# When You Think About Train

Education is one of AESF's principal means of meeting its objective of advancing the science of electroplating and surface finishing. The Society is your best resource for training and education in metal-finishing-related subjects. Here are just a few of the courses available now. New courses are continually under development.

# YEAR 2000 Computer Crisis—RUY2KOK™?

Do you have complete control over your millennium computing problems? Are you absolutely positive? AESF is jointventuring with  $CWE^2$  in a new course that will help your metal finishing shop be able to identify, evaluate and overcome its Year 2000 risks. In this two-day course, *Day 1* will focus on the problem generically (the technical nature of the problem and the operational, legal and financial risks if your company doesn't address the issue); and *Day 2* will focus on problems specific to the surface finishing industry. At the completion of the course, you'll walk out the door with an action plan to implement as soon as you get back to your company.

# TECHNICAL APPLICATIONS—Introduction to Electroplating & Surface Finishing

This course serves as both an introduction to the industry and as a refresher course in chemistry and algebra. Other subjects covered are electricity, electrochemistry, types of parts plated & finishing cycles, plating equipment/processes, use of the Hull cell & other plating cells to test solutions, plating processes, and basics of corrosion.

# **Training Course in Electroplating & Surface Finishing**

A more advanced study of technologies, this course covers 22 subjects, such as: electricity, cleaning, electrochemistry, electroless plating, filtration & carbon treatment, corrosion, chromate conversion coatings, phosphating, pollution prevention, metallurgy, anodizing, alloy plating and rinsing, as well as nine commonly used plating processes (Ag, Au, Pd, Ni, Zn, Cu, Sn, Sn-Pb). AESF's optional certification exam that leads to the designation of Certified Electroplater-Finisher (CEF) is given at the conclusion of this course.

# **Chromium Plating for Engineering Applications**

This course is intended for training personnel who work in "hard chrome" plating shops. It's particularly useful to jobshops, aerospace and airline plating operations. A background in chemistry and metallurgy are provided so that the student can better understand the problems involved in plating chromium onto a variety of substrates. Detailed information is provided on analytical control of plating solutions, preparation, masking and polishing operations, and more.

# New! Light Metals Finishing Course

This course covers finishing processes for light metals, specifically aluminum, magnesium and titanium. It covers corrosion, metallurgy, mechanical finishing, equipment considerations, cleaning/preparation processes, etching/chemical milling, hard coating, chromic and sulfuric acid anodizing, and more.



AESF's Technical Director, Frank Altmayer, CEF, Tells Why You Should Think About the AESF Whenever You Think About Training

"AESF is currently developing four new courses per year! These courses are designed to meet the needs of virtually anyone involved in surface finishing—from managers to engineers, product designers to sales and technical representatives, specifiers and purchasers, to production-line workers.

Our instructors are the top experts in their fields, with hands-on experience gained over many years of working in the field of surface finishing.

AESF's course materials and method of training are unmatched by any other training programs available:

- All student materials are reproduced in full color! Each student receives a binder or multiple binders containing reproductions of all slides, and a full text with appendices, creating a reference source that will have high value for many years to come.
- All our courses are taught using computerized PowerPoint® shows that are projected from a high-resolution computer-projector. This allows incorporation of digitized videos and animations to help get complicated points across, and to 'bring the student into the shop!'

AESF also has the ability to train your personnel in the confines of your own facility—on specific subjects that apply to your operations. We can digitize video, incorporate your own photos, slides, illustrations and sketches, or we will come into your facility and shoot the footage to appropriately illustrate a procedure for training use. We have training plans to meet all your needs!"

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# ing, Think About the AESF!

#### **New! Electroless Deposition of Metals**

This course is designed to train shop personnel and managers in the science of electroless deposition. Specific focus is given to electroless nickel and copper plating. Subjects covered include operating variables, troubleshooting, properties & applications, test methods & quality control, surface preparation, plating of plastic & non-conductors, electroless deposition of alloys & composites, post-treatment of deposits, and waste treatment.

#### **Electroforming Course**

The Nickel Development Institute and AESF cooperated to produce this course to provide attendees with a thorough understanding of electroforming technology. The course covers electroforming principles, design guidelines, control of deposit properties, post-deposition techniques, when to specify electroforming, operating an electroforming plant, designing & processing mandrels, and current applications. **Note:** This course in not currently available in PowerPoint<sup>®</sup> format.

# **SPECIFICALLY FOR ELECTRONICS**—Training Course in Electroplating & Surface Finishing for Electronic Applications

This course zeroes in on surface finishing as it applies to the intricate business of creating printed wiring boards, connectors and semiconductors. Overall, 25 subjects are covered, including copper, tin, tin-lead and precious metals plating, continuous reel-to-reel, barrel, rack and pulse plating. You need a high-school-level algebra and chemistry background. Specific topics covered are electroless deposition (Cu & Ni), copper-clad laminates, Ni & Sn-Ni plating, semiconductor bonding, tapeautomated bonding, and the dry film resist process. AESF's optional certification exam, leading to designation as an Electronics Specialist-Certified (ESC) or Certified Electroplater-Finisher—Specialist in Electronics (CEF-SE) is given at the conclusion of the course.

#### ENVIRONMENTAL—New! Innovative Pollution Prevention Practices

This course incorporates pollution prevention information developed through a partnership between the office of the U.S. EPA and the AESF, as well as materials from AESF's former "Innovative Recycling" course. It will help shop owners and managers learn new practices in pollution prevention so they may benefit: (1) By reducing chemical costs associated with finishing; (2) by reducing chemical costs associated with waste treatment; (3) by decreasing the regulatory burden through better environmental control; and (4) by helping provide good finishing services through innovative, cost-effective technologies.

#### **Regulatory Compliance Workshop**

This course provides detailed compliance information on RCRA, the Clean Water Act, the Clean Air Act, Superfund, SARA, and other compliance issues. Learn from experts when and how to comply. Plus, learn how to make those tricky calculations for TRI reporting. The textbook used in this workshop is the *Guidance Manual to Environmental Compliance*, which was produced under an EPA grant through the efforts of the AESF, NAMF and the MFSA.

#### Wastewater Treatment & Control Workshop

This workshop provides wastewater treatment operators with much of the knowledge necessary to become licensed operators. It covers sampling/preservation of samples for compliance purposes; optimizing rinsing to minimize wastewater; treatment of wastes (cyanide-bearing, chromium-bearing, metals & oily wastes), advanced methods for conventional & chelated wastes; solid/liquid separation; troubleshooting; and recycle/recovery methods.

# OSHA/SAFETY—Safety & Compliance Workshop

This workshop is sponsored by AESF's OSHA Committee. It covers in easy-to-understand terms OSHA training requirements, hazard assessment, personal protective equipment, hazard communication, bloodborne pathogens, permitrequired confined space control, record-keeping, control of hazardous energy, process safety management of highly hazardous chemicals, first aid & medical surveillance, prevention of heat stress, and fall protection & safety standards.

list of dates and For а locations of all current educational opportunities from the Electroplaters American Surface Finishers Society and Contact: Educational Services AESF 12644 Research Parkway • Orlando, FL 32826-3298 407/281-6441 • FAX: 407/281-6446 • e-mail: education@aesf.org Phone: