



# ALUMINUM ANODIZERS COUNCIL™

## ADVANCED ANODIZING CLASS (Level 3)

January 16, 2019

Hyatt Regency Clearwater Beach  
Clearwater Beach, Florida

**8:00 a.m. – 8:02 a.m.**

**Welcome/Opening Remarks**

**8:02 a.m. – 9:00 a.m.**

**Anodizing for Design and Function**

*Judy Runge, CompCote International, Inc.*

Anodizing Aluminum will be presented as an engineering process, modelled by the Tafel Equation. The unique structural characteristics of the anodic oxide: columnar spacing, wall thickness and pore diameter will be presented in terms of this model such that anodic oxide nucleation and growth is clearly understood, as well as how the anodizing process governs structural characteristics. This class will enable the anodizer to build anodizing strategies to best fulfill component design requirements and functional demands by way of tuning the oxide structure and therefore its properties by way of process control.

**9:00 a.m. – 10:00 a.m.**

**Base Metal Microstructural Considerations for Anodizing Aluminum**

*Judy Runge, CompCote International, Inc.*

This class builds on the learnings from the Anodizing Essentials Class and the Level II Quality Workshop, Metallurgy and Manufacturing Presentations. Microstructural development from the four basic principles of Chemistry, Composition, Deformation and Thermal Processing is presented to elucidate the intimate relationship between base metal microstructure and anodic oxide finish appearance and quality. By understanding the impact of these critical factors, the design aspects of alloy selection, manufacturing process and surface finishing can be optimized to yield the desired component appearance and performance.

**10:00 a.m. – 10:15 a.m.**

Break

**10:15 a.m. – 11:15 a.m.**

**Hard Anodizing of Aluminum**

*Pinakin Patel, Techevon*

This class will cover the basic characteristics of Hard Anodizing of different alloys. What will be discussed is the difference between hardness & wear resistance, importance of racking, and effect of color formation of different alloys particularly as it relates to coating thickness. Also discussed will be the dyeing characteristics and limitations of hard anodizing.

**11:15 a.m. – 12:15 p.m.**

**Decorative Anodizing**

*Mark Jozefowicz, Reliant Aluminum Products*

Elements of Decorative Anodizing will cover expectations for Type II finishes - what they are and how to achieve them. Consideration will be given to process factors that affect aesthetic appeal as well as coating functionality. Some time will be spent covering the avoidance of

common Type II defects.

**12:15 p.m. – 1:15 p.m.      Lunch**

**1:15 p.m. – 2:15 p.m.**

**Pulse Anodizing**

*Fred Schaedel, Anodic Technical Surfaces*

A historic review of pulse anodizing techniques and methodology will be presented.

Discussions and data logger graphs will cover practical and economic improvements: 1) Reduced anodize time 2) Running difficult alloys 3) Increased wear resistance/hardness 4) Corrosion resistance 5) Adhesive bonding properties during the Pulse – Step – Ramp (PSR) cycle. A video and/or simplified live demonstration will include a Pulsed Power Supply and non-hazardous Organic/Citric Electrolyte along with a Real Time Graphic Data Logger

**2:15 p.m. – 3:15 p.m.**

**Processing Solutions Anodizing Difficult Alloys**

*Jeffrey Almeyda, Master Metal/Aerotech Processing Solutions*

A holistic approach to anodizing and hard anodizing the more difficult alloys encountered in a job shop setting. Proper chemistry, racking, pre-treatment, anodizing, rinsing and sealing shall be discussed for 2024, 7075 and 380 Series aluminum. Process parameters for each alloy shall be reviewed along with best practices to follow and common mistakes to avoid.

**3:15 p.m. – 3:30 p.m.      Break**

**3:30 p.m. – 4:30 p.m.      Moderated Q&A/Discussion**