Message from the Program Director

At the time of this writing, the TechCon program planning calendar has arrived at the stage where "game plan" development has been completed, and the Program Leadership Team is changing gears towards implementation and execution. The "game plan" period relies on an in-depth analysis of the 2025 TechCon performance, reading the barometer of the economic climate ahead, merging strategic goals into tactical initiatives, and reviewing and implementing "best practices".

The SVC is fortunate to be able to combine an understanding of underlying drivers of "attendee value" with an operational model that allows for nimble execution and creative implementation of innovative program characteristics. For the 2026 program planning cycle, this has resulted in a number of refinements that promise a superior attendee experience in Long Beach:

- 4 additional session topics to extend the range in expertise.
- A significant "review and refresh" of the all-volunteer Program Leadership Team to promote ownership and active participation.
- Enhancing the attendee experience of the TechCon's renowned interactive networking program elements by…
  - hosting an unprecedented number of six in-session Colloquia;
  - expanding the Technology Forum program by adding afternoon "Technology Forum Sunset" blocks to the traditional "Technology Forum Breakfast" (TFB) offerings that allow to host a wider range of topics that attendees can attend more effectively.

Furthermore, we understand that the TechCon experience of our diverse stakeholders extends well beyond the technical program, and covers education and the exhibit. Consequently, the Program Leadership Team coordinates with the Education Program to ensure an optimal match between tutorial offerings and program topics. Program Leadership actively encourages exhibit booth sign-ups, the program schedule promotes and minimally competes with attending the exhibit, and we continue the successful "Exhibitor innovation Session" as an opportunity for our valued exhibitors to pursue their commercial interests by highlighting the value and innovation of their products.

In summary, while we live in a time of uncertainty and a cloudy outlook on the future for many professional societies and conferences, the SVC leaves no idea untested and no opportunity unevaluated to offer our stakeholders the best experience to further their professional and personal goals. I hope the review of the extraordinary technical contributions highlighted in this issue of the Bulletin – most of it sourced from community member contributions to a past TechCon – and the planning and preparation that the all-volunteer Program Leadership Team invests in the 2026 TechCon convinces you to join us in Long Beach next April.

Please consider submitting an abstract to highlight your recent scientific achievements or product innovation, network with colleagues and peers during a Colloquium or Technology Forum get-together, further your technical expertise with a tutorial, or meet with exhibitors to help solve process or equipment challenges. Now is a perfect time for you to commit to attending the most impactful and influential conference in our industry.

I look forward to welcoming you in Long Beach next April!

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

SVC™ Society of Vacuum Coaters

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 2026 Technical Program

WITHOUT PEER REVIEW

Submission Deadline:
September 12, 2026
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, 2026
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, 2026
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 activites 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, 2025

The SVC Foundation provides scholarships and/or stipends for travel expenses to attend the annual SVC technical conference. Scholarships are open to well-qualitified students planning to enter fields related to vacuum coatings as well as techicians 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 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, 2025

Industry Scholarship application deadline: January 23, 2026

Student Travel Sponsorship application deadline: October 4, 2025

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

Advanced Multifunctional Coatings: Integrating Vacuum and Electrochemical Deposition for Sustainable Energy, Surface Protection, and Biomedical Innovations (*Joint Session wwith 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 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. These techniques are becoming crucial for the fabrication of next-generation energy devices, corrosion and wear-resistant surfaces, and bioactive films. This session aims to explore the dynamic intersection of vacuum-based deposited thin films materials and electrochemical technology applications. 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 such as batteries, fuel cells, sensors, and beyond.

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, and
- Novel vacuum deposition approaches to enhance corrosion resistance and extend the service life of components in aerospace, marine, and harsh environments.

Session Organizers:

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Jones Alami, *Mohammed VI Polytechnic University*, jones.alami@um6p.ma
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Advances in Thin Film Sensor Technologies: Materials Design and Applications

This technical session highlights cutting-edge developments in thin film sensor technologies, with a focus on the interplay between novel functioning materials, innovative design strategies, and impactful real-world applications. As sensing demands grow across diverse sectors—from healthcare and environmental monitoring to industrial automation and wearable electronics—thin film-based sensors have emerged as a powerful platform for achieving high sensitivity, selectivity, and integration in compact form factors.

Contributions to this session will explore advances in functional thin film materials, including nanostructured, hybrid, and two-dimensional systems; breakthroughs in deposition techniques and micro/nanofabrication; and the engineering of sensor architectures optimized for performance and reliability. Particular emphasis is placed on interdisciplinary approaches that combine materials science, nano-photonics, optoelectronics, electronics, and data-driven techniques to push the limits of sensing performance. Researchers and technologists from academia, industry, and government are

The 7th Annual SVC Foundation Casino Night on Monday Evening, April 27, 2026
To benefit the SVC Foundation and Student Sponsorship Program!

encouraged to share innovations, challenges, and future directions in this rapidly evolving field.

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

- Advanced Sensing Materials: Novel nanostructured, hybrid, and 2D thin films,
- Deposition and Fabrication: Innovations in thin film growth and micro/nano-processing,
- Sensor Design and Integration: Compact, robust, and multifunctional architectures,
- Interdisciplinary Approaches: Merging materials, photonics, and electronics,
- Smart Sensing Systems: AI/ML-enhanced data processing and analytics, and
- Application Highlights: Use cases in health, environment, industry, and wearables.

INVITED SPEAKER:

Self-Assembled Oxide-Metal and Nitride-Metal Nanocomposite Thin Films for Metamaterials and Optical Sensing Applications

Di Zhang
University of Texas at Arlington, Arlington, TX

Integration of nanocomposites and heterostructures can create extraordinary properties that cannot be achieved in single phase materials. Beyond oxide-oxide functional nanocomposite films which have been widely explored in the past two decades of this century, oxide-metal nanocomposites films have attracted increasing interests in recent years owing to their wide range of functionalities, such as metamaterials with plasmonic and hyperbolic optical properties, and ferroelectric, ferromagnetic and multiferroic behaviors. In this talk, I will focus on introducing the recently explored oxide-metal and nitride-metal vertically aligned nanocomposite (VAN) thin films showing exotic optical and magnetic-optic coupling effect. Detailed transmission electron microscopy (TEM) and X-ray diffraction (XRD) characterization work revealed the film epitaxy and crystallographic lattice matching relation at metal/oxide (nitride) interfaces. The structure anisotropy of the nanocomposite films results in the corresponding anisotropic optical properties such as angular-dependent transmission and reflectivity, and plasmonic hyperbolic dispersion in the UV-Vis-NIR wavelength regimes. The novel physical properties and coupled functionalities render the VAN thin films to have great potentials in nanophotonic and optical sensing applications.

TAC Co-Chairs:
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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.

FEATURED SPEAKER:

Directional Atomic Layer Etching of Lithium Niobate Using Bromine Plasma Chemistry

Austin Minnich
California Institute of Technology, Pasadena, CA

Lithium niobate ($LiNbO_3$, LN) is a ferroelectric crystal of interest for integrated photonics owing to its large second-order optical nonlinearity and the ability to impart periodic poling via an external electric field. However, on-chip device performance based on thin-film lithium niobate (TFLN) is presently limited by propagation losses arising from surface roughness and corrugations. Atomic layer etching (ALE) could potentially smooth these features and thereby increase photonic performance. Previously, our group has reported the first isotropic ALE processes for lithium niobate. Here, we report a directional ALE process for x-cut MgO-doped LN using an HBr-containing plasma. At 0 degrees Celsius we report an 85% synergy ALE recipe with etch rate of 1.04 nm/cycle and surface roughening. At 200 degrees Celsius we report a reduced synergy at 30%, with an etch rate of 1.24 nm/cycle and no evidence of surface roughening. We also compare the surface roughness result of the HBr containing process with a chlorine-only process. Our ALE process could be to fabricate waveguide structures with nanometer precision without surface roughening or redeposition, thereby increasing the performance of TFLN nanophotonic devices and enabling new integrated photonic device capabilities.

TAC Co-Chairs:

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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 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

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

- Nano/microscale phenomena, organized structures and nano-composites,
- 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.

INVITED SPEAKERS:

New Developments in Spectroscopic Ellipsometry

James N. Hilfiker, Nina Hong, Rafał Korlacki, Jeffrey S. Hale, Joel Mohrmann, Jeremy Van Derslice

J.A. Woollam Company, Lincoln, NE

For decades, spectroscopic ellipsometry (SE) has been a prominent technique for non-destructive and accurate measurement of thin film thicknesses and optical constants. To understand recent advances, we first need to consider the conventional SE measurement technology. Most SE tools probe the sample of interest using light with wavelengths from the ultraviolet (UV) to the near-infrared (NIR) or even the mid-infrared (IR). SE data are often collected in seconds. The data analysis has become routine for the thickness and refractive index of single-layer coatings, and with some effort, can be extended to more complex structures. Now, let's examine several new advances in instrumentation and software that are enhancing SE capabilities.

While SE performed at UV to NIR wavelengths is fast, SE measurements in the mid-IR can take hours to achieve an adequate signal-to-noise ratio. Recently, quantum cascade lasers (QCL), with many orders of magnitude more brightness than standard blackbody radiation sources, have been integrated into IR-SE. The extra light allows much faster measurements, which is particularly useful for dynamic data collection, anisotropic characterization requiring multiple sample orientations, and uniformity mapping.

Standard SE measurements describe the transformation of polarized light by the sample. A more complete description of light is considered by the Stokes-Mueller formalism. With this capability, both the cross-polarization and depolarization of light can be quantified. One such example is $LiNbO_3$, used in photonic applications, where the uniaxially anisotropic refractive index can be determined via sample-rotated Mueller matrix (MM) SE measurements. MM-SE is also used for chiral materials and non-symmetric crystal materials. MM-SE measurements have even found applications in many semiconductor processing steps, where critical dimensions (CD) can be determined via the specular scatter measured by MM-SE for 3D memory and logic device structures.

Finally, we will examine how machine learning is transforming the approach to SE data analysis. Will computers put us out of a job? Only time will tell, but maybe we had better start saving for an early retirement.

Surface Coating, Treatment, and Analysis of Materials for Medical Devices

Bernard Li

Medtronic Neuromodulation, Minneapolis, MN

Surface coating and treatment on medical device components are critical to enhance the performance of medical devices. Surface coatings and treatments have been used in medical devices for different functions, such as insulation, low friction, wear resistance, antimicrobials, etc. All coatings and surface treatments need to undergo surface characterization in order to understand their properties. This study investigates the application of Diamond-Like Carbon (DLC) and Tungsten Carbide-Carbon (WC-C) coatings for the Sychro-Med Infusion (SMII) drug pump, as well as Titanium Oxide (TiOx) coatings for a piston pump application. Advanced surface analysis techniques, including microscopy, nanoindentation and scratch tests, were employed to evaluate coating properties, adhesion, and surface morphology. These analyses, combined with wear resistance testing, demonstrate the effectiveness of the coatings to mitigate surface degradation and to extend the functional lifespan of critical components under demanding operational conditions. The study confirms that the coatings not only improve wear resistance, but they also offer significant improvement for the durability and reliability of medical devices.

TAC Co-Chairs:

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Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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,
- Cardiac rhythm management,
- Neurostimulation technologies,
- Cardiovascular interventions,
- Bio-corrosion resistance,
- Flexible and stretchable electronics,
- Biosensors, bioelectronics, and biochips,
- Antimicrobial surface treatments,
- Novel surface modification techniques (e.g., laser processing),
- High-throughput materials development,
- High-throughput and advanced characterization techniques,
- 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:

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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.

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.

SAMPLE SPEAKER

Yttrium Oxyhydride-Based Photochromic Coatings for Window Applications: From Lab Scale Films to Large Scale Roll-to-Roll Production

S. Zh. Karazhanov
Institute for Energy Technology, Kjeller, Norway
and University of Latvia, Riga, Latvia

Yttrium oxyhydride ($YH_{3-2x}O_x$, YHO) belongs to the emerging class of mixed anion systems—materials incorporating multiple anion species, potentially enabling unique properties not found in single-anion counterparts. First discovered in 2011, YHO is synthesized via reactive magnetron sputtering to deposit $YH_{2-\delta}$, followed by oxidation in air. It exhibits photochromic behaviour under ambient conditions, transitioning from a transparent state (transmittance T > 85%) to a dark state (T ≈ 20%) upon exposure to sunlight, with nearly uniform absorption across all wavelengths.

YHO has strong potential for various technological applications, including smart windows, protective eyewear, helmet visors, and automotive roof glass. The commercialization of roll-to-roll deposited photochromic YHO has already begun through the SME Sunphade. Today, the study of YHO and other rare-earth metal oxyhydrides is an increasingly attractive research field.

This talk will highlight key research findings on YHO, focusing on its physical and optical properties, including photochromic behavior under visible and ultraviolet light exposure, tunable transparency, and high optical stability with minimal degradation over multiple cycles. The temperature-dependent dynamics of YHO's transition between transparent and opaque states will also be discussed. Additionally, the presentation will cover ongoing studies related to durability and chemical stability, ensuring long-term reliability in practical applications, as well as efforts to enhance response times, cycling stability, and energy efficiency for large-scale implementation.

Theoretical advancements will be explored, including predictions of crystal structures for oxidized yttrium hydride, hydrogen-induced band structure modifications that explain its distinctive optical effects, and phenomena such as light-induced lattice breathing and lattice contraction/expansion. Furthermore, deposition techniques for small- and large-area glass and flexible substrates, prototype development, and functionality assessments in both laboratory and outdoor environments will be presented, along with insights from roll-to-roll deposition studies.

TAC Co-Chairs:

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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 erosion 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:

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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.

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:

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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 that 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.

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Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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

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Towards Reactive-Gas-Less Sputtering of Functional Nitrides – The Role of Metal Ions in Plasma-Activated Reactive Environments

Tetsuhide Shimizu[1], Caroline Hain[2,3], Yuji Oshida[1,2], Eva Vogt[2], Thomas Nelis[2,3], Johann Michler[2]

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Nitride thin films are indispensable materials across diverse industrial sectors, including hard coatings, semiconductors, and optical devices, typically fabricated by reactive sputtering with nitrogen (N_2). Film stoichiometry and crystallinity are strongly governed by the N_2 partial pressure, but less attention has been given to the actual incorporation efficiency of nitrogen into the growing film. In particular, dissociation of N_2 molecules into atomic nitrogen within the plasma is expected to critically influence surface reaction kinetics. This study investigates the role of highly ionized metal ions of high-power impulse magnetron sputtering (HiPIMS) in the discharge with activated nitrogen species during nitride film growth, with a focus on AlN deposition by microwave (MW)-assisted reactive HiPIMS. In this approach, AlN thin films were synthesized at very low N_2 flow rates within the metallic regime, where enhanced deposition rates and improved process stability are advantageous for industrial application. To analyze discharge characteristics during the reactive mode transition, energy- and time-resolved mass spectrometry was performed using a time-of-flight mass spectrometer (E-ToFMS), enabling detailed analysis of ion dynamics under varying reactive gas conditions. The results demonstrate that highly crystallized, (0002)-oriented AlN films can be deposited at very low N_2 flow rates when MW plasma assistance is applied, whereas conventional HiPIMS under the same conditions yielded metallic Al films. Mass spectrometry revealed that even at reduced N_2 flows, high fluxes of atomic and molecular nitrogen ions were present, particularly during the pulse-off time, highlighting their decisive role in sustaining film-forming reactions. These findings clarify the mechanism of AlN growth under low N_2 pressures and emphasize the importance of dissociated nitrogen species to improve the incorporation efficiency of nitrogen duruing reactive sputtering. The insights gained not only improve process control for AlN but also provide broader implications for the synthesis of other transition metal nitrides by HiPIMS in industrially relevant conditions.

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

Large Area Advanced Packaging and Integrated Photonics

The growing demand for high-performance computing, artificial intelligence, augmented/virtual reality, and advanced communication systems is driving unprecedented innovation in both large-area advanced packaging and integrated photonics. As the limits in transistor size and speed approach, the logical next steps to increase performance involve advancements in parallel computation and optimized communication between integrated components. To increase throughput, yields, thermal performance, and reduce cost, substantial focus and development effort have been put into large-area advanced packaging. As a foundational technology for these advancements, thin film deposition, a core area of expertise within the SVC community, plays a critical role in enabling the next generation of devices.

This session will explore the cutting-edge intersection of large-area manufacturing techniques for advanced packaging and integrated photonics. We encourage submissions that address challenges, present novel solutions, and showcase recent advancements in manufacturing equipment, processes, materials, and architectures.

Topics of Interest Include, but are not limited to:

Large Area Advanced Packaging:

- New process, equipment, performance, and yield requirements for advanced packaging,
- Large area packaging challenges and solutions,
- Wafer-level and panel-level packaging for integrated photonics,
- Advanced interconnects (e.g., through-silicon vias (TSVs) and through-glass vias (TGVs)), and
- Substrate technologies and interposer solutions for large-area integration.

Thin Film Deposition for Photonic Integration:

- Challenges and opportunities in scaling up integrated photonics manufacturing,
- Silicon photonics and other material platforms for integrated optics,
- Advanced dielectric and optical coatings for waveguides, filters, and resonators,
- Deposition of active photonic materials,
- The role of atomic layer deposition (ALD) and precise film control, and
- Large area physical vapor deposition (PVD) techniques for metallization and optical layers.

Manufacturing and Process Control:

- High-throughput manufacturing methods,
- Process control and in-situ monitoring for thin film deposition, and
- Yield enhancement and cost reduction strategies for large area integration.

We encourage submissions from academic and industrial researchers, engineers, and scientists working on all aspects of large area advanced packaging and integrated photonics, especially those with a focus on the underlying thin film and deposition processes. Join us to discuss the latest breakthroughs and future directions in this rapidly evolving field.

TAC Chair:

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

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:

- 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,
- Human-assisting technologies: predicting and correcting materials and processes by physical simulations and machine learning,
- 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.

INVITED SPEAKER:

Mass Production of Inorganic and Organic Coatings for Display Cover Glass

Brian S. Holsclaw

Corning, Inc., Corning, NY

As automotive displays become central to modern vehicle design, it is critical for cover glass coatings to meet certain optical performance, durability, and manufacturability requirements. This presentation will discuss anti-reflective (AR) and organic coatings designed for mass production processes. AR coatings will be discussed that have specific optical attributes for automotive displays including low reflectivity, high transmission, neutral color, and minimal color shift at high-viewing angles. These AR coatings must be scalable to a large-area process and manufacturable with precision. Durability requirements must also be considered for real-world use cases for such AR coatings. From a production point of view, cost of manufacturing will depend on effective integration of an appropriate coating system within a streamlined factory flow with best-practice processing and manufacturing improvements. Such a flexible and forward-looking manufacturing strategy will allow new products and coatings to be efficiently mass produced.

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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.

State of the Art of Amorphous IBS Coatings Improvements for the Gravitational Wave Detectors and Other Applications

L. Pinard, C. Michel, B. Sassolas, J. DeGallaix, D. Forest, M. Granata, L. Mereni, J. Teillon

Laboratoire des Matériaux Avancés – CNRS, Villeurbanne, France

For the first time in September 2015, a direct detection of gravitational wave occurred in the LIGO interferometers. These advanced detectors need large fused silica mirrors (34-35 cm diameter, 20 cm thick) having optical and mechanical properties never reached up to now. LMA has developed and optimized these IBS (Ion Beam Sputtering) coatings on the mirrors of the Fabry-Perot arm cavities of the LIGO or Virgo gravitational wave detectors to get:

- the lowest optical losses (0.3 ppm absorption at 1064 nm, around 5 ppm of scattering)
- the lowest mechanical losses (thermal noise reduced by the use of Ti:Ta_2O_5 as high index layer)
- the best coating uniformity (<0.1 % on 150 mm diameter).

To improve the detector sensitivity, the laser power has increased during the following scientific runs and a problem appeared in the high reflective coating: some very high absorbing points (several hundreds of ppm) can be present. Some investigations were done to understand and find their origin, and a solution was found to suppress them. This optimization was helpful for other projects using high finesse cavities.

The other noise limiting the detector performances in the 100 Hz region is the coating thermal noise, coming from the high index layer. Some R&Ds started at LMA (Working Group between LIGO and Virgo) to find a new material able to reduce this noise by a factor of 2. The best candidate is the Ti:GeO_2. Some final results will be presented.

Recent Innovations in Optical Coating Design Software

Michael Trubetskov[1,2]

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[2]Max Planck Institute of Quantum Optics, Garching, Germany

Modern software packages in the field of multilayer optical coatings cover many classes of different problems, including analysis and synthesis of multilayers, characterization of monolayers, reverse-engineering of produced multilayer coatings, real-time control of deposition processes using broadband or quasi-monochromatic optical monitoring, and computer simulation of multilayer production. This wide coverage of various classes of problems is essential to achieve high-quality multilayer coatings, addressing new challenges in science and technology.

Various aspects of innovative software support are considered, including efficient ways to solve direct problems of multilayer coating evaluation involving vectorization and parallelization of computations. Efficient methods of solving synthesis problems are discussed, including classic and deep search needle synthesis, gradual evolution, and multi-start optimization. The choice and correct specification of targets—ranging from spectral and integral values, absorptance, and electric field to stress and thickness—are critical. For ultrafast optics, specialized targets include group delay (GD) and group delay dispersion (GDD), and multi-coating configurations for dispersive mirror compressors are involved.

Recent innovations integrate deep search methods able to provide solutions with excellent performance on the one hand and production-friendly tools, such as design cleaner, bound-trap, thick layer reduction, and robust synthesis.

Characterization determines optical parameters of substrates and layer materials, while reverse engineering identifies and compensates for repeatable production errors. Special adaptations support large area manufacturing in automotive, architectural, and wafer applications. Real-time characterization and re-optimization mitigate non-repeatable deposition errors.

Insights from recent Optical Interference Coatings (OIC) design challenges underscore the progress and creativity in tackling these complex problems, illustrating the interplay between theory, computation, and manufacturing realities in modern multilayer optical coating technology.

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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.

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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 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).

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Photonically-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 photonically-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, multifunctional '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.

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Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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.),
- 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.

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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 repeatability, reproducibility, and yield levels 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. Challenges include sensor and actuator integration in harsh environments, data fusion across different systems, the development of adaptive, autonomous control algorithms and cybersecurity.

This session focuses on practical solutions while highlighting the latest advances in:

- Embedded real-time sensors and actuators,
- Cyber-physical monitoring and control systems,
- Digital twins for process control,
- Automation and digitalization,
- AI and machine learning for predictive and adaptive automation,
- Robotic systems for material handling and process execution, and
- Autonomous materials discovery and optimization platforms.

We welcome contributions from researchers, engineers, and solution providers that address these challenges through innovative technologies, case studies, or system-level implementations. Presentations that demonstrate practical applications, integration strategies, or lessons learned from deployment are especially encouraged.

Join us to explore how automation and digitalization enable the next generation of intelligent vacuum processing systems.

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

Beyond Ion Gauges: Wide-Range, Maintenance-Free Vacuum Sensing for Modern Coating Systems

Caspar Ask Christiansen, Ole Wenzel

Sens4 A/S, Hellebaek, Denmark

Precise and reliable vacuum measurement is essential to achieving consistent, high-quality results in modern vacuum coating processes. Traditionally, this has required a combination of sensors—including ionization gauges—to cover the full vacuum range. However, recent advancements in sensor design and materials now make it possible to significantly extend the functional range and durability of thermal and mechanical gauges, challenging long-standing dependencies on fragile, high-maintenance technologies.

This talk presents recent breakthroughs in vacuum gauging that enable wide-range, gas-independent measurement without the need for ionization gauges. Central to this development is the integration of MEMS-based Pirani sensors with high-resolution piezo resistive diaphragm sensors and capacitance diaphragm gauge sensors, enabling seamless pressure coverage across six decades. The inclusion of automatic zero-offset adjustment of the diaphragm type sensors further reduces drift and eliminates the need for frequent manual zero adjustment, offering huge savings.

To address the challenges of harsh process environments, advanced protective strategies have been implemented. Conformal coatings—such as high-purity Al_2O_3 applied by atomic layer deposition (ALD)—provide exceptional resistance to corrosive gases, while preserving sensor sensitivity and response time. Novel replaceable baffle designs, further increase the resilience towards sensor contamination. These innovations dramatically extend sensor lifespan and reduce maintenance intervals, lowering total cost of ownership.

Finally, the talk will explore the role of modern digital interfaces, including EtherCAT, in enabling faster, more reliable integration of vacuum gauges into coating system control architectures. Together, these advancements represent a new generation of vacuum sensing solutions—robust, low-maintenance, and fully aligned with the demands of high-throughput, precision coating operations.

Transforming Process Innovation through Advanced Chamber Pressure Control

Pedro Reyero Santiago, Preston Ernst, Dominic Mayrhofer

VAT Vakuumventile AG, Haag, Switzerland

New processes and applications in the vacuum industry, especially in semiconductor manufacturing, require faster and more precise control of the conditions in the vacuum chamber. VAT has developed a new pressure control solution to optimize performance on each process individually by leveraging auto-learning and feed-forward control strategies. This is achieved by training VAT's pressure control algorithms specifically on the actual process of interest, instead of using a universal control strategy. Through this new approach, it is possible to achieve better raw pressure control performance, resulting in higher process efficiency, as well as on-wafer performance improvements. Furthermore, it opens the door to new process innovation in vacuum manufacturing by enabling new process control strategies that are challenging to achieve with state-of-the-art pressure control technology, such as stable control of highly dynamic pressure changes or maintaining a stable chamber pressure during fast gas pulses in Atomic Layer processing. Coupling these new control strategies with high-end control devices (sensors, drives, gas inlet systems, …) allows to push the performance to the system's physical limits for each particular process. Lastly, VAT is targeting higher run-to-run process repeatability and improved chamber-to-chamber matching with this new pressure control solution.

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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.

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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 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 of 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_2 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, and
- 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, and
- 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, and
- Integration of Industry 4.0 in vacuum coating plants.

PVD Coatings for Tribological Applications – Known Paths and New Perspectives

K. Bobzin, C. Kalscheuer

RWTH Aachen University, Aachen, Germany

Physical Vapor Deposition (PVD) technology and coatings are integral part of today's products and production routes. Efficient process development, coatings tailored to specific applications, and performance prediction of coated components are crucial topics. Regarding process and coating development, experimental and iterative approaches are still common. However, synergies between experiment and simulative capabilities gain increasing importance. Regarding performance prediction of coated components, the interplay between experiment and simulation becomes even more important.

Within this presentation, tribological nitride, oxide and oxynitride coatings as well as self-lubricating coatings for tools and components are addressed. The deposition technologies span from magnetron sputtering over arc-PVD to gas flow sputtering. The field of applications reaches from cutting and forming tools until machine elements such as gears and chains.

Prediction of coating properties and coating performance in applications cannot be solved solely by physics-based approaches up to now. Within this context, approaches to determine coating properties from process parameters by data-driven methods are shown. Regarding performance prediction, greybox models that combine physics-based models and data-driven methods are very promising. Current research on greybox models for wear prediction of cutting tools is presented.

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Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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:

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

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,

Call for Papers

Abstract Submission Deadline
Guaranteed Session Placement: January 1, 2026

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 (including "best practices"), use cases / application examples, market analysis and business perspectives in all areas related to R2R processing.

Some pertinent topic focus areas are:

- Substrate materials and technologies (polymer, flexible glass, fabrics and non-wovens, etc.),
- Deposition sources and deposition modalities specific to R2R processing,
- Inline process diagnostics and 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, 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
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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 Porgram 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 USD cash award for the Best Poster will be offered. This year the SVC Young Members Committee will be offering an additional $200 USD prize for the best Student/Young Member poster presented at the session. **Submit an abstract for your presentation in the Poster Session before February 14, 2026.**

Conference Calendar

Start planning now for your trip to TechCon 2026

SUNDAY April 26	MONDAY April 27	TUESDAY April 28	WEDNESDAY April 29	THURSDAY April 30
Education Program 30+ Tutorial Courses				
TechCon Registration Counter Hours: Sunday, April 26 — 7:00 a.m. – 10:00 a.m. and 4:00 p.m. – 7:00 p.m. Monday, April 27 — 7:00 a.m. – 6:00 p.m. Tuesday, April 28 — 7:00 a.m. – 5:30 p.m. Wednesday, April 29 — 7:00 a.m. – 5:00 p.m. Thursday, April 30 — 7:00 a.m. – 12:00 p.m.		**Technical Program**		
		Exhibit **Exhibit Open Hours** **11 a.m. – 6 p.m. Tuesday** **10 a.m. – 4 p.m. Wednesday**		
Conference Registration Open Long Beach Convention Center				

CONFERENCE REGISTRATION FEES*

Back AGAIN for 2026!

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 March 1, 2026/after March 1, 2026)

- ❑ 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

Exhibitor Registration

(through March 1, 2026/after March 1, 2026)

- ❑ 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 Virtual 5K Run $40.00
- ❑ Awards Ceremony and Welcome Reception (Tuesday Evening) ..... No Fee
- ❑ SVC Foundation Casino Night Fundraiser (Monday Evening) ..... 1 Ticket Included with Full Conference Registration (additional tickets $75.00)
- ❑ Farewell Social (Thursday Evening) ..... No Fee

** Pricing contingent on making hotel accommodations at the Hyatt Regency Long Beach/Hyatt Centric Long Beach*

On-Locat
Pro

Processing Cluster

- C-103 An Introduction to Physical Vapor Deposition (PVD) Processes
- C-201 Electron Beam Evaporation for Thin Film Deposition
- C-204 Basics of Vacuum Web Coating
- C-207 Evaporation as a Deposition Process
- C-208 Sputter Deposition for Industrial Applications
- C-210 Introduction to Plasma Processing Technology
- C-212 Troubleshooting for Thin Film Deposition Processes
- C-214 Thin Film Deposition Optimization
- C-240 Fundamentals of Ion Beam Sputtering
- C-245 Industrial Broad Beam Ion Sources
- C-250 Introduction to Pulsed Laser Deposition
- C-280 Thermal Spray Technology
- C-304 ITO and Other Transparent Conductive Coatings: Fundamentals, Deposition, Properties, and Applications
- C-306 Non-Conventional Plasma Sources and Methods in Processing Technology
- C-307 Cathodic Arc Plasma Deposition
- C-308 Tribological Coatings
- C-310 Sputtering
- C-314 Plasma Modification of Polymer Materials and Plasma Web Treatment
- C-316 Introduction to Atomic Layer Deposition (ALD) Processes, Chemistries, and Applications
- C-323 Fundamentals of High Power Impulse Magnetron Sputtering (HIPIMS)
- C-324 Atmospheric Plasma Technologies (half day)
- C-332 Zinc Oxide-Based and Other TCO Alternatives to ITO: Materials, Deposition, Properties and Applications
- C-334 Manufacture of Precision Evaporative Coatings
- C-336 Transparent Gas Permeation Barriers on Flexible Substrates
- C-337 ITO and Alternative TCO: From Fundamentals to Controlling Properties
- C-343 From Basic Aspects to Industrial Components and Applications in HIPIMS Technology
- C-333 Practice and Applications of High Power Impulse Magnetron Sputtering
- C-338 Application of Reactive Sputtering
- M-120 Design of Experiments for R&D
- M-150 Cleaning Fundamentals for Coating Applications
- M-240 Basics and Applications of Electron Beam Technology for Manufacturing Processes
- VT-230 Design and Specification of Vacuum Deposition Systems

Optical Cluster

- C-205 Introduction to Optical Coating Design
- C-218 Advanced Design of Optical Thin Films
- C-216 Practical Design of Optical Thin Films
- C-217 Practical Production of Optical Thin Films
- C-340 Plastic Optics - Coatings and Antireflective Structures
- C-341 Processing on Flexible Glass - Challenges and Opportunities
- M-205 The Craftsmanship of Ophthalmic Coatings

Vacuum Technology Cluster

- M-140 Mass Flow Controllers: Fundamentals, Troubleshooting, and Calibration
- VT-201 High Vacuum Systems and Operations
- V-202 Vacuum System Gas Analysis
- VT-203 Residual Gas Analyzers and Analysis
- V-204 Vacuum Systems Materials and Operations
- V-207 Operation and Maintenance of Production Vacuum Systems
- V-208 Basic Ananlysis of Mass Spectrometer Spectra
- V-209 Fundamentals of Vacuum Technology and Vacuum Gauging
- V-210 Pumps Used in Vacuum Technology
- V-211 Vacuum Hardware and Vacuum Leak Detection
- V-212 Vacuum System Design
- VT-220 Practical Guide to Vacuum System Operation Using a Trainer System
- VT-230 Design and Specification of Vacuum Deposition Systems
- VT-240 Practical Elements of Leak Detection
- VT-245 Hands-on Helium Mass Spectrometer Leak Detection

Course Catalog (September 2025)

Characterization Cluster

- M-102 Introduction to Ellipsometry
- M-103 In Situ Spectrascopic Ellipsometry
- M-110 Introduction to X-ray Photoelectron Spectroscopy
- M-130 Scanning Electron Microscopy Sample Preparation, Image Optimization, and Microanalysis
- M-230 Nanoscale Heat Transfer in Thin Films and Interfaces
- M-250 Deposition Process Simulation
- C-322 Characterization of Thick Films, Thin Films, and Surfaces

PVD Cluster

- C-103 An Introduction to Physical Vapor Deposition (PVD) Processes
- C-201 Electron Beam Evaporation for Thin Film Deposition
- C-207 Evaporation as a Deposition Process
- C-208 Sputter Deposition for Industrial Applications
- C-212 Troubleshooting for Thin Film Deposition Processes
- C-214 Thin Film Deposition Optimization
- C-240 Fundamentals of Ion Beam Sputtering
- C-250 Introduction to Pulsed Laser Deposition
- C-307 Cathodic Arc Plasma Deposition
- C-310 Sputtering
- C-323 Fundamentals of High Power Impulse Magnetron Sputtering (HIPIMS)
- C-333 Practice and Applications of High Power Impulse Magnetron Sputtering
- C-334 Manufacture of Precision Evaporative Coatings
- C-338 Application of Reactive Sputtering
- C-343 From Basic Aspects to Industrial Components and Applications in HIPIMS Technology
- M-240 Basics and Applications of Electron Beam Technology for Manufacturing Processes
- M-250 Deposition Process Simulation

Application Cluster

- C-220 Introduction to Two-Dimensional Materials
- C-230 PVD Processing of Plastics for Better Protection, Reflection, and Decoration (half day)
- C-260 Organic Electronics - The Future is Bright
- C-270 Coatings, Thin Films and Surface Solutions for Biomedical Applications: An overview of market trends, synthesis and characterization
- C-304 ITO and Other Transparent Conductive Coatings: Fundamentals, Deposition, Properties, and Applications
- C-320 Diamond Like Carbon Coatings-From Basics to Industrial Realization
- C-329 Properties and Applications of Tribological and Decorative Coatings
- C-330 Introduction to Thin Film Photovoltaic Technologies (half day)
- C-332 Zinc Oxide-Based and Other TCO Alternatives to ITO: Materials, Deposition, Properties and Applications
- C-336 Transparent Gas Permeation Barriers on Flexible Substrates
- C-337 ITO and Alternative TCO: From Fundamentals to Controlling Properties
- C-339 Mechanical Heart Valve Thrombosis: An Introduction and Review (half day)
- C-340 Plastic Optics - Coatings and Antireflective Structures
- C-341 Processing on Flexible Glass - Challenges and Opportunities
- C-342 Thin Film Photovoltaic Solar Cells
- M-140 Mass Flow Controllers: Fundamentals, Troubleshooting, and Calibration
- M-201 Flexible Electronics
- M-205 The Craftsmanship of Ophthalmic Coatings
- M-210 Introduction to Solid-State Thin Film Batteries
- M-220 Thin Film Superconductor Tapes
- M-240 Basics and Applications of Electron Beam Technology for Manufacturing Processes
- M-250 Deposition Process Simulation

Business Cluster

- B-101 Creating a Business from your Idea, Product or Service
- B-110 Getting the Most Value out of Marketing without Spinning your Wheels
- B-120 Introduction to Patents and Trademarks
- B-130 Doing Business in the U.S.A.

Networking Opportunities at the 2026 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. Late afternoon sessions are currently under development for Monday 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 with early evening Sunset sessions under development for Monday, April 27 and Thursday, April 30. 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.

- Welcome Lunch 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

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, April 27, 2026.

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 Wednesday, April 29, 2026, outside the Convention Center entrance.

Back by Popular Demand: FREE Technical Conference Admission for April 28th & 29th

Networking Opportunities at the 2026 TechCon

2026 SVC TechCon Farewell Social

Date: **Thursday, April 30, 2026**

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.

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.

2026 SVC Awards Ceremony and Welcome Reception

Date: **Tuesday, April 28, 2026**

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 2026 the Welcome Reception will be broken into a lunch at 1:00 p.m. and a cocktail hour at 5:00 p.m; all held in the exhibit hall.

Back by Popular Demand: FREE Technical Conference Admission for April 28th & 29th

Education Program

FROM THE **EDUCATION DIRECTOR**

Certainly the 2026 TechCon in Long Beach feels like an eternity from now, but you can rest assure that planning is well underway! Since we all said goodbye in Nashville, we spent time assessing the program and thinking about new courses to offer. We learned that our offerings in Nashville continued to be well subscribed, with an average course enrollment that was comparable to the last few years. Several of our courses did quite well. For example, "Troubleshooting for Thin Film Deposition Processes" (C-212), taught by Mike Miller; "Diamond Like Carbon Coatings-From Basics to Industrial Realization" (C-320), taught by Lars Haubold, Christian Stein, and George Savva; "Application of Reactive Sputtering" (C-338), taught by Ralf Bandorf and Holger Gerdes; "Deposition Process Simulation" (M-250) taught by Dennis Barton; and "Materials for PVD Applications" (C-110) taught by Christos Pernagidis and Anas Ghailane all had outstanding attendance. The latter was a new course offering this year, which makes its large enrollment great to see. As for new courses in Long Beach, we are actively developing courses on topics that will help our members develop the skills needed to excel in our craft. And while the ink is not yet dry on our Long Beach program, we expect to exceed the 30 courses that were offered in Nashville. Stay tuned!

Since some of you reading this might have missed us this year, we remind you that most of our courses are offered in our "on-site" program, where the instructors come to teach their course in the comfort of your own facilities. Alternatively, we have a portfolio of "on demand" educational videos as well. So, if you have new employees who need training or "seasoned" ones who need a refresher, contact us to see how we can help meet your needs.

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 we have a course that satisfies your needs. To see a listing of all the courses and offering platforms, please visit the SVC website and follow the "education" link.

If you have some questions, please ask. We are always happy to help!

— 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

Long Beach Convention Center, Long Beach, California, USA

The 2026 TechCon will be held in the "Center" of Southern California... the Long Beach Convention & Entertainment Center. Located in the heart of Long Beach, the Convention Center is an urban waterfront destination. The building has an impressive architectural design, modern enhancements, and eye-catching décor. The glass dome of the Atrium provides illumination by sunlight in daytime and by colorful LED lights in the evening. The exhibit hall and meetings rooms are perfectly suited for the TechCon and our emphasis on networking and technical exchange. Overlooking bustling Rainbow Harbor, Queensway Bay, and Pacific Ocean beachfront, the Center sits in the middle of Long Beach's downtown waterfront, within walking distance to first-class accommodations, shopping, dining, attractions, sightseeing along picturesque bays, and 5 1/2 miles of sandy beach. Long Beach is convenient to Los Angeles International, Long Beach, and Orange County Airports.

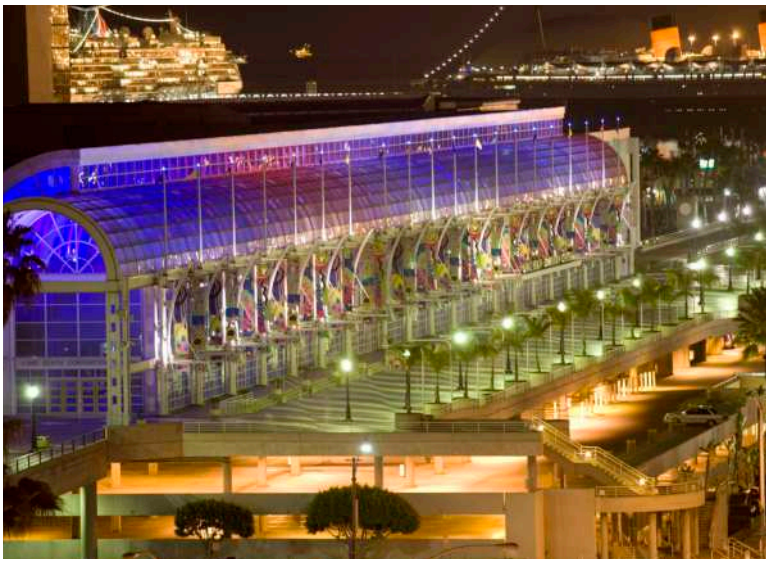
Room blocks and discounted rates have been organized for TechCon attendees. These accommodations are available at:

- $309 USD (double occupancy) - Hyatt Regency Long Beach Hotel, 200 S. Pine Avenue, Long Beach, CA 90802

  Located on a premier waterfront spot in the heart of downtown, Hyatt Regency Long Beach is the only 4 Diamond Award-winning Long Beach, California, hotel with all 531 rooms and suites offering ocean or harbor views. The Hyatt Regency Long Beach is connected directly to the Long Beach Convention Center and will house the majority of the TechCon's social events as well as meeting space/classrooms for the TechCon TFB and tutorial programs.

- $319 USD (double occupancy) - Hyatt Centric The Pike Long Beach Hotel, 285 Bay St, Long Beach, CA 9080

  Hyatt Centric The Pike Long Beach pays homage to the fascinating history of The Pike, an amusement park founded in 1902 that was a thriving destination for its bathhouse, wooden roller coaster, arcades and exciting family fun until 1979. This luxe hotel possesses a rooftop pool and bar with 360° panoramic views, places you in the middle of the neighborhood action so you can explore Long Beach's bustling shopping areas, non-stop nightlife and the rolling surf of California's Pacific Ocean. The hotel is a two-minute walk from the Long Beach Convention Center.



Important note! Discounted room rates are available **exclusively** on the dedicated hotel pages that will be accessible on the SVC 2026 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.

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EFFICIENT
HIGH-SPEED
COMPACT
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J.A. Woollam

Introducing alpha 2.0

Spectroscopic ellipsometry for thickness and refractive index at a low cost.
Power meets efficiency with the alpha 2.0.