Forecast Looks Good For R&D Spending in 1999

Total expenditures in research and development (R&D) in the U.S. are expected to increase to nearly $236 billion in 1999, according to the annual Battell-*R&D Magazine* forecast. That's nearly seven percent more than the $221 billion estimated to have been spent in 1998.

The predictions for 1999 include:

- Industry, which continues to dominate the amount of growth of R&D spending, will spend $157 billion, an increase of more than nine percent from last year.
- The federal government will spend $68.1 billion in 1999, a slight increase over the previous year, barely keeping pace with inflation.
- Universities and other non-profit organizations will spend $10.8 billion, about five percent more than the amount spent in 1998.

The report said increases in R&D will not be uniform across industry. Areas expected to show notable increases are electric components, pharmaceuticals and medicine, office computing and communications equipment.

R&D investments will tend to support projects that lead to new businesses. Also, industry will continue to out-source much of its research.

Prior to 1980, more than 50 percent of all R&D was funded by the federal government. In the past 18 years, however, the government's share of R&D has dropped to about 30 percent. Most decreases in federal R&D funding have come through reductions in spending by the Department of Defense.

Test Your Plating I.Q. #338

By John Laurilliard, CEF

Acids (true or false).

1. Skin burns as small as the size of a hand (25 in.^{2}) from concentrated hydrofluoric acid may cause death if not treated promptly and properly. T____ F____

2. Aqua regia (royal water) is a mixture of nitric acid and sulfuric acid. T____ F____.

3. Concentrated sulfuric acid (96%) may be stored in steel tanks without attack. T____ F____

4. When diluting concentrated acids, the acid should always be poured into the water slowly to prevent splattering from the heat generated. T____ F____

5. The yellow skin stain caused by concentrated nitric acid is formed by absorption of impurities in the nitric acid. T____ F____

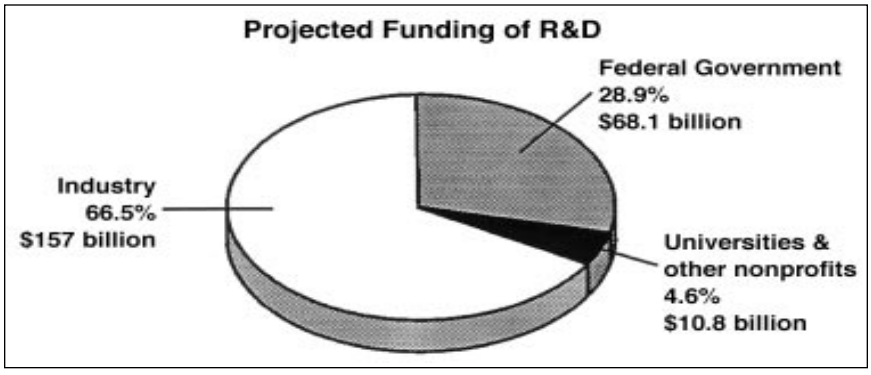
Answers are on page 97.

SCAQMD Withdraws BACT Guideline for Degreasers

California's South Coast Air Quality Management District (SCAQMD) has withdrawn its April 1998 Best Available Control Technology (BACT) guideline for batch vapor degreasers. The guideline would have required airless degreasing equipment for all operations using volatile organic compounds (VOCs) in the district, and could have served as a basis to establish the technology as the lowest achievable emission rate (LAER) nationally. The guideline faced a legal challenge filed by the Halogenated Solvents Industry Alliance, Inc. (HSIA).

The decision was reached at the December 11, 1998 meeting of the SCAQMD governing board when it directed the staff to revise its existing BACT guideline process, and to replace the guideline for batch vapor degreasers within 90 days. As a result, the April 1998 BACT guideline for batch degreasers will be replaced with a list of recent permit decisions. Future degreaser permit decisions are expected to be based on consideration of factors included in new permit processing guidance developed by HSIA, Unique Equipment Corporation and the SCAQMD staff. The factors include part type and geometry, soil type and amount, cleanliness sensitivity and (to a limited degree) part throughput.

Because of the decision, HSIA has withdrawn its legal challenge.



Its Official Name Is Now IPC

The Institute for Interconnecting and Packaging Electronic Circuits has officially changed its name to IPC. The organization has been known as IPC for more than 40 years, but industry has had trouble remembering the real name. IPC will be the official

In Memoriam

Dr. Morton Antler, president and principal consultant of Contact Consultants, Inc., Columbus, OH, passed away on January 6. A member of the Columbus Branch, he founded Contact Consultants following retirement from AT&T Bell Laboratories. He was an expert in the electronics industry in the areas of contact materials, connector design requirements and manufacturing process technology.

Dr. Antler published more than 125 papers on contact science, the structure and properties of electrodeposits and sliding friction and wear.

Among his honors were the AESF Scientific Achievement Award (1987), the AESF Precious Metal Plating Awards (1967, 1970), the Society Award of the IEEE Components, Hybrids and Manufacturing Technology Society (1990), and the Henry J. Albert Palladium Medal of the International Precious Metals Institute (1989). He is a Fellow of the IEEE, a Fellow of ASTM, and is listed in Who's Who in America.

William C. Geissman, 87, died on December 29, 1998. During his career, he was active in the Rockford and Milwaukee Branches. A graduate of Marquette University, he retired as director of metal finishing from National Lock Company, Rockford, IL, in 1975. Prior to joining National Lock Company, he worked as a chemist for Briggs & Stratton Corp., Allis Chalmers Corp., and S.K. Williams Company, all of Milwaukee, WI.

As an active member of the Milwaukee Branch, he held all offices, including president, and served as co-chairman of the 1949 AES (now AESF) Annual Convention held in Milwaukee.

Geissman joined National Lock Company in 1950 and became active in the Rockford Branch, where he held all offices, including president. He also taught several plating courses in the Rockford area.

On the national level, Geissman served as vice chairman (1968–70) and chairman (1970–71) of the AES Research Board. During that period, he also wrote the quarterly reviews for AES research projects for *Plating.* He was the author of seven technical papers, served on ASTM Committee B-08 and served as group chairman for the ISO Technical Committee. In 1975, he received the Charles Henry Proctor Leadership Award. He was also active as a lay leader in the Emmanuel Episcopal Church, and was a past board member of the Rockford Sanitary District.

Robert L. Giesel of the Chicago Branch died on January 4. He was the former chairman of the board and CEO of API Industries, Chicago, IL. In 1946, he helped found Adolph Plating Company with his father and two brothers. Adolph was merged into API Industries in 1969.

Prior to going into business, he was district sales manager for Metallizing Engineering Company, Inc.

He is a past member of the board and former chairman of the Chicago Electroplaters Institute, and a past president of the National Association of Metal Finishers (NAMF).

Charles "Charlie" Gillespie of the Philadelphia Branch died recently. He retired as head of the metal finishing department at Honeywell, Fort Washington, PA.

Howard L. Mitchell, 80, died on December 6, 1998. A long-time member of the Springfield Branch, he was president of Luster-On Products, Inc., Springfield, MA., until he retired in 1983. Active in the industry for more than 45 years, he was a past trustee of the Metal Finishing Suppliers' Association (MFSA).

SME Elects Officers For 1999

The Society of Manufacturing Engineers (SME) recently elected officers for 1999. They are: Cecil W. Schneider, FSME, P.E., Marietta, GA, president; Ronald P. Harrelson, CMfgE, Metamora, IL, president-elect; Peter Z. Bulkeley, Ph.D., FSME, Sequim, WA, second vice president; Keith M. Gardiner, Ph.D., FSME, CMfgE, P.E., Bethlehem, PA, third vice president; and Marcus B. Crotts, FSME, CMfgE, P.E., Winston-Salem, NC, secretary/treasurer.

Company News

o **The Shipley Company**, Marlborough, MA, has achieved ISO 14001 environmental certification for its U.S. facility. It is believed to be the first company in its industry to attain the certification.

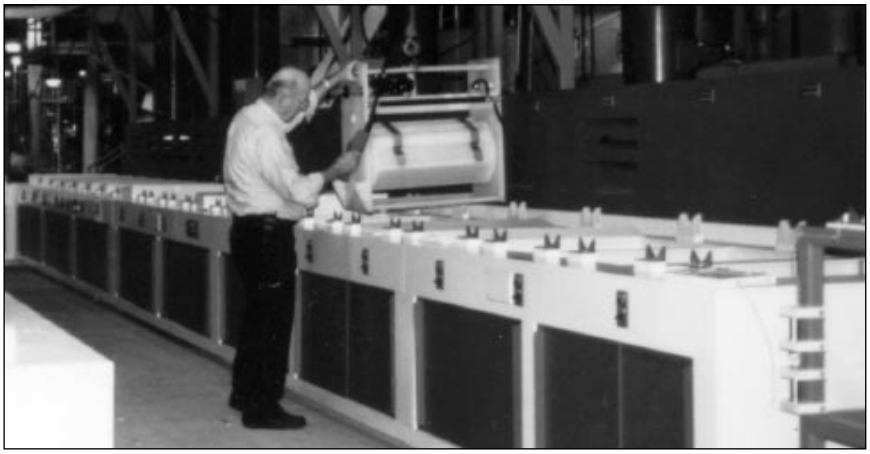
Shipley is a manufacturer and supplier of chemicals and photoresists for the electronics industry. A subsidiary of Philadelphia-based Rohm and Haas, Shipley serves the microlithography, printed wiring board and surface finishing markets with a global network of manufacturing, sales and technical support in the U.S., Europe and the Far East.

o **Perfection Plating, Inc.**, Elk Grove Village, IL, has achieved certification to the ISO 9002 quality standards.

o **Lewis Corporation**, Oxford, CT, has achieved ISO 9001 certification. Established in 1965, the company provides precision parts cleaning systems to industry. The systems manufactured by the company use 100 percent aqueous technology and are environmentally compatible with federal and state regulations.

o **Imperial Zinc Corp**., Chicago, IL, has achieved certification to ISO 9002 standards. The company specializes in quality zinc die casting alloys and anodes.

o A new program for accrediting Quality Management Systems (QMS) internal auditor training courses has been introduced by the **National** name of the organization, and it will be known as the Association Connecting Electronics Industries.



Price-Pfister, Inc. installed a multi-application barrel plating system in late 1998 at its plant in Pacoima, CA.

Accreditation Program, a joint program of the **Registrar Accreditation Board** (RAB) and the **American National Standards Institute** (ANSI).

The three-day internal auditor courses are aimed at training auditors who primarily perform quality management systems audits internally within their own or directly associated organizations. The courses will provide training in the requirements of ISO 9001, the principles and practices of internal auditing of a QMS as related to ISO 9001 and ISO 10011.

In late 1999, RAB will launch a complementary internal auditor certification program for individual internal auditors.

o **Price Pump Company**, a manufacturer of centrifugal pumps in Sonoma, CA, has acquired a proprietary air-operated diaphragm pump product line from **ITT AC Industries**. The pumps are used in a wide range of applications in industrial, high technology, utility and construction pump markets.

o **Survi-Sure Corporation**, a manufacturer of titanium anodizing racks and accessories, has moved to a larger facility in Chicago, IL. Its new address is 2020 W. Rascher Ave., Chicago, IL 60625.

o **Sinclair & Rush, Inc**., has created a new division called **VynaFlex** that specializes in stock and custom plastisol formulations for dip molding and dip coating. Plastisol coating applications include outdoor furniture, hand tools, racks and playground equipment.

o **USF Surface Preparation**, Newnan, GA, has acquired **Walther Trowal**, a European-based mass finishing specialist. Trowal, formerly a division of **Carl Kurt Walther GmbH & Co. KG**, is based in Haan, Germany, and has factories in the U.K., France and the U.S.

o **Price-Pfister, Inc**. has installed a multi-application barrel plating system at its plant in Pacoima, CA. The manually operated plating system includes barrels, overhead hoist system, exhaust fan and scrubber. Design, construction, site preparation and installation were completed by **HBS Equipment Corporation**, La Mirada, CA.

Answers to quiz from page 95.

1. True.
2. False. It is a mixture of nitric and hydrochloric acids.
3. True.
4. True.
5. False. The yellow stain is nitrated tissue, xanthoproteic acid.

Don't Gamble with Our Future—Invest in It!

Since 1927—that's more than 70 years!—the AESF has spent millions of dollars on research projects that were believed to help insure the future of our industry and the future of our way of life.

Without research, the future is left to chance. With the many research projects in progress now, we are *designing* our own future. Everyone in the metal finishing industry benefits from research, and ultimately, the general public benefits, too. We are an important support industry to *all* manufacturing endeavors, and we must not forget that.

Recently, contributions for research have been falling. To insure our future, we need the help of everyone in the industry. The Research Sponsors Committee believes that it is the duty of every branch to become a research sponsor, and it is the duty of every member to become a research contributor. We also feel confident that the entire AESF leadership shares this philosophy, too.

We must not gamble with our future. The only way we can insure a bright future is through research, and the only way we can insure the continuance of our research program is with your help.

I cannot state it more simply: *The future of our industry depends on you.* Your support and help are needed now. Only through research can we be the leaders of tomorrow.

—Robert P. Goulet, P.E., CEF
Chairman, AESF's Research Sponsors Committee