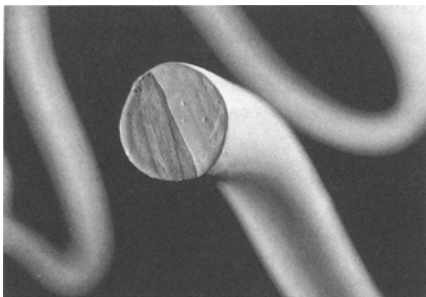


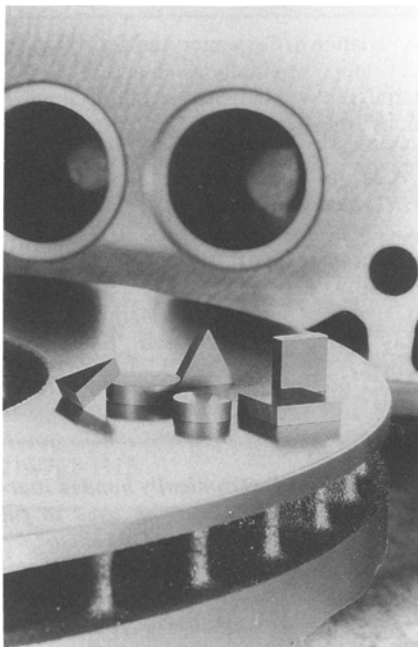
Materials/Products

Owens-Corning has developed MI-RAFLEX glass fiber, which *has the potential to compete with synthetic, petroleum-based and even natural fibers in an array of consumer and industrial products.* The fiber is composed of two different forms of glass fused together in a single filament and can hold up under typical textile process like carding and needling. Fiber properties include: a diameter of 7 μm , a density of 2.46 gm/cc, a tensile strength of 100 to 150 kpsi, and a refractive index of 1.52/1.55. For further information, contact Owens-Corning, Fiberglas Tower, Toledo, OH 43659; tel: 410/248-8000.



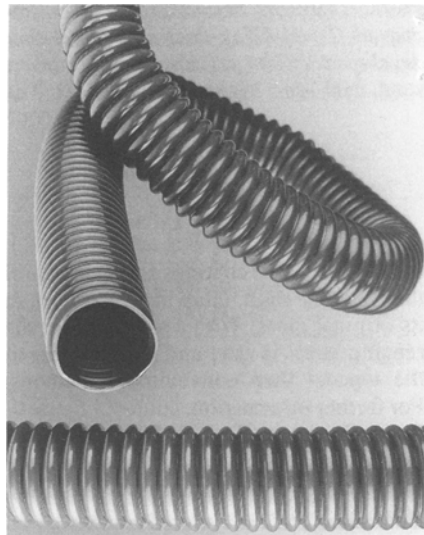
Owens-Corning

GE Superabrasives has introduced its first solid, polycrystalline cubic boron nitride tool insert, BZN-7000S. *The insert offers excellent cutting edge stability, tight part dimensional control, and consistent surface finishes with lower overall part cost and increased productivity* for machining a wide range of ferrous materials. It is ideal for machining Ni-Hard rolls and pumps, cast-iron cylinder liners of automobile engines and hardened high-chromium steel mill rolls due to its high fracture toughness, wear resistance, and chemical stability. GE Superabrasives also has introduced several MBS-960 coated products that demonstrated an average tool life gain of 35%. For further information, contact GE Superabrasives at 800/443-1955.



GE Superabrasives

A line of convoluted Teflon tubing with a conductive lining for handling volatile and corrosive liquids and gases is available from M.M. Newman Corporation. The tubing is ideally suited for applica-



M.M. Newman Corporation

tions involving the transfer of volatile liquids and gases, is chemically inert, and can operate at continuous service temperatures up to 450 °F. For further information, contact Charles F. Loutrel, M.M. Newman Corporation, 24 Tioga Way, PO Box 615, Marblehead, MA 01945; tel: 617/631-7100; fax: 617/631-8887.

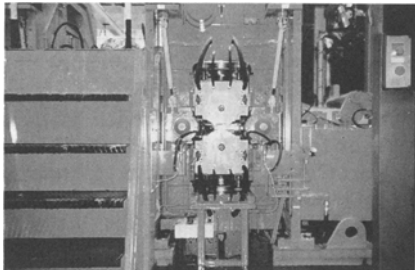
Self-lubricating bushings made of a graphite fiber/resin composite are available from HyComp Inc. provide significantly longer wear than comparable plastic and metal bushings, especially in high-temperature applications up to 600 °F. The bushings are available in small diameter and have been used successfully as replacements for needle bearings, lubricated bronze, and nylon in oscillating and reciprocating action applications. For further information, contact HyComp Inc., 17960 Englewood Drive, Cleveland, OH 44130; tel: 216/234-2002; fax: 216/234-4911.



HyComp Inc.

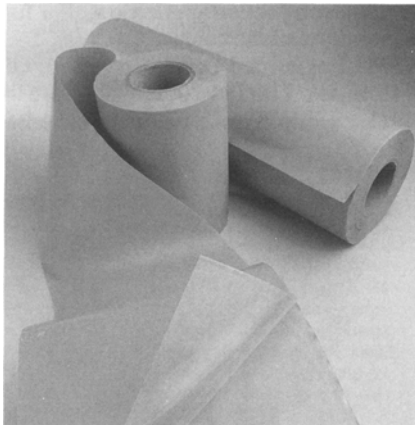
Several grades of powder-metallurgy high-speed tool steel bars are now available from Barworth Flockton. Produced by precision forging and precision mill rolling, the bars have fine grain size and uniform carbide distribution. *The resulting steel has a homogenous structure which gives it good stability properties in heat treatment and improved grindability.* Applications include taps, milling cutters, reamer, broaches, hobs, dies, form tools, and gear-cutting tools. Improve-

ments have been recorded up to 200% in heat-treatment stability and bend/rupture strength, 230% in wear resistance, and 450% in tool life. For further information, contact Barworth Flockton Ltd., Johnson Lane, Ecclesfield, Sheffield, England S30 3XH; tel: 44/1742-468291; fax: 44/1742-454230.



Barworth Flockton Ltd.

Fairprene Industrial Products, Inc. has formulated UL-recognized *silicone rubber coated fiberglass fabrics for a wide variety of laminated flexible wire and foil heating element applications*. The fabric is available in uncured and one-side un-



Fairprene Industrial Products, Inc.

Processing/Equipment

Ingersoll-Rand Company's Tool and Hoist Division has introduced a *new technology to remove imperfections on the finish of plastic-based parts used in automotive, aerospace, furnishings, agricultural, and recreational products*. The CFS200 Cold Air Finishing System uses supercooled compressed air to chill the surface to a level below its glass transition point, allowing clean contact, rather than smearing, by the polishing unit. The proc-

ured/one-side cured states with custom thicknesses, rubber distributions, and fabric reinforcements. It is rated at temperatures up to 450 °F continuous and 600 °F intermittent, with a UL Relative Thermal Index rated to 302 °F. For further information, contact Fairprene Industrial Products, Inc., 85 Mill Plain Rd., Fairfield, CT 06430; tel: 203/259-3351; fax: 203/254-2481.

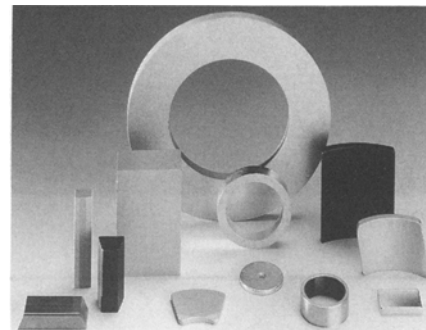
A variation of Carpenter AerMet 100 alloy, developed originally as an aerospace material, is now available for tooling applications requiring ultrahigh strength and exceptional fracture toughness. *The new grade can be heat treated to 53.5 to 55.0 HRC and exhibits Charpy V-notch impact resistance in excess of 30 ft · lb. longitudinally*. It is fully air hardenable and virtually free of distortion when heat treated. For further information, contact Ray Hemphill, **Carpenter Technology Corp.**, PO Box 14662, Reading, PA 19612-4662; tel: 610/208-2447.

A *water-based, ceramically bonded inorganic filler, which can be used to fill voids, cracks, porosity, and other surface defects in aluminum or ferrous metal castings*, is available from **Corro Therm, Inc.** CT-334 is a single-component product that exhibits outstanding performance at temperatures in excess of 1000 °F. It applies readily with spatula, putty knife, or other suitable applicators and is water soluble for easy cleanup. For further information, contact Corro Therm, Inc., 175 Philmont Ave., Feasterville, PA 19053; tel: 800/726-7948; fax: 215/322-3023.

Palmer/Enecon has introduced an *improved CeramAlloy coating system that developed a 4000 psi adhesion to carbon steel, and even higher for stainless*. The

system also exhibits outstanding resistance to moisture permeability, even at elevated temperature, and resist a broad range of chemicals. The coating is used for rebuilding and resurfacing all types of metal components which have been damaged by erosion, corrosion, cavitation, entrainment, impingement, and bimetallic corrosion. For further information, contact Andrew A. Janczak, **ENECON Corporation**, Suite 190, 125 Baylis Road, Melville, NY 11747-3800; tel: 516/755-0022.

Vacuumschmelze, a division of Siemens Components, Inc., has introduced *two new magnet grades*, VACODYM 510 HR and VACOMAX 240. Based on neodymium, iron, and boron, VACODYM 510 HR achieves an energy density of 48 MGOe or 42 MGOe, depending on process method and sustains a maximum operating temperature typically up to 212 °F. Samarium cobalt VACOMAX 240 magnets require only a typical magnetization field strength as low as 20 kOe. For further information, contact Vacuumschmelze, a division of Siemens Components, Inc., 186 Wood Avenue South, Iselin, NJ 08830; tel: 908/494-3530.



Vacuumschmelze

ess cools flexible coatings and paints until they become rigid, allowing it to return to its original gloss. With rigid coatings, the repair process is faster and removes less of the topcoat than conventional methods. For further information, contact Ingersoll-Rand Company, Tool & Hoist Division, Department NR-557, 253 East Washington Avenue, Washington, NJ 07882; tel: 908/689-5580.

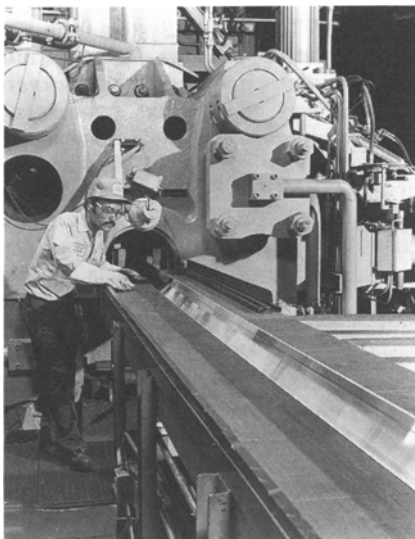
Mazak's new STX HiPro Supercharged series introduces a *new laser machine layout which integrates the high performance of fixed beam machines with the smaller footprint of flying optic machines*. The unique design minimizes beam divergence by providing a virtual constant-length beam instead of the variable-length beam provided by flying optic machines. This permits uniform cutting capability at any point on the table and

easier determination of cutting conditions. It also increases beam intensity at the focal point which lowers gas and power usage as well as other operating costs. The machine cuts materials up to 0.75 in. (19 mm) thick. For further information, contact Bob St. Aubin at 708/882-8777.



Mazak Nissho Iwai Corporation

One of the world's most *efficient hard alloy light aluminum presses* is now in full operation at the Anaheim extrusion mill of **Universal Alloy Corporation**. The 7 in. 2750 ton extrusion press is fully automated including material handling and can produce finished hard alloy extrusions up to 40 ft in length with circle sizes up to 6 in. Die changes are made in one-half the time of other presses with billet loading in less than 30 s. For further information, contact Universal Alloy Corporation, 2671 La Mesa Avenue, Anaheim, CA 92816-7207.



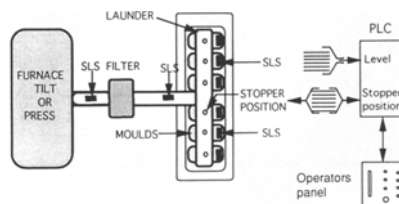
Universal Alloy Corporation

A patented new agglomeration technology developed by **Scandinavian Powdertech AB** permits the manufacture of extremely

pure, inert gas atomized stainless steel, tool steel, and other iron, nickel and cobalt-based powders. These powders can then be compacted by uniaxial pressing and sintered to fully dense parts with the mechanical strength and corrosion resistance of wrought product. For further information, contact Christer Åslund, Scandinavian Powdertech, Kungsgatan 82, S-632 21 Eskilstuna, Sweden, tel: 46/16128088; fax: 46/16122302.

The Rotomold series, a new *line of rotational molding systems* from **ACC Automation Co.**, features independent arms for increased process control and flexibility. The innovative arm design includes heavy-duty enclosed gear drive systems and is capable of multiple rotation speed settings. Available in four basic models ranging in capacity from 1000 to 2500 lb, the system includes an advanced thermal management system and computer-based programmable controls. For further information, contact ACC Automation Company, 730 Carroll Street, PO Box 569, Akron, OH 44309; tel: 216/762-9188; fax: 216/762-1113.

A *highly accurate and easy-to-operate closed-loop mold level control system for vertical aluminum castings* which precisely regulates the flow rate of molten metal from a tilt or press furnace through a filter and launder with a stopper rod mechanism into the mold has been introduced by **Selective Electronic, Inc. (Selcom)**. The LaserPour Aluminum Slab Mold Level Control System assures a steady and consistent fill rate up to the desired level within an accuracy from ± 0.006 in. (± 0.4 mm) to ± 0.016 in. (± 0.14 mm) depending on the measurement range. Level variations up to 7.8 in. (200 mm) can be measured. For further information, contact Selcom, 21654 Melrose Ave., Southfield, MI 48075; tel: 818/355-5900; fax: 818/355-3283.



Selective Electronic, Inc.

Designed specifically for CNC production purposes, the Explorer I CNC milling ma-

chine from **Bridgeport Machines, Inc.**, is built to *withstand the rigors of high production milling and provide consistent accuracy, repeatability, and efficiency.* Features include an extra-wide saddle bearing surface to reduce the effect of wear, and a deeper saddle for extra stiffness. The Explorer I also offers 62% greater table support than the standard machine. For further information, contact Bridgeport Machines, Inc., 500 Lindley Street, Bridgeport, CT 06606; tel: 800/243-4292.



Bridgeport Machines, Inc.

The **Aerogen Company** has introduced a *system for high-speed flame plasma surface treatment of plastic automotive components.* The system identifies individual treated automotive parts and retains their specific process data. It also comes with



The Aerogen Company Ltd.

robotic handling. Any process decline is quickly detected, resulting in fewer rejects and an improvement in product

quality. For further information, contact the Aerogen Company Ltd., Newman Lane, Alton, Hampshire GU34 2QW Eng-

land; tel: 44/1420-83744; fax: 44/1420-80032.

Measurement/Testing/Evaluation

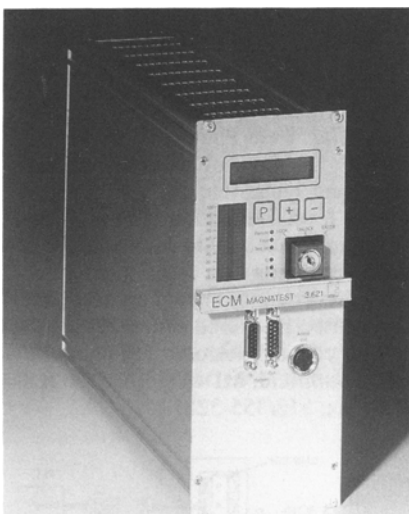
A truly portable alloy analyzer based on optical emission spectroscopy has been developed by **Metorex International Oy**. Designated **ARC-MET 930**, the analyzer weighs only 14.5 kg and can measure the entire spectrum from 178 up to 340 nm with just one detector. Identification of steel grades is based on 0.02% difference in carbon concentration with a precision of 0.001% at 0.04% carbon. Metorex has also introduced the 920 XRT-H, a bench-top heavy element XRF analyzer. For further information, contact Metorex Inc., 860 Town Center Drive, Langhorne, PA 19047; tel: 215/741-4482; fax: 215/741-6385.



Metorex Inc.

Nano Instruments, Inc. has introduced the **latest version of the continuous stiffness measurement option for its Nano Indentor II mechanical properties microprobe**. This option imposes a user-defined force oscillation on the diamond indentation tip, enabling the user to quantitatively measure the hardness and modulus of a material as a function of load and/or depth of penetration. For example, hardness at nominal loads of under 1 mg and over 50 g may be determined with a single indentation. Applications include passivations and metallizations for microelectronics, thin films on magnetic storage media, AR and hard optical coatings, and polymer thin films. For further information, contact Michael O'Hern, Nano Instruments, Inc., 1001 Larson Drive, Oak Ridge, TN 37830; tel: 615/481-8451; fax: 615/481-8455.

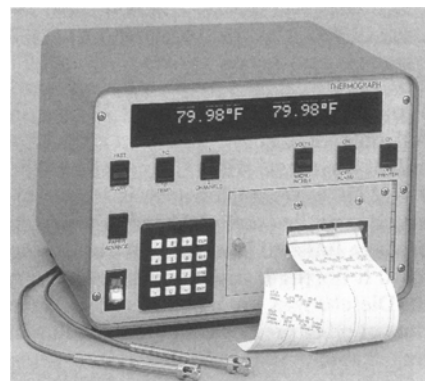
Foerster Instruments has introduced **three eddy-current testing modules designed to provide basic, cost-effective, easy-to-use eddy current testing capabilities in high-throughput production line operations**. The line includes the **MAGNATEST ECM** for magneto-inductive testing of material properties, **DEFECTOMAT ECM** for defect testing in the manufacture of semifinished products, and **STATOGRAPH ECM** for defect testing on components and small parts. Each module offers precise, reliable "threshold exceeded" or "yes/no" QA testing capabilities in a compact package. Foerster has also installed a multiple testing block at a Brazilian seamless steel tube production facility, which will measure length, diameter, wall thickness, material identification, and defect testing. For further information, contact William J. Kitson, Jr., Foerster Instruments, Inc., 140 Industry Drive, RIDC Park, Pittsburgh, PA 15275; tel: 42/788-8976; fax: 412/788-8984.



Foerster Instruments, Inc.

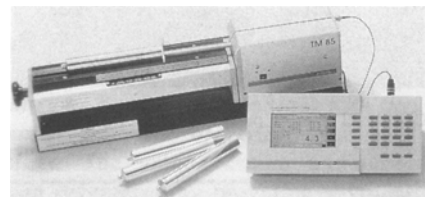
B-G Instruments introduces the **Thermograph II, a dual-channel temperature monitoring system featuring a maximum measurement range from 30 to 150 °F and an accuracy of 0.01 °F**. Thermistor probes are used to track temperature changes for the purpose of ensuring that

critical temperature constants and tolerances are not exceeded. A front panel switch activates an alarm that sounds when specified high or low limits are surpassed. A printed report is provided. For further information, contact Dave Wright, B-G Instruments, Route 1, Box 258, Mead, WA 99021; tel: 206/567-5000; fax: 509/238-4920.



B-G Instruments

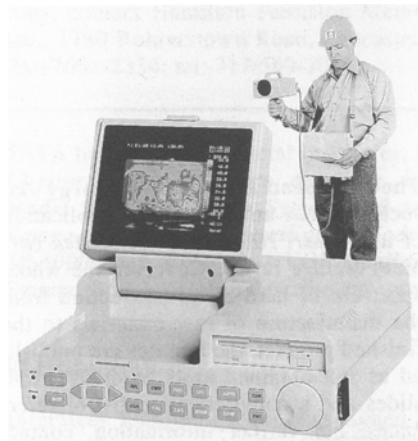
The **TM85 Test Station System** from **Fischer Technology** allows **fast, accurate and nondestructive coating thickness measurement of ultrathin coatings on nonferrous substrates**. Measurements can be made on inside and outside diameters of cylindrical objects without indenting the coating or the substrate. Based on the eddy-current measurement principle, precise measurements can be made on coatings as thin as 40 μm , with a range of 0 to 40 mils. For further information, contact Fischer Technology, Inc., 750 Marshall Phelps Rd., Windsor, CT 06095; tel: 800/243-8417; fax: 203/688-8496.



Fischer Technology, Inc.

Panametrics, Inc. has been awarded a contract by Rohr, Inc. to *provide a large gantry ultrasonic system for inspection of composite aircraft structures*. The Panametrics ARGUS system is capable of acquiring ultrasonic data and reading several types of high resolution images of material discontinuities in a single scan pass. This turnkey system provides contour following capabilities for two synchronized five-axis manipulators with an X, Y, Z scanning envelope of approximately 25 x 10 x 9.8 ft. For further information, contact Panametrics, 221 Crescent St., Waltham, MA 02154-3497; tel: 617/899-2740; fax: 617/899-1552.

The TH100 Thermal Imaging System introduced by **Mikron Instrument Co. Inc.** is a compact portable system for both production and research and development. This dual capability has been accomplished by the use of advanced electronic cooling techniques and the elimination of a dedicated image processing computer. For field applications, the system consists of the small detector unit, with either a close focus, telephoto, or wide-angle lens, and the control unit with 3.5 in. display. Three temperature ranges are available: -50 to 250 °C, 0 to 300 °C, and 290 to 2000 °C. For further information, contact Mikron Instrument Co., Inc. 445 W. Main St., Wyckoff, NJ 07481; tel: 800/631-0176; tax: 201/891-1205.



Mikron Instrument Co., Inc.

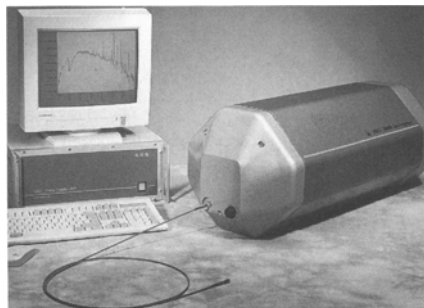
UE Systems, Inc. has introduced the *Ultraprobe 2000 Ultrasonic Inspection System for monitoring bearings in operating*

equipment, including lack of lubrication and the early stages of bearing failure. In addition, the portable instrument detects cavitation in pumps, leaks in compressor valves, electrical arc, corona discharges, and all types of pressure, vacuum, and steam trap leakage. A unique feature is frequency tuning, which makes it simple to tune into a bearing and isolate it for analysis regardless of competing signals. For further information, contact UE Systems, Inc., 14 Hayes Street, Elmsford, NY 10523; tel: 914/592-1220 or 800/223-1325.



UE Systems, Inc.

The world's first optical detector capable of carrying out time-resolved spectroscopy over 58,000 spectral channels simultaneously has been delivered to the French atomic energy authority CEA by **NOW Optics AB**. The MES 58000 will be used for spectroscopy of excimer laser-generated plasmas and was developed by NOW Optics AB. The system has an image intensifier, which adds the possibility of making time-resolved exposures in ten nanosecond intervals. For further information, contact Christoffer Lindblom, NOW Optics AB, Isafjordsgatan 11, S-164 40 Kista, Sweden; tel: 46/87512015; fax: 46/86320789.



NOW Optics AB

RJ Lee Group, Inc. and MCM Capital Corporation have formed **RJ Lee Instruments Ltd.**, which will be able to create analytical tools configured specifically for a customer's application based on *the PERSONAL SEM, an easy-to-use computer-controlled version of the electron microscope*. Features include continuous zoom from 10 to 100,000x magnification, little or no sample preparation, large depth of field, and sensitive compositional analysis using appropriate detectors. For further information, contact RJ Lee Instruments Ltd., 515 Pleasant Valley Road, Trafford, PA 15085; tel: 412/744-0100.

A right angle probe that is capable of profiling small and intense sources of radiation on the exact surface plane inside hostile environments has been introduced by **International Light, Inc.** The RAMP Micro Probe features a ground quartz optical element with a 400 µm sensing aperture and is designed to perform measurements from 200 nm to 3000 nm at 204 °C. For further information, contact International Light, Inc., 17 Graf Rd., Newburyport, MA 01950; tel: 508/465-5923; fax: 508/462-0759.

Chatillon has announced its latest addition to the Material Witness software family, *Data Analysis for Windows for materials testing and data analysis*. The software allows for quick and easy control, acquisition, storage and analysis of test data for both product quality and material characterization needs. The program can test up to 50 samples per batch and select from 60 preset standard ways to analyze and reanalyze the resulting test data. For further information, contact Chatillon, 7609 Business Park Dr., Greensboro, NC 27409; tel: 800/241-5867.

AOAC International has announced the *CD-ROM version of Official Methods of Analysis, 16th Edition*. This version enables the user to search almost 3000 chemical and microbiological methods for food, agricultural, drug, environmental, and other analyses in less than 1 min. For each method, the user can view it, zoom in on it, link to referenced methods, and print fully formatted text. For further information, contact AOAC International at 703/522-3032; fax: 703/522-5468.

International Research

OPTEX Communications Corp. has been awarded a \$2 million grant under the Advanced Technology Program, which is administered by the National Institute of Standards and Technology. *The award will be used to develop inexpensive materials and manufacturing techniques to enable the use of a new high-density data storage technology* in mass-market consumer products for video and computing applications. For further information, contact Brain Williams, OPTEX, 2 Research Court, Rockville, MD 20850; tel: 301/840-0011.

Textron Specialty Materials has received a contract for \$4.2 million from the U.S. Department of Energy to continue to improve the efficiency and capability of continuous fiber ceramic composite processing methods for the fabrication of components. Ceramic composite furnace

tubes and gas turbine combustors have already been made; an aluminum holding furnace with immersion tube heaters has been installed at a large aluminum die-casting facility to demonstrate performance in an industrial environment. Final preparations are being made for testing a ceramic composite combustor at operating conditions representative of an advanced industrial gas turbine application. For further information, contact Bruce Thomson, Textron Specialty Materials, 2 Industrial Avenue, Lowell, MA 01851; tel: 508/452-8961.

The American Welding Society has been awarded a \$2.4 million research contract by the Department of Defense's Advanced Research Projects Agency to develop a Flexible Laser Automated Intelligent Research System (FLAIR). The FLAIR project will research new efficiencies in

maintaining and repairing titanium and lead alloys using flexible automated laser systems. Applications include refurbishing titanium turbine blades used in jet aircraft and repair for lead-acid batteries.

A consortium of ceramic component manufacturers (**Association of American Ceramics Components Manufacturers**) is working with Sandia and Los Alamos national laboratories to develop improved manufacturing technologies for advanced ceramic materials. The program will work on developing an improved understanding of some of the processes involved in manufacturing ceramic components and will develop computer models that will help identify and avoid potential problems before they begin making tools and parts.

University View

The Rubber Division of the American Chemical Society has matched \$40,000 in pledges from the rubber industry to support the Akron Polymer Training Center at the University of Akron. The training center is an education outreach program that gives Northeast Ohio's thriving polymer industry access to state-of-the-art training for employees. It is operated by UA's College of Polymer Science and Polymer Engineering and the Edison Polymer Innovation Corporation. The Gen-

Corp Foundation has also pledged \$1 million over seven years to an equipment endowment for the college.

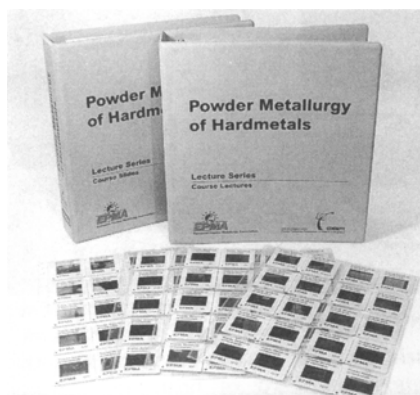
The University of Missouri-Rolla has teamed up with the **Iron and Steel Society** to promote the industry to students through the Ferrous Metallurgy Grant Program. The program is funded through a three-year grant of \$50,000 per year

and is geared mainly to attract undergraduate students to manufacturing metallurgy areas. Students will work on research projects in the metallurgical engineering department, take part in industrial conferences, and get hands-on experience by working in steel mills during summer months.

Literature/Data Sources

Thomson Industries, Inc. has published a number of free literature, including a 20-page catalog featuring standard and custom precision balls, a technical bulletin describing Super Smart Ball Bushing Bearings, a 12-page brochure on specification of engineered polymer bearings, and a six-page brochure that provides full details on AccuGlide linear ball bearing systems. For copies, contact Thomson Industries, Inc., 2 Channel Drive, Port Washington, NY 11050; tel: 516/883-8000; fax: 516/883-9039.

scissors with zirconia blades and ceramic golf putters. The catalog is located at <http://www.aros.net/~lonpeak/ceramics>.



European Powder Metallurgy Association

The European Powder Metallurgy Association has announced the publication of its 16-part *Hardmetal (cemented carbide) lecture series*. Covering the whole spectrum of hard metal production from the manufacture of raw materials to the finished product, the lectures are published as self-obtained units, with over 350 slides and a comprehensive list of references. For further information, contact European Powder Metallurgy Association, Old Bank Buildings, Bellstone, Shrewsbury, SY1 1HU U.K., tel: 44/1743-248899; fax: 44/1743-362968.

The Loctite Design Guide for Bonding Plastics is available from **Loctite Corporation** and includes 30 chapters on properties of plastics and adhesive bonding

Lone Peak Engineering, Inc. has opened an electronic catalog of ceramic products on the World Wide Web. The catalog displays unusual ceramic products produced from novel ceramic materials, including

performance on them; a section on plastic surface treatments; adhesive joint design information; and a stress-cracking potential table for many adhesive/plastic combinations. For a copy call Loctite at 800/562-0560.

CAPTAN Associates Inc. has published an updated buyers' guide to commercial radiation curing and processing, Volume 10 of Reactive Cure Systems: UV-IR-EB. Volume 10 is available both on disk and on paper and lists 1650 suppliers worldwide and their products and services. For further information, contact Claire Bluestein at 908/840-1244.

Pratt & Lambert Industrial Coatings has introduced a full-color brochure on its comprehensive line of Vitralon powder coatings including epoxies, polyesters, polyurethanes, hybrids, and special coatings. The brochure features 60 different color chips, details on powder coating technology options, and an easy-to-read table on performance characteristics. For a copy, contact Pratt & Lambert Industrial Coatings, PO Box 2153, Wichita, KS 67201-2153; tel: 800/888-1849; fax: 800/777-6831.

Hamilton Precision Metals Inc. has introduced a 12-page four-color brochure highlighting the company's capabilities in rolling, slitting, and annealing of a wide variety of metals and alloys. For a copy, contact Hamilton Precision Metal, Inc., 1780 Rohrerstown Road, Lancaster, PA 17601-2334; tel: 717/569-7061.

TAFA has published several brochures, a 12-page color brochure detailing its Model 9000 Arc Spray System and an 8-page color brochure detailing its Model JP-5000 High Pressure HVOF Coating System. Both brochures describe the com-

ponents of each system and options available. For further information, contact TAFA Incorporated, 146 Pembroke Road, Concord, NH 03301; tel: 603/224-9585; fax: 603/225-4342.

A comprehensive operation and maintenance manual for the *Metaullics L-Series molten metal circulation pumps* is available from **Metaullics Systems Co., L.P.** The 50-page manual covers equipment specifications and applications, installation instructions, and a complete parts list. For a copy, contact Metaullics Systems Co. L.P., 31935 Aurora Road, Solon, OH 44139; tel: 216/349-8800.

ASTM has published a comprehensive manual on corrosion, *Corrosion Tests and Standards: Application and Interpretation*. The 750-page ASTM Manual 20 includes guidelines for recognizing types of corrosion, as well as fundamentals of corrosion testing. To order contact ASTM Customer Service at tel: 215/299-5585; fax: 215/977-9679.

The proceedings from the recent Annual Technical Conference of the Society of Plastics Engineers has been published in a three-volume, 4458-page set by Technomic Publishing Company, Inc. AN-TEC 95—The Plastics Challenge—A Revolution in Education contains more than 600 in-depth technical reports covering recent advances in plastic materials, processes, analytical techniques, and applications. To order, contact Technomic Publishing Company, Inc., 851 New Holland Ave., Box 3535, Lancaster, PA 17604; tel: 717/291-5609 or 800/233-9936; fax: 717/295-4538.

General Magnaplate has published two brochures describing several surface enhancement treatments for metal parts.

Properties of CANADIZE, a surface enhancement treatment for titanium and titanium alloys are covered in one brochure and technical information concerning the LECTROFLUOR series of polymer- and copolymer-based surface enhancement treatment for metal is described in another and includes engineering data. For copies, contact General Magnaplate Corp., 1331 Route 1, Linden, NJ 07036.

The Handbook of Plastics, Elastomers, and Composites, 2nd Edition, has been published by **McGraw-Hill Engineering Books**. The handbook covers full performance data, application guidelines, processes, and engineering properties for all types of plastic materials.

Butterworth-Heinemann has published a number of books on materials. *Advances in Particulate Materials* covers novel processes, including chemical powder production, melt atomization, hot consolidation processes, among others. *High Temperature Mechanical Behavior of Ceramic Composites* provides an up-to-date comprehensive coverage of the mechanical behavior, both short term and long term, of ceramic matrix composites. *Materials for Electronic Packaging* examines the interconnections, encapsulations, substrates, heat sinks, and other components involved in the packaging of integrated circuit chips. *Plastics Materials, Sixth Edition*, provides a balanced and comprehensive overview of the nature, manufacture, structure, properties, processing, and applications of commercially available plastics materials. To order, contact Butterworth-Heinemann, 313 Washington Street, Newton, MA 02158-1626; tel: 617/928-2500; fax: 617/928-2620.

In Business

Intersteel Technology, Inc. has signed a contract for the supply of a CONSTEEL system for the multimillion dollar project by Nakornthai Strip Mill Co., Ltd. to produce flat products in Chonburi, Bowin, Thailand. The plant will produce 1.5 million tons of liquid steel to be processed into thin slabs, hot-rolled coils and cold-rolled flat products for deep-drawing applications.

Laurel Industries' Specialty Compounding Division has begun construction of a 22,000 square foot expansion in Ohio. The company specializes in custom and toll compounding of resins.

Davy International has been awarded a contract from Samarco Mineracao S.A. for engineering services and erection supervision for the "Second Line" expansion of

their pellet plant at Point Ubu, Brazil. Davy has also been awarded several contracts by Scaw Metals, the third largest steel producer in South Africa, as well as Tokyo Steel for a rod mill and Reynolds Metals Company for a high-speed foil mill.

Cabot Corporation has recently constructed a production facility that is being

used to manufacture the advanced STERLING carbon blacks developed by the company's North American Industrial Rubber Blacks business.

PPG Industries has sold its French architectural coatings business to Imperial Chemical Industries of Great Britain.

Cadillac Plastic and Chemical Company and W. W. Grainger, Inc. have entered an agreement that will provide customers with a single point of contact for maintenance and repair products. The agreement states that Grainger's integrated supply customers will be able to order Cadillac's products directly through Grainger.

ARCO Chemical Company has announced several expansion projects. An expansion of the Channelview, TX propylene oxide/styrene monomer complex is scheduled for completion by early 1998, and a new world-scale propylene oxide plant to be built at Rotterdam Netherlands is scheduled for startup in the year 2000.

Urethane Technologies is expanding its production capacity by 40% for manufacturing polyurethane by adding equipment at its Atlanta, GA, and Orange, CA, plants.

DuPont has formed a licensing agreement with **Lilly Industries** to market Cormax II electrodeposition coating technology to automatic parts, appliance, and general industrial manufacturers.

Inland Steel Company has ordered superalloy hearth rolls from Duraloy Technologies, Inc. for their continuous normalizing line.

Three aluminum recycling companies, **Allied Metal Co.**, **Arkansas Aluminum Alloys**, and **State Metal Industries Inc.**, have joined the Aluminum Association.

The Honeywell Solid State Electronics Center has received the Award of Distinction from the U.S. Small Business Administration. This award recognizes large prime contractors with exceptional pro-

grams for subcontracting to small and small disadvantaged businesses.

PRI Automation, Inc., a leading supplier of factory automation systems, is expanding into a new 80,000 square foot building.

Coil Technology, Inc., a manufacturer of coil handling equipment and sensors, has completed a 4000 square foot expansion to accommodate a new technical center and assembly facility.

Advanced Technology Materials, Inc. has been awarded U.S. Patent No. 5442200 for a process to manufacture low resistance contacts on silicon carbide. The company has also received contracts of \$1.5 million to optimize the contact fabrication and demonstrate its applicability for high power MOSFET devices from the Ballistic Missile Defense Organization and the Air Force.

The Empire Die Casting and Industrial Castings divisions of Empire Die Casting Co., Inc. have earned ISO 9002 certification. These divisions produce finished parts in aluminum, zinc, zinc aluminum, and magnesium.

TAFI Inc. has acquired Metallurgical Technologies, a producer of thermal spray powders.

Superconductivity, Inc. has signed a technology transfer agreement with Eskom, the utility serving the Republic of South Africa. Under this agreement, the companies will continue to develop applications of Superconductivity's micro-superconducting magnetic energy storage device.

AGA Gas, Inc. has acquired Sommerfeld Welders Supply Co., Inc., which sells industrial gases, welding equipment, and supplies, from Lowell Kalmerton.

ASARCO Inc. is spending nearly \$10 million to increase copper production, reduce costs, and expand control of emissions at the Hayden operations.

Engelhard-CLAL has announced an agreement with Optimfinish to be an exclusive distributor of Optimfinish technology for purifying and electroforming iridium products.

Pines Manufacturing Inc., a manufacturer of semiautomatic and CNC bending machines, has completed an expansion to quadruple its engineering space.

Richmond Aircraft Products has been awarded the exclusive distribution rights in the United States and Canada for RO-HACELL(R) core material used in composite construction manufactured by Rohm GmbH.

Nagoya Aerospace Systems' Mitsubishi Heavy Industries, Ltd. has awarded Universal Alloy Corporation the annual Excellent Suppliers Award. The award was given for advanced technology, superior quality, and on-time schedule performance.

Globe Metallurgical Inc. has formed a foundry and casting technology service, GlobeTech, for all aspects of gray and ductile iron foundry and casting technology.

OSI Specialties has signed a contract with Sea Lion Technology, Inc. in order to expand its capacity to produce amine catalysts for making polyurethane foam products.

Cabot Performance Materials, a division of Cabot Corporation, is building a cesium production facility at Tantalum Mining Corporation of Canada, a wholly owned subsidiary of Cabot Corporation. The facility will cost \$10 million and have a production capacity of over five million pounds a year.

Aavid Thermal Technologies, Inc. has acquired Fluent, Inc., a developer of computer software for design and simulation of fluid flow and heat transfer engineering processes.

Kudos

General Magnaplate Corporation has appointed **Corey Wesnitzer** as vice president and general manager of General Magnaplate Texas, one of the corporation's five Technology Centers.

Phibro-Tech, Inc. has added **Gary Maiworm** to its Midwest sales group, who will handle sales of the company's line of etchants in the midwest territory.

Eliot M. Grossman has been elected President of the **Injection Molding Division of the Society of Plastics Engineers**. Mr. Grossman is Vice President of Operations at Scortec, Inc., a subsidiary of BTG USA.

Washington Steel Corporation has appointed **Donald E. Zakman** to the vice president-commercial, in an effort to grow the company's share of the stainless steel market. He will be responsible for the sales and marketing groups.

W. Eugene Eckhart has been promoted to Director, Customer Systems Group of the **Electric Power Research Institute**. This group delivers technologies, planning tools, and information to enhance the value of electricity and influence patterns of demand for the benefit of both utilities and their customers.

Dr. Mark G. Benz, a metallurgist at **General Electric's Research & Development Center**, has been presented with the Center's highest honor, the Coolidge Fellowship Award. This award was for his contributions to products manufactured by a wide variety of GE businesses.

WCI Steel Inc. has appointed **Patrick G. Tatom** as vice president of commercial operations and **David A. Howard** as general manager of sales.



Patrick G. Tatom



David A. Howard

Michael L. Swiderski has been named Director of Operations, Machined Products-Plant 1 at **Burgess-Norton Mfg. Co.**

Force Industries, a leader in soldering, brazing, and welding flux technology, has appointed **Neil E. Kearney** national sales manager.



Neil E. Kearney

Kelly S. Kirkpatrick has been named 1995-96 MRS/OSA Congressional Science and Engineering Fellow, which is a one-year appointment sponsored jointly by the **Materials Research Society** and the **Optical Society of America**.

Air Liquide America has appointed **William Johnson, Ronald LaBarre, Gary McDow, John Schreiber, Michael Smith,** and **Kent Tayler** to the newly created positions of Area Vice Presidents.

Jerry Dwyer has been promoted to the position of District Sales Manager at **Heatbath/Park Metallurgical Corporation**.

Antoinette Coles, a materials engineering student at the **Georgia Institute of Technology**, was awarded a 1995 Ford Foundation fellowship, which is administered by the National Research Council.

Harold Shaub, vice president of technology at **Petrolon Technologies Division of Slick 50 Corp.** received a 1995 Award of Merit from ASTM for his contributions to the development of standards for low-temperature viscosity measurement.



Harold Shaub

Deloro Stellite, Inc. has promoted **Jim Fox** to vice president of the company's Stellite Coatings operating unit, which

manufactures wear-resistant alloy powders and application equipment used in plasma transferred arc welding, flame spraying, and plasma spraying.



Jim Fox

Joseph W. Dillon has been named Director-Purchasing and Traffic at **American Steel Foundries**, a division of AMSTED Industries.

3D Systems Corporation, a manufacturer of stereolithography systems, has selected **John T. Davis** as Federal Systems Manager in Washington D.C. to act as liaison between the company and the federal government.

The LTV Corporation has announced the following flat-rolled management appointments: **James J. Murray** as general manager-coke operation; **Calvin E. Baxter** as division manager-rolling, finishing, and maintenance; **Robert J. Hennessy** as Hennepin plant manager; **Richard F. Hall** as division manager-primary operations and computer process control for Cleveland Works; and **Eric D. Hauge** as manager-iron producing for Cleveland Works.

Richard W. Siegel has been named Robert W. Hunt Professor and head of the Materials Science and Engineering Department at **Rensselaer Polytechnic Institute**.

The following have received the 1995 National Medal of Science, the highest scientific honor given by the President of the United States: **Isabella Karle**, head of Naval Research Laboratory's x-ray diffraction section; **Louis Nirenberg**, former director and professor of mathematics at **New York University's Courant Institute of Mathematical Sciences**; **Hans Dehmelt**, a physicist at **University of Washington**; **Thomas Cech**, a chemist at the **University of Colorado**; **Peter Goldreich**, a **California Institute of Technology** planetary sciences and astrophysicist; **Herman Haus**, an electrical engineer from **MIT**; **Alexander Rich**, a structural molecular

biologist at MIT; and *Roger Shepard*, a Stanford University psychologist.

Kenneth C. Ludema, professor of mechanical engineering at the University of Michigan, has received the Mayo D. Hersey Award from the **American Society of Mechanical Engineers**. This award recognizes contributions to the advancement of lubrication science and engineering.

Laurel Industries' Antimony Division has appointed *Robert Duffin* as technical sales representative for the Midwest region.



Robert Duffin

NGK Metals Corporation, a producer of beryllium copper alloys, has appointed *Curtis L. Klein* regional sales manager for the Midwest Region.



Curtis L. Klein

Bridgeport Machines, Inc. has named *Robert M. Ross* to the position of Vice President, Engineering, and *Vincent J. Yurksaitis* to the position of Vice President, Manufacturing.

The American Welding Society has awarded the Miller Electric Fellowship to *Daniel A. Hartman*, a doctoral student at Vanderbilt University researching automation of welding, and the Glenn J. Gib-

son Fellowship to *Jack E. Helms*, a doctoral candidate in mechanical engineering at Louisiana State University researching adhesive-bonded joining methods
