ASTM Prepares to Develop New Standards for Industry

ASTM International, West Conshohocken, PA, recently held two organizational meetings to discuss the development of standards in two new initiatives.

On January 13–14, 2005, the organization held a meeting to discuss the development of consensus standards for restricted substances in materials. Key personnel representing a variety of stakeholders affected by restriction on hazardous substances (RoHS) regulations were included. Various disciplines, including consumers, manufacturers, suppliers, trade and professional societies, and federal agencies participated in the meeting.

The European Union (EU) has been legislating restrictions on the content of certain hazardous substances in the materials used in several industries, including packaging, vehicles and electrical and electronic devices. EU Directive 2002/95/EC on the restriction on certain hazardous substances has generated global activity in the development of test methods, preparation of material specifications, reengineering of materials and coatings, and development of reporting formats. ASTM intends to accommodate this new standardization initiative.

On January 18, 2005, ASTM hosted a meeting to discuss the development of consensus standards for Nanotechnology. Key personnel from a variety of stakeholders affected, including the U.S. Government (NIST, U.S. FDA), academic (CBEN/Rice University), legal and industrial sectors agreed to hold the organizational meeting for the development of this new activity. Various disciplines, including consumers, manufacturers, suppliers, trade and professional societies, and federal agencies participated.

While research into properties, synthesis and applications of nanostructures is growing at an exponential rate, there is not a common language to describe the chemical compositions and physical forms of these materials. The absence hampers technical communication within the myriad fields involved, and prevents outreach to the public at large as products containing nanomaterials enter the marketplace.

It is ASTM's intention to accommodate this new standardization initiative.

Test Your Plating I.Q. #403

By Dr. James H. Lindsay, AESF Fellow

Deposit Property Testing

1. Velocity is expressed in dimensions of miles per hour (mi/hr). A Vickers hardness number is expressed in dimensions of _____. How about the Knoop hardness number?

2. The Ollard test is a quantitative means of measuring _____ .

3. The hydraulic bulge test is a quantitative means of measuring _____.

4. Which of the following does NOT measure plate thickness? And, what does it measure?
   Eddy-current, magnegage, spiral contractometer, beta-backscatter, metallographic cross-section.

5. What is "perfect adhesion?"

Answers on page 53

Company News

Knoll distributor Mar-tec Products, Inc., Madison Heights, MI, has renamed the company Knoll America, Inc., and has become the American Division of German-based Knoll Maschinenbau GmbH, a 35-year-old company specializing in chip conveying systems, filters and pumps.

Knoll America will maintain the same management, employees and headquarters. Its core focus will be on the sales and service of Knoll high-pressure pumps and equipment.

The company had been distributing Knoll products in the U.S. for 10 years prior to the change.

Battelle Researcher Pingsha Dong has developed a method for predicting fatigue life in welded structures that is said to be revolutionary, and could save billions of dollars in the aerospace, automotive, bridge construction, shipbuilding, pipeline and off-shore oil rig industries.

While previous stress concentration calculation methods were highly sensitive to the detail of computerized models, Pingha's method—referred to as the Verity™ mesh-insensitive structural stress method—proved to be accurate regardless of that detail. Also, the accuracy far surpasses any existing modeling method, so that fatigue lives of welded structures now can be reliably predicted regardless of the complexity of welded components and modeling details.

A news release from Battelle said that one major automotive company has been using the method for full vehicle durability prediction and has seen considerable savings in new vehicle development cost.

Thierica Equipment Company, Grand Rapids, MI, has moved to a new 74,000 ft^2 facility. The company manufactures and installs automated systems for hard coating, laser etching and finishing automotive interior and exterior parts. The company supports the automotive, aerospace, telecommunications and other general service industries.

Continued on page 53

Finishing Facts

Continued from page 37

DeVilbiss, Binks and Owens Community College have teamed up to present a Spray Finishing Technology Workshop May 18–20, 2005 in Toledo, OH. Classes will meet from 8:30 a.m. to 4 p.m. daily and include classroom and hands-on sessions. Two continuing education units (CEUs) are awarded for the course.

Attendees should be involved with industrial, contractor or maintenance spray finishing applications, or spray equipment sales and distribution. Topics for the workshop include:

- Equipment types and selection.
- Equipment set-up, operation and maintenance.
- Surface preparation and defect analysis.
- Material selection.
- Safety and regulatory concerns.

To register, or for additional information, contact Jaime Hollabaugh, Owens Community College, Workforce and Community Services Division (800/466-9367, ext. 7354; spraywrokshop@netscape.net). More information is available on-line at www.owens.edu/workforce_cs/index.html.

Special Materials Company, Cherry Hill, NJ, has announced the completion and start-up of a 50-percent capacity expansion project for sodium hypophosphite (SHP) at its Changshu New-tech Chemicals Company facility in China. The plant now has the capacity to produce 5,000 metric tons per year.

Changshu New-tech Chemicals is a joint venture founded in 2002 between Special Materials Company and Changshu Xinhua Chemicals Company of China. The facility produces SHP, Hypophosphorous acid and its salts, THPS, and other phosphonium compounds.

In Memoriam

Marilyn Sanicky died on August 19, 2004, following complications of kidney problems. She was an active contributor to the metal finishing industry for more than 40 years, and an active member of the AESF Cleveland Branch.

Sanicky authored many articles and papers for professional and trade journals on laboratory methods to facilitate control of plating baths. Her speciality was the Hull cell. She was the author of the *AESF Illustrated Lecture Series* on "The Use of the Hull Cell." She was also a frequent speaker at AESF Branch meetings and made a number of presentations at national technical conferences.

A graduate of Fenn College in Cleveland, Sanicky started in the metal finishing industry as a laboratory technician for Incar, a supplier of proprietary plating products and processes in Cleveland. She also served as technical director for Electrochemicals, Inc., another Cleveland-based supplier of plating and post-plating technologies.

After leaving Electrochemicals, Sanicky joined H.O. Hull Company, which later became Rohco, and then McGean Rohco in the early 1980s. When she retired in 1993, she was technical service director. Following retirement, she consulted for McGean Rohco for several years.

Sanicky's outside interests included golf, and she was active for many years as a track official for the Amateur Athletic Union (AAU). She authored the original *AAU Track and Field Guide for Women*.

Answers to I.Q. Quiz #403

1. Kilograms of force per square millimeter (kgf/mm^2). Same for Knoop hardness.
2. Adhesion.
3. Tensile strength and ductility.
4. Spiral contractometer; plating stress.
5. Perfect adhesion exists when the strength of the bond between the coating and the substrate exceeds the strength of either one.

Finishers Think Tank *Continued from page 28*

Bright Dips

For many years, brass and copper alloys were bright dipped in fuming acids. These solutions contain a balance of inorganic and organic acids. Although fast acting, their highly corrosive nature and liberation of nitric oxide (brown gas), make these baths very tough to handle and work. Two safer, easier to handle and control alternative bright dips are available. One consists of stabilized hydrogen peroxide, inhibitors, and sulfuric acid. The other is made up of iron salts, sulfuric acid, stabilizers, and inhibitors. Both are development equivalent bright finishes to the fuming acids, but they are non-fuming.

Related Items

Some other alternatives to consider relate to equipment. More efficient, easier to maintain and service, and overall reliability attest to the improved status of metal finishing equipment. A bonus has been the use of better materials of construction that resist the corrosive shop environment. Where appropriate (ex. rectifiers), calibration delivers consistently desirable results and performance on an on going basis.

Analysis offers an opportunity to improve in-house process control and troubleshooting. Drop method test kits can be replaced by more accurate titration burettes. Hull cells provide a good representation of any plating bath's performance. Accurate thickness testers confirm whether a specification has been achieved. Customers really appreciate knowing their platers maintain a functioning, updated lab. They are relieved to know the plater keeps complete control and service of baths used to process their parts. It means that jobs get done right and on time in baths that are in optimum working order.

Alternative procedures and processes are readily available. Improvements are on-going. Our success is linked to being innovative and continually progressing. The concept of tanks filled with aqueous solutions has been with us since our industry evolved. But it is what we put in the tanks, and how innovative we are, that bodes us well into the future. ***P&SF***