Monday (May 19, 2025)

Technical Forum Breakfasts (7:00 AM – 8:30 AM)

- **TFB: Manufacturing in Space** — Nick Franzer (Kurt J. Lesker Company) / Ken Savin (Redwire Space Co.) — Cheekwood A
- **TFB: Protective, Reflective, and Decorative Coatings** — Martin Engels (Ionbond) / Anas Ghailane (Avaluxe) — Cheekwood B
- **TFB: Transparent Conductive Materials (TCM)** — Clark Bright (Bright Thin Film Solutions, LLC) / Patrick Morse (Arizona Thin Film Research LLC) — Cheekwood C
- **TFB: Atmospheric Plasma Technology** — Hana Baránková (Uppsala University) / Ladislav Bardos (Uppsala University) — Cheekwood F
- **TFB: Post-Processing of Vacuum-Coated Roll-to-Roll Products** — Andy Jack (Emerson and Renwick Ltd.) / Chris Stoessel (StoesselConsulting) — Cheekwood G
- **TFB: Surface Engineering for the Hydrogen Economy** — Ralf Bandorf (Fraunhofer IST) / Herbert Gabriel (PVT Plasma und Vakuum Technik GmbH) — Cheekwood H
- **TFB: Supply chains, manufacturing processes, and sustainability for materials enabling PVD processes** — David Sanchez (Materion) / Christos Pernagidis (Avaluxe) — Belmont A
- **TFB: Durability Evaluation of Thin Film Coatings: Testing Methods and Practical Implications** — Brent Boyce (Guardian) / Aneliia Wäckerlin (Glas Trösch) — Belmont B

10 minute passing break

Compact Business Meeting (30 minutes) — Tennessee C

10 minute passing break

Director of Program Welcome and Conference Introduction

Keynote — Paul H. Mayrhofer - TU Wien — Materials Science-Based Guidelines to Develop Robust Hard Coatings (Tennessee C)

20 minute refreshment break

Morning sessions (10:40 AM – 1:10 PM)

Optical Coatings
- Optical Coatings (OTinv) — Optical Coatings and Plasma Processes for Quantum Computing Hardware (Ulrike Schulz - Fraunhofer IOF)
- Optical Coatings (OT) — Titanium Dioxide Thin Films from a Low-Frequency Dual Magnetron Sputtering Process (Philipp Dürrenfeld - Advanced Energy Industries)
- Optical Coatings (OT) — Comparison of ICO Film Properties using Different Doping Compositions (Rajiv Pethe - Vital Chemicals)
- Optical Coatings (OT) — Clark Bright + 5 min Ron Willey Tribute
- Optical Coatings (OT) — Practical Designs for the Next Generation of Eyeglass Coatings (Ronald Willey - Willey Optical Consultants)
- Optical Coatings (OT) — Calibrating Reflectance Measurements (Ronald Willey - Willey Optical Consultants)
- Optical Coatings (OT) — An Alternative to Rugate Coatings (Ronald Willey - Willey Optical Consultants)

Protective, Tribological and Decorative Coatings
- Protective, Tribological and Decorative Coatings (TT) — The Investigations of the Interfacial Strength and Bonding of DLC Films Deposited on Chalcogenide Glasses - SPONSORED STUDENT PRESENTATION (Simran - McMaster University)
- Protective, Tribological and Decorative Coatings (TT) — High Durability Dental Drills Due to Wear-Resistant DLC Protective Coatings (Angela Bertuna - Protec Surface Technologies)
- Protective, Tribological and Decorative Coatings (TTinv) — CVD-Diamond Coatings for High Performing Tools and Components (Christian Stein - Fraunhofer IST)
- Protective, Tribological and Decorative Coatings (TT) — Diamond Coatings for CFRP Machining for the Aircraft Industry (Jeffrey Barlow - CemeCon AG)
- Protective, Tribological and Decorative Coatings (TT) — Decorative PVD Coatings - Market Trends (Martin Engels - Ionbond Netherlands B.V.)
- Protective, Tribological and Decorative Coatings (TT) — Surface Engineering of Cast Iron for Stamping Dies: a Plasma Surface Alloying and Nitriding Approach with Computational Insights (Tainá Pigosso - Federal University of Santa Catarina (UFSC))
- Protective, Tribological and Decorative Coatings (TT) — Studies of Diamond-Like-Carbon (DLC) PVD Coatings (Zhonghuai Wang - Tanury Industries)

Digital Xformation
- Digital Xformation (DT) — Simulation of Particle Contamination Using the PALADIN Code (Holger Gerdes - Fraunhofer IST)
- Digital Xformation (DT) — Open-Source Simulation of Rarefied Gas and Plasma Flows with PICLas: Step-by-Step Verification and Application Examples (Paul Nizenkov - boltzplatz - numerical plasma dynamics GmbH)
- Digital Xformation (DT) — AI-Powered Analysis: Predicting Process Success with Deep Learning (Oisin Boyle - Gencoa Ltd)
- Digital Xformation (DT) — Practical Use-Cases for Digital Twin Models: Automated Recipe Design, Troubleshooting Production Challenges (Adam Obrusnik - PlasmaSolve s.r.o.)
- Digital Xformation (DTinv) — Physics-Informed Data-Driven Approaches to Plasma Processing Technologies (Satoshi Hamaguchi - Osaka University)
- Digital Xformation (DT) — Coping with Limited Data Amounts When Applying Artificial Intelligence in Industrial Process Control (Thomas Schütte - PLASUS GmbH)
- Digital Xformation (DT) — Geometry-Dependent Thin Film Uniformity in Large Area Sputtering with Rotary Cathodes: A COMSOL Multiphysics Modeling Study (Patrick Morse - Arizona Thin Film Research)

Electron Beam Processes
- Electron Beam Processes (EBinv) — Innovative Approach to Low-Temperature Deposition of Ceramic TBC Coatings Using Hollow Cathode Plasma in the EB-PVD Process (Andrzej Nowotnik - Rzeszow University of Technology)
- Electron Beam Processes (EB) — Novel Thermal Barrier Coating Microstructures Produced via Electron Beam Physical Vapour Deposition (Koldo Almandoz Forcen - Cranfield University)
- Electron Beam Processes (EB) — Rare Earth Zirconates for Thermal Barrier Coatings: Improving Manufacturability and Assessing Performance (Luis Isern - Cranfield University)
- Electron Beam Processes (EB) — Shaping the Future: Advanced EB-PVD Technology for a Diverse Range of Applications (Stefan Saager - Fraunhofer FEP)
- Electron Beam Processes (EB) — Electron Beam Technology: Thin Film Coatings, High Heat Flux Testing, Additive Manufacturing, and Micromachining (Christopher DeSalle - Penn State Applied Research Laboratory)
- Electron Beam Processes (EB) — Supporting the Decarbonising of Energy Production, Industry and Transport through the Application of Electron Beam Welding (Chris Punshon - Cambridge Vacuum Engineering)

10 minute passing break

Don Mattox Tutorial — Kenneth Savin - Redwire — Crystals Generated in a Microgravity Environment (Tennessee C)

10 minute passing break

Afternoon sessions (2:10 PM – 4:10 PM)

- Optical Coatings (OTinv) — Effect of Copper Doping on the Optical and Electrical Properties of Aluminum-Chlorophthalocyanine (AlClPc) Thin Films for Photovoltaic Applications (Bassel Abdel Samad - Université de Moncton)
- Optical Coatings (OT) — Influence of Different Impurities on Ion-Beam Sputtered UV-Coatings (Binyamin Rubin - Veeco)
- Optical Coatings (OT) — Precision Sputtering System OPTA X (Waldemar Schönberger - VON ARDENNE GmbH)
- Thin Film Sensors (SEinv) — Development of Highly Sensitive Short-Wavelength Infrared Avalanche Photodiodes (Seunghyun Lee - University of Texas at Arlington)
- Protective, Tribological and Decorative Coatings Colloquium — "A large success factor of vacuum coating: the right cleaning!"
- Coatings for Energy Conversion and Related Processes (EN) — Broad Beam Plasma Source Enhanced Thin-Film Growth at Low Temperatures (Qi Fan - Michigan State University)
- Coatings for Energy Conversion and Related Processes (ENinv) — Thin-Film Technology Innovations for Silicon Heterojunction Solar Cell (Kaining Ding - Forschungszentrum Jülich GmbH)
- Coatings for Energy Conversion and Related Processes (EN) — Effect of Different Composition Ratio of Quaternary Alloy Targets Prepared by DC Magnetron Sputtering for CIGS Solar Cells (Sheng-Kuei Chiu - National University of Tainan)
- Coatings for Energy Conversion and Related Processes (EN) — One-Step DcMS and HiPIMS Sputtered CIGS Films from a Quaternary Target - SPONSORED STUDENT PRESENTATION (Rachid Oubaki - University Mohammed VI Polytechnic)
- WebTech Roll-to-Roll Technologies and Innovation (WTinv) — Market Insights into the Role of Vacuum Coating in Roll-to-Roll Production of Flexible Devices (Helia Jalili - BCC Research)
- WebTech Roll-to-Roll Technologies and Innovation (WT) — Relations of System Parameters for an Optimized Setting of the Deposition Rate, Use Case for an Anti-Reflective Flex R2R Multilayer Application (Michael Muecke - Bühler Alzenau GmbH)
- WebTech Roll-to-Roll Technologies and Innovation (WT) — Deposition of Magnetic Materials as Thin Films in an R2R Vacuum Coater (Robert Malay - Intellivation LLC)

20 minute refreshment break

Late afternoon sessions (4:30 PM – 5:50 PM)

- Protective, Tribological and Decorative Coatings (TTinv) — PVD Coatings for Cutting Tools: Trends and Visions (Christoph Schiffers - CemeCon AG)
- Protective, Tribological and Decorative Coatings (TT) — Mega Leap for Commercially Viable PVD Functional Coatings for Automotive and Industrial Components (Chinmay Trivedi - IHI Hauzer Techno Coating BV)
- Protective, Tribological and Decorative Coatings (TT) — Influence of Carbon Incorporation on the Microstructure, Morphology, Mechanical Properties, Tribological Behavior and Corrosion Resistance of TiAlCN Coatings Deposited Via Reactive HiPIMS - SPONSORED STUDENT PRESENTATION (Mohamed Lahouij - Mohammed VI Polytechnic University)
- Coatings for Energy Conversion and Related Processes (EN) — Construction of a Linear PVD Evaporator for the Deposition of C60/SnO2 Electron Contact Layers in a SALD Hybrid System (Volker Sittinger - Fraunhofer IST)
- Coatings for Energy Conversion and Related Processes (EN) — Chemical Synthesis and Magnetron Sputtering of Nickel Nanoparticles Embedded in Graphitic Carbon Nitride As HER Electrocatalyst for Water Splitting Systems - SPONSORED STUDENT PRESENTATION (Gustavo Delfino - Sao Carlos School of Engineering - EESC)
- Coatings for Energy Conversion and Related Processes (EN) — HiPIMS-Deposited TiO_x on a Cobalt-Free $LiNiO_2$ Cathode for Improved Electrochemical Stability and Suppressed Ni Dissolution (Mohammed Makha - University Mohammed VI Polytechnic)
- Coatings for Energy Conversion and Related Processes (EN) — Design of Vacuum Evaporation Coating Process for Composite Copper Current Collectors and the Performance Study in LIBs (Kun Liu - Northeastern University, Shenyang, China)

2hr Dinner Break — 5:50 - 8 PM

Casino Night Fundraiser — 8:00 - 10:00 PM (Magnolia Ballroom)

Tuesday (May 20, 2025)

Technical Forum Breakfasts

- **TFB: Industrial Challenges: Uptime, Yield, & Consistency** — Nick Franzer (Kurt J. Lesker Company) / Jimmy Haight (Semicore) — Cheekwood A
- **TFB: Leak Detection - Issues and Practices** — Mike Ridenour (Leybold USA) / Jean-Pierre Deluca (BDL Redwood) — Cheekwood D
- **TFB: Coatings and Surface Engineering for Medical Applications** — Jeff Hettinger (Rowan University) / Greg Taylor (Lawrence Livermore National Laboratory) — Cheekwood B
- **TFB: Magnetron Sputtering** — Wilmert De Bosscher (Soleras Adsvanced Coatings) / Patrick Morse (Arizona Thin Film Research LLC) — Cheekwood C
- **TFB: Energy Conversion and Storage** — Volker Sittinger (Fraunhofer-IST) / Christian Stein (Fraunhofer-IST) — Cheekwood F
- **TFB: Electron Beam Processes** — Mark Pellman (Pellman Technology, Inc.) / Stefan Saager (Fraunhofer-FEP) — Cheekwood G
- **TFB: Process Monitoring & Control** — Martynas Audronis (Nova Fabrica, Ltd.) / Gun Hwan Lee (Korea Institute of Materials Science) — Cheekwood H
- **TFB: High Power Impulse Magnetron Sputtering (HIPIMS)** — Arutiun P. Ehiasarian (Sheffield Hallam University) / Ralf Bandorf (Fraunhofer-IST) — Belmont A
- **TFB: Tribological and Diamond-Like Coatings** — George Savva (IHI Ionbond, Inc.) / Lars Haubold (Fraunhofer USA) — Belmont B

10 minute passing break

Awards Ceremony (Tennessee C) — 8:40-9:20 AM

10 minute passing break

Morning sessions (9:30 AM – 10:30 AM)

- Protective, Tribological and Decorative Coatings (TT) — Protective Surfaces and Coatings against Heavy Oil Fouling (Pedro Avila - Polytechnique Montreal)
- Protective, Tribological and Decorative Coatings (TT) — New Thermal Barrier Coating Architectures for Maximum Reflectivity and Resistance to CMAS Infiltration - SPONSORED STUDENT PRESENTATION (Mathieu Bruzzese - Polytechnique Montreal)
- Protective, Tribological and Decorative Coatings (TT) — Influence of Nitride Formation Enthalpy and Atomic Size on the Structure and Properties of Cr-Mn-Mo-Si-Y-(N) Magnetron Sputtered High-Entropy Nitride Coatings - SPONSORED STUDENT PRESENTATION (Lukáš Vrána - Masaryk University)
- Emerging and Translational Tech and Applications (ETinv) — Flash Lamp Annealing – A New Approach to Surface Engineering Challenges (Joerg Neidhardt - Fraunhofer FEP)
- Emerging and Translational Tech and Applications (ET) — RF and HiPIMS Technologies for Advanced PCB Manufacturing: A Focus on High-Performance Cu Etching and Deposition (Yilei Shen - TRUMPF Hüttinger GmbH + Co. KG)
- Process Monitoring, Control, and Automation (PC) — Research on Autonomous In-Situ Calibration Method for Wide-Range Vacuum Gauges (Kun Liu - Northeastern University)
- Process Monitoring, Control, and Automation (PCinv) — AI and in-situ Diagnostics Enabled Autonomous PLD System for Fast Thin Film Material Fabrication (Sumner Harris - Oak Ridge National Laboratory)
- Exhibitor Innovator Showcase (EIS) — Solvent Cleaning in High-Tech-Coating Processes (Karl Trautz - HEMO GmbH)
- Exhibitor Innovator Showcase (EIS) — PlasmaSolve's Latest Developments: MatSight Suite Upgrades, Process Mining and Digital Twins in Thin Film Production (Adam Obrusnik - PlasmaSolve s.r.o.)
- Exhibitor Innovator Showcase (EIS) — Cutting-Edge Plasma Monitoring Techniques for Process Development, Production Control and Machine Learning (Thomas Schütte - PLASUS GmbH)

20 minute refreshment break

Late morning sessions (10:50 AM – 1:10 PM)

- Selective Atomic Scale Processes (SAinv) — Area Selective Atomic Layer Deposition for Future Microelectronics (Stacey Bent - Stanford University)
- Two-Dimensional Materials and Heterostructures (2D) — Accelerated Thin Film Optimization via Laser Oxidation and Crystallization (Chris Murator - University of Dayton)
- Two-Dimensional Materials and Heterostructures (2Dinv) — 2D Materials for Advanced Logic and Memory Devices (Deep Jariwala - University of Pennsylvania)
- Emerging and Translational Tech and Applications (ET) — Sustainability and PVD: What Can We Do? (Lara Maroto-Diaz - Gencoa Ltd)
- Emerging and Translational Tech and Applications (ET) — Amorphous Carbon Interlayers: Surface Engineering toward Stable Next Generation Lithium Batteries (Nina Baule - Fraunhofer USA, Inc.)
- Emerging and Translational Tech and Applications (ET) — Leveraging "External Innovation" to Diversify the Innovation Pipeline in Functional Coatings and Surface Engineering (Chris Stoessel - Stoessel Consulting)
- Emerging and Translational Tech and Applications (ET) — Methods and Considerations for Magnetron Sputtered Boron Carbide for ICF and IFE Applications (Gregory Taylor - Lawrence Livermore National Laboratory)
- Process Monitoring, Control, and Automation (PC) — Argon - Zero Helium: Vacuum Leak Detection with SPOES (Martynas Audronis - Nova Fabrica Ltd.)
- Process Monitoring, Control, and Automation (PC) — Improving Real-Time Etch Process Efficiencies and Chamber Condition Monitoring with a Novel High Pressure, Long Lifetime In-Situ Quadrupole Mass Spectrometer (Michie Imanishi - HORIBA Instruments Inc.)
- Process Monitoring, Control, and Automation (PC) — A New Differential Pressure Sensor Based Mass Flow Controller for Advanced Semiconductor Processing (Shaun Pewsey - Brooks Instrument)
- Process Monitoring, Control, and Automation (PC) — Near-Process Sensor Integration for Characterization of In-Vacuo Deposited Thin Films by Eddy Current Sensor Metrology (Marcus Klein - SURAGUS GmbH)
- Process Monitoring, Control, and Automation (PC) — Pyrometry Solutions for Vacuum Chamber Temperature Monitoring (Tim Dubbs - Advanced Energy Industries)
- Process Monitoring, Control, and Automation (PC) — Deposition Control Technology for Arc Ion-Plating Process (Gun Hwan Lee - Korea Institute of Materials Science (KIMS))
- Process Monitoring, Control, and Automation (PC) — Transforming Leak Detection in Vacuum Coating Systems with Remote Plasma Optical Emission Spectroscopy (Marcus Law - Gencoa Ltd)
- Exhibitor Innovator Showcase (EIS) — DHF Technical Products-Your First Choice for Total Life-Cycle Management of Precious Metal Sputtering Targets (Ed Wegener - DHF Technical Products)
- Exhibitor Innovator Showcase (EIS) — R2R System for Process and Product Development (Wolfgang Decker - Kurt J. Lesker Company)
- Exhibitor Innovator Showcase (EIS) — Contract R&D and Production Services with a Vertical Inline Coater (Frank Papa - GP Plasma)
- Exhibitor Innovator Showcase (EIS) — AEI-Sarah Williams (reserved)
- Exhibitor Innovator Showcase (EIS) — Under $98K Precision Layers Metrology Spectrometers: Surface Mappable Composition Depth Profiling Quantified (Ben Johns - MSI)
- Exhibitor Innovator Showcase (EIS)
- Exhibitor Innovator Showcase (EIS)

Exhibit Hall

10 AM Exhibitor B2B Coffee Hour

11 AM Exhibit Hall Opens

(Ryman Hall B1-B3)

- POSTERS (P1): Evaluation of the Microhole Profile Drilling Process and Characterics on the Basis of the Electron Beam Radiation (Hyung Wook Park - Ulsan National Institute of Science and Technology)
- POSTERS (P2): Thin, Free-Standing Metal Films for Accelerator-Based Physics Experiments (John Greene - Argonne National Laboratory)
- POSTERS (P3): Enhancing Ultrathin Layer Quality: Copper-Doped Silver via Thermal Evaporation PVD (Kenneth Jarefors - 3M Svenska AB)
- POSTERS (P4): Sinusoidal and Bipolar Pulsed Power Delivery for Dual Magnetron Sputtering Processes (Gayatri Rane - Advanced Energy Industries)
- POSTERS (P5): The Fabrication of Cu-Added Co Thin Films Using a Magnetron Cosputtering Process Giving an Enhanced Conductivity and Electromigration Reliability for Interconnect Metallization (Giin-Shan Chen - Feng Chia University)
- POSTERS (P6): Anodic Arc Evaporation of Graphite for Deposition of ta-C Diamond-Like Films (Bert Scheffel - Fraunhofer FEP)
- POSTERS (P7): FT-Guided Design and Sputtering Deposition of BiVO4 Thin Films: Optimizing Photocatalytic Activity for Solar Water Splitting (Mohammed Makha - University Mohammed VI Polytechnic)
- POSTERS (P8): Optical Properties of Reactively Sputtered Antimony Doped Tin Oxide Thin Films (Khalid Choglay - Manchester Metropolitan University)
- POSTERS (P9): Spectroscopic Characterization and Defect Identification in Wide Bandgap Semiconducting Materials (Praveena Manimunda - Horiba)
- POSTERS (P10)

Exhibit Hall Closes: 6:00 PM

Welcome Reception — 5:00-6:00 PM (Exhibit Hall; Ryman Hall B1-B3)

Wednesday (May 21, 2025)

TAC Breakfast Meetings

- (1) Digital Transformation through Artificial Intelligence, Machine Learning. Simulation, and Data Science in the Thin Film Industry, and (2) Process Monitoring, Control, and Automation — Cheekwood A
- Atomic Layer Processing (ALP) — Cheekwood B
- (1) High Power Impulse Magnetron Sputtering, and (2) Thin Film Contributions for the Hydrogen Economy — Cheekwood C
- Coatings and Processes for Biomedical Applications — Cheekwood D
- Optical Coatings — Cheekwood E
- Coatings for Energy Conversion and Related Processes — Cheekwood F
- Protective, Tribological and Decorative Coatings — Cheekwood G
- Large Area Coatings — Cheekwood H
- (1) Quantum Computing, and (2) Organic and Perovskite Electronics — Belmont A
- Plasma Processing and Diagnostics — Belmont B
- (1) Thin Film Sensors, (2) Emerging and Translational Technologies and Applications, and (3) WebTech Roll-to-Roll Technologies and Innovation — Belle Meade C/D
- (1) Electron Beam Processes, (2) Two-Dimensional (2D) Materials and Heterostructures - Applications, Large-Scale Growth and Advanced Characterization, and (3) Selective Atomic Scale Processes — Magnolia Boardroom B

10 minute passing break

Keynote — André Anders - Leibniz Institute of Surface Engineering (IOM) — Equilibrium versus Non-Equilibrium Heating to Control the Microstructure of Coatings and Thin Films (Tennessee C)

10 minute passing break

Morning sessions (9:30 AM – 10:30 AM)

- Organic and Perovskite Electronics (OEinv) — Vacuum Coating of Metal Halide Perovskite Thin Films for Photovoltaic Applications: Challenges and Opportunities (Zhaoning Song - University of Toledo)
- Organic and Perovskite Electronics (OE) — Thermally Evaporated Metal-Halide Perovskite Semiconductors for Triple-Junction Photovoltaics (Jay Patel - King's College London)
- Thin Film Contributions for the Hydrogen Economy (HY) — Comparison of Two Techniques for Coating Metallic Bipolar Plates: Sputtering and Arc Evaporation (Teja Roch - Fraunhofer IWS)
- Process Monitoring, Control, and Automation (PCinv) — Critical Subsystem Suppliers: Enabling Technologies for the Next Generation of Advanced Vacuum Processing Equipment (Stefan Chitoraga - Yole Group)
- Process Monitoring, Control, and Automation (PC) — Inteleg® OES: Advancing from 2B-PEM to SPOES RGA, EIES, Plasma Diagnostics, and Enabling Digital Transformation (Martynas Audronis - Nova Fabrika Ltd.)
- Exhibitor Innovator Showcase (EIS) — Vacuum Process Monitoring, Control and Automation Using Remote Plasma Optical Emission Spectroscopy (Erik Cox - Gencoa Ltd)
- Exhibitor Innovator Showcase (EIS) — DOMINO- Efficient Solutions For Thin Film Equipment (Bruce Deiseroth - INFICON)
- Exhibitor Innovator Showcase (EIS) — INFICON Zevision® IMC300: Precision Control for Maximum Repeatability and Unmatched Crystal Efficiency (Sheldon Wayman - INFICON)

20 minute refreshment break

Late morning sessions (10:50 AM – 12:50 PM)

- Organic and Perovskite Electronics (OE) — Organic Photovoltaics - What's Next? (Moritz Riede - University of Oxford)
- Organic and Perovskite Electronics (OE) — Low Cost, Flexible and Fully R2R Processed Perovskite Solar Modules (Trevor McArdle - Power Roll Ltd)
- Organic and Perovskite Electronics (OEinv) — Engineering Organic and Metal-Halide Perovskite Thin Films and Devices Via Vapor Processing (Russell Holmes - University of Minnesota)
- Quantum Computing (QCinv) — High Quality Superconducting Resonators from a Magnetically-Contaminated Sputter System (Maciej Olszewski - Cornell University)
- Quantum (QCinv) — Understanding and Surpassing Materials Challenges in Superconducting Quantum Devices (Adam Schwartzberg - Lawrence Berkeley National Laboratory)
- Exhibitor Innovator Showcase (EIS) — Reactive Magnetron Sputtering Feedback Control, 'Flexibility for Success' (Dermot Monaghan - Gencoa Ltd)
- Exhibitor Innovator Showcase (EIS) — Unlocking Innovation: Solving Complex Challenges Through Collaborative Engineering (Jimmy Haight - Semicore Equipment, Inc.)
- Exhibitor Innovator Showcase (EIS) — Accelerating Material Breakthroughs with Atomic Layer Deposition (ALD) and Physical Vapor Deposition (PVD) Combined Processes (Carlos Guerra - Swiss Cluster)
- Exhibitor Innovator Showcase (EIS) — (Reserved for Telemark)
- Exhibitor Innovator Showcase (EIS) — (Reserved for Manitou)
- Exhibitor Innovator Showcase (EIS)

Exhibit Hall

9:00 AM Exhibitor Meeting

10:00 AM Exhibit Hall Opens

(Ryman Hall B1-B3)

2:00 PM Beer Blast

3:00 PM Announce: 5 K Run Winner & Best Poster

Exhibit Hall Closes at 4:00 PM

Free Time — 4:00-5:30 PM

TAC Program Meeting — 5:30-7:30 PM (Tennessee Lobby/Tennessee C)

Thursday (May 22, 2025)

Technical Forum Breakfasts

- **TFB: Digital Transformation of Industrial Deposition Processes** — Holger Gerdes (Fraunhofer-IST) / Thomas Schütte (Plasus GmbH) — Cheekwood A
- **TFB: Aligning Deposition Process Requirements with Vacuum System Layout and Design** — Wolfgang Decker (Kurt J. Lesker Company) / Jimmy Haight (Semicore) — Cheekwood B
- **TFB: Optical Thin Film Design and Fabrication** — Ulrike Schulz (Fraunhofer-IOF) / Rajiv Pethe (Vital) — Cheekwood C
- **TFB: Advanced Deposition Coating Hardware** — Frank Papa (GP Plasma, LLC) / Ralf Bandorf (Fraunhofer-IST) — Cheekwood F
- **TFB: Coatings for Thin Film Photovoltaics** — Volker Sittinger (Fraunhofer-IST) / Stefan Saager (Fraunhofer-FEP) — Cheekwood G
- **TFB: CVD and ALD Processing** — Matt Weimer (ForgeNano) / Jacob Bertrand (Maxima Sciences) — Cheekwood H
- **TFB: Thin Film Sensors** — Jason Hrebik (Kurt J. Lesker Company) / Binbin Weng (University of Oklahoma) — Belmont A
- **TFB: Ultra-thin Flexible Glass - the next big thing?** — Chris Stoessel (StoesselConsulting) / Jörg Neidhardt (Fraunhofer-FEP) — Belmont B

10 minute passing break

Keynote — Angel Yanguas-Gil - Argonne National Laboratory — Machine Learning for Atomic Layer Deposition: Accelerating Optimization and Predicting Scale Up of Thin Film Growth Processes (Tennessee C)

10 minute passing break

Morning sessions (9:30 AM – 12:10 PM)

Large Area
- Large Area (LAinv) — Trends in Large Area Glass Coating (Paul Morgensen - Saint Gobain Glass France)
- Large Area (LA) — Simulation of Rotary Magnetron Discharges Excited by Different Frequencies (Ken Nauman - Sputtering Components Inc.)
- Large Area (LA) — Ion Source Pretreatment of Large Area Glass Substrates (Alexey Arkhipov - Bühler Alzenau GmbH)
- Large Area (LA) — Impact of AC Waveform on Plasma Dynamics and Film Growth – Sine Wave vs Square Wave (Adam Obrusnik - PlasmaSolve s.r.o.)
- Large Area (LA) — High Rate - High Quality Thin Films Made Possible with a Game Changing Plasma Source (David Stevenson - Ampres, Inc.)
- Large Area (LA) — Large-Area Coating Innovations by HCVAC for Energy Applications (Zhiming Luo - Guangdong Huicheng Vacuum Technology Co., Ltd)
- Large Area (LA) — Bringing Novel Applications to Large Area with Advanced Sputtering Solutions (Kenny Vernieuwe - Soleras Advanced Coatings)

HIPIMS
- HIPIMS (HP) — Enhancing Uniformity and Stability through OES-Based Feedback Control in an Industrial Roll-to-Roll HiPIMS Coater (Ju-Liang He - Feng Chia University)
- HIPIMS (HP) — Novel Reactive Process Control in Industrial HiPIMS (Rafael Sanchez Reategui - Ionautics)
- HIPIMS (HP) — Influence of Pulse Duration on Plasma Chemistry and Thin Film Growth of Plasmonic Titanium Nitride Deposited by Constant Current Regulated HiPIMS - SPONSORED STUDENT PRESENTATION (Ethan Muir - Sheffield Hallam University)
- HIPIMS (HP) — HiPIMS TiB2 Coating onto Slitter Cutters to Enhance Aluminum Capacitor Foil Cutting Quality (Jui-Chang Tsui - Feng Chia University)
- HIPIMS (HP) — Experiments and Modelling of High Power Impulse Magnetron Sputtering Discharges with Metallic Target (Jon Tomas Gudmundsson - University of Iceland)
- HIPIMS (HP) — Black Metal Film Prepared by Gas Flow Sputtering for Capacitor Electrode Purpose (Ping-Yen Hsieh - Feng Chia University)
- HIPIMS (HPinv) — Reactive Sputtering of High Entropy Alloy Nitride, Carbide, and Oxide Thin Films by HiPIMS: Effect of Reactive Gas Flow Rates (Jyh-Wei Lee - Ming Chi University of Technology)

Plasma Processing and Diagnostics
- Plasma Processing and Diagnostics (PPinv) — Plasma Nitriding and PACVD Coating as Complementary Technology for PVD for Big Industrial Applications (Stefan Haas - Rübig GmbH & Co KG)
- Plasma Processing and Diagnostics (PP) — Simulating the Impact of Loading Density onto Coating Uniformity in Batch Coaters (Krystof Mrozek - PlasmaSolve s.r.o.)
- Plasma Processing and Diagnostics (PP) — Hollow Cathode Processes (Ralf Bandorf - Fraunhofer IST)
- Plasma Processing and Diagnostics (PP) — Plasma Process Fault Detection Using High-Speed Signal Analysis (Martin Dummermuth - Bird Technologies)
- Plasma Processing and Diagnostics (PP) — Fast Kinetic Modeling of the Plasma Evolution, Etch Rate and Deposition Profile in Direct Current Magnetron Sputtering (Daniel Main - Tech-X Corporation)
- Plasma Processing and Diagnostics (PP) — Diagnostic Techniques for Real-Time Monitoring and Optimization of Plasma-Assisted Deposition and Etching Processes (Angus McCarter - Impedans Ltd.)
- Plasma Processing and Diagnostics (PP) — Plasma Anodization for the Production of AlF_3 Layers (Scott Walton - U.S. Naval Research Laboratory)

Coatings and Processes for Biomedical Applications
- Coatings and Processes for Biomedical Applications (BT) — Sputtered Coatings on Paper – First Results of a Feasibility Study (Christina Lehmann - Technical University Braunschweig)
- Coatings and Processes for Biomedical Applications (BT) — Identification of New Alloys for Biomedical Applications using Combinatorial Approaches (Jeffrey Hettinger - Rowan University)
- Coatings and Processes for Biomedical Applications (BT) — Use of Elevated Temperature X-Ray Diffraction for Investigating Biomedical Coatings (Theodore Scabarozi - Rowan University)
- Coatings and Processes for Biomedical Applications (BT) — Electrochemical and Microstructural Evolution of Neural Stimulation Electrodes Coated with Antibacterial Metal Oxide Thin Films (Kriti Panchal - Drexel University)
- Coatings and Processes for Biomedical Applications (BTinv) — Hierarchical Surface Restructuring: The Technology of the Future for Sustainable, High Performing and Multifunctional Neural Interfacing Electrodes and Microelectrode Arrays (Shahram Armini - Pulse Technologies Inc.)

Lunch break

Afternoon sessions (12:50 PM – 3:20 PM)

- Large Area (LA) — The Advantages of Bidirectional Pulsing Technique for Magnetron Sputtering (Yilei Shen - TRUMPF Hüttinger GmbH + Co. KG)
- **HIPIMS Panel Discussion and Workshop** (2 hrs) — "Success Stories and Positive Adoption of HIPIMS"
- HIPIMS (HP) — Robust Plasmonically-Active Nanoscale Multilayer TiN/NbN Coatings (Arutiun P. Ehiasarian - Sheffield Hallam University)
- HIPIMS (HP) — Impact of the Pulse Length in HiPIMS on the Deposition Rate, Ion Metal Flux Fraction and Argon Ion Flux - SPONSORED STUDENT PRESENTATION (Martin Ondryáš - Masaryk University)
- Plasma Processing and Diagnostics (PPinv) — Data-Integrated Modeling for Memristive Device Processing (Jan Trieschmann - Kiel University)
- Plasma Processing and Diagnostics (PP) — A Specialized QMS System for High Sensitivity Measurements to Correlate Partial Pressure Data for ITER (Chris Marcus - U.T. - Battelle for ORNL)
- Atomic Layer Processing (AL) — Advanced Materials and Processes for Climate Technology Solutions: An Industry Perspective (Alexander Cruz - Baker Hughes)
- Atomic Layer Processing (AL) — Challenges and Advances in ALD for High Aspect Ratio Structures - SPONSORED STUDENT PRESENTATION (Josh Pinder - Brigham Young University)
- Atomic Layer Processing (AL)

20 minute refreshment break

Late afternoon sessions (3:40 PM – 6:00 PM)

- HIPIMS (HP) — Optimizing HIPIMS Processes in Real-Time by Pulse-Resolved Spectroscopic and Electrical Plasma Process Control (Jan-Peter Urbach - PLASUS GmbH)
- HIPIMS (HP) — HiPIMS Deposited Constantan Alloy Film for Stretchable Thin-Film Strain Gauge (Yu-Wen Chen - Feng Chia University)
- HIPIMS (HPinv) — HIPIMS Technology in Industrial Applications (Klaus Boebel - Oerlikon Surface Solutions)
- HIPIMS (HP) — HiPIMS-TiO2 As Electron Transport Layer for Flexible Perovskite Solar Cells Application (Pei-En Fang - Feng Chia University)
- HIPIMS (HP) — In-Line Coating System With Hollow Cathode Inverted Cylindrical Magnetron For Thin Film Applications On Long Tubes And Continuous Fibers (Ivan Shchelkanov - Starfire Industries LLC)
- HIPIMS (HP) — Exploring the HIPIMS Process from an Application Perspective (Daniel Loch - Trumpf Hüttinger GmbH & Co. KG)
- Atomic Layer Processing (ALinv) — Spatial Atomic Layer Deposition: A New Revolution in Ultra-Fast Production of Conformal and High-Quality Thin-Film Coatings (John Rönn - Beneq)
- Atomic Layer Processing (AL) — Thermal Atomic Layer Deposition of Low Resistivity Metallic Films for High Aspect-Ratio Via Seed (Dane Lindblad - Forge Nano)

Young Mentors/Farewell Party — 6:00-7:30 PM (Waters Edge)