lithium-Ion Batteries (Ghizlane ELOMARI Mohammed VI Polytechnic University) POSTERS (P05) Influence of the Deposition Parameters on Adhesion and Resistivity of Mo Thin Films for Photovoltaic Applications (Rachid OUBAKI Mohammed VI Polytechnic University) POSTERS (P06) The Effect of Al Content on Mechanical, Tribological and Corrosion Resistance of Ti1-xAlxN Thin Films Deposited Using HiPIMS (Mohamed LAHOUIJ Mohammed VI Polytechnic University) POSTERS (P07) Study of Tribocorrosion of DLC Coatings Deposited Via HiPIMS on Tools Steels (Adrian Claver Institute for Advanced Materials and Mathematics (INAMAT2), Universidad Pública de Navarra) POSTERS (P08) Influence of the Deposition Environment on the Structure of Zinc Tin Nitride Films Fabricated via Microwave Plasma-Assisted R-HiPIMS (Caroline Hain Swiss Cluster) POSTERS (P09) Eddy Current Monitoring in High Temperature Vacuum Environments (Thomas Preussner Fraunhofer FEP) POSTERS (P10) Pulsed Xenon Flash Lamp Treatment for Surface Cleaning Applications (Thoralf Gebel University of Applied Sciences Mittweida) POSTERS (P11) Monitoring the Nonequilibrium Electronic Response During Plasma Treatment (Daniel Hirt University of Virginia) POSTERS (P12) Influence of Metal Precursors on Low Temperature Plasma Assisted Atomic Layer Deposition of Vanadium Pentoxide Thin Films (Adnan Mohammed) POSTERS (P13) Soft Dry Electrode Prepared by Carbon Nanotubes Mixed Polydimethylsiloxane with High Power Impulse Magnetron Sputter Deposited Silver Coating for Electrocardiography Measurements (Ying-Hung Chen Feng Chia University)			
4:30 P.M.				
	6:40 P.M. - 7:20 P.M. – Awards Ceremony (Sponsored Students, Mentor, Nathaniel Sugerman)			
	7:20 P.M. - 8:30 P.M. – Welcome Reception (Exhibit Hall)			
	Exhibit Hall Closes at 8:30 P.M.			

Wednesday May 10, 2023 | Daily Schedule

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Technical Program

TAC Breakfast Meetings — 7:00 A.M. – 8:30 A.M.

Optical Coatings

Azalea 1 meeting room

Protective, Tribological, and Decorative Coatings

Azalea 2 meeting room

Large Area Coatings

Azalea 3 meeting room

WebTech

Magnolia 1 meeting room

Emerging Technologies

Magnolia 1 meeting room

Plasma Processing

Magnolia 2 meeting room

Atomic Layer Processing

Magnolia 2 meeting room

HIPIMS

Magnolia 3 meeting room

High Powered Electron Beam Technology

Camellia 3 meeting room

Coatings for Energy Conversion and Related Processes

Camellia 3 meeting room

Coatings and Processes for Biomedical Applications

Camellia 4 meeting room

Superconducting Thin Films

Camellia 4 meeting room

Sensors

Maryland 5 meeting room

Vacuum Technology to Enable the Future of the Automotive Industry

Maryland 5 meeting room

Process Monitoring, Control and Automation

Maryland 6 meeting room

Digital Transformation of Industrial Deposition Processes

Maryland 6 meeting room

EXHIBIT HALL OPEN: 10:00 P.M. - 4:00 P.M.

Exhibitor Meeting (closed session) 9:00 A.M. - 10:00 A.M.

8:30 A.M.

10 Minute Passing Break

8:40 A.M.

Keynote | Technology Opportunities in Hybrid Electronics Manufacturing

(Dr. Scott Miller | NextFlex)

Maryland C Ballroom

9:20 A.M.

10 Minute Passing Break

Wednesday May 10, 2023 | Daily Schedule

Maryland C Ballroom		Maryland A Ballroom	Maryland B Ballroom	Maryland D Ballroom
9:30 A.M.	HIPIMS (HP7) Corrosion and Tribological Performance of DLC Coated Magnesium Alloys <i>(Adrián Claver Institute for Advanced Materials and Mathematics (INAMAT2), Universidad Pública de Navarra (UPNA))</i>	Large Area Glass and Energy Conversion Panel Discussion (Colloquium)	Process Monitoring (PCInv1) Step Up Thin Film Coating Productivity Using Smart Control and High-Level Automation <i>(Edmund Schüngerl Evatec AG)</i>	Innovator Showcase (EIS12) Optimizing Magnetics in a Magnetron Sputtering Cathode <i>(Robert Rovnakik Angstrom Sciences, Inc.)</i>
9:50 A.M.	HIPIMS (HP8) A Combinatorial HCD/PECVD System for Gradient Ag Containing Plasma Parylene Coating <i>(Ping-Yen Hsieh Feng Chia University)</i>			Innovator Showcase (EIS13) Coating Service for Mass Production of Coatings for Bipolar Plates for Fuel Cells and Electrolyzers <i>(Herbert Gabriel PVT Plasma und Vakuum Technik GmbH)</i>
10:10 A.M.	HIPIMS (HP9) Performance of HiPIMS–DLC on Silent Chain Plate for Wear Protection <i>(Ying Hung Chen Feng Chia University)</i>		Process Monitoring (PC1) The Five Pillars of Broadband Plasma Emission Monitoring <i>(Martynas Audronis Nova Fabrica Ltd)</i>	Innovator Showcase (EIS14) Speeding Up Material Design and Process Design with Machine Learning and Simulation <i>(Adam Obrusnik PlasmaSolve)</i>
10:30 A.M.	20 Minute Refreshment Break			
10:50 A.M.	HIPIMS (HP10) Effect of High Power Impulse Magnetron Sputtering Power Source on Optical Emission of Plasma Generated by Sputtering Graphite in Argon Atmosphere <i>(Anna W. Oniszczuk TRUMPF Huettinger Sp. z o.o.)</i>		Process Monitoring (PC2) High-Rate Reactive Sputtering of Plasma Resistant Oxide Coatings <i>(Gun-Hwan Lee Korea Institute of Materials Science)</i>	Innovator Showcase (EIS15) Large Capacity Cryochiller <i>(Tom Guppenberger Telemark Cryogenics)</i>
11:10 A.M.	HIPIMS (HP11) Effect of the Carbon Content on the Mechanical, Tribological, and Anti-Corrosion Properties of TiC Films Deposited Using a HiPIMS Discharge <i>(Hicham Larhlimi Mohammed VI Polytechnic University (UM6P))</i>		Process Monitoring (PC3) Machine Learning for PVD processes: Process Anomaly Detection and Prediction of Coating Properties <i>(Emile HAYE UNamur)</i>	Innovator Showcase (EIS16) Process Monitoring and Control Using Remote Plasma Optical Emission Spectroscopy <i>(Erik Cox Gencoa Ltd.)</i>
11:30 A.M.	HIPIMS (HPInv1) HIPIMS from the Point of View of a (Coating) Machine Builder <i>(Philipp Immich IHI Hauzer Techno Coating)</i>	Large Area (LTInv1) From Lab to Pilot – Bridging the Gap from Feasibility to Scalability for Surface Engineering Solutions <i>(Joerg Neidhardt Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology)</i>	Process Monitoring (PC4) Advancements in Optical Gas Analysis techniques for Residual Gas Analysis with application to ITER <i>(Chris Marcus U.T. - Battelle)</i>	Innovator Showcase (EIS17) In Situ Control of Deposition Rate and Chemical Composition of Compound Materials and Alloys During PVD <i>(George Atanasoff AccuStrata Inc.)</i>
11:50 A.M.			Process Monitoring (PC5) Extending the Potential of Optical Monitoring Software by Full Machine Control and Quality Assurance <i>(Stefan Bruns Fraunhofer IST)</i>	Innovator Showcase (EIS18) Trumpf Huettinger Latest Line Up of Innovative Products <i>(Mark Seeman TRUMPF Huettinger, Inc.)</i>
12:10 P.M.	HIPIMS (HP12) In-Situ Process Control of Reactive HIPIMS Based on Optical Emission Spectroscopy <i>(Stefan Körner TU Braunschweig)</i>	Large Area (LT1) No-Defect Insulating Coatings by Optimized Reactive Sputtering <i>(Dieter Wurczinger W-ENGINEERING D. Wurczinger)</i>	Process Monitoring (PC6) Monitoring System Health with High-Resolution IoT Data in Large-Area Coating Applications <i>(Craig Rappe Advanced Energy Industries, Inc.)</i>	Innovator Showcase (EIS19) The Korvus HEX- a New, Highly Modular Approach to PVD Systems <i>(Matt Clancy Korvus Technology Ltd.)</i>
12:30 P.M.	HIPIMS (HP13) Tunable, Graded Band-gap TiO ₂ Thin Film Solar Cell Deposited by High Power Impulse Magnetron Sputtering on Flexible Substrate <i>(Sheng-Kuei Chiu Feng Chia University)</i>		Process Monitoring (PC7) Emissivity and Reflectance in Temperature Critical Processes <i>(Rodeo Winchell Advanced Energy Industries, Inc.)</i>	Innovator Showcase (EIS20) When to Upgrade an Old PVD Coating System Versus Buying a New One? A Practical Method for Understanding Risk/Cost Aspects of PVD Coating System Upgrades/Retrofits <i>(Frank Papa GP Plasma)</i>
12:50 P.M.	Exhibit Hall Opens at 10:00 A.M.			Innovator Showcase (EIS21) An Economical ALD Development Reactor for University and National Labs <i>(Jacob Bertrand Maxima Sciences LLC)</i>
1:10 P.M.				
2:00 P.M.	2:00 P.M. Beer Blast			
3:00 P.M.	3:00 P.M. Announce: 5k Run Winner & Best Poster Award			
4:00 P.M.	120 Minute Break			
6:00 P.M.	6:00 - 7:30 P.M. Program Committee Meeting			

Thursday May 11, 2023 | Daily Schedule

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Technical Program

7:00 A.M. | TECHNOLOGY FORUM BREAKFASTS

TFB: Digitalization in the Coating Industry – Does It (already) Improve Production and Product?!

Holger Gerdes (Fraunhofer-IST)/Thomas Schütte (Plasus GmbH)
Azalea 1 meeting room

TFB: Aligning Deposition Process Requirements with Vacuum System Layout and Design

Wolfgang Decker (Kurt J. Lesker Company)
Colin Quinn (Dynavac)
Camellia 3 meeting room

TFB: Optical Coating Design

Robert Sargent (Viavi Solutions Inc.)
Ron Willey (Willey Optical Consultants)
Azalea 3 meeting room

TFB: Advanced Deposition Coating Hardware

Frank Papa (GP Plasma, LLC)/Ralf Bandorf (Fraunhofer-IST)
Magnolia 1 meeting room

TFB: Coatings for Thin Film Photovoltaics

Volker Sittinger (Fraunhofer-IST)
Ric Shimshock (MLD Technologies, LLC)
Magnolia 2 meeting room

TFB: CVD and ALD Processing

Craig Outten (Universal Display Corporation)
Lenka Zajickova (Masaryk University)
Magnolia 3 meeting room

TFB: Thin Film Sensors

Jason Hrebik (Kurt J. Lesker Company)
Binbin Weng (University of Oklahoma)
Camellia 4 meeting room

TFB: Laser-based Metrology of Thermal Properties

John Gaskins (Laser Thermal Analysis, Inc.)
Patrick E. Hopkins (University of Virginia)
Azalea 2 meeting room

8:30 A.M.

10 Minute Passing Break

8:40 A.M.

Keynote | Solar Photovoltaic (PV) Supply Chains, Regional Manufacturing Costs, and Technology and Market Opportunities

(Dr. Michael Woodhouse | National Renewable Energy Laboratory)

Maryland C Ballroom

9:20 A.M.

10 Minute Passing Break

Thursday May 11, 2023 | Daily Schedule

Maryland C Ballroom		Maryland A Ballroom	Maryland B Ballroom
9:30 A.M.	Atomic Layer Processing (ALinv1) Improving the Speed of Atomic Layer Deposition Without Sacrificing Chemical Efficiency (Matt Weimer Forge Nano)	Large Area (LT2) Multilayer Optical Coating Using Magnetron Sputtering on Large Telescope Mirror (Ramya Chandrasekaran Dynavac)	Process Monitoring (PC8) Case Study - Data Acquisition and Analysis for Arc Characterization and Process Optimization (Craig Rappe Advanced Energy Industries, Inc.)
9:50 A.M.		Large Area (LT3) Forecasting of Magnetron Target Degradation at Vera C. Rubin Observatory Coating Plant (Franco Colleoni AURA / Vera C. Rubin Observatory)	Process Monitoring (PC9) Enabling Automated Process Control by Simultaneous In-Situ Measurement of Plasma Process and Thin Film Growth in Real-Time (Jan-Peter Urbach PLASUS GmbH)
10:10 A.M.	Atomic Layer Processing (AL1) Influence of Plasma Species on the Growth Kinetics and Structural Properties of Epitaxial InN Films Grown by Plasma-Enhanced Atomic Layer Deposition (Jeffrey Woodward U.S. Naval Research Laboratory)	Large Area (LT4) Glass Substrate Preparation for Large Astronomical Mirrors (Tomislav Vucina AURA / Vera C. Rubin Observatory)	Process Monitoring (PC10) Reactive Magnetron Sputtering Feedback Control via Target Voltage A Method to Overcome Ambiguities in Complex Systems (Tommaso Sgrilli Gencoa Ltd)
10:30 A.M.	Atomic Layer Processing (AL2) Carbon Nanostructures Deposited by Pulsed Plasma Technology: From HiPIMS to Anodic Arc Discharges (Carles Corbella George Washington University)	Large Area (LT5) Aluminate™ for Next Generation Energy-Saving Windows (Viktor Elofsson MIMSI Materials AB)	Process Monitoring (PC11) A Chalcogen Species Sensor for Plasma Vapour Deposition Monitoring and Control (Lara Maroto-Diaz Gencoa Ltd)
10:50 A.M. 20 Minute Refreshment Break			
11:10 A.M.	Atomic Layer Processing (AL3) Atomic Layer Deposition of Strontium Oxide on Different Materials (Lenka Zajickova Brno University of Technology)	Large Area (LT6) On-Line 100% First Surface Glass Cleanliness Measurement (Timothy Potts Dark Field Technologies, Inc.)	Bio (BT1) Investigating Combinatorial Thin Films Using Scanning Electrochemical Techniques (Natalie Page Rowan University)
11:30 A.M.	Atomic Layer Processing (ALinv2) Novel Deposition Equipment for ALD and ALD/PVD Processes: Tailoring Materials and Scaling Production (Carlos Guerra Swiss Cluster)	Large Area (LT7) Three Key Topics for Improved Quality, Throughput and Yield in Large-Area Industrial Coating Applications (Mike Meyer Advanced Energy Industries, Inc.)	Bio (BT2) Zirconium Nitride Coatings for Biomedical Applications (Jeffrey Hettinger Rowan University)
11:50 A.M.			Bio (BT3) Development of Antibacterial Electrodes for Neural Interfacing Applications via Femtosecond Laser Hierarchical Surface Restructuring and Atomic Layer Deposition (Shahram Amini Pulse Technologies Inc.)
12:10 P.M. 40 Minute Lunch Break			
12:50 P.M.	Atomic Layer Processing (AL4) Improved Performance and Safety via ALD-Enhanced Sulfide-Based Solid-State Batteries (Brianna Boeyink Forge Nano)	Emerging (ETInv1) Towards Economical Lithium Metal Batteries Using Scalable PVD Technologies (Kristyn Zoschke Li Metal)	Bio (BT4) Evidence for Non-Equilibrium Phases in Palladium Oxide Reactively Sputtered Films (Gregory Taylor Lawrence Livermore National Lab)
1:10 P.M.	Atomic Layer Processing (AL5) Plasma Processing for the Production of Abrupt Epitaxial Interfaces on Aluminum Nitride (Scott Walton Naval Research Laboratory)	Emerging (ET1) Focused Ion Beam Lift-Out Geometry (Maja Koblar Jozef Stefan Institute)	Bio (BT5) Can HiPIMS Silver Survive for Commonly Used Sterilization? (Shuting Li Feng Chia University)
1:30 P.M.	Atomic Layer Processing (AL6) Effects of Oxygen Addition on Plasma-Enhanced Atomic Layer Etching of Silicon Nitride: A Molecular Dynamics Study (Jomar Tercero Osaka University)	Emerging (ET2) Literature Review of Network Threats and Data Privacy Security Measures (Taiwo Calfos Amazon)	Bio (BTInv1) Soft Optoelectronic Devices for Electrophysiology and Optophysiology (Luyao Lu George Washington University)
1:50 P.M.	Atomic Layer Processing (AL7) On the Stability of Nanostructured Multilayers Containing Ti, Cr, and Zr (Julia Nascimento Pereira University of São Paulo (USP))	Emerging (ET3) Promoting Conceptual Understanding by Optimizing Course Design (Maja Koblar Jozef Stefan Institute)	
2:10 P.M.	Plasma Processing (PP1) Spatio-Temporal Characterization of Plasmas Generated in Different Ar-N ₂ Gas Mixtures for Plasma-Enhanced Atomic Layer Deposition (Michael Johnson Huntington Ingalls Industries)	Emerging (ET4) Novel Technologies for Particle Size Analysis and Particle Identification (Yitzak Vanek Persys Engineering)	Bio (BT6) HiPIMS Prepared Ultrathin Gold Film for Plasmonic Biosensor Application (Shleng-Yang Huang Feng Chia University)
2:30 P.M.	Plasma Processing (PPinv1) Characterizing Plasma Sources for Atomic Precision Processing (David R. Boris U.S. Naval Research Laboratory)	Emerging (ET5) Reactive Ion Beam Etch of Highly Uniform Slanted Gratings for Augmented Reality Applications (Maryam Sourì Veeco Instruments)	Bio (BT7) Laser Patterned Sputter Coatings for Production of Two-Dimensional Multilayer Electronic Sensors (Matthew Kleyrn Intellivation LLC)
2:50 P.M.			Bio (BT8) Anatase Film on Orotracheal Tubes to Mitigate Staphylococcus Aureus (Lucia Vieira Univap-University of Paraíba Valley)
3:10 P.M.	Plasma Processing (PP2) Multi-Physics Multi-Scale Modelling of SiO ₂ Deposition by HC-PECVD with O ₂ /TMSO Mixture Used as Gaseous Precursors (Jerome Muller University of Namur)	Sensors (SEinv1) ALD and ALE for Quantum Sensors (Katie Hore Oxford Instruments)	Bio (BT9) Antimicrobial Protection for Touch Surfaces to Reduce Hospital Associated Infections (Patricia Killen Gencoa Ltd)
3:30 P.M.	Plasma Processing (PP3) Effect of Different Power Configurations on Sputtering of Titanium Dioxide (Philipp Duerrenfeld Advanced Energy Industries, Inc.)		Bio (BT10) Candida Species Biofilm Inhibition on Metallic Coated 3D Printed Medical Devices (Dorina Mihut Mercer University)
3:50 P.M.	Plasma Processing (PP4) Enhancing the Ionized Metal Flux Fraction in Industrial Conditions (Peter Klein Masaryk University)	Sensors (SE1) An Oriented Attachment Method based Mid-Infrared PbSe Photoconductive Detectors (Jeremy Bates The University of Oklahoma)	Bio (BT11) Fabrication and Characterization of Ultrathin Cupric Oxide (CuO) Films Deposited via Atomic Layer Deposition (ALD) (HENNA KHOSLA Villanova University)
4:10 P.M.	Plasma Processing (PP5) In Situ Passivation of InAs Surfaces using Plasma Enhanced CVD of a-Si (John Murphy Naval Research Labs)	Sensors (SE2) Synthesis of Magnetic Particles for Printable Inks and Pastes by Sputtering for Sensor Applications (Morris Ott Fraunhofer FEP)	
4:30 P.M.	Plasma Processing (PP6) Impedans Sensors for Sputtering Applications (Thomas Gilmore Impedans Ltd)		
4:50 P.M.	Plasma Processing (PP7) Hybrid Optical Films Deposited by Ion Beam Assisted CVD (Oleg Zabeida Polytechnique Montreal)		
5:10 P.M.	Plasma Processing (PP8) Simulation-Driven Engineering of a Hollow-Cathode PECVD Reactor Operating in Various Gases (Kristína Tomanková Masaryk University)		
5:30 P.M.	Plasma Processing (PP9) Study of Nonequilibrium Electron and Vibrational Response During Plasma Excitation (Sara Makarem University of Virginia)	6:00 - 7:30 P.M. - Young Members/Farewell Social POSE Rooftop Lounge	