Finishing Facts

CTC to Verify Technology For Metal Finishing Concurrent Technologies Corporation (CTC) has been awarded a U.S. Environmental Protection Agency (EPA) cooperative agreement to establish an Environmental Technology Verification (ETV) Center for Metal Finishing (MF) at CTC's regional office in Largo, FL. The agreement is valued at \$2 million, and the project duration is for three years.

The center, in association with EPA's Common Sense Initiative (CSI) Metal Finishing Sector, will verify innovative technologies designed to improve industry performance and achieve cost-effective pollution prevention (P2). Performance of the various technologies will be verified through unbiased third-party testing under actual production conditions in metal finishing shops nationwide.

As the lead organization, CTC will operate the MF-ETV program and will partner with CAMP, Inc., Cleveland, OH; Industrial Technology Institute, Ann Arbor, MI; CAI Resources, Oakton, VA; and Integrated Technologies, Inc., Cheshire, CT.

The objectives of the center will include:

- 1. Constructing a verification program for commercially available MF pollution prevention technologies and/or systems.
- 2. Testing various pollution prevention technologies and systems in metal finishing processes.

CEF & CEF-SE Update

Robert C. Denney of Honeywell, Inc. (Midwest Florida Branch) earned AESF's Certified Electroplater-Finisher—Specialist in Electronics (CEF-SE) earlier this year. The designation was mistakenly reported as an Electronics Specialist Certified (ESC) in the July issue of *P&SF*.

Congratulations to **David J. Ferguson** of Harley-Davidson, Inc., for recently earning the designation of Certified Electroplater-Finisher (CEF). He is a member of the Susquehanna Valley Branch.

Test Your Plating I.Q. #341 By John Laurilliard, CEF

Faraday's Law (fill in the blanks)

- 1. Six factors that affect the rate of electrodeposition (µm/hr) are: _____; ____; ____; ____;
- 2. For some metals, such as copper or tin, the rate of deposition can be greatly influenced by the choice of ______ used.
- 3. Faraday's Law states that one Faraday of current, ______ ampereseconds, will deposit a weight of metal in grams equal to the atomic weight divided by the _____ (assuming 100% CCE).
- 4. Rather than solve Faraday's Law for each plating situation, factors have been calculated for each metal, which gives the _____ per ft² to deposit 0.001 in.
- 5. One Faraday of electricity, _____, contains a total of ______, electrons.

Answers are on page 103.

3. Disseminating verification results to all parties.

EPA's National Risk Management Research Laboratory in Cincinnati, OH, will partner with CTC and the metal finishing industry to select key test criteria to verify the performance of innovative pollution prevention technologies. Test results will be made available as technologies are verified.

European Chemical Societies To Merge Journals The Royal Society of Chemistry (RSC) and the Deutsche Bunsen-Gesellschaft für Physikalische Chemie (DBG) have signed an agreement to merge their two physical chemistry journals, *Faraday Transactions* and *Berichte der Bunsen-Gesellschaft für Physikalische Chemie.* The change is expected to start with the January 1999 issue. The new publication will be called *Physical Chemistry; Chemical Physics (PCCP).*

The publication will be run by an ownership board, with both societies having equal representation. Other national European chemical societies are being invited to join. The Societá Chimica Italiana (SCI) and the Koninklijke Nederlandse Chemische Vereniging (KNCV) have already committed to join the venture, and others are expected to join by January 2000.

The RSC will publish the new journal under contract to the owner-ship board.

Aluminum Shipments Increase in 1997

The Aluminum Extruders Council (AEC) recently released the results of its 1997 survey of extrusion shipments by its U.S. and Canadian members.

Reported shipments totaled nearly 3.5 billion lb in 1997, representing an increase of 327 million lb, up 10.4 percent, compared to 1996. Largest gains were tallied in the electric and machinery and equipment markets.

World Gold Production Will Increase Less In the Near Future World gold production is expected to increase by an average of only one percent per year over the next four years, reaching 83.5 million oz in 2001, according to The Gold Institute, Washington, DC.

South Africa, the world's largest producer, is expected to maintain its annual production at between 15 and 16 million oz through 2001. The U.S. produced a record 11.4 million oz in 1997 and retained its rank as the second largest producer in the world. Australia produced 10 million oz during the period, keeping its rank as third largest producer. Together, the top three countries produced 47 percent of the total world production of gold in 1997.

SAE Tech Papers

Can be Downloaded

The Society of Automotive Engineers (SAE) is providing downloadable SAE technical papers and standards in PDF format through its secure website at www.sae.org. The documents available include the most current SAE technical papers and the complete set of Ground Vehicle Standards.

The documents are \$10 (U.S.) per technical paper and \$49 per standard (SAE member and list price). Complete sets of SAE technical papers and standards are also available in electronic image format on CD-ROM.

R&D Spending

Continues to Climb

There's more proof that U.S. companies are spending more for research and development (R&D). In its most recent survey, Inside R&D® reports that the top 100 U.S. companies spent \$92.2 billion in 1997, an increase of 13.8 percent over a year earlier. The top 100 companies accounted for 44 percent of the 184 billion the National Science Foundation estimates industry spent on R&D. The top three industries in R&D spending were electronics and electrical, motor vehicles and parts, and computers and software.

Assistance Available

For P2 Projects in NY The New York State Energy Research & Development Authority (NYSERDA) has invited New York companies to submit short proposals for projects that promote energyefficient pollution prevention under Program Opportunity Notice (PON)

426-98. The goal of the program is to develop, demonstrate or commercialize processes and technologies that reduce or reuse industrial wastes at the point of generation.

The assistance is available for feasibility demonstration projects and FlexTech studies, under the Flexible **Technical Assistance** Program.

Eligible industrial wastes may include solvents or other liquid wastes, wastewater, solid materials or gases. Eligible reduction strategies may include process modifications, feedstock substitutions, operational efficiency improvements, new product or process development, and water recovery and reuse.

All proposals must be cost-shared (50 percent co-funding preferred) and should demonstrate substantial economic benefits for New York State companies. For information about the program, contact Adele Ferranti at: 518/852-1090, ext. 3206 (E-mail: afl@nyserda.org).

Record Consumption

Set for Copper Domestic consumption of copper and copper alloy mill products reached a record high in 1997 of 8,310 million lb, according to the Copper Development Association, New York, NY. That's a 5.3 percent increase over 1996. Exports of mill products during the period were up 11.9 percent (766.1 million lb.), and imports increased by 12.9 percent (912.8 million lb.).

Building construction was the largest end-use market for copper products, accounting for 41.8 percent of the total U.S. consumption. Electrical and electronic products accounted for 24.8 percent; transportation equipment for 12.8 percent; industrial machinery and equipment for 11.5 percent; and consumer and general products for 9.1 percent.

Company News

o Petroferm of Fernandina Beach, FL, recently had three of its proprietary cleaning agents¹ certified as clean air solvents (CAS) by the **South**



studies, development and Ionics Engineering Corp., Urbana, OH, recently opened an advanced demonstration and testing laboratory for powder coatings on all substrates. The facility features two fully automated powder coating lines, plus manual powder coating capability. The laboratory will be used to demonstrate the company's line of electrostatic powder coating equipment and technology.

Coast Air Quality Management

District (SCAQMD) in California. The products have been designated as environmentally safe according to the standards of the SCAQMD. Products submitted for certification must meet strict VOC and ozone formation requirements and must contain no hazardous air pollutants (HAPs), ozone depleting compounds or global warming compounds, as defined by the Air Quality Management District.

o Koch Membrane Systems, Inc., Wilmington, MA, a manufacturer of separation systems using ultrafiltration and other advanced membrane technologies, has acquired Fluid Systems Corporation of San Diego, CA, a producer of reverse osmosis membranes. Koch's line of membrane products includes hollow fiber, spiral wound and tubular configurations.

o Chemetco, Inc., Warren, MI, and its subsidiaries, Arrow Profile and KC Jones Plating, have earned QS-9000 certification for quality management systems. The registration qualifies the company for automotive business, because the standard is now mandatory for Tier One suppliers.

Arrow Profile specializes in highand low-volume proprietary adhesive and sealant applications. KC Jones Plating provides metal finishing services, including electroless nickel, Nibron and salt bath nitriding.

o MEGTEC Systems, De Pere, WI, has signed an agreement to license

¹BIOACT[®] MSO Precision Cleaner, BIOACT EC-7TM Defluxer, and AXAREL® 46 Cleaning Agent

²Clear Cote 416, Morgan Ohare, Inc.

oxidizer and burner technology from **E-Products, Inc.**, Vadnais Heights, MN. The agreement gives MEGTEC exclusive license to sell and manufacture current E-Products thermal oxidizer designs for all markets worldwide, except soil remediation.

o **INPRO/SEAL Company**, Milan, IL, has expanded its manufacturing facilities. The 28,000 ft² expansion houses 21 metal turning lathes, 11 of which are computer numerically controlled (CNC). Company officials say the expansion makes the plant the largest facility for manufacturing bearing isolators in the world.

Some markets where Inpro products are used include chemical, water, wastewater treatment, metalworking, automotive and general industrial.

• **Digital Instruments**, Santa Barbara, CA, has officially merged with **Veeco Instruments**. Digital is a supplier of Atomic Force Microscopy (AFM), and Veeco is a supplier of instrumentation for the semiconductor, data storage and other industries.

Digital currently employs 152 people and recently expanded to a new 100,000 ft² building.

o **Morgan Ohare, Inc.**, Addison, IL, has been approved as a source for bright zinc plating for **Maytag** Specification F-064-007. The revised specification requires a proprietary clear coating² that is an after-plating and chromating post dip process to provide extended corrosion protection.

• **Cornerstone Systems, Inc.**, has relocated its corporate office to 800 McHenry Ave., Suite B, Crystal Lake, IL. The company installs and services software programs for the surface finishing industry. The organization has also opened a technical support center in Plano, TX.

• **Taber Industries**, North Tonawanda, NY, has received ISO 9001 certification. The company manufactures materials test and measurement instruments used in various industries, including paints and coatings.

Ashland Chemical Company,
Dublin, OH, a division of Ashland,
Inc., has acquired Inland Leidy, Inc.,
Baltimore, MD. Inland Leidy special-

In Memoriam

Frederick J. Gumm, 55, passed away on July 4 in Stone Harbor, NJ. He was chief executive officer of Canning Gumm, Inc., formerly known as Frederick Gumm Chemical Company until it was acquired by W. Canning plc in March 1998.

Gumm served as head of the company for 28 years. He was known for his high level of involvement in industry organizations, including a term as president of the Metal Finishing Suppliers Association from 1974 to 1976. In that position, he worked hand-in-hand with the AESF regarding the annual exhibit that became known as SUR/FIN[®] in 1979.



Active in the Garden State Branch of AESF since 1968, Gumm held each major branch office, as well as that of educational chairman. He served on the educational committee for more than 25 years, and through that committee was involved with meeting planning, providing speakers, and organizing programs and banquets. He was a strong supporter of AESF through his corporation, sponsoring more than 30 members. In 1995, he was the recipient of the AESF Leadership Award, and also received the AESF Order of Past Presidents Award at SUR/FIN[®] '98—Minneapolis.

Gumm was born and raised in Montclair, NJ. He graduated from Marshall University, Huntington, WV, and attended Harvard Business School. He served as a First Lieutenant in the U.S. Army, and was on the board of directors for several companies and local service organizations, including the Young Presidents Organization. For many years, he was an active fund raiser for Marshall University.

Louis Packman, founder of PAX Surface Chemicals, Syosset, NY, died on July 22. He was actively involved in the management of the firm until his death. During his 55 years of service in the surface finishing industry, Packman was involved with business management, product development and sales. He was well known throughout the industry and was a regular exhibitor at SUR/FIN[®] shows.

izes in the distribution of solvents and specialty chemicals.

Inland Leidy's business, including sales and products, will become a part of Ashland's Industrial Chemicals & Solvents Division.

• **Plymouth Coating Products Corp.**, Whitman, MA, has purchased **Sancap Abrasives**, Alliance, OH. Both companies, which manufacture coated abrasives for the wood and metal industries, will retain their own product lines and corporate identities.

o AlumiPlate, Inc., Minneapolis, MN, has reached an agreement with Mercury Marine to produce aluminum-plated components that will perform better and last longer in highly corrosive conditions. Production will begin this fall to plate steel components with a proprietary aluminum plating process in three families of Mercury outboard engines. Mercury Marine is one of the largest manufacturers of boat motors in the world. AlumiPlate is an exclusive provider of aluminum electroplating services.

• **ASOMA Instruments, Inc.**, Austin, TX, has been acquired by **SPECTRO Analytical Instruments**, Kleve, Germany. Spectro designs, manufactures and markets spectrometers for a wide range of customers and applications.

Answers to quiz from page 101.

- 1. Amperes; time; area plated; cathode efficiency; valence; and density (in any order).
- 2. Plating solution
- 3. 96,500 ampere-seconds; valence
- 4. ampere-hrs
- 5. 96,500 coulombs; 6.02 x 10²³ electrons (or Avagadro's number)