31st Annual Anodizing Conference & Exposition

Innovation for Sustainability

October 4–6, 2022

Kansas City Marriott Downtown • Kansas City, Missouri • USA

Take Advantage of 2022 Focus & General Sessions!

Take part in three extensive tracks with four extended top level sessions that run concurrently and are filled with all the tools and know-how to help advance your company and career to the next level!

Maximize your learning experience by sending team members to participate and share these track sessions with the rest of your company!

Anodizing.org/AnodizingConference

Focus & General Sessions • Anodizing EXPO • School for Anodizers • Networking and more
This year delivers industry-focused information and education, giving anodizers the tools and know-how to make well-informed decisions:

- Educational sessions
- Business information
- Industry analysis
- Technology exchange
- Networking opportunities and more

### Why Attend

- Acquire fresh, up-to-date information on industry issues
- Gain technical insights
- Learn troubleshooting techniques
- Expand and develop industry relationships
- Enhance and expand business operations
- Increase your career advancement potential
- Achieve a higher level of understanding of technological and business issues
- Gather data on industry equipment, supplies, and services.

### Who Should Attend

Anodizers, suppliers, professionals — anyone who is involved in operating, supporting, or promoting the anodizing process, should attend the Annual Anodizing Conference. The program is designed to appeal to a wide variety of anodizing industry professionals at every level of production — from the front office to the shop floor.

### What is Included in the Program?

This three-day comprehensive event offers education, information and networking geared specifically to the anodizing community. Your paid registration includes entry to the Anodizing Conference General Sessions, Focus Sessions, Anodizing Expo, and networking events.

### Schedule at a Glance

**Monday, October 3**
- 7:30 a.m. – 5:00 p.m. Committee & Board of Directors Meetings
- 8:30 a.m. – 5:00 p.m. Anodizing Essentials Class

**Tuesday, October 4**
- 7:30 a.m. – 6:30 p.m. Registration Open
- 8:30 a.m. – 3:45 p.m. Anodizing Quality & Troubleshooting Workshop
- 4:30 p.m. – 5:30 p.m. New Member Reception (by invitation only)
- 5:30 p.m. – 7:30 p.m. Welcome Reception & Anodizing Expo Open (with Student Posters)

**Wednesday, October 5**
- 7:00 a.m. – 8:00 a.m. Breakfast & Anodizing Expo Open (with Student Posters)
- 7:30 a.m. – 5:00 p.m. Registration Open
- 8:00 a.m. – Noon Anodizing Conference Opening General Session
- Noon – 1:00 p.m. Lunch & Anodizing Expo Open (with Student Papers)
- 1:10 p.m. – 5:00 p.m. FOCUS SESSION TRACKS
  - Automation
  - Technical and
  - Anodizing Fundamentals
- 5:00 p.m. – 6:30 p.m. Reception & Anodizing Expo Open

**Thursday, October 6**
- 7:30 a.m. – 8:30 a.m. Breakfast & Anodizing Expo Open
- 8:30 a.m. – Noon Anodizing Conference CLOSING GENERAL SESSION
- 12:15 p.m. – 1:00 p.m. Post Conference Critique Meeting
- 1:00 p.m. – 2:00 p.m. Education & Academic Committee Meetings
Advance to the Next Level with Value-Added Options!
Adding optional events help you advance to gain more insight into the world of anodizing — advancing your knowledge, helping move your career and company forward! Take part in the next level of your Anodizing Conference experience today! (See registration form on page 7)

School for Anodizers
AAC developed the School for Anodizers as an educational program for industry professionals to improve their operations and level of expertise. The following courses are offered as additional educational options during the Annual Anodizing Conference. Additional fee and registration are required. Further program details can be found online at Anodizing.org/AnodizingConference.

Anodizing Essentials Class
Monday, October 3 • 8:30 a.m.– 5:00 p.m.
A Value-Added Option
This one-day program for anodizers teaches the fundamentals and the foundation of quality anodizing. This basic course explains how to anodize aluminum properly and was developed by anodizing professionals for anodizing professionals.
With an emphasis on quality, the program takes the learner through the entire process – beginning with the metallurgical properties of aluminum alloys commonly anodized right through to the final rinse and sealing processes. This course is ideal for those who may be new to working the anodizing line, as well as those who oversee the process or who may simply want a refresher – a reminder of best practices.
Registration for this course includes continental breakfast, lunch, and workbook course materials.
$425 for AAC Members; $825 for Non-members

Anodizing Quality & Troubleshooting Workshop
Tuesday, October 4 • 8:30 a.m.– 3:45 p.m.
A Value-Added Option
This advanced class moves beyond the anodizing basics to address quality and process issues commonly faced by anodizers. The first half of the workshop explains manufacturing processes and metal finishing, followed by how to recognize and troubleshoot anomalies that may manifest through the processes discussed. The second half of the workshop offers a series of interactive "Troubleshooting Stations" where process experts will host small groups to discuss various individual problems, building on the principles presented in the first half of the workshop.
*Feel free to bring in your own small pieces of anodized aluminum and questions and the group can help you troubleshoot a solution.
Registration for this course also includes continental breakfast, lunch, welcome reception, and course materials.
$425 for AAC Members; $825 for Non-members

Workshop Topics:
• Anodizing Basics for Aluminum Surfaces
• Manufacturing Processes
• Effective Troubleshooting
• A Systems Approach to Quality Anodizing
• Breakout Tabletop Discussions of Anomalies (defects), their Causes & Cures

Hotel Reservations
Make your room reservations directly with the Kansas City Marriott Downtown by calling: 1.888.236.2427. AAC’s group room rate is $219 (USD), single or double occupancy, plus tax. To receive this special rate, make your reservation over the phone or online no later than 5:00pm CST on Monday, September 12, 2022.

Kansas City Marriott Downtown
200 West 12th Street
Kansas City, Missouri 64105 USA
Phone: 1.816.421.6800
Reservations: 1.888.236.2427
Please mention the Aluminum Anodizers Council (AAC) to receive the special rate.

Visit www.Anodizing.org/AnodizingConference for hotel reservations page details and further information.
Due to the limited space in this brochure, session descriptions and abstracts are abbreviated. For complete information and program details, please visit Anodizing.org/AnodizingConference.

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* AAC reserves the right to alter the schedule & substitute speakers as needed.

Tuesday, October 4

4:30 p.m. - 5:30 p.m.
New Member Reception
Join us at the New Member Reception as we welcome and introduce those who joined our organization during the last year; this is an excellent networking opportunity for everyone!

5:30 p.m. - 7:30 p.m.
Welcome Reception and Anodizing Expo
Whether you are looking to reconnect with friends and colleagues, or meet and mingle with new contacts, the Welcome Reception is the place to bridge your connections. Set amid the business-friendly Anodizing Expo, this provides a great opportunity to ask questions, get answers, and establish new contacts in the anodizing industry.

Wednesday, October 5

8:00 a.m. - Noon  PLENARY Session

8:00 a.m. - 8:40 a.m.
AAC Chairman’s Welcome, AAC Annual Meeting and Business Report
Janette Courtney, Bonnell Aluminum

8:40 a.m. - 9:25 a.m.
Wastewater Treatment for Anodizing Processes: Reusing Resources
Janette Courtney, Bonnell Aluminum
An update is provided on Bonnell Aluminum’s wastewater treatment and treated water reuse system. The presentation will focus on Bonnell’s process for reusing treated wastewater to decrease the reliance on existing water supplies. Consideration of the benefits of reusing treated wastewater and ongoing challenges will be discussed, assessing additional opportunities to reduce environmental impacts from anodizing waste streams.

9:25 a.m. - 10:10 a.m.
Is Having End-of-Life Scrap Acceptable for Anodized Surface Finish?
Helen Weykamp, Hydro Aluminum Technical Center
Recycled end-of-life (EOL) aluminum scrap used to produce extrusion ingots is predicted to increase. Hydro’s CIRCAL® uses 75% post-consumer scrap (PCS) and recently, extrusion ingots with 100% PCS are produced. Varying EOL scrap quality and increasing trace elements are concerning for anodizers. Advanced scrap sorting technologies are critical to ensure extrusion ingot quality for anodized surface finish. Integrating sustainability ambitions of recycled EOL aluminum scrap with ensuring extrusion ingot quality are highlighted. Hydro’s scrap sorting knowhow is reviewed, and molten metal quality control and casting technologies are discussed.

10:10 a.m. - 10:25 a.m. BREAK

10:25 a.m. - 11:10 a.m.
Zero Liquid Discharge – Anodizing Plants Can Benefit from Vacuum Distillation
Mirko Strauss, H2O – Leaders in Zero Liquid Discharge
Vacuum distillation technology with maximum operational safety offers a physical evaporation process to reliably separate surfactants, heavy metals, acids, and alkalis from wastewater under highly energy-efficient conditions, focusing on reuse of recovered water. Metals are separated based on boiling point differences, ensuring strict discharge limits are safely met. Potential combined treatment of alkaline and acidic rinsing water from pickling-degreasing and anodizing enables reduced investment and operating costs. Downstream evaporation enables reducing residual water content in evaporation residue, lowering disposal costs, and potential secondary raw materials recovery.

11:10 a.m. - Noon
Towards Cr(VI)-Free Anodizing of Aerospace Aluminum Alloys for Metal-to-Metal Bonding
Prof. Arjan Mol, Delft University of Technology, Dept. of Materials Science and Engineering
Classic aluminum pre-treatment for metal-to-metal bonding of aerospace structures applies chromic acid anodizing to generate porous anodic oxide with optimal strength and adhesion using carcinogenic hexavalent chromium (Cr(VI)). To identify comparable Cr(VI)-free candidates, the relation between oxide properties and interfacial bonding under dry, wet, and corrosive conditions is studied under changing parameters. Characteristics critical for bonding, oxide chemistry and morphology are highlighted. Cr(VI)-free anodizing electrolytes and porous oxide morphology are explored. Results show chemical and morphological surface properties are critical considerations when selecting Cr(VI)-free alternatives for structural adhesive bonding.

1:10 p.m. - 5:00 p.m.
Focus Session Tracks - See page 6 for details.

Three concurrent tracks featuring 12 extended topic-specific presentations help anodizing professionals enhance performance, improve practices, and gain new insights into anodizing procedures, processes, and information.

Due to the limited space in this brochure, session descriptions and abstracts are abbreviated. For complete information and program details, please visit Anodizing.org/AnodizingConference.

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Annual Awards of Excellence

The Awards of Excellence are presented every year to recognize outstanding contributions to the Anodizing Conference and to advance and promote exemplary work in the field of anodizing. New award winners will be recognized for their work presented at the 2021 AAC Conference.

Thursday, October 6

8:30 a.m. – Noon

GENERAL Session

8:30 a.m. – 9:15 a.m.
State of the Aluminum Industry: Unprecedented Changes in the Primary Aluminum Market and Their Impact on Extruders and Anodizers

Greg Wittbecker, CRU Group

Unprecedented changes in the primary aluminum market are assessed and discussed, in terms of how these changes are impacting aluminum extruders and anodizers – now and into the future. The presentation will cover the following market changes and their impacts: the major structural changes in production and consumption of aluminum; China’s changing role in the market; how decarbonization and ESG will shape future material production processes and material choices; supply chain disruptions and the onshoring of demand; and trade fiction and how it has become “weaponized”.

9:15 a.m. – 10:00 a.m.
Anodizing vs. Paint/Powder Coat: Why One Finish is Superior

Tej Patel, Techevon, LLC

Aluminum applications are reviewed, emphasizing aluminum use in architectural anodizing, and how selecting finish type is critical to the application. Anodizing’s unique desirability for applications such as marine components, sunroof and seal tracks for automotive components is discussed. Test methods used in the paint industry are considered, comparing anodized component durability versus painted components. The filiform corrosion phenomenon is considered as it relates to a painted or anodized finish. Wear testing is performed on both finishes to compare durability, and environmental impacts of each finish are considered.

10:15 a.m. – 11:00 a.m.
Defining Cosmetic Quality for Type II Anodization from the Customer’s Perspective

Emily Li, Microsoft

“Beauty is in the eye of the beholder” tackles the key challenge to customer satisfaction. In consumer products and electronics, Type II anodization is often chosen for decorative finishes since it is easily colored and textured to desired specifications. Like all manufacturing processes, output has quality variations. Describing these variations and aligning with customers on what is “good” and “bad” is critical to manufacturing scalability and business success. Techniques presented demonstrate how anodizers and customers can communicate and agree on color, material, finish, reliability, and quality.

11:00 a.m. – 11:45 a.m.
Polarization and Natural Order

Jude Mary Runge, Ph.D., CompCote International

Understanding the long-range order induced by non-equilibrium polarization systems, like anodizing, reveals interesting parallels in natural equilibrium systems. Natural systems of all sizes, from the smallest coral to the largest elk, are presented that connect polarization to the order that forms when same-type species assemble. Examples of natural order developed through inherent polarization within member groups are presented, including human beings. This presentation was the Blum Lecture given at SUR/FIN 2022; a privilege given to celebrate receiving the NASF Scientific Achievement Award in 2020.

11:45 a.m. – Noon
Closing Remarks

* AAC reserves the right to alter the schedule & substitute speakers as needed.
Focus Session Tracks*  Wednesday, October 5

Choose one session within each time slot. Feel free to move between tracks to attend relevant sessions.

For more detailed descriptions: Anodizing.org/AnodizingConference  *AAC reserves the right to alter the schedule and substitute speakers as needed.

1  Automation

1:10 PM to 2:00 PM

Technology Solutions that Regenerate Operations
Tamea Franco, Kristie Sparks, and Phillip Tarpley, Global Metal Finishing

Global Metal Finishing presents barriers and rewards encountered when their team navigated the challenges of finding, quoting and operating software and hardware that complied with ITAR and enforced cyber security. Customer engagement, systems improvements, and overall gains are highlighted. Aluminum anodizers must satisfy customer requirements at lightning speed, often with inadequate information and unrealistic expectations. Anodizers are demonstrated to be the Heroes in the supply chain, bringing on-time technical and profitable solutions to customers’ internal dysfunctions.

2  Anodizing Fundamentals

1:10 PM to 2:00 PM

Risk Elimination System: The Road to Zero Injuries
Dawn Purucker, Bonnell Aluminum

Leading Key Performance Indicators can reliably predict where injuries will occur before they happen, driving safety culture toward a future where fewer hazards are present. The Risk Elimination System, an associate-based approach to removing hazards, enables shop-floor associates to make decisions about their work environment. When utilized as a tool to address potential problems, associates can reliably prevent incidents from occurring. A proactive approach to site safety while focusing on sustainable individual contributions has consistently reduced overall injuries with the lowest TRIR in Bonnell Aluminum’s history.

3  Technical

1:10 PM to 2:00 PM

Heavy Metal Free Dyes
Mahe Chandrasekaran, Techevon, LLC

This presentation describes the introduction of metallizing dyes and the benefits of such metallizing. Different metals that can be used when metallizing and the advantages and disadvantages of each metal are reviewed. These options will be demonstrated specific to the dyes that are suitable for anodizing. There will be an emphasis on replacing Chrome with more eco-friendly metals or in the best case, the development and benefits of non-metallized dyes. All of these choices are performance tested using the criteria of contamination and light fastness.

2:10 PM to 3:00 PM

Automated Racking and Other Modernization
Petter Isaksson, Ahlins

The Job Shop anodizing business must step up to modern ways of production. Digitalization, Industry 4.0, the Internet of Things (IoT) and other buzzwords surround us all the time. In what aspects are they influential to our small operation? What has been accomplished by Ahlins in these areas will be highlighted and discussed regarding automation in different applications, from picking parts to more complex systems.

3:10 PM to 4:00 PM

Automated Anodize Lines
Gary Kriesch, Gary Kriesch & Associates

TBD

4:10 PM to 5:00 PM

Spray Dyeing of Anodized Aluminum with Organic Dyes
Britta Dickmeiss, Bang & Olufsen

For the last 24 years, Bang & Olufsen has been using a spraying technique when coloring anodized aluminum. Spray dyeing has many advantages over the normal dipping process such as increased flexibility, which is important in order to meet the demand from our designers. Both the pros and cons of using the spraying technique will be discussed, together with some of the challenges that have been experienced when trying to make the same shades by a dipping process.

How to Ensure Lightfastness of Type II Dyed Anodized Aluminum
Jacqueline Cook, Reliant Aluminum Products

Ensuring lightfastness for dyed anodized aluminum to an architectural level is challenging. Picking the correct dye with an architectural-grade lightfastness rating is the first step to ensure dyeing that withstands years of exposure. Coating thickness, weight, density, dye concentration and activity, seal quality and chemistry all play vital roles in creating a good UV-resistant coating. Various factors are presented highlighting dyes and their management to retain a quality part. This presentation provides insights into managing the line for maximum efficacy with cost and environmental factors in mind.

Addressing the Demand for Clear Cr (III) Chemistries for Passivating Aluminum Alloys
Jacob Weingart, Ph.D., Columbia Chemical Co.

Understanding and enhancing aluminum alloy corrosion resistance is widely studied to maintain key mechanical properties and aesthetic appearance for industrial and consumer applications. Surface treatments are examined that impart protective inorganic layers to help mitigate atmospheric corrosion. Focus is on the demand for, and development of, trivalent passivates to address growing environmental, regulatory and health concerns of hexavalent chromates. A clear aluminum trivalent passive is reviewed that achieves excellent corrosion protection and enhanced durability, evaluating performance factors including appearance, operating range, and salt spray analysis.
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PAYMENT

Payment must accompany registration form; registration is not complete until payment is received.

Check enclosed for $__________________

Make check payable in U.S. dollars, drawn on a U.S. bank, to the Aluminum Anodizers Council.

Credit Card: □ Visa □ MasterCard □ AmEx □ Discover

Printed name of cardholder ____________________________ Signature ____________________________

Billing Address (if different from above) ____________________________

For your protection, this portion of the form will be destroyed after processing your credit card information.

Card Number ____________________________ Exp. Date ____________________________ V-Code: ____________________________ (3 or 4 digit code on card)
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Innovation for Sustainability

October 4–6, 2022
Kansas City Marriott Downtown
Kansas City, Missouri USA

Register Today & Save!
Early Discounts
Ending on September 5, 2022

Attend the single educational conference for the anodizing community that provides the tools and know-how to help you take your company and your career to the next level!