



# TechCon 2025 Nashville

Gaylord Opryland Hotel  
Nashville, Tennessee, USA

May 17 – May 22, 2025

## Call for Papers

### Deadlines for Abstracts:

**October 18, 2024**

(Guaranteed placement in requested session)

**February 14, 2025**

(Guaranteed conference participation)

## Now Accepting Abstracts for the 2025 Technical Conference

### Technical Program: May 19 – May 22, 2025

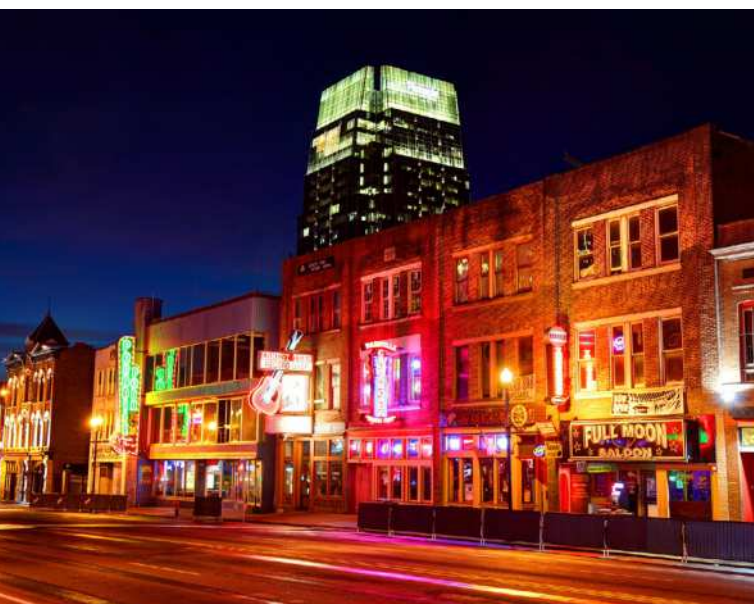
- Technical Sessions
- Interactive Networking Forums  
+ *Technology Forum Breakfasts*

### Education Program: May 17 – May 22, 2025

- Problem-Solving Tutorial Courses

### Featuring Sessions on:

- Atomic Layer Processing (ALP)
- 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
- Emerging and Translational Technologies and Applications
- Electron Beam Processes
- High Power Impulse Magnetron Sputtering (HIPIMS)
- Large Area Coatings
- Optical Coatings
- Organic and Perovskite Electronics
- Plasma Processing and Diagnostics
- Process Monitoring, Control, and Automation
- Protective, Tribological and Decorative Coatings
- Quantum Computing
- Selective Atomic Scale Processes
- Thin Film Sensors
- Thin Film Contributions for the Hydrogen Economy
- Two-Dimensional (2D) Materials and Heterostructures – Applications, Large-Scale Growth and Advanced Characterization
- 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](http://WWW.SVC.ORG)

# 2025 SVC TechCon Call for Papers

## Message from the Program Director

The 2025 SVC TechCon will take place in the heartland of the U.S. in Nashville, Tennessee! The venue is conveniently close to many stakeholders of our community, and features a fantastic combination of a first-class meeting venue and an attractive tourist destination. The all-in-one Gaylord venue contains the hotel, conference rooms, tutorial classrooms and the industry's largest technical exhibit in close proximity to provide you with the best experience for learning, networking, creating new connections, and mingling with new and long-time members of our community.

The technical program offers a comprehensive and updated selection of sessions that covers critical technical and business aspects of thin film technology and surface engineering. The program will address applications, challenges, and technology development from a contemporary focus that has been updated with latest topics such as the influence of artificial intelligence on our industry as well as several new application arenas. The 2025 TechCon offers an industry-leading technical exhibition, abundant networking opportunities, along with an extensive educational program and in-depth technological expertise. The 2025 TechCon is a great opportunity to present your latest research results, coating processes, and equipment applications in the field.

We invite you to share your latest R&D and application achievements with the SVC community. The TechCon offers a range of presentation options – oral, poster, or exhibitor innovation formats – which facilitate the full spectrum of academic research and industrial product innovations. This is complemented by our wide range of publication options – PowerPoint presentations (static or narrated/pre-recorded) or a manuscript in the conference proceedings, or peer-reviewed submissions to a high-impact scientific journal. The SVC Student / Young Professional Travel Sponsorship Program provides financial support for a limited number of qualified applications to encourage student and young member participation.

***We encourage you to contribute a talk or poster, taking advantage of the opportunity for renewing or making new connections that only the SVC can offer!*** Our academic researchers, industrial innovators, technical practitioners, and application experts await your news and look forward to talking with you in Nashville. With the addition of our brand-new sessions covering two-dimensional materials, organic electronics, quantum computing, and supply chain issues, the SVC TechCon confirms its position as the worldwide forum for thin film technologies and surface engineering. In 2025, the magic will happen in Nashville, and we very much look forward to having you join us there!



***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 2025 Technical Program

#### **WITHOUT PEER REVIEW**

Submission Deadline:  
September 12, 2025

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

#### **PEER REVIEWED**

Submission Window Open  
May 1 – September 12, 2025  
*Publication in a special edition of Elsevier's Surface and Coatings Technology Journal*  
(ISSN: 0257-8972)

#### **VIDEO PRESENTATIONS**

Submission window open  
May 1 – September 12, 2025  
*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 PowerPoint 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, 2024**



**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 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 175 scholarships and travel awards totaling over \$490,000 to students from more than 28 countries.

Please visit **[www.svcfoundation.org](http://www.svcfoundation.org)** for more information

**Academic Scholarship application deadline:**  
**October 18, 2024**

**Industry Scholarship application deadline:**  
**January 10, 2025**

**Student Travel Sponsorship application deadline:** **October 4, 2024**



# Call for Papers

**Abstract Submission Deadline**

**Guaranteed Session Placement: October 18, 2024**

## 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.

We are soliciting oral and poster contributions to ALP sessions in areas including both established ALD technologies and creative new ALP developments. Advanced ALP technologies which successfully cross over from early-stage feasibility studying into 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 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
- Novel concepts for ALP process control, characterization, and monitoring

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## Coatings and Processes for Biomedical Applications

Coatings and surface treatments are used in many existing and emerging biomedically relevant areas. Recent advances in knowledge related to biological systems have motivated the development and characterization of coatings and surface treatments with the purpose of improving osseointegration, interfacing with the nervous system, extending implanted device lifetimes, improving biocompatibility, and lowering costs to highlight a few. The applications also extend beyond implantable devices. For example, energy harvesting for health monitoring wearable devices requires biocompatibility and flexibility. Applications for coatings in healthcare are already broad and continue to expand.

To disseminate advances and address technical issues in this broad and growing area, The Coatings and Processes for Biomedical Applications Technical Advisory Committee (TAC) welcomes papers reporting on biomedical coatings and surface modifications, characterization of these materials and their performance, as well as advances leading to new applications in the biomedical area.

The following list is intended as a guide to topics appropriate for this session but other biomedically relevant papers are also encouraged:

- Orthopedic and osseointegration applications
- Cardiac rhythm management
- Neurostimulation
- Cardiovascular intervention
- Bio-corrosion
- Flexible electronics
- Biosensors, bioelectronics, and biochips
- Antimicrobial applications

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

## 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.

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



**Again for 2025:**

**The 6<sup>th</sup> Annual SVC Foundation Casino Night on Monday Evening, May 19, 2025**

*To benefit the SVC Foundation and Student Sponsorship Program!*



# Call for Papers

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## *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
- Coatings for improved performance

## *Energy Harvesting:*

- RF Harvesting, Piezoelectrics, Kinetic harvesting through body movement

## *Energy Storage:*

- Thin flexible batteries
- Flow batteries
- Powder surface treatment (PVD, CVD, ALD) for Li-ion batteries or Na-batteries, or solid-state batteries (or other types)
- Super capacitors
- Coatings for improved stability, graphene and carbon nanotubes
- 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
- Anticorrosive coatings

## *Other traditional subjects:*

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

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**Ric Shimshock**, *MLD Technologies, LLC*, ricshimshock4mld@aol.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 covers all topics in which novel digital technologies play an important role. These include, without limitation, physics and chemistry simulations, advanced data science techniques, and approaches that rely on subsets of artificial intelligence, such as machine learning. It brings together experts in simulation and artificial intelligence and provides an ideal platform to discuss the benefits of the digital transformation of industrial deposition processes from the perspective of various technology fields. The session welcomes perspectives from academic experts as well as stakeholders from the entire vacuum coating supply chain — OEMs, coating centers,

providers of coater components and monitoring tools, and providers of digital services and simulation software.

The motivation behind this session is the fact that industrial deposition processes are under strong competitive pressure, as better productivity is always demanded with higher precision and increasing complexity of coating products. This increased complexity requires optimized coating processes, model-based process control, and a comprehensive view and understanding of the entire process chain. Therefore, a digital transformation, which will be one of the key drivers in the future for industrial deposition processes, is needed.

The digital transformation includes the systematic collection of data generated in different processes and the representation of the coating processes through real-time capable digital twins.

Even today, simulation and digital twin models are well-established tools for predicting and optimizing deposition processes. It is possible to use physical and/or chemical models to predict the behavior of the process with very little a priori knowledge.

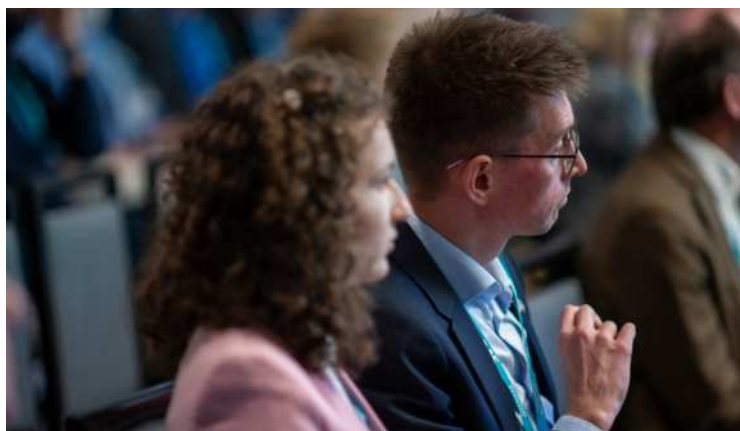
Another approach to predicting processes is the use of generated data and components of artificial intelligence, such as machine learning, deep learning, or grey-box models. In this context, data acquisition, storage, and accessibility become increasingly important. Artificial intelligence is already deployed in areas such as image recognition, predictive maintenance, and process control.

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



# Call for Papers

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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 and 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@attglobal.net

#### Assistant TAC Chairs:

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**Maryam Olsson**, *MAX IV Laboratories*, maryamolsson.lu@gmail.com

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

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

## Electron Beam Processes

The Electron Beam Technology 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 focuses on the development of new coatings and coating processes using electron beam technology, as well as new e-beam components such as power supplies and beam control systems to enhance material properties. Of particular interest are equipment improvements that enable new applications such as additive manufacturing of turbine engine components and medical implants.



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,
- Modeling 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.)
- Related and new applications of electron beam processes

#### TAC Chairs:

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

#### Assistant TAC Chairs:

**Gösta Mattausch**, *Fraunhofer-FEP*, goesta.mattausch@fep.fraunhofer.de

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**Asim Mirza**, *Boltplatz-numerical plasma dynamics GmbH*, mirza@boltplatz.eu

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**Sergio Pace**, *CRM Group*, Sergio.PACE@crmgroup.be

**Mark Pellman**, *Vital Chemicals & FHR North America*, MarkAPellman@outlook.com

**Jason Van Sluytman**, *Honeywell*, Jason.VanSluytman@Honeywell.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, but not limited to, from 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

Again for 2025:

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2025 TechCon



# Call for Papers

## Abstract Submission Deadline

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

### TAC Co-Chairs:

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

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

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

- “Low-carbon footprint coatings” and required technologies for inside/outside of vacuum, and
- Automation of coating processes, as well as assisting tools: physical vs statistical models, ML, AI.

### TAC Chair:

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

### Assistant TAC Chairs:

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

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

## Large Area Coatings

A key factor in driving down the cost of production is highly correlated to the throughput or scale of production. In thin film processes the substrate width or total area being processed per batch or per substrate is the key metric. Scaling up to High Volume Manufacturing (HVM) has enabled tremendous cost reduction in the production of Architectural Glass, Flat Panel Displays, Solar Cells, and Roll-to-Roll polymers. For example, architectural glass coaters are now operating with substrates that are 3m x 6m in size or larger.

Scalability comes with unique challenges. To operate a plant at HVM scales, the process must be stable over long operation time and reproducible, capable of depositing or etching materials homogeneously over large areas and at high rates. Film properties (such as stoichiometry, stress, or conductivity) must be precisely controlled to achieve performance as in a lab scale environment. This is true across all types of coatings whether they are used for optics, barriers, scratch resistance, or transparent conductors to name a few. Furthermore, complex decisions involve inversely proportional factors of Capital Expenditures (CapEx) versus Cost of Ownership (CoO). Further factors include facility constraints and requirements and product yield.

The Large Area Coating Session is the forum where scholars and industry experts present the scalability of thin film vacuum science. The talks may cover the limitations, challenges, failures, and success of moving from lab scale or pilot production up to High Volume Manufacturing. Session topics will cover:

- Scale-up and process Transfer: challenges and good practices,
- Understanding process and nanoscale: Physics and chemistry of thin films and their interfaces, analytical equipment in-/ex-situ, in-/off-line,
- Coating of 3D substrates: enabling technologies,
- Functional coatings at temperature sensitive plastic substrates or thin glass: hard coating, barrier properties, adhesion, and stress management,
- Architectural, Automotive, Aerospace, and Display thin film materials, processes, equipment for heat reflecting, hydrophobic/hydrophilic, de-icing, and anti-static functions,
- New Large Area Trends and Solutions: coatings for semiconductor industry at glass, patterned or integrated structures for bird friendly glass, mobile signal transmission, sound insulation,

## 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 sessions 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.).



**The SVC is Celebrating its 68<sup>th</sup> Anniversary!**

*Providing an unmatched Technical Program and Networking Event!*



# Call for Papers

**Abstract Submission Deadline**

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- 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.
- Optical coatings for quantum optics.

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**Vivek Gupta**, Meta/Facebook, [guptavivek23@meta.com](mailto:guptavivek23@meta.com)

**Nadja Felde**, Fraunhofer Institute for Applied Optics and Precision Engineering IOF, [nadja.felde@iof.fraunhofer.de](mailto:nadja.felde@iof.fraunhofer.de)

**Rajiv Pethe**, Vital Chemicals USA, [Rajiv.Pethe@VitalChemUSA.com](mailto:Rajiv.Pethe@VitalChemUSA.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 wide-

spread 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 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 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 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 invites 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 on 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 symposium.

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

- Organic & Perovskite Light-Emitting Diodes (OLEDs & PLEDs)
- Organic & Perovskite Photovoltaics (OPV & Perovskite PV)
- Hybrid Inorganic/Perovskite Tandem Photovoltaics
- Organic Thin-Film Transistors (OTFTs & OFETs)
- Organic Memory Devices & Spintronics
- Organic Sensors
- Flexible and Wearable Electronics
- Building-Integrated Photovoltaics (BIPV)

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**John Naylor**, Kurt J. Lesker Company, [johnn@lesker.com](mailto:johnn@lesker.com)

**Paul Sullivan**, Kurt J. Lesker Company, [paulsu@lesker.com](mailto:paulsu@lesker.com)

**Akhil Vohra**, Angstrom Engineering, [avohra@angstromengineering.com](mailto:avohra@angstromengineering.com)



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**2025 TechCon**



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## Plasma Processing and Diagnostics

Plasma has the unique capability of providing a diverse and complex environment that has proven to be well-suited for a wide variety of industrial applications including anisotropic dry etching, surface chemical modification, magnetron sputter-deposition and plasma enhanced chemical vapor deposition (PECVD) of thin films and coatings. Nevertheless, the potential of plasma processing on an industrial scale can only be realized when basic material processing studies are accompanied by the understanding of plasma physics, plasma chemistry and the underlying mechanisms at the plasma-surface interface, developed through both modeling and experimental efforts. More recently, the plasma processing community is exploring exciting new opportunities involving atmospheric pressure discharges, micro-plasmas and pulsed discharges, plasma interactions with liquids, plasma-enhanced catalysis at surfaces and plasma processing of nanomaterials. These new developments along with the never-ending quest for improvement in long standing applications are the basis for an active plasma processing community engaged in the research of reactive plasma environments and exploration of new possibilities and applications.

Accordingly, the session chairs welcome papers of a fundamental and applied nature in the following topics:

- Plasma-enhanced physical or chemical vapor deposition and plasma-surface modification techniques.
- Novel and emerging plasma processing methods such as the processing of nanoparticles and nanomaterials, plasma catalysis and the treatment of non-traditional materials including liquids.
- Development of plasma sources and related technologies (ex. power electronics) to enable both conventional and novel plasma processing techniques including those operating at or near atmospheric pressure.
- Diagnostics (optical, electrical, particle, or systemic) applied to understand the plasma environment and plasma interactions with materials, along with techniques to improve diagnostics capabilities.
- Modeling of gas-phase phenomena in plasmas, plasma-surface interactions, and plasma processing systems.

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

**Adam Obrusnik**, *PlasmaSolve*, obrusnik@plasmasolve.com

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

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

**Craig Outten**, *Universal Display Corp.*, coutten@verizon.net

## Process Monitoring, Control, and Automation

The fourth industrial revolution is steering manufacturing towards full automation. Producers seek robust vacuum process monitoring, control, and automation solutions. They hold the key to any attempt to achieve the necessary level of industrial automation. The bonuses of successful automation include higher production rates, lower

waste of materials & energy, lower operating costs, and increased overall efficiency.

Reliable monitoring and control solutions are far from readily available, and intense development efforts are underway in industry and academia across the globe. It is intensely hot around the topics related to the development and industrial application of:

- Embedded sensors & actuators,
- Cyber-physical monitoring and control systems,
- Holistic process control methods and systems, and
- Robotic automation.

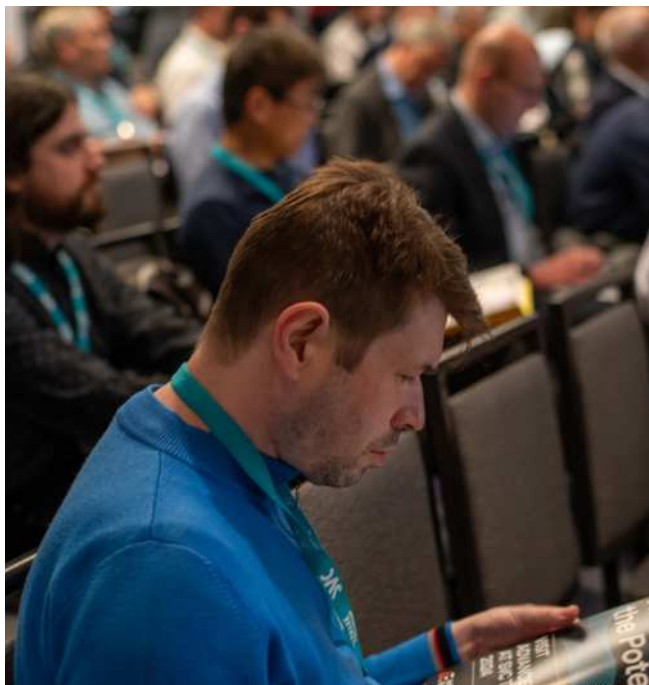
This session/TAC brings together experts, technologists, and solution providers from the thin film/surface engineering community to discuss challenges, developments, and solutions that pave the way toward enabling the autonomous operation of vacuum coating plants. Contributions highlighting particular challenges or constraints and talks detailing cutting-edge control and automation methods and their physical and digital embodiments are particularly well suited to this session.

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

**Joseph Brindley**, *Gencoa Ltd.*, joseph.brindley@gencoa.com

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

**Edmund Schuengel**, *Evatec AG*, edmund.schuengel@evatecnet.com



**Best Poster Award: A \$200 cash award will be offered for the Best Poster presented in the Session**

*Submit an abstract for your presentation in the Poster Session before February 14, 2025*

**2025 TechCon**



# Call for Papers

**Abstract Submission Deadline**

**Guaranteed Session Placement: October 18, 2024**

## Protective, Tribological and Decorative Coatings

The Protective, Tribological and Decorative Coatings Technical Advisory Committee (TAC) encourages speakers to submit presentations dealing with design, research, development, applications, and production of coatings deposited with vacuum processes, the characterization of their properties related to wear, friction, and corrosion, and to assess their protection of the receiving components, such as cutting and forming tools, engine components, as well as decorative parts.

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 invites speakers to present on the subjects of 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 on new applications. Environmental pressure on CO<sub>2</sub> emissions and electroplating as well as fast moving communication technologies are well known examples of such change. Electrification of transportation and moving away from the combustion engine are daily news.

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

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

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

**Ton Hurkmans**, *Ionbond*, ton.hurkmans@ionbond.com

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

**Christian Stein**, *Fraunhofer 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 SVC symposium aims to explore the current state and prospects of this transformative technology.

The symposium invites 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:

### 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.
- Benchmarking and performance analysis.



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# Call for Papers

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## *Scalability Challenges:*

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

## *Applications:*

- Emerging applications in materials science, drug discovery, and encryption.
- Quantum-enhanced machine learning and artificial intelligence.
- 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.
- Commercialization and industry trends in quantum technology.

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

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

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

## Selective Atomic Scale Processes

Selective processes with atomic and molecular resolution have been attracting considerable attention during the last few years due to their capability to reach sub-10 nm resolution in semiconductor fabrication and a great potential for 3D-patterning.

After the breakthrough of atomic layer deposition (ALD) of dielectrics about a decade ago and revival of interest towards atomic layer etching (ALE), the research efforts to a large extent shifted to area-selective (AS) ALD and material- topographically-selective ALE. The combination of atomically selective ALD and ALE processes not only provide high flexibility in 2D patterning in high-resolution semiconductor technology, but also allow formation of structures in 3D. Both AS-ALD and selective ALE are based on self-limiting process steps that allow extreme control of deposition or etching in a layer-by-layer fashion.

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. The high degree of control makes the selective atomic scale processes very attractive for future nano-fabrication methods.

We are soliciting both poster and oral contributions to the Selective

Atomic Processes session to include the following topics:

- Fundamental mechanisms of selective atomic processes in 2D (layer-by-layer) and 3D (bulk)
- Applications of selective atomic processes
- Selective atomic processes in micro- and nanoelectronics
- Characterization of selective atomic processes
- Industrial applications and scale-ups
- Other relevant topics

**Ivan Maximov**, *Lund University*, ivan.maximov@ftf.lth.se

## Thin Film Sensors

The evolution of sensors in today's world has been driven by numerous technological advances and an explosion of new demand/applications. It is evident that as we continue to grow as a society, there are limitless ways to advance our capabilities as it pertains to health, labor, safety, transportation, and economic prosperity. Sensors are becoming extremely common in our everyday lives and can be found in such items as clothing, machinery, photovoltaics, analysis of light, pressure, gas, temperature, speed, and a wide variety of health monitoring equipment. Sensor technology is frequently based on thin film technologies; principally physical vapor deposition (e.g., magnetron sputtering and thermal evaporation), and even when they incorporate additive manufacturing (such as printing and device attach) or micro-electromechanical systems (MEMS), the interfaces and multi-layer material sets of the resulting sensor structures require expert knowledge of surface and thin films engineering. The competencies found in the thin film and surface engineering community can provide solutions to advance the overall capability and efficiency of these devices. This advancement will not only accelerate the adoption of existing applications, but also enable new sensor applications and modalities.



# Call for Papers

**Abstract Submission Deadline**

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Topics of interest to this session will include:

- Advanced photonic sensing materials design and fabrications,
- Nano plasmonic materials for environmental sensing applications,
- Sensing modalities enabled by microfluidics and selective surface functionalities, and
- Flexible sensing materials and devices for wearable health monitoring applications.

This session/TAC seeks to connect thin film and surface engineering technologies to the myriad applications driven by the connectivity opportunities of the Internet of Things (IoT). Contributions that focus on novel solutions, techniques, and manufacturing challenges are of particular interest.

**Jason Hrebik**, Kurt J. Lesker Company, [jasonh@lesker.com](mailto:jasonh@lesker.com)

**Maciej Lisiak**, Futek, [mlisiak@futek.com](mailto:mlisiak@futek.com)

**Binbin Weng**, University of Oklahoma, [binbinweng@ou.edu](mailto:binbinweng@ou.edu)

## Thin Film Contributions for the Hydrogen Economy

This session is focused on the role of Physical Vapor Deposition (PVD) and related thin film & 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.

**Ralf Bandorf**, Fraunhofer-IST, [ralf.bandorf@ist.fraunhofer.de](mailto:ralf.bandorf@ist.fraunhofer.de)

**Herbert Gabriel**, PVT Plasma und Vakuum Technik GmbH, [h.gabriel@pvtvacuum.de](mailto:h.gabriel@pvtvacuum.de)

**Lucia Mendizabal**, Tekniker, [lucia.mendizabal@tekniker.es](mailto:lucia.mendizabal@tekniker.es)

## Two-Dimensional (2D) Materials and Heterostructures – Applications, Large-Scale Growth and Advanced Characterization

Two-dimensional (2D) materials with thicknesses of only several molecular layers realize the ultra-thin limit of crystalline materials. This material class demonstrates unique combinations of electronic, optical, mechanical, and thermal properties owing to their anisotropic structure. Applications leveraging these functionalities include transistor and memory technologies, wearable electronics, photovoltaics, and sensors. Significant efforts focused on controlled, large-area synthesis of 2D materials and integration into diverse device constructs are the focus of multidisciplinary teams worldwide. In addition to new applications, development of new approaches to understand the properties of 2D materials at the ultra-thin limit and when integrated with other materials is the topic of vital and ongoing research.

The objective of this session is to discuss advances in synthesis and fabrication of 2D materials and devices to address impactful applications, with a special emphasis on large-scale integration.

Processes of particular interest include controlled low-temperature synthesis of 2D materials, chemical vapor deposition, sputtering, and atomic layer deposition. Talks on new device designs integrating crystalline and polycrystalline 2D materials and their heterostructures for electronic and photonic device applications are welcome. Advanced characterization methods, especially in situ and/or high-throughput methods focused on the structure-property correlation in 2D materials are also topics for this session.

Topics will include:

- Large-scale synthesis of 2D materials and their heterostructures
- Low-temperature synthesis
- New 2D device concepts
- Scalable device fabrication and heterogeneous 2D materials integration



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**2025 TechCon**



# Call for Papers

Abstract Submission Deadline

Guaranteed Session Placement: October 18, 2024

- In situ and high-throughput characterization techniques
- 2D device reliability and failure mechanisms
- Industry-related 2D materials activities

**Michael Altwater**, Blue Halo/Air Force Research Laboratory - Materials and Manufacturing Directorate, michael.altwater.ctr@afrl.af.mil

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

## 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.

The WebTech TechCon session typically features presentations on materials, deposition processes, manufacturing techniques, use cases / application examples, market analysis and economical perspectives in all areas related to R2R processing.

Some pertinent topic focus areas are:

- Novel substrate materials and technologies (polymer, flexible glass, fabrics & non-wovens etc. Novel deposition sources and deposition modalities
- 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
- Aspects of progressing R2R coatings from concept demonstration to commercial scale
- Coatings under harsh conditions
- Interfacing with non-vacuum/atmospheric pre- and post-processing, including cleaning
- Low-cost/high-performance barrier coatings
- R2R processing for electronics, semiconductor and energy conversion applications

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

**Neil Morrison**, Applied Materials, Neil\_Morrison@amat.com

**Liz Josephson**, Intellivation, ljosephson@intellivation.com

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

**Simon Cheung**, Emerson & Renwick, s.cheung@eandr.com

**Hazel Assender**, University of Oxford (Begbroke),

hazel.assender@materials.ox.ac.uk

**Matthias Fahland**, Fraunhofer Institute for Electron Beam and Plasma Technology FEP,

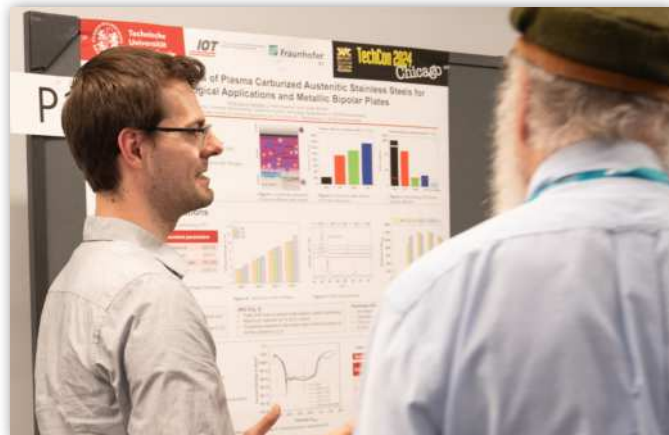
matthias.fahland@fep.fraunhofer.de

**Robert Malay**, VDI, rmalay@vdi-llc.com

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

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

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

The Program Committee encourages poster presentations on all topics covered in the Call for Papers. A \$200 cash award for the Best Poster will be offered. **Submit an abstract for your presentation in the Poster Session before February 14, 2025.**



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2025 TechCon

**SVC**

# Conference Calendar

Start planning now for your trip to Nashville, TN USA

SATURDAY May 17	SUNDAY May 18	MONDAY May 19	TUESDAY May 20	WEDNESDAY May 21	THURSDAY May 22
<b>Education Program</b> 31 Tutorial Courses					
<b>TechCon Registration Counter Hours:</b> Saturday, May 17      7:00 a.m. – 10:00 a.m. Sunday, May 18      7:00 a.m. – 10:00 a.m. and 4:00 p.m. – 7:00 p.m. Monday, May 19      7:00 a.m. – 6:00 p.m. Tuesday, May 20      7:00 a.m. – 5:30 p.m. Wednesday, May 21   7:00 a.m. – 5:00 p.m. Thursday, May 22      7:00 a.m. – 12:00 p.m.		<b>Technical Program</b>			
			<b>Exhibit</b> <b>Exhibit Open Hours</b> <b>11 a.m. – 6:00 p.m. Tuesday</b> <b>10 a.m. – 4 p.m. Wednesday</b>		
<b>Conference Registration Open</b> Gaylord Opryland Hotel					

## CONFERENCE REGISTRATION FEES\*

**Back AGAIN for 2025!**

*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 18, 2025/after April 18, 2025)

<input type="checkbox"/> Full Conference .....	\$995.00/\$1095.00
<input type="checkbox"/> Media Personnel .....	\$0.00
<input type="checkbox"/> Student Conference .....	\$400.00/\$500.00
<input type="checkbox"/> Young Members Group Conference.....	\$400.00/\$500.00
<input type="checkbox"/> Exhibit Visitor Only .....	FREE

**SVC Membership is included with all paid conference registrations.**

**If not attending the conference, renew your membership for 2025 or join SVC on-line**

### Exhibitor Registration

(through April 18, 2025/after April 18, 2025)

<input type="checkbox"/> Exhibitor Booth Personnel and Manufacturer's Representative .....	\$0.00
<input type="checkbox"/> Exhibitor with Full Conference Registration .....	\$995.00/\$1095.00

### Special Events at the TechCon

<input type="checkbox"/> SVC Foundation 5K Run (Wednesday Morning) includes a T-shirt .....	\$35.00
<input type="checkbox"/> Awards Ceremony and Welcome Reception (Tuesday Evening) .....	No Fee
<input type="checkbox"/> SVC Foundation Casino Night Fundraiser (Monday Evening) .....	1 Ticket Included with Full Conference Registration (additional tickets \$75.00)
<input type="checkbox"/> Farewell Social (Thursday Evening) .....	No Fee

\* Pricing contingent on making hotel accommodations at the Gaylord Opryland Hotel

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2025 TechCon



# Networking

## Opportunities at the 2025 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.



### Technology Forum Breakfasts

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.

### To all of our SVC Stakeholders:

The **Technology Forum Breakfasts** have emerged as one of the most significant networking events at the TechCon. These breakfasts, held from 7:00 a.m. to 8:30 a.m. 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 TFBs 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. This year we are expanding the program even further and will offer more than 20 meetings during the TechCon. Please be sure to check the daily schedule (the TFBs 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



### Exhibit Networking

Enjoy more opportunities than ever to visit the Exhibit Hall on May 20-21, 2025.

- Welcome Reception (held in Exhibit Hall)
- Poster Session ■ Beer Blast

### Additional Networking:

- Technical Program Keynote Presentations
- Exhibitor Innovator Showcase
- Roundtable Discussions

### 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 Fifth Annual SVC Foundation Casino Night on Monday, May 19, 2025. **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 AM on Wednesday, May 21, 2025.





# Networking

## Opportunities at the 2025 TechCon



### 2024 SVC Awards Ceremony and Welcome Reception

Date: **Tuesday, May 20, 2025**

#### **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 before the start of the Technical Program.



### 2024 SVC TechCon Farewell Social

Date: **Thursday, May 22, 2025**

#### **Everyone is invited to attend**

The **Farewell Social** 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 Young Members and all the new connections that were made after a densely packed four day program.



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2025 TechCon



## FROM THE EDUCATION DIRECTOR

The buzz. Or is it the vibe? Or maybe both. Regardless, it sure felt like this year's TechCon had that old familiar feeling. It can be very hard to say just what that is or what's driving it when you're experiencing it. Hindsight can sometimes help. Here's one for you to consider: 344 of your friends and colleagues registered for a tutorial at this year's TechCon. That is the largest enrollment we have on record. It beats the previous high in 2019 by 20 and the decade average more than 100. That will contribute to the buzz!

Digging a bit deeper, we find the most popular courses this year include topics associated with optical coatings such as, Advanced Design of Optical Thin Films and Thin Film Debug-

ging and Optimization, both taught by Dr. Ronald Willey. Topics covering PVD techniques such as, Manufacture of Precision Evaporative Coatings, taught by Dr. James Oliver; Sputter Deposition for Industrial Applications, taught by David Glocker; and, Fundamentals of High Power Impulse Magnetron Sputtering (HIPIMS), taught by Dr. Arutiun Ehasarian were also well attended. Other popular courses included topics needed to practice our craft such as, Design and Specifica-

tion of Vacuum Deposition Systems, taught by Rob Belan; and, Troubleshooting for Thin Film Deposition Processes, taught by Dr. Mike Miller.

Riding the buzz ... we are offering a webinar event that targets our stakeholders in the microelectronics and photonics communities. EdCon Microelectronics 2024 will be a 4 day event (October 7-11, 2024) that includes courses covering topics in vacuum technology, contamination control, thin film deposition, and 2D materials. Our instructors have updated and modified each course to address the needs of microelectronics and photonics applications. While the tutorials will be virtual, they will be moderated and interactive to provide ample opportunity for dialogue with the instructors.

Of course, we are always interested in hearing what you like and what you want. So, if you have any questions, please ask and if you have any ideas, please reach out and let us know.

— Scott Walton, SVC Director of Education  
[scott.walton@svc.org](mailto:scott.walton@svc.org)



# About Our Venue

## Gaylord Opryland Resort & Convention Center, Nashville, Tennessee

Situated in the heart of Nashville, the Gaylord Opryland Resort & Convention Center allows you to hit all the high notes of Music City. The landmark Nashville hotel is just minutes from Nashville International Airport and a short drive or riverboat cruise from downtown Nashville. The resort invites you to experience a host of entertainment and fun while in Nashville. Marvel at the gorgeous gardens, sparkling waterways and cascading waterfalls. The hotel is easily accessible to Music City's legendary attractions, including the Grand Ole Opry®, Ryman Auditorium®, Wildhorse Saloon® and the General Jackson® Showboat.

The Grand Ole Opry®, the show that made country music famous, features a wide array of chart-toppers, newcomers, and living legends. The General Jackson Showboat offers cruises for special occasions and afternoon shows spiced up with authentic Southern specialties. The Wildhorse Saloon is home to Nashville's largest dance floor and the cover charge is waived for guests of Gaylord Opryland Resort. Other local attractions include: Madame Tussauds Nashville, Ryman Auditorium, Country Music Hall of Fame, Nashville Zoo at Grassmere, Cheekwood Botanical Garden & Museum of Art, Cooter's Museum and Store Nashville, Texas Troubadour Theater, The Redneck Comedy Tour, Opry Mills, Nashville Nightlife Theater, Music Valley Antiques and Marketplace, The Cowboy Church, Adventure Science Center, Andrew Jackson's Hermitage, and Lane Motor Museum.

Whether you are interested in music, history, shopping, or dining, Nashville has much to offer.

- \$269.00 USD/night (resort fee included).  
A limited number of Premium rooms are available for \$319.00 USD/night (resort fee included).

Gaylord Opryland Resort & Convention Center,  
2800 Opryland Drive, Nashville, TN 37214  
615-889-1000



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