

TechCon 2027 Dallas

Sheraton Dallas Hotel | Dallas, Texas, USA

May 1 – 6, 2027

Call for Papers

Deadline for Abstracts:

January 1, 2027

(Guaranteed placement in requested session)

Now Accepting Abstracts for the 2027 Technical Conference

Technical Program: May 3 - May 6, 2027

- Technical Sessions
- Interactive Networking Forums
 - + Technology Forums
 - + Colloquiums

Education Program: May 1 - May 6, 2027

- Problem-Solving Tutorial Courses

Featuring Sessions on:

- ◆ Advanced Multifunctional Coatings: Integrating Vacuum and Electrochemical Deposition for Sustainable Energy, Surface Protection, and Biomedical Innovations (Joint Session with The Electrochemical Society - ECS)
- ◆ Advances in Thin Film Sensor Technologies: Materials Design and Applications
- ◆ Atomic Layer Processing
- ◆ Characterization, Testing and Failure Analysis of Thin Films, Coatings, and Engineered Surfaces
- ◆ Coatings and Processes for Biomedical Applications
- ◆ Coatings for Energy Conversion and Related Processes
- ◆ Digital Transformation through Artificial Intelligence, Machine Learning, Simulation, and Data Science in the Thin Film Industry
- ◆ Electron Beam Processes
- ◆ Emerging and Translational Technologies and Applications
- ◆ Exhibitor Innovator Showcase
- ◆ High Power Impulse Magnetron Sputtering (HIPIMS)
- ◆ Large Area Advanced Packaging and Integrated Photonics
- ◆ Large Area Coatings
- ◆ Optical Coatings
- ◆ Organic and Perovskite Electronics
- ◆ Photonically-Induced Transformations of Thin Films and Surfaces
- ◆ Plasma Processing and Diagnostics
- ◆ Process Monitoring, Control, and Automation
- ◆ Protective, Tribological, and Decorative Coatings
- ◆ **Substrate Cleaning & Preparation *NEW!***
- ◆ Quantum Computing
- ◆ Thin Film Contributions for the Hydrogen Economy
- ◆ WebTech Roll-to-Roll Technologies and Innovation



For more information, contact the SVC at +1-505-897-7743
or [CLICK HERE](#) to submit an abstract

WWW.SVC.ORG



Message from the Program Director

The 2027 SVC TechCon will debut in an exciting new site in Dallas, Texas – an attractive conference venue in an urban setting conducive to strengthen professional acquaintances and initiate new business connections while enjoying the unparalleled benefits of attending the TechCon.

The updated technical program will offer new sessions to reflect latest topics of interest to our stakeholders. The highly successful interactive program elements - Technology Forum Breakfasts (TFBs) and in-session Colloquia – will benefit from structural improvements (adding two afternoon TFB sessions, introduced in Long Beach) to provide unparalleled topical breadth with enhanced accessibility. Prominent Keynote and Invited speakers will anchor the program content with their outstanding topic matter expertise. The 2027 TechCon offers an industry-leading technical exhibition, abundant networking opportunities, along with an extensive educational program and in-depth technological expertise. We plan to emphasize and highlight the opportunities and potential of our young members (students and early-career professionals) that are so important to the growth of our industry. The 2027 TechCon will be a wonderful opportunity to present your latest research results, coating processes, and equipment applications in the field. Please mark your calendar for the 2027 TechCon (May 3-6, 2027), and review this Call for Papers for opportunities to contribute a talk or poster that highlights your current technical or business achievements.

Please join us in Dallas to share your latest R&D and application successes with the SVC community. The TechCon offers a broad range of presentation options – oral presentations, posters, or exhibitor innovation talks – which accommodate the full spectrum of academic research and industrial product innovations. New for 2027 will be the option of exhibitor innovation talks to have the standard 20-minute duration or a shorter 10-minute “sales pitch”. This is complemented by our publication options: PowerPoint presentation (static or narrated / pre-recorded) or manuscript in the conference proceedings, or peer-reviewed publication in a high-impact Elsevier journal. The SVC Student Sponsorship Program as well as the SVC Foundation provide financial support for a limited number of qualified applicants to encourage student participation.

We encourage you to contribute an abstract for a talk or poster to showcase your latest scientific findings, technical results, or industrial innovations to our SVC stakeholders that want to hear from you in Dallas! Our academic researchers, industrial innovators, technical practitioners, and application experts await your news and look forward to talking with you in Dallas. The SVC TechCon continues to be the preeminent global forum for thin film technologies and surface engineering that you do not want to miss. Come and join us in Dallas next May!

— Chris Stoessel, SVC Program Director
cstoessel@stoesselconsulting.net



Our Vision: *To provide a dynamic forum for transitioning and commercializing thin film and surface engineering innovation to industry.*

Our Mission: *To promote technical excellence by providing a global forum for networking, educating, and informing the stakeholders, the technical community, and the industrial eco-system on all aspects of industrial vacuum coating, surface engineering and related technologies.*

Publication Options:

There are two publication options and one video presentation option for work presented during the 2027 Technical Program

WITHOUT PEER REVIEW

Submission Deadline:
September 10, 2027

Publication in PowerPoint OR
Manuscript format in Society of
Vacuum Coaters Annual Technical
Conference Proceedings
(ISSN 0737-5921)

PEER REVIEWED

Submission Window Open
April 15 - September 10, 2027
Publication in a special edition of
Elsevier's Surface and Coatings
Technology Journal
(ISSN: 0257-8972)

VIDEO PRESENTATIONS

Submission window open
April 15 - September 10, 2027
Narrated mp4 or PowerPoint
video to be posted to the
SVC's dedicated YouTube Channel

SVC and SVC Foundation Travel Support for Students and Young Professionals

Young professionals and students are our future. The SVC and the SVC Foundation recognize that capturing the imagination and the interest of young technicians, engineers, and scientists are essential activities that will perpetuate the technologies and the companies that comprise the SVC. Student education scholarships and sponsorships supporting travel and conference participation are offered annually through programs that encompass a global reach to qualified and deserving individuals.



SVC Student/Young Professional Travel Sponsorship Program

The SVC Travel Sponsorship Program provides travel support and complimentary conference registration to selected full-time students and young professionals (under the age of 35 working in industry) to make an oral technical presentation at the SVC Annual Technical Conference. A limited number of sponsorships will be awarded to the best applicants. Applicants from industry, academic, research, and technical institutions from the United States and around the world are encouraged to apply. The Travel Sponsorship Committee evaluates applications and makes selections based on the quality and relevance of the applicant's project to the interests and mission of the SVC. It will also consider the quality of the application itself (completeness, quality, etc.), potential impact of the oral presentation, its relevance to the specific session, as well as the need for funding.

Requirements for Participation:

The applicant must have a sponsor. The sponsor can be a faculty member or supervisor at the student's institution/place of employment or another academic, technical, or research institution. The sponsor must indicate that he or she understands the nature of the conference and what SVC technical programs are about. The applicant must commit to providing a manuscript based on the content of the oral presentation at the TechCon or the Power-Point presentation delivered at the TechCon for subsequent publication by the SVC before any financial support is provided.

During the selection process, preference will be given to those applicants who have not already received sponsorship from SVC. The successful candidates should also preferably come from different institutions.

SVC Travel Sponsorship Program Abstract and Application Deadline: October 4, 2026



The SVC Foundation provides scholarships and/or stipends for travel expenses to attend the annual SVC technical conference. Scholarships are open

to well-qualified students planning to enter fields related to vacuum coatings as well as technicians already working in the field practicing the craft. The Society of Vacuum Coaters (SVC), the SVCF's founder, and ARC (formerly AIMCAL), an organization committed to advancing vacuum roll-coating technology, and their members, provides support for the Foundation to pursue these goals. Since its inception in 2002, the SVCF has awarded more than 220 scholarships and travel awards totalling over \$600,000 to students from more than 28 countries.

Please visit www.svcfoundation.org for more information

Academic Scholarship application deadline: October 18, 2026

Industry Scholarship application deadline: January 23, 2027

Student Travel Sponsorship application deadline: October 4, 2026





Ad hoc

Deposition, Plasma & Surface Engineering Processes

- Atomic Layer Processing (TAC)
- Electron Beam Processes (TAC)
- High Power Impulse Magnetron Sputtering - HIPIMS (TAC)
- Photonically-induced Transformations of Thin Films and Surfaces (TAC)
- Plasma Processing and Diagnostics (TAC)
- Substrate Preparation & Cleaning (TAC)

Functional and Protective Coatings for Energy, Environmental, and Biomedical Applications

- Advanced Multifunctional Coatings: Integrating Vacuum and Electrochemical Deposition for Sustainable Energy, Surface Protection, and Biomedical Innovations (Joint Session with The Electrochemical Society)
- Coatings and Processes for Biomedical Applications (TAC)
- Coatings For Energy Conversion and Related Processes (TAC)
- Protective, Tribological, and Decorative Coatings (TAC)
- Thin Film Contributions for the Hydrogen Economy (TAC)

Electronics, Photonics, Sensors, and Quantum Technologies

- Advances in Thin Film Sensor Technologies: Materials Design and Applications (TAC)
- Optical Coatings (TAC)
- Organic and Perovskite Electronics (TAC)
- Large Area Advanced Packaging and Integrated Photonics (TAC)
- Quantum Computing (TAC)

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Large Area, Roll-to-Roll, and Scalable Manufacturing

- Large Area Coatings (TAC)
- WebTech Roll-to-Roll Technologies and Innovation (TAC)

Characterization, Reliability, Monitoring, and Digitalization

- Characterization, Testing, and Failure Analysis of Thin Films, Coatings, and Engineered Surfaces (TAC)
- Process Monitoring, Control, and Automation (TAC)
- Digital Transformation through Artificial Intelligence, Machine Learning, Simulation, and Data Science in the Thin Film Industry (TAC)

Innovation, Translation, and Community Platforms

- Emerging and Traslational Technologies and Applications (TAC)
- Exhibitor Innovator Showcase Session
- Technical Poster Session

Program
May 6
Program
May 6
Exhibit
May 5

Directors



Technology
markets
- Program
Director

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Finance Committee

Long Range Planning Committee

Nominations Committee

Education Committee

Director of Education - SVC Instructor Base

Women in the SVC Committee

Young Members Committee

Exhibit Committee

Awards Committee

Student Sponsorship Committee

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- Jacque Matanis (Finance)
- Mark Matanis (Event Management)
- Marcella Matanis (Event Management)
- Lauren Cramer/TK Events (Digital Event Management)
- Sue Taube (Taube-Violante; Publishing)
- Maja Koblar (VOD/Social Media)
- Doug Khrum (DAK Networks; IT)
- Eric May/Alliance AV (Audio Visual)
- Freeman Company (Event Decoration)

Call for Papers

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Guaranteed Session Placement: January 1, 2027

The SVC welcomes contributions in the following areas. Each area is organized by a Technical Advisory Committee (TAC) or Session Organizing Committee.

Advanced Multifunctional Coatings: Integrating Vacuum and Electrochemical Deposition for Sustainable Energy, Surface Protection, and Biomedical Innovations (Joint Session with The Electrochemical Society)

Thin-film coatings are at the heart of materials innovation, playing a transformative role in energy systems, corrosion resistance, surface protection, and biomedical applications. This session will bridge expertise from the Society of Vacuum Coaters (SVC) and the Electrochemical Society (ECS) by exploring the synergy between vacuum-based deposition techniques and electrochemical processes, focusing on their combined potential for enhancing specific applications. Whether by integrating vapor-phase deposition methods with electrochemical techniques or applying vacuum-deposited thin films directly to electrochemical devices such as batteries, fuel cells, and sensors, the session will highlight how the dynamic intersection between these approaches can drive the development of high-performance, multifunctional materials for a range of applications.

Vapor-phase methods such as physical vapor deposition (PVD), chemical vapor deposition (CVD), and atomic layer deposition (ALD) enable the deposition of high-purity, conformal coatings with precise microstructural control. By bridging surface engineering with electrochemical performance, the session seeks to promote cross-disciplinary dialogue and drive innovation across both fields. Discussions will focus on how advanced thin films, coatings, and nanostructures fabricated through vacuum processes can transform electrochemical devices for a wide range of applications.

The Session welcomes papers in the following areas:

- Innovations in PVD, CVD, and emerging vacuum methods for fabricating high-performance electrochemical components,

- Integration of vacuum deposition (PVD/CVD) with electrochemical methods (electrodeposition, electroless plating) for multifunctional and durable coatings,
- Design and development of thin film electrodes for batteries, supercapacitors, and fuel cells to enhance energy storage and conversion efficiency,
- Surface modification using vacuum-based techniques to improve interfacial stability, conductivity, and overall electrochemical performance,
- Advances in scalable vacuum deposition processes tailored for mass production of electrochemical energy storage and conversion devices,
- Vacuum-deposited coatings for next-generation batteries, fuel cells, supercapacitors, and hydrogen storage systems,
- Novel vacuum deposition approaches to enhance stability in electrochemically active environments and extend the service life of components in aerospace, marine, and harsh environments, and
- Innovative analytical techniques that leverage electrochemical effects to investigate vacuum-deposited thin film structures.

Session Organizers:

ECS:

Luca Magagnin, *Politecnico Milano 1863*, luca.magagnin@polimi.it
Wei Tong, *Lawrence Berkeley National Laboratory*, weitong@lbl.gov

SVC:

Jones Alami, *Mohammed VI Polytechnic University*, jones.alami@um6p.ma
Mohammed Makha, *Mohammed VI Polytechnic University*, mohammed.makha@um6p.ma
Chris Stoessel, *Stoessel Consulting*, cstoessel@stoesselconsulting.net

Advances in Thin Film Sensor Technologies: Materials Design and Applications

This technical session addresses recent progress in thin film sensor technologies, with a focus on the relationship between functional materials, vacuum processing, design strategies, and application-specific performance requirements. As sensing demands expand across healthcare diagnostics, environmental monitoring, industrial automation, and wearable electronics, thin film sensors provide scalable solutions for achieving high sensitivity, selectivity, and integration in compact formats. Researchers and technologists from academia, industry, and government are encouraged to share innovations, challenges, and future directions.

The session will welcome contributions on, but not limited to, the following topics:

- Advanced Sensing Materials: Novel nanostructured, hybrid, and 2D thin films,
- Deposition & Fabrication: Innovations in thin film growth (PVD, CVD, ALD) and micro/nano-processing,
- Sensor Design & Integration: Compact, robust, and multifunctional architectures,
- Interdisciplinary Approaches: Merging materials, photonics, and electronics,



The 8th Annual SVC Foundation Casino Night on Monday Evening, May 3, 2027

To benefit the SVC Foundation and Student Sponsorship Program!

Call for Papers

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- Smart Sensing Systems: AI/ML-enhanced data processing and analytics, and
- Application Highlights: Use cases in health, environment, industry, and wearables.

TAC Co-Chairs:

Jason Hrebik, Kurt J. Lesker Company, jasonh@lesker.com

Jacob Lee, University of Oklahoma, seunghyun.lee@uta.edu

Binbin Weng, University of Oklahoma, binbinweng@ou.edu

Veronika Červenková, Polytechnique Montreal & Charles University,

veronika.cervenkova@matfyz.cuni.cz

Atomic Layer Processing (ALP)

Over the last few years, atomic layer processes (ALPs), such as atomic layer deposition (ALD), atomic layer etching (ALE), molecular layer deposition (MLD), and atomic layer epitaxy (ALEp) have increased in importance, enabling many new products and applications. With excellent uniformity, nanoscale precision, and high versatility, ALPs have applications in sensing, optical coatings, energy storage, and microelectronics. Recent advances in low temperature processing make ALP methods attractive to the processing polymers, biomaterials, and other applications with low thermal budgets.

Sequential Infiltration Synthesis (SIS), alternatively called also Vapor Phase Infiltration (VPI) complements the above-mentioned layer-by-layer technologies by its ability to form 3D nanostructures by a bulk diffusion and selective chemical reactions of precursor with functional groups in polymers or block co-polymers (BCP). Highly selective reactions of precursors with e.g., carbonyl groups (C=O) in the polymer bulk allows integration of inorganic materials into the organic matrix, resulting in a hybrid material. A self-organized BCP film after the SIS will form 3D nanostructures.

The common feature of all those methods is the use of self-limiting reactions that can provide atomic-scale resolution in both vertical and horizontal directions: this property can also be complemented by selectivity in etching or deposition. Selectivity in deposition or etching may solve some of the processing challenges in the technology of nano-devices, e.g., alignment of nanometer-sized features. A high degree of control makes the selective atomic scale processes attractive for future nano-fabrication methods.

We are soliciting oral and poster contributions in areas including both established technologies and creative new developments. Advanced technologies which successfully cross over from early-stage feasibility studying to commercially viable industrial solutions are of particular interest.

Session topics will include:

- Innovations in methods for upscaling ALPs towards high-volume industrial applications,
- New business concepts or market perspectives that accelerate transfer of ALPs and selective atomic processes from the lab to commercial viability,
- Current commercial products using ALPs,
- Precursor synthesis,
- Fundamental aspects of ALP,

- Process development,
- Plasma enhanced processes,
- Challenges and applications of ALPs and selective atomic processes,
- Novel concepts for ALP process control, characterization, and monitoring,
- Applications of selective atomic processes, and
- Selective atomic processes in micro- and nanoelectronics.

TAC Co-Chairs:

Sara Harris, Forge Nano, Inc., sharris@forgenano.com

Matt Weimer, Forge Nano, Inc., mweimer@forgenano.com

Sheng-Kuei Chiu, National University of Tainan, shengkuei@mail.nutn.edu.tw

Characterization, Testing, and Failure Analysis of Thin Films, Coatings, and Engineered Surfaces

In support of innovations and continuous R&D, product and process improvements across SVC society stake holders and industries, a new session for the SVC TechCon has been added to this year's program. This new session focuses on thin film, coating, and engineered surface characterization, evaluation and failure analysis. The goal of the session is to provide a forum for attendees to present and exchange technical information related to characterization and evaluation of thin films, coatings and engineered surfaces made through vacuum coating processes. The importance and significance of this session are obvious. First, the various properties of thin films and coatings depend on several factors during preparation. Proper characterization is critical for understanding and further optimization. Second, characterization and testing are essential for intended applications, for meeting product-design specifications, and for ensuring desired interactions with service environments. Third, the lifetime estimates, and failure analysis of thin films and coatings are crucial for avoiding unexpected situations and for identifying root causes of failures.

There are a variety of techniques for analysis, characterization and testing of materials. This session will focus on techniques and applications suitable for thin films, coating and engineered surfaces, with an emphasis on the recent development of the new in-situ and



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ex-situ capabilities, multi-technique approaches, automation, and AI assistance.

Presentation submissions in the following areas and topics are encouraged:

- Biological compatibility, toxicity, antimicrobial properties,
- Chemical composition, stability and interactions with environments,
- Lifetime estimation and life cycle assessment,
- Mechanical properties, super-hardness and stress evolution,
- Electric and magnetic properties,
- Microstructure, crystallinity, phase composition and porosity
- Nano/microscale phenomena, organized structures and nanocomposites,
- Optical properties, colors and emissivity,
- Surface and interfacial properties,
- Thermal properties, heat transfer and thermal stability, and
- Tribological properties, wear and adhesion.

This session, through a series of invited talks and contributed presentations, aims to address common questions and challenges faced by researchers, practitioners, and professionals who are in the SVC associated fields. It will provide new insights into the analysis, characterization and testing methods currently available, recently developed and under development for thin films, coatings and engineered surfaces.

TAC Co-Chairs:

Matthew Linford, *Brigham Young University*, mrlinford@chem.byu.edu

Dehua Yang, *Ebatco*, dyang@ebatco.com

Oleg Zabeida, *Polytechnique Montréal*, oleg.zabeida@polymtl.ca

Coatings and Processes for Biomedical Applications

Coatings and surface treatments are essential to the advancement of both established and emerging biomedical technologies. Recent progress in the understanding of biological systems has accelerated the development of innovative coatings and surface engineering approaches. These technologies aim to improve osseointegration,

enable neural interfaces, extend the operational lifespan of implanted devices, enhance biocompatibility, and reduce costs. These advances are not limited to implantable devices; they also support a wide range of applications such as energy harvesting for wearable health-monitoring systems, where flexibility and biocompatibility are essential.

To support continued innovation and address technical challenges in this rapidly evolving field, the Coatings and Processes for Biomedical Applications Technical Advisory Committee (TAC) welcomes paper submissions focused on coatings and surface modifications for biomedical applications. Submissions may cover material development, surface engineering techniques, characterization methods, performance evaluation, regulatory pathways, or emerging applications in the biomedical space.

Topics of interest include, but are not limited to:

- Orthopedic coatings and osseointegration,
- Neurostimulation technologies,
- Cardiovascular device coatings and surface modifications,
- Bio-corrosion resistance,
- Biocompatible films for medical injection mold fabrication,
- Biocompatible films for high energy laser processing,
- Flexible electronics, biosensors, and biochips,
- Antimicrobial coatings and surface treatments/modifications,
- Novel surface modification techniques (e.g., laser processing),
- High-throughput approaches,
- High-throughput and advanced characterization techniques,
- Screening and testing techniques for biomedical surface characterization,
- Hard coatings for OR tools/devices,
- Novel processing approaches and deposition tools,
- Regulatory approval strategies,
- Navigating evolving funding landscapes, and
- Market analysis and projections.

Submissions addressing other biomedically relevant topics related to coatings and surface engineering are also encouraged.

TAC Co-Chairs:

Christopher Cook, *Edmund Optics*, ccook@edmundoptics.com

Jeff Hettinger, *Rowan University*, hettinger@rowan.edu

Natalie Page, *Lila Sciences*, npage@lila.ai

Gregory Taylor, *Lawrence Livermore National Laboratory*, taylor275@llnl.gov

Chinmay Trivedi, *IHI Hauzer Techno Coating B.V.*, ctrivedi@hauzer.nl

Coatings for Energy Conversion and Related Processes

This session provides a comprehensive forum for experts and researchers to discuss the latest developments and technologies in the field of energy conversion coatings. These talks cover a wide area of applications, however with a core focus on energy conversion, storage, and management. This session brings industry, research, and academics together in order to facilitate the transfer of technology and share new and upcoming ideas and technologies for the improvement of sustainable living.



Call for Papers

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Guaranteed Session Placement: January 1, 2027

The Technical Advisory Committee (TAC) welcomes papers in the following areas:

Solar and Ambient Light Energy Conversion:

- Thin-film and thin wafer as well as perovskite silicon tandem photovoltaics for space and terrestrial applications,
- Organic flexible photovoltaics (OPV),
- Semi-transparent photovoltaics, and
- Coatings for improved performance.

Energy Harvesting:

- RF harvesting,
- Piezoelectrics, and
- Kinetic harvesting through body movement.

Energy Storage:

- Thin flexible batteries,
- Flow batteries,
- Powder surface treatment (PVD, CVD, ALD) for Li-ion batteries, Na-batteries, or solid-state batteries (or other types),
- Super capacitors,
- Coatings for improved stability, graphene and carbon nanotubes, and
- Protective coatings for the prevention of e.g., hydrogen embrittlement.

Efficient Functional Coatings:

- Radiative cooling,
- Hydrophobic and hydrophilic,
- Self-cleaning catalytic coatings,
- Development of coatings for reduction of precious metal, and
- Anticorrosive coatings.

Other Traditional Subjects:

- Smart windows,
- Selective radiators,
- Fuel cells and electrolyzers (low temperature, high temperature, advanced types), and
- Large-scale energy conversion and storage.

TAC Co-Chairs:

Volker Sittinger, *Fraunhofer IST*, volker.sittinger@ist.fraunhofer.de

Roel Bosch, *IHI Hauzer Techno Coating B.V.*, RBosch@hauzer.nl

Ric Shimshock, *MLD Technologies, LLC*, ric.shimshock@ga.com

Stefan Saager, *Fraunhofer FEP*, stefan.saager@fep.fraunhofer.de

Digital Transformation through Artificial Intelligence, Machine Learning, Simulation, and Data Science in the Thin Film Industry

This session explores the transformative role of digital technologies in the domain of industrial thin film deposition, particularly within vacuum-based coating technologies. The focus is on leveraging physics-informed simulation, artificial intelligence, and data-driven methods to enhance process understanding, optimization, and control.

The session will include, but is not limited to, the following topics:

- **Physics and Chemistry Simulations:** Use of high-fidelity, multi-physics models to predict key process parameters like ero-

sion and deposition profiles, film composition, ion bombardment, gas and plasma distributions, and substrate heating.

- **Digital Twin Models:** Real-time capable simulations that integrate equipment layout and operating parameters to forecast coating performance and variability.
- **Machine Learning and Hybrid Approaches:** Applications of AI for predictive maintenance, parameter tuning, and anomaly detection. Emphasis on combining limited experimental data with physical modeling for higher generalizability (greybox models).
- **Data Infrastructure and Process Mining:** Tools and methods for systematic data acquisition, storage, accessibility, and intelligent analysis across the coating process chain.

This session is intended for all stakeholders involved in the digital transformation: OEMs and system integrators in the vacuum coating sector, coating service providers and production engineers, developers of coater components and diagnostic tools, as well as providers of simulation software and digital services, and data mining platform providers.

TAC Co-Chairs:

Holger Gerdes, *Fraunhofer IST*, holger.gerdes@ist.fraunhofer.de

Paul Nizenkov, *boltzplatz - numerical plasma dynamics GmbH*,

nizenkov@boltzplatz.eu

Adam Obrusnik, *PlasmaSolve s.r.o.*, obrusnik@plasmasolve.com

Electron Beam Processes

The Electron Beam Processes Technical Advisory Committee (TAC) is a spin-off from the International Conference on High-Powered Electron Beam Technology, originally founded by Dr. Robert Bakish in 1983. Today, high-power electron beam technology is well established for coating, melting, and welding. The EB TAC focus is the development of new coatings and coating processes using electron beam technology as well as new ebeam components, such as power supplies and beam control systems to enhance material properties. Of particular interest are improvements to equipment that enable new applications such as additive manufacturing of turbine engine components and medical implants.



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The TAC supports the technical and technological exchange of knowledge to promote electron beam technology especially for industrial applications and is looking for papers on the topics listed below:

- Advances in high-rate PVD by electron beam evaporation (EB-PVD), such as for thermal barrier coatings,
- Electron beam processes for the production of novel materials,
- Additive manufacturing with electron beam,
- Thermal processes (welding, hardening, refining, drilling),
- Non-thermal processes (curing, sterilization, crosslinking, gas conversion),
- New applications for PVD by electron beam evaporation for photovoltaics, concentrated solar, energy production (fuel cells), energy storage (batteries), and high efficiency lighting,
- Modelling of electron beam sources, processes, and systems,
- New components in electron beam technology (guns, power supplies, vacuum systems, plasma assist),
- Emerging technologies (electron generation, beam guidance, etc.), and
- Related and new applications of electron beam processes.

TAC Chair:

Stefan Saager, Fraunhofer FEP, Stefan.Saager@fep.fraunhofer.de

Assistant TAC Chairs:

Luis Isern Arrom, Cranfield University, l.isernarrom@cranfield.ac.uk

Koldo Almandoz Forcen, Cranfield University, k.almandoz@cranfield.ac.uk

Kevin Meisner, Honeywell, kevin.meisner@honeywell.com

Jack Mershon, PGT, jack.mershon@linde.com

Asim Mirza, boltzplatz-numerical plasma dynamics GmbH, mirza@boltzplatz.eu

Matthias Neumann, VON ARDENNE GmbH, neumann.matthias@vonardenne.com

Sergio Pace, CRM Group, sergio.pace@crmgroup.be

Chris Punshon, Cambridge Vacuum Engineering, cpunshon@camvaceng.com

Jason Van Sluytman, Honeywell, Jason.VanSluytman@honeywell.com

Emerging and Translational Technologies and Applications

This session welcomes presentations related to Deposition and Surface Engineering Technologies and Applications that do not readily align with the classic Session topics of the SVC TechCon program.

Modern market needs and application requirements continuously trigger innovation in the production and development of thin films and coatings. There are two trajectories that historically advance the field: (a) adjacent markets and applications expand by taking advantage of innovation in traditional technologies, and on the other side (b) established markets and applications benefit from technical innovation in fields that previously were restricted to exterior “heritage” domains.

This session seeks to highlight new applications and markets that are enabled by advances in thin film and coating deposition, interface engineering, and surface processing. Contributed presentations may emphasize applications & markets, describe the role of enabling or cross-over technologies, as well as business topics such as market opportunity overviews, or new business and engineering concepts.

Market- and business-focused talks should generally relate to technology innovation within the SVC domain, and technology-focused talks should relate to a new market or application arena that SVC stakeholders should pay attention to.

TAC Chair:

Chris Stoessel, Stoessel Consulting, cstoessel@stoesselconsulting.net

Assistant TAC Chairs:

Ladislav Bardos, Uppsala University, ladislav.bardos@angstrom.uu.se

Clark Bright, Bright Thin Film Solutions (3M retired), brightcrewllc@gmail.com

Jörg Neidhardt, Fraunhofer FEP, joerg.neidhardt@fep.fraunhofer.de

Frank Papa, GP Plasma, frank@gpplasma.com

High Power Impulse Magnetron Sputtering – HIPIMS

High power impulse magnetron sputtering (HIPIMS) has moved from lab scale to industry. Today, a significant number of industrial-scale HIPIMS processes exist as well as some commercial processes and products. Both fundamental understanding and application-oriented development are essential for exploiting the full potential of this technology.

The latest results from fundamental research, new and advanced approaches for simulation and modeling, and the combination of applied research from lab scale to industrial size cathodes and machines are the focus of this TAC. The session aims to provide a forum linking scientists, technologists, and industrialists to discuss all aspects of the HIPIMS technology.

Papers are solicited from, but not limited to, the following areas:

- Fundamental research on plasma, discharge, and coatings,
- Simulation and modeling of HIPIMS,
- New plasma sources and process modifications,
- Recent development in pulse generation and process and plasma diagnostics,



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- Application oriented results: tribological, optical, medical, etc., and
- New coatings and products.

TAC Co-Chairs:

Ralf Bandorf, *Fraunhofer IST*, ralf.bandorf@ist.fraunhofer.de

Arutiun P. Ehasarian, *Sheffield Hallam University*, a.ehasarian@shu.ac.uk

Frank Papa, *GP Plasma*, frank@gpplasma.com

Assistant TAC Chairs:

Ju-Liang He, *Feng Chia University*, jlhe@fcu.edu.tw

Ivan Shchelkanov, *Starfire Industries*, ishchelkanov@starfireindustries.com

Brian Jurczyk, *Starfire Industries*, bjurczyk@starfireindustries.com

Ivan Fernandez, *Nano4Energy*, ivan.fernandez@nano4energy.eu

Large Area Advanced Packaging and Integrated Photonics

The transition from 300 mm wafers to large-format panel packaging and Glass Core Substrates is critical to meeting the density, bandwidth, and scaling demands of next-generation AI accelerators and Co-Packaged Optics (CPO). However, vacuum equipment engineers face a fundamental architecture dilemma: legacy semiconductor-style cluster systems maintain exceptionally low defect rates by keeping substrates stationary, but they struggle to scale strict film uniformity across massive rectangular formats. Conversely, adapting traditional Flat Panel Display (FPD) or inline configurations provides superior large-area process uniformity via substrate motion or scanning, but inherently introduces higher defect and particle rates due to substrate transport mechanisms.

This session focuses exclusively on the in-vacuum engineering, hardware, and materials science solutions required to bridge this gap. We invite papers addressing the challenges of processing large-format substrates (e.g., 515 mm × 510 mm, 600 mm × 600 mm, or larger) entirely within the vacuum chamber, specifically focusing on the engineering compromises and hybrid approaches that combine the ultra-low defect rates of stationary processing with the superior uniformity of dynamic inline systems for both electrical interconnects and optical communication pathways.

Topics of interest include, but are not limited to:

- **Defect Mitigation vs. Process Uniformity:** Vacuum hardware and process innovations that bridge the gap between ultra-clean stationary architectures and moving/scanning inline configurations for large-area scaling.
- **Deposition of Photonic Communication Materials:** In-vacuum deposition (PECVD, ALD, Sputtering) of low-loss optical thin films (e.g., SiN, SiO₂, SiON, LiNbO₃) for integrated waveguides, optical interposers, and Co-Packaged Optics (CPO).
- **Refractive Index & Optical Uniformity Control:** Vacuum process engineering to achieve wafer-level precision in film thickness, stoichiometry, and refractive index across large-area, panel-sized footprints.
- **Conformal Deposition in Vias:** Vacuum metallization step-coverage challenges, focusing on highly conformal adhesion, barrier, and seed layer deposition (e.g., Ti/Cu, Ta/Cu) in high-aspect-ratio Through-Glass Vias (TGVs) for 2.5D/3D integration.

- **Thermal Management & Outgassing Mitigation:** In-situ vacuum degas strategies, low-temperature plasma deposition, and etch processes tailored for highly outgassing organic laminates and hybrid glass-polymer build-up stacks (operating <120°C).
- **Advanced Substrate Handling & Vacuum Etching:** Large-area Electrostatic Chucking (ESC) for dielectric glass panels, CTE mismatch warpage mitigation, and uniform plasma etching/ashing for fine-pitch RDL and TGV profiles.

TAC Chair:

Patrick Morse, *Arizona Thin Film Research LLC*, pmorse@azthinfilm.com

TAC Co-Chair:

Manuela Junghänel, *Fraunhofer Institute for Reliability and Microintegration IZM*, manuela.junghaehnel@assid.izm.fraunhofer.de

Large Area Coatings

Scaling up to High Volume Manufacturing (HVM) has enabled tremendous cost reduction in the production of architectural and automotive glass, flat panel displays, solar cells, and roll-to-roll. Scalability comes with unique challenges. To operate a plant at HVM scales, the selected deposition method and related processes must be stable and reproducible over long operation time. Chemical and physical layer properties at the nanoscale must be precisely controlled across the meter scale. The obtained layers serve later as optical interference stacks, diffusion barriers, hard- or lubricating coating for scratch resistance, transparent conductors, decorative coatings, solid electrodes or electrolytes.

The Large Area Coating Session gives you an opportunity to meet with and to learn from leading industry and academic experts in the field, present and discuss cutting edge developments in the broad field of coating applications, highlight the newest materials, methods, processes, review required equipment and software, and also discuss market trends. Session topics will cover:



Call for Papers

Abstract Submission Deadline

Guaranteed Session Placement: January 1, 2027

- Understanding and controlling process at nanoscale with homogeneity up to meter-scale: Physics and chemistry of thin films and their interfaces, analytical equipment in/ex-situ, in/off-line,
- Process data analytics and predictive methods: multi-physics simulations, digital twins, closed-loop process control, machine learning, and artificial intelligence (AI) applied to high volume manufacturing of coatings,
- 2D and 3D coatings, processes, equipment, market trends and regulations for architectural, automotive, aerospace, and display applications,
- Manufacturing methods including surface preparation, etching, sputtering (magnetron, ion beam assisted), High-Power Impulse sputtering (HIPIMS), evaporation, chemical vapor deposition (CVD), plasma enhanced CVD (PECVD), atomic layer deposition (ALD), plasma enhanced ALD (PEALD/PAALD), pulsed layer deposition (PLD), and
- Best practices: process engineering and transfer, quality control, upgrade of equipment, predictive maintenance, metrology, sustainability, testing and introducing new technologies, scale-up.

TAC Chair:

Aneliia Wäckerlin, *Glas Trösch AG*, a.waeckerlin@glastroesch.ch

Assistant TAC Chairs:

Brent Boyce, *Guardian Industries Corp.*, bboyce@guardian.com

Marcus Frank, *Bühler Group*, marcus.frank@buhlergroup.com

Brian Holsclaw, *Corning Inc.*, holsclawb@corning.com

Ken Nauman, *SCI/Bühler*, knauman@sputteringcomponents.com

Kyle Schuberg, *Gentex*, kyle.schuberg@gentex.com

Optical Coatings

Exciting developments in optical coatings are stimulated by the latest trends in optics, optoelectronics, photonics, optical data processing, mobile devices, displays, biomedical, sensors, energy and photovoltaics, architectural, aerospace, astronomical, and other technologies. The optical coatings session will bring together these different aspects for technical interchange in the field of optical interference coatings.

To build a well-rounded optical coatings session, abstracts are solicited to cover topics including coating design, development of practical manufacturing techniques, characterization methods, and a wide range of applications.

Specific areas may include:

- Novel optical coating materials, including metamaterials and metasurfaces,
- New fabrication processes for optical coatings,
- Novel optical interference design software and design techniques,
- Production issues common to the industry – including lessons learned or serendipitous discoveries that came from problems or disasters,
- Metrology of optical films (new instrumentation and software developments, inline or in-situ approaches, etc.),
- Real-time process monitoring and control with optical coating processes,
- Industrial scale-up,
- Preconditioning and cleaning issues; refurbishment approaches

- for optical coatings,
- Coatings on sapphire, polymers or other special substrate materials, coatings for complex 3-D optical devices,
- Applications in non-traditional wavelengths, from EUV to IR (e.g., IR thermal imaging),
- Optical coatings for mobile electronics (e.g., fingerprint sensors, cameras, displays, touchscreens, etc.),
- Optical coatings for wearable technology, including AR/VR,
- Coatings for LIDAR/driverless vehicles,
- Optical coatings for biomedical applications,
- Optical coatings for energy control and solar power,
- Optical coatings for laser applications, including femto-second lasers,
- Optical coatings for display and integrated photonic device applications,
- Optical coatings for astronomy and aerospace, and
- Optical coatings for quantum optics.

TAC Chair:

Jay Anzellotti, *IDEX Health & Science*, janzellotti@idexcorp.com

Assistant TAC Chairs:

Astrid Bingel, *Fraunhofer IOF*, astrid.bingel@iof.fraunhofer.de

Vivek Gupta, *Meta/Facebook*, guptavivek23@meta.com

Rajiv Pethe, *Vital Chemicals USA*, Rajiv.Pethe@VitalChemUSA.com

Binyamin Rubin, *Veeco*, brubin@veeco.com

David Sanchez, *thinfilmscientist@gmail.com*

Organic and Perovskite Electronics

Organic and organometal-halide perovskite materials have emerged in recent years as important alternatives to traditional inorganic materials for optoelectronic devices. These novel materials provide huge potential benefits such as reduced-cost processing, compatibility with nonconforming and flexible substrates, and tunable color properties, allowing for a range of interesting applications. Organic light-emitting diodes (OLEDs) have become widespread commercially in displays, with improvements in brightness and contrast ratios, as well as interesting form factors such as thin and flexible devices. Perovskite-based photovoltaic devices are attracting considerable interest as a potentially disruptive energy technology, with power conversion efficiencies similar to or in excess of those seen in current panels but with simpler processing requirements.

Like any interesting and fast-growing field of technology, the achievements and benefits in the field of organic/organometallic electronics and optoelectronics don't come without their own challenges. The inherent properties of these materials make them challenging to deposit using a vapor-phase technology:

- The materials are typically prone to decomposition at relatively lower temperatures which has led to development and use of evaporation sources with a complex set of features and temperature control mechanisms.
- Additionally, some of the active films in the device architecture require precise rate control algorithms to achieve the required

Call for Papers

Abstract Submission Deadline

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host-dopant compositions, which in turn also require critical hardware considerations.

- Materials are mostly sensitive to moisture and oxygen, so the protection from these elements during and post-fabrication is critical.

These factors require a deep understanding of material properties, study and treatment of substrates and interfacial properties of layers, considerations of the bottlenecks towards device fabrication, encapsulation techniques and thin-film deposition system solutions, and combined they result in an exciting process in this field of study.

This session welcomes papers addressing materials and processing challenges related to these technologies involving vacuum and vapor-based techniques such as evaporation, sputtering and ALD. We encourage submissions on practical approach towards fabrication of organic devices and emphasizing key parameters to consider during the design and building steps. Discussion on challenges and opportunities in scaling up processes for industrial production will be integral to the session.

The session will include discussions on research on the following device types:

- Organic and perovskite light-emitting diodes (OLEDs and PLEDs),
- Organic and perovskite photovoltaics (OPV and perovskite PV),
- Hybrid inorganic/perovskite tandem photovoltaics,
- Organic thin film transistors (OTFTs and OFETs),
- Organic memory devices and spintronics,
- Organic sensors,
- Flexible and wearable electronics, and
- Building-integrated photovoltaics (BIPV).

TAC Co-Chairs:

Mike Miller, *Angstrom Engineering*, mmiller@angstromengineering.com

John Naylor, *Kurt J. Lesker Company*, johnn@lesker.com

Paul Sullivan, *Kurt J. Lesker Company*, paulsu@lesker.com

Akhil Vohra, *Angstrom Engineering*, avohra@angstromengineering.com

Photonicallly-Induced Transformations of Thin Films and Surfaces

Lasers, flash lamps, and other highly energetic illumination sources enable rapid thermal processing of surfaces and thin films for scaled, low-cost materials and technologies in areas of high economic, societal and environmental impact. Realization of surface-selective rapid thermal annealing coupled with high-throughput are especially attractive features of photonic materials engineering.

This session provides a forum to discuss pioneering technological applications bound by the common thread of photonicallly-based methods for surface and thin film annealing, materials synthesis and surface patterning.

We welcome submissions addressing the following key areas:

- Surface selective annealing of bulk materials and thin films with light typically in the <100 ms range,
- Wafer based and large area in-line applications,
- Laser and flash-lamp-based conversion and synthesis of high quality, crystalline materials (transparent and conductive layers,

- energy harvesting, sensor material, low-power computing, multi-functional 'More than Moore' electronic device technology, large area photocatalysts and smart materials for window applications),
- Rapid patterning of microelectronic devices without photolithography (sensors, medical implants, and hardware for experiments and IoT devices),
- Control of nano-micro scale surface morphology (cell adhesion, directed fluid flow),
- Photonically-induced chemical activation of surfaces for antipathogenic, anti-smudge, (de)wetting properties, and
- Novel photonic illumination processes and devices.

TAC Co-Chairs:

Christopher Muratore, *University of Dayton*, Dayton, cmuratore1@udayton.edu

Jörg Neidhardt, *Fraunhofer FEP*, joerg.neidhardt@fep.fraunhofer.de

Plasma Processing and Diagnostics

This session welcomes contributions focused on the development, understanding, and application of plasma-based techniques for thin film coatings and surface modification. The scope includes both established and emerging approaches for plasma-enhanced deposition and treatment, emphasizing the underlying physical and chemical processes, diagnostics, and modeling strategies that enable performance optimization and scalability in industrial environments.

Topics of interest include:

- Physical vapor deposition (PVD) including magnetron sputter-deposition in conventional and non-conventional arrangements,
- Plasma-enhanced chemical vapor deposition (PECVD) both on process and application side,
- Plasma-based etching in the semiconductor industry and other applications,
- Development of novel plasma sources for materials processing (e.g., mid-pressure, atmospheric pressure, nanosecond-pulsing, micro plasmas, etc.),



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- Hybrid systems and hybrid processes integrating different plasma technologies,
- Atmospheric-pressure plasma processing, including dielectric-barrier discharges and plasma jets,
- Plasma diagnostics for understanding plasma dynamics and plasma-material interaction,
- Modelling and simulation of plasma and plasma-surface interactions, and
- Novel plasma processing methods such as treatment of nanoparticles, nanomaterials, and liquids, as well as plasma catalysis.

This session is particularly relevant for industry practitioners, researchers, and scientists:

- Working on the design, scale-up, and implementation of advanced plasma sources and coating technologies,
- Developing novel plasma-based processes or deposition techniques, and
- Engaged in the experimental diagnostics of laboratory or industrial plasma systems.

By fostering a technical exchange among these communities, the session aims to advance both the fundamental science and practical applications of plasma processing in thin film technologies.

TAC Co-Chairs:

Hana Baránková, *Uppsala University*, hana.barankova@angstrom.uu.se

Oleg Zabeida, *Polytechnique Montréal*, oleg.zabeida@polymtl.ca

Assistant TAC Chairs:

Lenka Zajíčková, *Central European Institute of Technology & Masaryk University*, lenkaz@physics.muni.cz

Process Monitoring, Control, and Automation

As the fourth industrial revolution transforms manufacturing, the demand for intelligent, automated vacuum processing systems is rapidly growing. This session explores the forefront of automation technologies reshaping thin film deposition, plasma processing, and surface engineering.

Achieving high levels of repeatability, reproducibility, and yield requires robust solutions for real-time process monitoring and control. While the benefits – such as increased throughput, reduced material and energy waste, and lower operational costs – are well recognized, the path to reliable automation remains complex. Key challenges include sensor and actuator integration in harsh environments, data fusion across heterogeneous systems, development of adaptive and autonomous control algorithms for closed loop and self-optimizing processes, and cybersecurity in connected manufacturing environments.

This session emphasizes practical, deployable solutions while highlighting recent advances in:

- Embedded real-time sensors and actuators,
- Cyber-physical systems and digital twins for monitoring and control,
- Advanced data integration and edge analytics,
- Automation and digitalization strategies,
- AI and machine learning for predictive and adaptive control,
- Robotic systems for material handling and process execution, and
- Autonomous materials discovery and optimization platforms.

We invite contributions from researchers, engineers, and solution providers that address these challenges through innovative technologies, case studies, or system-level implementations. We particularly encourage presentations demonstrating measurable impact, integration strategies, and lessons learned from industrial deployment.

Join us to explore how automation and digitalization are driving the transition from monitored processes to truly autonomous vacuum manufacturing systems.

TAC Chair:

Martynas Audronis, *Nova Fabrica Ltd.*, martynas@novafabrica.biz

TAC Co-Chairs:

Gun-Hwan Lee, *Korea Institute of Materials Science*, ghlee@kims.re.kr

Edmund Schuengel, *VAT Vakuumventile AG*, E.Schuengel@vat.ch

Brad Tinkham, *BTM Engineering LLC*, btinkham@btm-eng.com

Protective, Tribological, and Decorative Coatings

The Protective, Tribological and Decorative Coatings Technical Advisory Committee (TAC) encourages speakers to submit abstracts to highlight their work about coatings used to enhance wear resistance or modify friction characteristics in tribological components, such as those in machining and forming processes or in automotive and aeronautical applications.

The second topic covered in this session is corrosion resistance. We



Call for Papers

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welcome contributions highlighting the developments in this field that play an important role in enhancing lifetime of metallic components. Examples are fuel cells where the performance and lifetime are enhanced by reducing corrosion rate.

The third topic is coatings used in decorative sector, where mostly PVD coatings are used for enhanced surface finish. These PVD coatings enhance aesthetics appeal along with wear and corrosion resistance.

The use of such coatings is typically driven by performance requirements, reduction of life-cycle cost, environmental consideration, and durable cosmetic and aesthetic designs. These end-user motivations lead to dedicated coating and technology developments, vacuum coating equipment concepts, new testing procedures and methods, and production quality standards. Therefore, successful coating solutions in the marketplace require strong co-operation between market specialists, universities, suppliers, manufacturers, and end-users.

The TAC encourages speakers to present on new emerging technologies. Developing and scaling up from laboratory to high volume production at high production yields is also of high interest to the participants in this session.

Today's global landscape is changing rapidly and will drive many new application developments that will include new coatings for new applications. Environmental considerations for reducing CO2 emissions in electroplating and fast-moving communication technologies are well-known examples of such changes. Electrification of transportation and diversifying beyond the internal combustion engine are regular developments

Topics of interest for this session include, but are not limited to:

Applications:

- Hydrogen economy related components
- Coatings for high-performance engines, including hydrogen and e-fuels combustion
- PVD and CVD coatings for cutting, forming and molding tools
- Coatings for the reduction of friction and exhaust gas emissions
- Low- and high-temperature coatings for aerospace applications
- Decorative components and large area prefabricated sheets
- Corrosion protective coatings (e.g. Zn:Al) on large-area surfaces
- Electroplating Replacements by vacuum deposited coatings

Development:

- Super-lubricity Coatings
- Corrosion protection
- New colors
- Hydrogen embrittlement barriers
- Testing and evaluation of coating performance
- Scale-up of vacuum coating processes for industrial demands
- Failure analysis of coatings
- Assessment, control and management of residual mechanical stress
- Duplex coatings and thin-on-thick systems
- Modelling approaches to performance analysis and prediction

Production Related:

- Reliability and life of coated parts and systems
- Upscaling from laboratory to production
- Scrap rates from percentages to ppm levels
- Integration of Industry 4.0 in vacuum coating plants

TAC Co-Chairs:

Martin Engels, *Ionbond*, martin.engels@ionbond.com

Anas Ghailane, *Avaluxe Coating Technologies*, AGhailane@avaluxe-technologies.de

Juan Manuel Gonzalez Carmona, *Centro de Ingenieria y Desarrollo Industrial CIDESI*, juan.gonzalez@cidesi.edu.mx

Jolanta Klemberg-Sapieha, *Polytechnique Montreal*, jsapieha@polymtl.ca

Sankalp Kota, *The Timken Company*, sankalp.kota@timken.com

Christoph Schiffers, *CemeCon*, christoph.schiffers@cemecon.de

Christian Stein, *Fraunhofer Institute for Surface Engineering and Thin Films IST*, christian.stein@ist.fraunhofer.de

Quantum Computing

Quantum computing promises to harness the power of quantum mechanics to solve problems unfathomable for classical computers to resolve. Quantum computing, once a theoretical dream, is now experiencing an unprecedented surge of progress. Driven by intense research efforts, substantial investments, and collaboration across academia and industry, quantum computing technology is rapidly approaching reality with a promise to revolutionize fields ranging from materials science and drug discovery to finance and artificial intelligence. The quantum computing session aims to explore the current state and prospects of this transformative technology.

The session welcomes researchers, academics, and industry leaders to explore the cutting edge of quantum computing and share their insights on its remarkable emergence. We seek submissions on a range of topics, including:



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Abstract Submission Deadline

Guaranteed Session Placement: January 1, 2027

Quantum Hardware and Software:

- Progress and challenges in superconducting qubits, trapped ion, topological, and other platforms,
- Novel device architectures and fabrication techniques,
- Algorithmic breakthroughs, development frameworks, and their practical applications,
- Error correction and fault-tolerance techniques, and
- Benchmarking and performance analysis.

Scalability Challenges:

- Bridging the gap between quantum and classical systems, and
- Architectures for large-scale quantum computing.

Applications:

- Emerging applications in materials science, drug discovery, and encryption,
- Quantum-enhanced machine learning and artificial intelligence, and
- Financial modeling and risk analysis.

Impact:

- The ethical implications and impact of quantum computing on society,
- Educational initiatives and talent development for the quantum workforce, and
- Commercialization and industry trends in quantum technology.

TAC Co-Chairs:

Mike Miller, *Angstrom Engineering*, mmiller@angstromengineering.com

John Naylor, *Kurt J. Lesker Company*, johnn@lesker.com

Akhil Vohra, *Angstrom Engineering*, avohra@angstromengineering.com



Substrate Preparation & Cleaning

Effective substrate preparation and cleaning are critical enabling steps in vacuum coating applications directly impacting adhesion, performance, and reliability. As coating technologies advance, increasingly stringent cleanliness requirements demand controlled, repeatable cleaning processes to ensure consistent production quality.

In vacuum coating processes such as PVD, even small amounts of filmic or particulate contamination can prevent proper adhesion and lead to coating defects or failure. Cleaning must therefore be treated as a high-value production step, connected to the whole process chain, that prepares the surface for coating while minimizing the risk of recontamination prior to the coating process.

This session focuses on the concepts and practical implementation of cleaning concepts and processes across a range of substrates, geometries, and applications. Emphasis will be placed on process design using the interaction of chemistry, mechanics, temperature, and time, along with selecting appropriate cleaning methods based on contamination type. In many applications, optimal results are achieved through combinations of various cleaning processes.

Practical approaches will also be addressed, focusing on how combining different processes can improve cleaning performance, consistency, and coating results in production environments. In addition, this session will highlight the growing importance of process validation and monitoring to ensure a stable and reliable process. The session will also explore how cleanliness requirements are defined and verified for coating applications, emphasizing analytical methods, and application-specific standards. Special attention will be given to balancing cleaning effectiveness with potential risks such as surface damage, corrosion, or material degradation, particularly for sensitive or high-value components.

The Substrate Preparation & Cleaning session aims to bring together coaters, equipment manufacturers, cleanliness analysis providers, and researchers to share best practices, emerging technologies, and real-world case studies demonstrating how effective cleaning strategies enable high-performance coating solutions.

The session will include, but is not limited to, the following topics:

- Impact of surface cleanliness on coating adhesion, performance of functional layer systems, yield, and reliability in vacuum coating processes,
- Removal of contamination affecting PVD, CVD, and ALD coating (oils, particles, oxides, residues, outgassing sources),
- Cleaning and pretreatment strategies for high-performance and high-stress coatings (e.g., DLC, optical, functional coatings),
- Selection of cleaning technologies based on coating application requirements,
- Aqueous, solvent, and hybrid cleaning approaches for vacuum coating preparation,
- Integration of cleaning processes into vacuum coating production lines,
- Advanced cleaning technologies supporting vacuum coating (e.g. ultrasonic, plasma, CO₂, laser cleaning),

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- Cleaning challenges for complex geometries, precision components, and high-purity applications,
- Cleaning requirements for critical industries (optics, semiconductors, aerospace, automotive coatings),
- Cleanliness specifications and validation methods for coating-ready surfaces,
- Drying, handling, and storage strategies to maintain coating-ready surfaces,
- Process optimization for coating yield, defect reduction, and production scalability, and
- Case studies linking cleaning process improvements to coating performance outcomes.

TAC Chair:

Tyler Wheeler, *Ecoclean*, Tyler.Wheeler@ecoclean-group.net

Assistant AC Chairs:

Stefan Lukowski, *SAFECHM*, s.lukowski@safechem.com

Frank-Holm Roegner, *Fraunhofer FEP*, frank-holm.roegner@fep.fraunhofer.de

Karl Trautz, *HEMO*, k.trautz@hemo-gmbh.de

Thin Film Contributions for the Hydrogen Economy

This session is focused on the role of physical vapor deposition (PVD) and related thin film and surface engineering technologies in the emerging hydrogen economy. This session aims to bring together experts, researchers, and industry professionals from around the world to share their knowledge and insights on the application of PVD thin film coating techniques in advancing the use of hydrogen as a clean energy source.

Participants will have the opportunity to present their research findings, case studies, and innovative approaches in utilizing PVD thin film coating technology for various aspects of the hydrogen economy. The topics of interest include but are not limited to: PVD coatings for hydrogen storage materials, PVD methods for fuel cell catalyst preparation, thin film coating-based hydrogen production and purification techniques, and advancements in thin film coating processes for the manufacturing of hydrogen-related devices and components. Specific industrial implementation of solutions is of critical importance to the SVC's international stakeholder base.

The SVC TechCon provides a unique platform for scientists, engineers, and industry leaders to collaborate, exchange ideas, and explore the potential of thin film coating technology in shaping the future of the hydrogen economy. We encourage interested individuals and organizations to submit their abstracts showcasing their contributions to this rapidly evolving field. Together, let us uncover the transformative capabilities of thin film coating technology and pave the way for a sustainable and efficient hydrogen-powered future.

TAC Co-Chairs:

Ralf Bandorf, *Fraunhofer IST*, ralf.bandorf@ist.fraunhofer.de

Herbert Gabriel, *PVT Plasma und Vakuum Technik GmbH*, h.gabriel@pvtvacuum.de

Lucia Mendizabal, *Tekniker*, lucia.mendizabal@tekniker.es

WebTech Roll-to-Roll Technologies and Innovation

WebTech is the forum for flexible web and roll-to-roll (R2R) processing at the SVC. It is the podium to present new achievements in processing of flexible substrates such as polymer, textile or glass. The session scope encompasses materials, manufacturing techniques, products, applications, market developments and economical aspects of this versatile high-volume manufacturing method. A particular focus area this year is workforce development related to vacuum and atmospheric R2R coating & processing.

The WebTech TechCon session typically features presentations on materials, deposition processes, manufacturing techniques (including "best practices"), use cases / application examples, market analysis and business perspectives in all areas related to R2R processing.

Some pertinent technical topic focus areas are:

- Substrates and other materials / consumables along the entire R2R product value chain (polymer, flexible glass, fabrics & non-wovens, functional textiles, sustainable materials, barrier approaches, transparent conducting materials, hard-coats, anti-smudge coatings etc.)
- Deposition sources and deposition modalities specific to R2R processing,
- Inline process diagnostics & control (particularly for non-transparent coatings),
- Modeling and simulation of R2R processes,
- Examples and approaches to utilize Artificial Intelligence (AI), machine learning, and other "Industry 4.0" modalities in R2R,



Call for Papers

Abstract Submission Deadline

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- Aspects of progressing R2R coatings from concept demonstration to commercial scale,
- Performance of R2R coatings under harsh conditions,
- Interfacing with non-vacuum / atmospheric pre- and post-processing, including cleaning,
- Low-cost / high-performance barrier coatings, and
- R2R processing for electronics, semiconductor and energy conversion applications.

TAC Chair:

Chris Stoessel, *Stoessel Consulting*, cstoessel@stoesselconsulting.net

Assistant TAC Chairs:

Hazel Assender, *University of Oxford (Begbroke)*, hazel.assender@materials.ox.ac.uk

Corinne D'Ambrosio, *NPB Technology Group*, corinne@npbtech.com

Wolfgang Decker, *Kurt J. Lesker Company*, wolfgangd@lesker.com

Andy Jack, *Emerson & Renwick*, a.jack@eandr.com

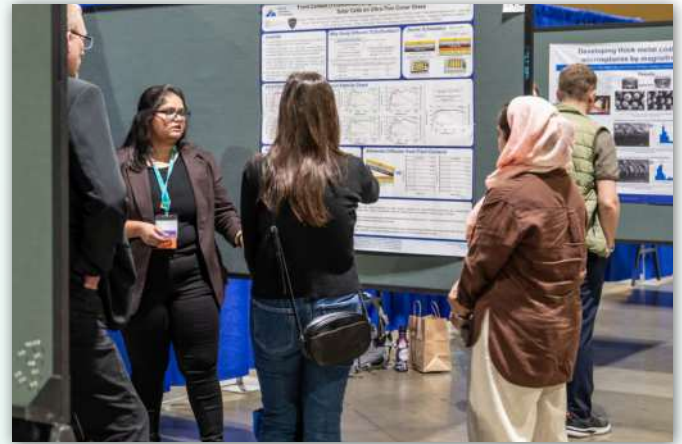
Liz Josephson, *Intellivision*, ljosephson@intellivision.com

Jaime Li, *Eastman Chemical Co.*, Jaime.Li@eastman.com

Michael Mücke, *Bühler/Leybold Optics*, michael.muecke@buhlergroup.com

Joe Papalia, *Deposition Technology Innovations*, jpapalia@dtifilms.com

Jerry Wu, *Enpack Composite*, wufujw@163.com



Technical Poster Session

Poster Presentations serve as an important component of the Technical Program by providing a format for extended discussions of the results in a casual environment.

In 2027 the SVC is dramatically increasing the visibility and reach of the Poster Session!

All oral presenters in the conference are encouraged to also provide a poster for the poster session summarizing their primary oral presentation. In addition, all oral presenters have the option to submit a second abstract for a poster presentation as part of their conference registration fee.

All posters will then be included in the judging for the overall best poster awards (\$1000/\$500/\$250 USD) which will be announced during the Exhibition "beer blast" on Wednesday afternoon, May 5, 2027 (3 :00 p.m.). Many thanks to the SVC Young Members Committee for their sponsorship and judging of this new signature event of the SVC!



For more information, contact the SVC at +1-505-897-7743 or [CLICK HERE](#) to submit an abstract | 2027 TechCon

Conference Calendar

Start planning now for your trip to TechCon 2027

SUNDAY May 2	MONDAY May 3	TUESDAY May 4	WEDNESDAY May 5	THURSDAY May 6
Education Program 30+ Tutorial Courses				
TechCon Registration Counter Hours:		Technical Program		
Sunday, May 2	7:00 a.m. – 10:00 a.m. & 4:00 p.m. – 7:00 p.m.	Exhibit Exhibit Open Hours 11 a.m. – 6 p.m. Tuesday 10 a.m. – 4 p.m. Wednesday		
Monday, May 3	7:00 a.m. – 6:00 p.m.			
Tuesday, May 4	7:00 a.m. – 5:30 p.m.			
Wednesday, May 5	7:00 a.m. – 5:00 p.m.			
Thursday, May 6	7:00 a.m. – 12:00 p.m.	Conference Registration Open Dallas Sheraton Hotel		

CONFERENCE REGISTRATION FEES*

Back AGAIN for 2027!

All paid conference registrations will include one free SVC in-person tutorial at the TechCon and a 30% discount on additional courses.

Attendee Registration

(through April 1, 2027/after April 1, 2027)

- Full Conference \$995.00/\$1095.00
- Media Personnel \$0.00
- Student Conference \$400.00/\$500.00
- Young Members Group Conference \$400.00/\$500.00
- Exhibit Visitor Only FREE

SVC Membership is included with all paid conference registrations.

If not attending the conference, renew your membership for 2027 or join SVC on-line

Exhibitor Registration

(through April 1, 2027/after April 1, 2027)

- Exhibitor Booth Personnel and Manufacturer's Representative \$0.00
- Exhibitor with Full Conference Registration \$995.00/\$1095.00

Special Events at the TechCon

- SVC Foundation 5K Run \$40.00
- University of North Texas Research Facility Tour (Tuesday Evening; limited to 50 visitors) No Fee
- Awards Ceremony and Welcome Reception (Tuesday Morning/Afternoon) No Fee
- SVC Foundation Casino Night Fundraiser (Monday Evening) 1 Ticket Included with Full Conference Registration (additional tickets \$75.00)
- SVC 70th Birthday Party (Thursday Evening) No Fee

* Pricing contingent on making hotel accommodations at the Sheraton Dallas Hotel

2027 SVC TechCon Exhibit Administrator: **Jacque Matanis, jacque.matanis@svc.org, +1-505-897-7743**

2027 SVC TechCon Exhibit Committee Co-Chairs:

Jason Hrebik, Kurt J. Lesker Company, jasonh@lesker.com

Steve Simons, Manitou Systems Inc., ssimons@manitousys.com

Networking

Opportunities at the 2027 TechCon



Make Connections

The TechCon is packed with networking events designed to connect vacuum coating and surface engineering professionals with the global SVC community. Each technical and social networking event provides a different forum for invaluable face-to-face interactions and the opportunity to collaborate with technical experts.



Exhibit Networking

Enjoy more opportunities than ever to visit the Exhibit Hall.

- Welcome Snacks and Cocktail Hour are two separate events held in the exhibit hall during the first day of the technical exhibition.
- Poster Session ■ Beer Blast

Additional Networking:

- Technical Program Keynote Presentations
- Exhibitor Innovator Showcase
- Colloquium Round Table Discussions



Technology Forum Meetings

Vacuum coating technology spans multiple applications and processes. Join a discussion group focused on a topic that's important to you. Enjoy the conversation over breakfast before the start of the technical program Monday, Tuesday and Thursday. Late afternoon sessions are currently under development for Monday and Thursday.

To all of our SVC Stakeholders:

The **Technology Forum Breakfasts** and **Sunset Forum Meetings** have emerged as one of the most significant networking events at the TechCon. These meetings, held from 7:30 a.m. to 8:30 a.m. and again late in the afternoon during the TechCon are "loosely" organized around a specific topic where we provide a moderator, a continental breakfast, plenty of seating, and an opportunity for free form discussion to take place. In the Technology Forums problems are solved, new ideas are vetted, relationships are made and rekindled; all in the spirit of camaraderie that has made the SVC the most unique technical conference in our field. Please be sure to check the daily schedule (the Technology Forum Meetings are offered on Monday, Tuesday, and Thursday of the TechCon) to find those topics that interest you! And remember, we are always looking for new topics as well as moderators to get the discussion going in the mornings. Good luck and have fun!

– Frank Zimone, Executive Director

SVC Foundation Networking Events

CASINO NIGHT

Come and join us for an evening of fun and networking, all to help a great cause at the Annual SVC Foundation Casino Night on Monday, May 3, 2027. *Additional Casino Night tickets can be purchased on-line during TechCon registration or at the TechCon. This is a wonderful opportunity to entertain friends and customers who may not be registered for the conference.*

RUN FOR A CAUSE!

Register for the Annual 5K Fun Run and support the scholarship efforts of the SVC Foundation. Bib pickup is tentatively scheduled for 5:30 a.m. on May 5, 2027.



Back by Popular Demand: FREE Technical Conference Admission for May 4th & 5th

Networking

Opportunities at the 2027 TechCon



2027 SVC 70th Birthday Party

Date: **Thursday, May 6, 2027**

Everyone is invited to attend

The **SVC 70th Birthday Party** will be the last networking event of the TechCon and will commemorate what promises to be the most successful TechCon yet! Come join us as we celebrate our storied history along with all the new connections that were made after a densely packed four day program.

Job Board

There will be a Job Board in the exhibit hall adjacent to the poster session. Open positions as well as resumes of those looking for a position can be posted. Messages for interested parties, either potential employer or employee, can also be posted on the board.



2027 SVC Awards Ceremony and Welcome Reception

Date: **Tuesday, May 4, 2027**

Everyone is invited to attend

The **Awards Ceremony** will introduce and recognize the Nathaniel Sugerman Memorial Award recipient, SVC Fellow-Mentor Award recipients, and Sponsored Student awardees.

The **Welcome Reception** is a popular networking event at the TechCon. It offers a relaxed venue to meet friends and colleagues and provides the opportunity to make new connections. In 2027 the Welcome Reception will be broken into a snacks at 2:00 p.m. and a cocktail hour at 5:00 p.m; all held in the exhibit hall.

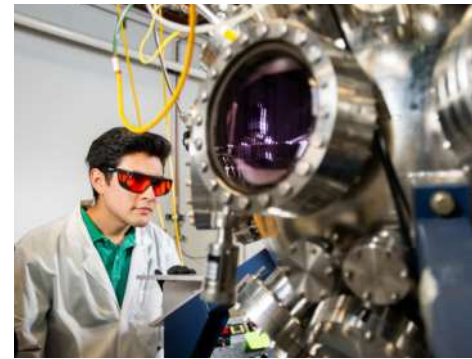


University of North Texas (Denton, Texas, USA) Research Facility Tour

Date: **Tuesday, May 4, 2027**

(6:00 p.m. bus departure from hotel entrance)

Come and join us for a walking tour of UNT's state of the art laboratories focusing on wide band gap semiconductors, tribology characterization and advanced materials characterization techniques. This event will be limited to 50 visitors and space can be reserved during conference registration



Back by Popular Demand: FREE Technical Conference Admission for May 4th & 5th

Education Program

FROM THE EDUCATION DIRECTOR

The planning for our education program at the 2027 Tech-Con in Dallas is well underway. While the details of the program typically do not get finalized until the fall, you can count on two things: We will continue to offer our highly-subscribed courses and we are actively developing new ones. The education program in Long Beach turned out to be quite successful. Indeed, we offered 34 courses and total attendance came in at just north of 370. That's a record! We had several courses that had 15 or more attendees. Those included, "Troubleshooting for Thin Film Deposition Processes" (C-212), taught by Akhil Vora; "Characterization of Thick Films, Thin Films, and Surfaces" (C-322), taught by Tom Christensen; "Fundamentals of High Power Impulse Magnetron Sputtering (HIPIMS)" (C-323), taught by Arutiun Ehasarian; "Sputtering" (C-310), taught by Ralf Bandorf; and "Introduction to Ellipsometry" (M-102) taught by James Hilfiker. James' course had the highest enrollment. You can certainly expect these courses to be offered again next year as well as our other courses in vacuum technology, thin film production, and surface characterization.

We offered 6 new courses in Long Beach and two of those had more than 10 attendees, which is great to see. Those



were, "Electron Beam Evaporation for Thin Film Deposition" (C-201), taught by Rob Belan and "Cleaning Fundamentals for Coating Applications" (M-150), taught by Tyler Wheeler. These too are expected to be on our list for Dallas. As for new courses next year, we are focused on developing courses in topics that will help our members develop the skills needed to excel in our craft.

Whether you want to add to your skills or refresh your old ones, understand the technology or the science behind it, or look into emerging science and technology, I'm sure you'll find a course that satisfies your needs next year in Dallas next May!

— Scott Walton, SVC Director of Education
scott.walton@svc.org



All paid TechCon conference registrants receive one complimentary seat in any tutorial and a 30% discount for any additional tutorials purchased.

About Our Venue

Dallas Sheraton Hotel,
Dallas, Texas, USA

The 2027 TechCon will be held at the Sheraton Dallas Hotel.

Located in the heart of downtown Dallas, the Sheraton Dallas Hotel boasts Texas-sized hospitality. This downtown Dallas hotel is near American Airlines Center, Fair Park, & within walking distance of many shops, restaurants & bars, including the Deep Ellum neighborhood.

Enjoy a variety of convenient on-site dining options, including breakfast, lunch, or dinner at Open Palette, sporting games at Draft Sports Bar and Lounge, cocktails at The Parlor, their hidden speakeasy, or on-the-go snacks from Open Mkt. The hotel features state of the art meeting space and contains 230,645 sq. ft. of event space.

Dallas, Texas, is a major, fast-growing metropolis in North Texas, ranked as the ninth-most populous city in the U.S. and the third-largest in Texas as of 2026.

As a core city of the 8.5 million-person Dallas–Fort Worth “Metroplex”, it serves as a massive economic, cultural, and transportation hub.

Dallas is known for a strong, diversified economy featuring technology, financial services, defense, and telecommunications. The DFW area is a top market for Fortune 500 headquarters. It is a major inland port with massive air cargo and logistics operations, largely driven by Dallas/Fort Worth International Airport (DFW) and Dallas Love Field.

Dallas is the home to the largest contiguous urban arts district in the U.S., featuring the Dallas Museum of Art and the Winspear Opera House. As a major sports city it is home to the Cowboys (NFL), Mavericks (NBA), Stars (NHL), and FC Dallas (MLS)

■ \$279.00 USD/night – Sheraton Dallas Hotel,
400 North Olive Street, Dallas, Texas, 75201, USA
+1 (214) 922-8000

Important note! Discounted room rates are available **exclusively** on the dedicated hotel pages that will be accessible only on the SVC 2027 TechCon registration site. **The SVC does not engage with any third-party companies to provide hotel accommodations.** Be aware that in all cases, organizations representing themselves as affiliated with the SVC when it comes to hotel accommodations for the TechCon are likely to have malicious motives leading to a nefarious outcome if you rely on them.



For more information, contact the SVC at +1-505-897-7743 or [CLICK HERE](#) to submit an abstract | 2027 TechCon