



SVC Personnel, Directors, and Committees

Effective July 2023

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

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

Interested in Getting Involved? Contact a Board Member.

Interested in Joining a Technical Advisory Committee? Contact a Committee Chair.

Interested in Forming a New Technical Advisory Committee? Contact the Program Chair.

Interested in Joining a Standing Committee? Contact a Committee Chair.

For General Information, Contact the SVC Administrative Team:

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General Committees

- Organization Chart
- Administration
- Officers and Directors
- Executive Committee
- Nominations Committee
- Education Committee
- Exhibit Committee
- Awards Committee
- Finance/Investment Committee
- Student Sponsorship Committee
- Long Range Planning Committee
- International Outreach Committee
- International Advisory Committee
- Young Members Committee
- Publications Committee
- Strategic Technologies and Markets Committee
- Women in SVC Committee

Technical Advisory Committees (TACs) & Sessions

- Atomic Layer Processing (ALP)
- Coatings and Processes for Biomedical Applications
- Coatings for Energy Conversion and Related Processes
- Digital Transformation of Industrial Deposition Processes
- Emerging and Translational Technologies and Applications
- High-Powered Electron Beam Technology
- High-Power Impulse Magnetron Sputtering – HIPIMS
- Large Area Coatings
- Optical Coatings
- Plasma Processing & Diagnostics
- Process Monitoring, Control and Automation
- Protective, Tribological and Decorative Coatings
- Thin Film Sensors
- Thin Film Superconductors
- Exhibitor Innovator Showcase
- WebTech Roll-to-Roll Coatings for High-End Applications

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***Years in brackets ()
denotes the term of
Officers and Directors.***

The SVC Executive Committee comprises the elected officers, the past president, and other board members as deemed appropriate by the President of the Society. The committee exists to address specific financial issues and decisions that are put before the SVC as well as to provide specific direction and action interim to board meetings. The executive committee exists to supplement the activities of the Board of Directors and, as with all activities with the SVC, is accountable to the Board. The Executive Committee and Board of Directors oversee the operation and strategic direction of the SVC in-line with our mission statement.

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Treasurer

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denote the terms of
Officers and Directors.***

The SVC Nominating Committee shall be comprised of the immediate Past President as chair, plus three members of the Society selected by the chair of the nominating committee to represent all constituencies of the Society. The nominating committee shall prepare a slate of candidates for each of the Officer or Board positions being vacated at the end of an elected term of office. The number of candidates for the position of Vice President/President Elect shall be at least two; for Treasurer and Secretary shall be at least one; and for Board Director shall be larger than the number of open positions by at least one. Nominees for Board and Officer positions must be members of the Society in good standing.

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Education is an important aspect of the mission of the Society of Vacuum Coaters and the Education Committee is charged by the Board of Directors with overseeing that function. Developing and overseeing courses obviously are an important activity, but the committee also is concerned with education and training as it pertains to the needs of the diverse SVC stakeholder base.

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The Exhibit Committee works closely with the Executive Director and follows the established guidelines to ensure fairness and equality to all exhibitors and exhibiting companies. Exhibitor's evaluation comments are always taken into consideration when planning for the next year's floor plan and functions designed to draw people to the exhibit area.

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The Awards Committee is charged with the annual selection of the Nathaniel H. Sugerman Award recipient for distinguished achievement. The committee also selects recipients of the SVC Mentors Award, given to those who have made significant contributions to the Society or the vacuum coating industry.

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- The SVC Finance Committee oversees the financial stewardship of the Society. Participation of the Treasurer and President participation are mandatory based on their role. Director participation is required but can be filled by any Director(s) per nomination and approval by the Executive Committee. Finance Committee members are authorized signatories on the SVC's Investment and Operational Accounts. Primary roles and responsibilities of the SVC Finance Committee are as follows:
- **Oversight:** The Committee oversees the financial performance of the SVC.
- **Transparency:** The Committee provides a direct link to the BOD to develop controls, policies and reporting standards.
- **Compliance:** The committee ensures compliance with those policies and controls in accordance with relevant statutes and policy making groups such as FASB and advises on policies and structures to mitigate risk.
- **Verification:** The Committee also functions as an audit committee and is the reviewer and signer of Tax returns. The Committee approves the engagement of outside accounting and audit resources.
- **Strategy:** The Committee advises and supports the BOD in the strategic development and financing of the SVC
- **Investments:** The Committee oversees the SVC's investment activity, reporting its findings at least annually to the BOD. The Committee develops investment strategies, aligned with SVC goals, for BOD approval, and employs professional financial firms to execute on the SVC's goals.

Members:

Treasurer/Chair

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The Student Sponsorship Committee (SSC) was established in 2001 and it is composed of members from different countries. Every year the SSC selects the most promising students and financially supports their participation at the Technical Conference. This sponsorship is meant to stimulate interest among future young scientists in the subjects and activities of the SVC, helps to involve more personnel from academic institutions (such as the students' professors), and also encourages new contacts that can lead to employment opportunities.

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*The **Covid19** pandemic has dramatically changed the operational landscape of professional organizations, trade associations, and exhibitions. Business travel restrictions limited to critical essential activities, border closures, social distancing, and the extremely contagious nature of Covid19 has upended the model of mass technical gatherings to disseminate information, promote personal networking, deploy in-person educational instruction, introduce new products, and manage supply chains. While it is certain that the world will have changed permanently as a result of Covid19, the resultant “new normal” is far from certain and will continue to evolve over time. Organizations like the SVC that derive the vast majority of their income from annual conferences and exhibitions will benefit from constructive “out of the box” thinking to explore new approaches that accommodate this completely new set of constraints.*

A working group will be established to refine the objectives and goals of a revised Strategic Plan to “Sur-thrive” in a post-COVID era. Fundamental elements of the SVC brand and stakeholder interests for the TechCon (strong exhibit, networking and personal interactions, multi-faceted attendee engagement opportunities such as the educational tutorials, technical program, exhibition, international attendance, structural flexibility to accommodate opportunities to partner with other organizations, and/ or accommodate continued organic growth) shall be preserved. Any changes to the current SVC Strategic Plan should be cast in the framework of income and revenue considerations to the Society.

The Committee will be chaired by the Vice President and consist of Society members, outside individuals that may possess exceptional stakeholder relevance and/or perspective, along with a minimum of three members from the Board of Directors. The members should be familiar with and in contact with the operation of organizations similar to the SVC and be associated with entities which are involved with international trade. Reports and recommendations will be issued at bi-annual Board of Directors meetings.

Education is an important aspect of the mission of the Society of Vacuum Coaters and the Education Committee is charged by the Board of Directors with overseeing that function. Developing and overseeing courses obviously are an important activity, but the committee also is concerned with education and training as it pertains to the needs of the diverse SVC stakeholder base.

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The main tasks and responsibilities of the **International Outreach Committee** are increasing and enrichment of the international membership in the SVC and extending the SVC vision and mission as the global source for learning, applying and advancing vacuum coating, surface engineering and related technologies.

The **International Outreach Committee** is established to identify challenges, opportunities, and proposed solutions to both engage a global audience and represent their best interests within the SVC organization. Fundamental elements of the SVC brand and stakeholder interests for the TechCon will be preserved; including but not limited to:

- strong exhibition footprint and international participation,
- networking and personal interactions,
- multi-faceted attendee engagement opportunities such as the educational tutorials, technical conference program, industrial workshops, exhibition, international attendance, student sponsorship/scholarship, and career placement
- accommodation of opportunities to partner/align with other organizations,
- promote continued organic growth.

The **International Outreach Committee** members will identify key international thought leadership in selected countries to spread information and increase interest about the SVC TechCon and to inform, educate, and engage the members, technical community, and the public on all aspects of vacuum coating, surface engineering and related technologies through the dissemination of promotional and marketing materials.

- The **International Outreach Committee** invites well positioned individuals from selected countries to become members of the **SVC International Advisory Committee** and the membership list of the International Advisory Committee will be reviewed annually.

- The **International Outreach Committee** shall also solicit concepts and ideas to foster local engagement from these thought leaders and refine/represent them to the SVC BOD for consideration and implementation.

- The **International Outreach Committee** members shall consist of SVC members to represent broad SVC strategic interests and may also include members from similar organizations who will be able to share their unique solutions and approaches. Team members with intimate familiarity with the operation of similar organizations (particularly program development) as well as extensive international conference/trade show participation are desired. It is anticipated that the team will meet monthly issuing interim reports every 6 months. The committee shall be co-chaired by two individuals, one from academia and one from industry.

The IOC group will meet quarterly via virtual meetings. Individual Committee members will be responsible for communication with selected members of the **SVC International Advisory Committee**.

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The International Advisory Committee (IAC) is chartered as a Subcommittee of the **International Outreach Committee (IOC)**. The IAC was founded to broaden the international outreach of the SVC and to increase the SVC membership and number of international attendees and presenters at the SVC TechCons from countries with rapidly growing economics, technology innovations, new industries and markets. The International Advisory Committee is composed from important highly experienced and well-connected individuals from selected countries, who can spread the SVC mission and provide expert advices and help to the SVC TechCons. The main tasks and responsibilities of the IAC are increasing and enrichment of the international membership in the SVC and extending the SVC vision and mission as the global source for learning, applying and advancing vacuum coating, surface engineering and related technologies.

The **SVC International Advisory Committee** operates under the following operational criteria:

- The IAC member is invited for 2-years period.
- The IAC member should actively promote the SVC vision and mission and distribute information materials about SVC and SVC TechCons in his/her country.
- The IAC member is required to recruit at least 2 abstracts for presentation in the TechCon program.
- The IAC member is granted by the conference fee waiver for the TechCon, provided that he/she stays in the conference hotel during the TechCon.

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Dr. Binder is an associate professor at Federal University of Santa Catarina (UFSC), Department of Mechanical Engineering in Florianópolis Santa Catarina in southern Brazil. He holds a degree in Chemical Engineering from the Federal University of Santa Catarina (2004), a Master's Degree in Materials Science and Engineering from the Federal University of Santa Catarina (2006) and a PhD in Materials Science and Engineering from the Federal University of Santa Catarina (2009). He is currently a professor at UFSC. His specific expertise is plasma materials processing, powder metallurgy and surface engineering. He has managerial and leadership capacity and broad experience in the relationship with the industrial sector in coating related technologies.

CHINA

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Prof. Xing-Fang Hu, is from Shanghai Institute of Ceramics, Chinese Academy of Sciences. He is organizer of international meetings, editor and expert in solar energy materials and solar cells, recently focused in 3D ordered macroporous materials (e.g. titania).

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Professor Junwei Wu is an associate professor and serves as a vice secretary general in SAVTI, who is a recognized expert in tribological coatings (PVD/PACVD/DLC).

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Dr. Jouko the CTO and co-founder of Comptek Solutions. He is the inventor of Kontrox technology, he holds a PhD in physics and is a passionate compound semiconductor materials professional with almost a decade of research behind. He has authored or co-authored almost 30 publications and holds 10+ patents.

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Over the years Pierre has amassed an incredible breadth of experience and applied knowledge. After having worked for more than 20 years in leadership roles with Oerlikon, Balzers, and Ionbond, Pierre created PD2i and became a consultant for leading companies. He brings with him a successful track record having established over 20 coating centers.

HUNGARY

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Dr. Csík currently serves as the President of the Hungarian Vacuum Society.

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Prof. Dr. Aryasomayajulu Subrahmanyam, has been working as Chair professor at the Department of Physics, Indian Institute of Technology Madras. He is an expert in metal oxide thin films and devices, magnetron cathode design, semiconductor materials and devices, recently in bio-medical applications like photocatalysis for oxygenation of blood.

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Professor Kusano is professor at Kanazawa Institute of Technology, the College of Bioscience and Chemistry, Department of Applied Chemistry, School of Chemistry and Bio-science. He is a Director of the Department of Applied Chemistry and he has a high expertise in sputtering, thin film physics and Materials science. He is an active researcher, university teacher and author of number of articles and several patents on transparent heat reflecting coatings for architectural plate glass, on multilayered unit-reflection coatings, and recently even on an atmospheric plasma system.

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Prof. Jeon Geon Han, is Director of Center for Advanced Plasma Surface Technology and professor at School of Materials Science and Engineering at Sungkyunkwan University. He is recognized expert in plasma processing and plasma diagnostics, especially in magnetron sputtering including HIPIMS.

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Prof. Oseguera is President of the National Network for Surface Engineering and Tribology, from CONACyT. His expertise is in plasma surface processing by PVD, HiPIMS and Plasma Nitriding for tribo-mechanical systems, hard surfaces and functionalizing components. He developed plasma assisted processes and industrial systems to nitride steels and produce micro- or nano-structured thin films. In his research he supervised many PhD students and developed two companies. He is currently a Member of the National Research System, rank 2.

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Prof. Dr. Witold Gulbinski, DSc. is a Vice Director for Science and Development, and chair professor of Division of Physics at Institute of Technology and Education in Koszalin University of Technology. Expert in vacuum plasma, nanotechnology, tribological films, recently focused to applications of stainless steels for medical instrumentation and food industry.

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Prof. Ju-Liang He, is the chair professor at the Department of Materials Science and Engineering at Feng Chia University, Taiwan. He is recognized expert in vapor coating technology, surface engineering/characterization, plasma engineering, photovoltaic and electrochromic materials and thin film batteries.

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Prof. Dr. Sener OKTIK is President of Research &
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chemicals businesses with total of 44 plants (26
abroad). Headquarters in Tuzla and Istanbul.

The SVC Young Members Group is open to young people (age 35 and younger) with an interest in vacuum coating and related technologies. Members of the group may be students or young staff in industry; the common feature is that they should meet the age requirement and have a keen interest in any topics which sit under the umbrella of the SVC. We intend to offer members of this new group special conference rates and other benefits, in exchange for their input and ideas regarding the growth and development of the Society as it relates to the younger generation. We envision that the Young Members Group will establish, from its membership, a Committee and a Chair. The Chair will be invited to attend the SVC Board meetings and participate in developing future strategies for the Society, thereby giving the Young Members a voice at the highest levels within the Society. If you have questions regarding the Young Members Group, please contact the Chair or a Board Mentor.

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The main mission of the Publications Committee is to assure appropriate advancement of the SVC publication activities while keeping in mind advances in the field of coatings and surface engineering, the interests and needs of the contributors and readers, as well as the technical, financial and manpower resources.

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“Strategic Technologies and Committee” Charter and Background:

1. The Committee coordinates all strategic aspects of the SVC’s Technical Program, in particular:
 1. Identification of technologies, applications, and markets – both mature and emerging - relevant to SVC stakeholders,
 2. Periodic review and adjustment of those technologies, applications, and markets to maintain relevance to SVC stakeholders recognizing that the SVC stakeholder base and interests are constantly evolving , and
 3. Developing the means that ensure adequate and effective representation of those technologies, applications, and markets in:
 1. the SVC’s Technical Advisory Committee (TAC) structure and
 2. the Technical Program of the TechCon and other SVC activities.
2. The Committee focuses on strategy and develops plans and proposals for tactical / operational implementation. It is envisioned that the ST&M Committee may engage members of existing TAC leadership/membership to not only develop any plans but to identify potential leadership in new areas of focus. The SVC BOD shall review and advise on such plans and proposals, as needed.
3. Tactical and operational aspects of maintaining TAC and TechCon program operations are the purview of the Program Director. Program Director reviews and approves plans and proposals of the Committee that are intended for tactical / operational implementation.

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Vision - To provide a platform for women in the society to support each other and excel in the industry.

The mission of the Women in SVC Committee is to promote the work, innovation and achievements of women in the SVC Community. We will raise awareness of women in the industry, highlighting women speakers and chairs throughout the conference and encourage, engage and provide mentorship to the female students of the SVC Foundation and the women of the SVC Young Members Group.

Objectives of the Committee:

- Have a designated time at every TechCon where all members of the group can meet, have discussions, provide support and network with each other.
- Raise awareness of the work and achievements of the women of the group.
- Encourage companies within the industry to encourage female staff to attend TechCon, submit papers and participate in the exhibit.
- Provide built in resources for women in the society through the SVC website.
- Offer a scholarship or bursary, directly linked to the Women in SVC Committee, to female students to allow them to attend TechCon and get an insight to the industry.

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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 makes ALP methods attractive to the processing polymers, biomaterials, and other applications with low thermal budgets. We are soliciting oral and poster contributions to ALP sessions in areas including both established ALD technologies and creative new ALP developments. Advanced ALP technologies which successfully cross over from early-stage feasibility studying into commercially viable industrial solutions are of particular interest.

Session Topics will include:

- Innovations in methods for upscaling ALPs towards high-volume industrial applications
- New business concepts or market perspectives that accelerate transfer of ALPs from the lab to commercial viability.
- Current commercial products using ALPs
- Precursor synthesis
- Fundamental aspects of ALP
- Process development
- Plasma enhanced processes
- Challenges and applications of ALPs
- Novel concepts for ALP process control, characterization, and monitoring

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Coatings and surface treatments are important and used in many biomedically related areas. Recent advances in knowledge related to biological systems have motivated the development and characterization of coatings with the purpose of improving osseointegration, interfacing with the nervous system, extending implanted device lifetimes, and improving biocompatibility to highlight a few. The applications also extend beyond implantable devices. For example, energy harvesting for health monitoring wearable devices requires biocompatibility and flexibility. Applications for coatings in healthcare are already broad and continue to expand. To disseminate advances and address technical issues in this broad and growing area, The Coatings and Processes for Biomedical Applications Technical Advisory Committee (TAC) welcomes papers reporting on biomedical coatings and surface modifications, characterization of these materials and their performance, as well as advances leading to new applications in the biomedical area. The following list is intended as a guide to topics appropriate for this session but other biomedically relevant papers are also encouraged:

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

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The Coatings for Energy Conversion and Related Processes Technical Advisory Committee (TAC) welcomes papers in the following areas:

Solar and Ambient Light Energy Conversion:

- Thin-film and thin wafer photovoltaics
- Organic flexible photovoltaics (OPV)
- Semi-transparent photovoltaics
- Coatings for improved performance

Energy Harvesting:

- RF Harvesting
- Piezoelectrics
- Kinetic harvesting through body movement
- Coatings for improved stability
- Graphene and carbon nanotubes
- Protective coatings

Efficient Functional Coatings:

- Radiative cooling
- Hydrophobic and hydrophilic
- Self-cleaning catalytic coatings

Business Topics:

- Market assessment
- Advanced manufacturing processes
- Integration of functional coatings into wearable products

Other traditional subjects of the Coatings for Energy Conversion and Related Processes TAC will be considered including:

- Smart windows
- Selective radiators
- Fuel cells
- Large-scale energy conversion and storage

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Industrial deposition processes are subject to strong competitive pressure, as better productivity is always demanded with a higher precision and increasing complexity of coating products. This increased complexity requires optimized coating processes, model-based process control and a view of the complete process chain. Therefore, a digital transformation, which will be one of the key drivers in the future for industrial deposition processes, is needed. The digital transformation includes the systematic collection of data which is generated in the different processes and the representation of the (coating) processes by means of real-time capable, digital twin.

Already nowadays, the simulation, which can be part of digital twin, is a well-established tool for predicting and optimizing deposition processes. It is possible to use physical and/or chemical models to predict the behavior of the process. Another approach of predicting processes is the use of generated data and utilize the artificial intelligence. Therefore, the data acquisition, storage, and accessibility of the data plays an important role. Artificial intelligence is already deployed for example in image recognition, predictive maintenance, and process control. This session will cover all topics in which digitalization plays an important role. It will bring the experts for simulation and artificial intelligence together and offers a perfect floor to discuss the benefits of the digital transformation of industrial deposition processes from point of view of different technology fields.

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This session welcomes presentations related to Deposition and Surface Engineering Technologies and Applications that do not readily align with the classic 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, and
- (b) Established markets and applications benefit from technical innovation in fields that previously were restricted to exterior “heritage” domains.

This session seeks to highlight new applications and markets that are enabled by advances in Thin Film and coating Deposition, Interface engineering, and Surface processing. Contributed presentations may emphasize applications & markets, describe the role of enabling or cross-over technologies, as well as business topics such as market opportunity overviews, or new business and engineering concepts. Market- and business-focused talks should generally relate to technology innovation within the SVC domain, and technology-focused talks should relate to a new market or application arena that SVC stakeholders should pay attention to.

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The High-Powered Electron Beam Technology Technical Advisory Committee (TAC) is a spin-off from the International Conference on High-Powered Electron Beam Technology, originally founded by Dr. Robert Bakish in 1983. Today, high-powered electron beam technology is well established for coating, melting and welding. The focus of the TAC is the development of new coatings and coating processes utilizing high-powered electron beam technology as well as new e-beam guns, power supplies and beam guidance systems for improved materials 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 high-powered electron beam technology for industrial applications and is looking for papers on the topics listed below:

- Advances in high-rate PVD by electron beam evaporation for thermal barrier coatings.
- Electron beam processes for the production of novel materials
- Additive manufacturing with electron beam
- 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.)
- Related and new applications for high-power electron beams

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High Power Impulse Magnetron Sputtering (HIPIMS) has moved from lab scale to industry. Today, a significant number of industrial scale HIPIMS processes exist as well as some commercial processes and products. Both fundamental understanding and application-oriented development are essential for exploiting the full potential of this technology. The latest results from fundamental research, new and advanced approaches for simulation and modeling, and the combination of applied research from lab scale to industrial size cathodes and machines are the focus of this TAC. The session aims to provide a forum linking scientists, technologists, and industrialists to discuss all aspects of the HIPIMS technology.

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

- Fundamental research on plasma, discharge, and coatings
- Simulation and modeling of HIPIMS
- New plasma sources and process modifications
- Recent development in pulse generation and process and plasma diagnostics
- Application oriented results: tribological, optical, medical, etc.
- New coatings and products

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Large Area Coatings, generally considered to be on substrates or aggregates of substrates larger than one square meter, are found all around us in applications for communication, recreation, architecture, eyewear, lighting, entertainment, electronics, airplanes, aerospace, automotive and so on. Large Area manufacturing typically provides the benefits of low cost, high volume, excellent quality and low capital cost per unit yielded capacity. The Large Area Technical Advisory Committee solicits presentations in the following and related areas:

- Sustainability, including:

- Battery technology (e.g. post-lithium)
- Energy storage (hydrogen – from the cradle to the grave generation, storage, fuel cells)
- Life cycle management
- Replacing/substituting limited raw materials as well as materials whose refinement poses environmental challenges
- Solutions for recycling costly materials
- CO2 footprint reduction in mobility and transportation

- Communications and Displays:

- Touch screen, cell phone and other active display applications
- Semiconductor deposition and fabrication

- Architectural and Automotive thin film materials, processes, equipment, and applications including:

- Low-emissivity, absorbing and reflective architectural coatings
- Electrochromic and other smart window coatings
- Transparent conductor, anti-reflection and mirror coatings
- Temperable and bendable coatings
- Windshield coatings (heat reflecting, hydrophobic/hydrophilic)
- Antennas, including fractal circuits
- Surface modification coatings: friction-reducing, wear-resistance, chemical-resistance, thermal control, anti-reflection, mirror and barrier coatings
- Decorative coatings for automotive reflectors, trim etc.

- Green/alternative energy applications including thin film photovoltaic and semiconductor materials

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Exciting developments in optical coatings are stimulated by the latest trends in optics, optoelectronics, photonics, optical data processing, mobile devices, displays, biomedical, sensors, energy and photovoltaics, architectural, aerospace, astronomical, and other technologies. The Optical Coatings sessions will bring together these different aspects for technical interchange in the field of optical interference coatings. To build a well-rounded Optical Coatings session, abstracts are solicited to cover topics including coating design, development of practical manufacturing techniques, characterization methods, and a wide range of applications. Specific areas may include:

- Application of Optical Coatings for mobile electronics (e.g. fingerprint sensors, cameras, displays, touch-screens, etc.).
- Performance enhancement through optical coatings (e.g. improved efficiency for solar cells).
- Optical Coatings for wearable technology, including Ar/VR.
- Coatings on sapphire, polymers or other special substrate materials.
- Optical coatings for multifunctional requirements (scratch resistance, anti-smudge).
- Applications in non-traditional wavelengths, from EUV to IR (e.g. IR thermal imaging).
- Complex 3-D optical devices.
- Coatings for biomedical applications.
- Optical coatings for energy control and solar power.
- Optical coatings for laser applications, including femto-second laser.
- Optical coatings for display, aerospace and integrated photonic device applications.
- 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, in-line or in-situ approaches, etc.).
- Real-time process monitoring and control with optical coating processes.
- Industrial scale-up.

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Plasma has the unique capability of providing a diverse and complex environment that has proven to be well suited for a wide variety of industrial applications, including physical vapor deposition (PVD) and plasma enhanced chemical vapor deposition (PECVD) of thin films and coatings anisotropic dry etching, and surface chemical modification. More recently, the plasma processing community is exploring exciting new opportunities involving atmospheric pressure discharges, microplasmas, pulsed plasmas and plasma interactions with liquids and living tissues.

The full potential of plasma processing on an industrial scale can only be realized when basic material processing studies are accompanied by the understanding of plasma physics, plasma chemistry and the underlying mechanisms at the plasma-surface interface, developed through both modeling and experimental efforts. Accordingly, the plasma processing chairs welcome papers of a fundamental and applied nature in the following topics:

- Plasma diagnostics (optical, electrical, particle) of PVD, PECVD, and other plasma-enabled processes as a bridge between the plasma environment and material properties.
- Plasma modeling as a tool for simulation-driven design/optimization of novel plasma sources and plasma processes.
- Innovative PVD techniques, state of the art PECVD, and other plasma enhanced approaches to the production of advanced thin films and coatings.
- Reactive Ion Etching (RIE), nanopatterning, plasma nitriding/carburizing and other techniques of plasma surface modification and functionalization.
- Atmospheric pressure plasmas for thin film deposition and surface functionalization
- Disruptive plasma applications such as plasma catalysis, gas conversion, nanostructure growth or liquid treatment.
- Technological challenges in the implementation of plasma-based techniques for next-generation industrial applications

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The fourth industrial revolution is steering manufacturing towards full automation. Producers seek robust thin-film deposition process monitoring and control solutions. They hold the key to the success of any attempt to achieve the necessary level of critical industrial process automation. The bonuses of any such successful automation include higher production rates, lower waste of materials & energy, lower operating costs, and increased overall efficiency.

Reliable monitoring and control solutions are far from readily available, and intense development efforts are underway in industry and academia across the globe. It is intensely hot around the topics related to the development and industrial application of (1) embedded sensors & actuators, (2) cyber-physical monitoring and control systems and (3) holistic process control methods and systems. This session/TAC brings together experts, technologists, and solution providers from the thin film/surface engineering community to discuss challenges, developments, and solutions that pave the way toward enabling the autonomous operation of coating plants. Contributions that highlight particular challenges or constraints and talks that detail cutting edge control methods and their physical and digital embodiments are particularly well suited to this session.

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The Protective, Tribological and Decorative Coatings Technical Advisory Committee (TAC) encourages speakers to submit presentations dealing with design, research, development, applications, and production in the field of vacuum coatings and surface engineering processes, materials characterization and equipment for applications to protect components, tools, as well as decorative parts. The use of such coatings is typically driven by performance requirements, reduction of life-cycle cost, environmental consideration, and durable cosmetic and aesthetic designs. These end-user motivations lead to dedicated coating and technology developments, vacuum coating equipment concepts, new testing procedures and methods, and production quality standards. Therefore, successful coating solutions in the marketplace require strong co-operation between market specialists, universities, suppliers, manufactures, and end-users.

The TAC invites speakers to present on the subjects of new emerging technologies. Developing and scaling up from laboratory to high volume production at high production yields is also of high interest 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 CO₂ 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 pre-fab sheets
- Corrosion protective coatings (e.g. Zn:Al) on large-area surfaces
- Electroplating Replacements by vacuum deposited coating

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- **Development:**

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

- **Production Related:**

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

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

Topics of interest to this session will include:

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

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

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This unique session allows our exhibitors and other vendors to introduce their company's newest products and services to the SVC community. This is an ideal way to share your company's message, new products and encourage booth traffic at the TechCon.

Session Organizers:

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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 manufacturing techniques, products, applications, market developments and economical aspects of this versatile high-volume manufacturing method.

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

- Novel substrate materials and technologies
- Novel deposition sources and layer technologies
- Inline process diagnostics & control (particularly for non-transparent coatings)
- Modeling and simulation of R2R processes
- Aspects of progressing R2R coatings from concept demonstration to commercial scale
- Coatings under harsh conditions
- Interfacing with non-vacuum / atmospheric pre- and post-processing, including cleaning
- Low-cost / high-performance barrier coatings
- R2R processing for electronics, semiconductor and energy conversion applications

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