

USA Today Says Sports Benefit from Nanotechnology

An article in the August 17, 2005 issue of *USA Today* pointed out that a number of sports are benefiting from coatings made of nanometals.

Written by Jim Halley, the article pointed out that golf clubs coated with nanometals are lighter with a bigger "sweet spot." This allows the head of the club to be swung at a faster speed, which can result in longer and more accurate drives.

Nanotechnology, which has been covered in *P&SF* for many years, is also being used to enhance performance in other sports, the article pointed out. For example, nanometals are being used to coat blades on ice skates to reduce friction.

The article pointed out that coatings developed with nanotechnology are still quite expensive. As the cost of producing them comes down, however, more applications for the technology will be used.

Metalforming Association Offers Training Grants

The Precision Metalforming Association Educational Foundation (PMAEF), Cleveland, OH, has approved a \$170,000 grant budget for 2006.

The organization accepts requests for funding from organizations and initiatives with programs and services that promote, enhance and/or support the development of a metalforming workforce in the U.S.

Interested parties can download an application at www.pmaef.org or contact PMAEF staff at 216-901-8800. The deadline for submitting applications for next year is March 1, 2006.

SME Grants Will Target Remedy for Skill Level Of Manufacturing Engineers

The Education Foundation of the Society of Manufacturing Engineers (SME) has provided \$635,000 in grant funding to three major colleges to "remedy the skill level of manufacturing engineers," according to a recent news release.

It said that funding awarded to Purdue University, West Lafayette, IN; Wayne

Test Your Plating I.Q. #411 By Dr. James H. Lindsay, AESF Fellow

True or false

1. Electrowinning is an electrolytic deposition process for "winning" a metal from its ore.
2. Embrittlement is a severe loss of tensile strength in a metal or alloy.
3. Phosphating and phosphatizing are the same thing.
4. Chromating and chromating are the same thing.
5. Purple plague refers to a failure in electronic components.

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State University, Detroit, MI; and Eastern Washington University, Cheney, WA, "acknowledges each school's effective collaborative efforts in working with their industry partners and designing manufacturing programs to effectively resolve the issue of competency gaps previously identified by industry partners.

The grants include: \$274,000 for Purdue; \$140,000 for Wayne State; and \$221,000 for Eastern Washington. Each targets a particular industry-driven program at the three schools.

Company News

Scientific Control Laboratories, Inc., Chicago, IL, has been granted secondary laboratory accreditation by the Texas Commission on Environmental Quality (TCEQ) for environmental testing. The accreditation certifies that Scientific Control Laboratories meets or exceeds national standards and guidelines for environmental testing established by the U.S. Environmental Protection Agency's National Environmental Laboratory Accreditation Program (NELAP), and with

Title 30 of Texas Administrative Code for water.

NELAP is a national program designed to bring uniformity and consistency to the process used in accrediting environmental testing laboratories. Participation in the accreditation and proficiency testing programs assists labs in maintaining high quality standards.

Godfrey & Wing, Inc., Cleveland, OH, has been awarded a U.S. patent for component impregnation and the equipment used for component impregnation. The inventors of the system and equipment are Christopher D. Gilmore and Christopher B. Barney, both employees of the company.

The impregnation system, referred to as "Continuous Flow Impregnation (CFI), covers 19 recognized patent claims, including impregnation chamber technology design elements, centrifugal cleaning and washing design elements, internal part handling, and robotic processing and manipulation. The system has already been the subject of various trade journal articles. It is detailed in a paper entitled "Performance Driven Advances in Casting Impregnation for the Advancement of Lightweight Material," presented at the Society of Automotive Engineers' 2005 World Congress.

The company began development of the system in 2001. It is based on the dry vacuum and pressure (DVP) process. The CFI process uses the combined effects of vacuum and pressure and focuses impregnation on the individual part, not on the ambient environment.

The system is being used in two new Godfrey & Wing locations in Massena, NY, and Dayton, OH. The company says the Massena system has been producing impregnated parts for almost three years with zero ppm defects. *P&SF*

In Memoriam

Carl Archer

Carl Archer, a 36-year veteran of the coatings industry, and a territory sales manager for Eckart America, has passed away.

"Carl was a good friend and colleague, and a valued member of the Eckart sales team," said John Kruzal, Director of Sales—Coatings and Plastics, for the company. "He was well known and respected within the coatings industry."

Prior to joining Eckart, he worked with Millennium Chemicals (formerly SCM chemicals), Louisville, KY. Earlier in his career he worked with American Cyanamid Company, Dallas, TX.

Archer graduated from Arizona State University with a BS degree in chemistry.

Henry Strow

The AESF Connecticut Branch has reported the passing of long-time, former Waterbury Branch member Henry Strow, 95. He was born in Auburn, IN, and graduated from Purdue University during the Great Depression. He joined the staff of General Motors, Detroit, MI, in 1932, and joined the Detroit Branch the same year.

In 1936, Strow was hired by MacDermid, Inc., and moved to Waterbury, CT, where he transferred his AES membership. He served in the technical service department at MacDermid for about 10 years before starting his own company, Tru-Brite Chemicals. He did so with the assistance of Harold Leever, an executive of MacDermid. Tru-Brite Chemicals became well known for providing concentrated brass plating solutions, to which users needed only to add water to create a brass plating solution.

Strow was an expert in brass plating and gave many seminars and training sessions on the subject. He authored a number of papers, and for many years, authored the brass plating section of the *Metal Finishing Guide Book*.

A past president of the Waterbury Branch, Strow was active until failing health prevented him from attending meetings.

Fact or Fiction

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Summary

S. Fred Singer sums it up as follows, "The Antarctic ozone hole is genuine and will continue as a temporary thinning of the layer every October. It has stabilized and may diminish in the future. Ozone depletion at our latitudes has been less than 5 percent and has stopped altogether since 1992. The depletion is small in relation to the natural fluctuations, which can reach some 100 percent from day to day. No steady increase of average solar ultraviolet radiation has been measured on the ground so far."³

The area of thinning over Antarctica, measured around 12.5 million square km on September 1, 2004, half the size estimated in September 2000.¹⁴

Bjorn Lomborg looks at it this way, "The case of the depleted ozone layer and the solution through restrictive protocols is seen as a success story, in which the world community finally pulled itself together and put the environment before money. For this reason among others the ozone story is often quoted as a successful application of the principle of caution and of environmental awareness in general. However, it is worth pointing out that the implementation of the CFC ban was strictly profitable. It was actually relatively cheap to find substitutes for CFC and at the same time the advantages were quite clear-cut."¹⁵

The words I like best are those of Christopher Stone, "Aside from the uncertainty, it is intriguing, considering the rela-

tively high level of publicity the problem has drawn, to note how low the speculative peril is compared with the number who are indubitably dying each day now, with hardly an eyelash batted, from unsanitary water, malaria, measles, tetanus, and other diseases."¹⁶

References

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6. S. Fred Singer, "Stratospheric Ozone: Science and Policy," in *The State of Humanity*, Julian L. Simon, Editor, (Oxford, UK, Blackwell, 1998), 537.
7. Aaron Wildavsky, "But is it True? A Citizen's Guide to Environmental Health and Safety Issues," (Cambridge, Massachusetts, Harvard University Press, 1995), 338.
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9. Roger Bate, *Life's Adventure: Virtual Risk in a Real World*, (Oxford, Butterworth Heinemann, 2000), 109.
10. S. Fred Singer, "My Adventures in the Ozone Layer, Earth Day '96," *The Heartland Institute*, April 22, 1996, Page 18.
11. Hugh W. Ellsaesser, "Why the U.S. Should Abandon the Montreal Protocol ... Now!," *Citizen Outlook*, 11, 2, November/December 1996.
12. Gregg Easterbrook, *A Moment On Earth*, 530.

13. Joseph L. Bast, Peter J. Hill and Richard C. Rue, *Eco-Sanity*, 70.
14. Julio Godoy, "The Return of the Ozone Layer," Inter Press Service News Agency, September 14, 2004.
15. Bjorn Lomborg, *The Skeptical Environmentalist*, (Cambridge, UK, Cambridge University Press, 2001), 274.
16. Christopher D. Stone, *The Gnat Is Older Than Man*, (Princeton, New Jersey, Princeton University Press, 1993), xix.

Answers to I.Q. Quiz #411

1. True. The term "winning" in the context of "winning a prize" was coined for recovering a metal electrolytically.
2. False. Embrittlement is a severe loss of ductility or toughness in a metal or alloy.
3. True. Though phosphating is the preferred term, both refer to a conversion coating process, which forms an adherent phosphate coating on a metal by immersion in an appropriate phosphating solution.
4. False. Chromating is a conversion coating process that forms an adherent chromate coating on a metal by immersion in an appropriate chromating solution. Chromatizing is a process for improving paint adhesion on aluminum or aluminum alloys by treatment with a solution of chromic acid.
5. True. Purple plague involves the formation of brittle intermetallic compounds at aluminum wire/gold bonding pad intersections. Moisture and temperature can cause this problem. The color purple is characteristic of one of the intermetallics formed, when seen under the microscope.