

## Microcuvettes

**B**randTech's ultra-violet-transparent Ultra-micro disposable cuvettes accommodate sample volumes from 70  $\mu$ L to 1.8 mL. The new cuvettes boast superior chemical compatibility; can be used with most polar organic solvents, acids, and bases; and minimize the cross-contamination risk associated with quartz cuvettes during DNA, RNA, and protein analysis. Ultra-micro cuvettes are

compatible with most photometers and spectrophotometers, and are suitable for most analytical applications between 220 and 990 nm. They are available with 8.5- and 15-mm window heights.

BrandTech Scientific, Inc.

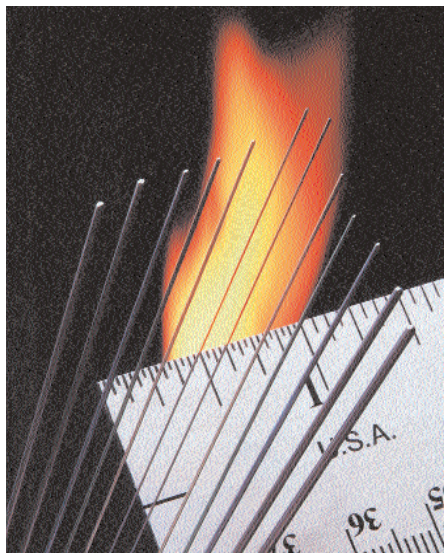
11 Bokum Road

Essex, CT 06426-1506

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## Forming Mandrels

Applied Plastics provides heat-resistant, polytetrafluoroethylene-coated stainless steel and nitinol forming mandrels for use in manufacturing small-diameter extruded tubing, formed rubber bladders, and simi-



lar products. The uniform, nonflaking coating used on its Natural Fluoropolymer Mandrels creates a nonsticking surface that can withstand continuous temperatures of 550° F and spikes to 700° F. Applied Plastics uses a proprietary grit-blasting process to prepare the wire before applying the release coating in a thickness ranging from 0.00127 to 0.02 mm on the stainless steel wire and 0.127 to 1.52 mm on the nitinol, with a final diameter tolerance of  $\pm 0.00254$  mm and a coefficient of friction of 0.05.

Applied Plastics Co., Inc.

25 Endicott Street/P.O. Box 128

Norwood, MA 02062

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## Optical Systems

Alpine Research has introduced a comprehensive line of long-life, 800-nm-centered optics for use with ultrafast laser beams and amplifiers. The products include mirrors, windows, spherical and cylindrical lenses, beam splitters, and output couplers. All of the optics are suitable for intracavity and beam-delivery applications, and users can choose between broadband performances for use with lower-power systems or ultrahigh damage resistance for high-power systems. Alpine's lower-power optics provide a wide spectral band ( $> 150$  nm) for use with tunable ultrafast sources or transform-limited pulses. The high-power optics are intended for use with regenerative and multipass amplifier systems.

Alpine Research Optics

3180 Sterling Circle

Boulder, CO 80301

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## Hydrogen Generators

Proton Energy's new HOGEN GC laboratory hydrogen generators provide a continuous supply of ultrapure carrier gas for



gas chromatography and fuel gas for flame-ionization detector analyzers. Compared with gas cylinders,

the units provide an inexpensive supply of hydrogen. The HOGEN 300 delivers 300 cc/min, and the HOGEN 600 provides 600 cc/min. Both units improve laboratory productivity by eliminating the time needed to order, receive, and leak-check and quality-check hydrogen cylinders. They fit easily on laboratory benchtops, and their internal self-diagnostics, high-visibility displays, and internal-external leak-detection and remote-alarm capabilities increase laboratory safety and productivity. The generator's caustic-free, maintenance-free proton exchange membrane delivers ultrahigh-purity hydrogen gas up to 200 psig.

Proton Energy Systems

10 Technology Drive

Wallingford, CT 06492

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Service Card

## Conformal Coating

HumiSeal now packages its 1B31 acrylic conformal coating for printed-circuit and printed-wire assemblies in aerosol cans. The fast-drying (10 min), single-component coating has a curing

time of 24 h at room temperature (30 min at 170° F) and reaches its optimal properties at 7 days. It also has excellent dielectric properties and provides moisture and environmental protection. The transparent final film has excellent flexibility and adhesion and is easy to repair, making it useful in many high-performance situations. Its continuous-use operating range is  $-85$  to  $+257$ ° F. The coating fluoresces under ultraviolet light for easy inspection, and it is MIL 1-46058C and IPC-CC-830 qualified. Available in various quantities from quarts to 55-gal drums.

HumiSeal Division, Chase Corp.

Woodside, NY 11377-0445

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## Exhaust Trap

MV Products' Maxi-Mist exhaust trap eliminates oil mist from large pumps used in processes such as casting, coating, chemicals, heat-treating, metallizing, metal injection molding, mold-making, and plastics. The high-capacity trap uses a parallel bank of five pleated microfiber-glass coalescing filter elements, which have a pore size of  $0.1 \mu\text{m}$  and an efficiency of 99.9999%. The stainless steel Maxi-Mist, designed for industrial vacuum pumps up to 300 cfm, enables users to recirculate the reclaimed oil back to the vacuum pump or dispose of it through a drain port. The 10-in.-diameter, 13.5-in.-high trap has a 50-mm NW flange on the pump side and a 1.5-in. NTP fitting at the exhaust. Filters typically need changing once a year.

### MV Products

247 Rangeway Road/P.O. Box 359

North Billerica, MA 01862

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## Sensor Coatings

Balluff's new SlagMaster coating technology increases sensor life in resistance welding and reduces high rates of sensor failure. The coating developed by the company can be applied to inductive proximity sensors without causing degradation, and it allows sensors to resist weld slag buildup, high heat, and mechanical



damage. Balluff calls its SlagMaster coating a major improvement over the Teflon-coated caps typically used today. The company will initially release the coating on its Weld Field Immune and Factor 1 sensors in flush- and nonflush-mount versions.

### Balluff, Inc.

8125 Holton Drive

Florence, KY 41042

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## Epoxy Resin

Master Bond's new two-component, highly flexible EP51FL epoxy-resin system provides high-performance bonding with a 1:1 mix ratio, by weight or volume. Its operating temperature, as



low as 4 K, makes it useful in cryogenic applications. Curing occurs rapidly at room temperature and can be accelerated by the use of heat, and it has a setup time of 30 to 40 min. The 100% reactive system emits no solvents or

volatiles during curing. EP51FL provides a strong bonding to many substrates, including metals, glass, ceramics, wood, numerous rubbers, and most plastics. The cured compound has a high peel strength of more than 25 pounds per linear inch and an elongation of more than 125%.

### Master Bond, Inc.

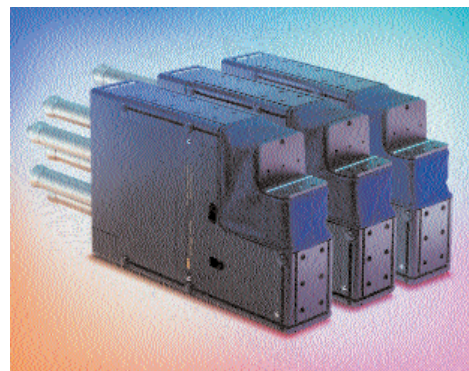
154 Hobart Street

Hackensack, NJ 07601-3922

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## Nanopositioners

Melles Griot has introduced APT, its new line of advanced positioning products. The fast, flexible nanopositioners provide seamless control electronics to simplify and automate operations, as well as open-architecture software with an easy-to-use, intuitive graphical user interface. The heart of the APT system is its 17 APT 600 six-axis stage—based on the company's new alignment linkage pin technology—which provides the resolution and the friction- and



stiction-free performance of flexures as well as the increased travel and compact construction of bearing rails. A family of benchtop controllers combines analog electronic designs and digital control systems with easy-to-use plug-and-play software that is independent of the application-programming platform.

### Melles Griot

St. Thomas Place

Ely, Cambridgeshire, CB7 3EX, U.K.

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## Programmable Digitizer

Gage Applied has released the ARMADA—North Island Digitizer for use in shore- and ship-based test systems that support the F/A-18 fighter aircraft. The new digitizer replaces the Tektronix 7612D model. Gage worked closely with engineering teams at the U.S. Navy's North Island facility (San Diego, CA) to ensure that the new digitizer meets all functionality and characteristics requirements. The unit consists of a Cleron 566-MHz processor, a PCI bus GPIB card, and one of Gage's high-speed digitizer cards capable of sampling at 200 megasamples/s. The ARMADA units are 100% hardware- and software-compatible, as well as mechanically compatible with the 7612D. Deployment of the new units requires only the use of a set of screwdrivers to replace the older digitizers.

### Gage Applied, Inc.

2000 32nd Avenue

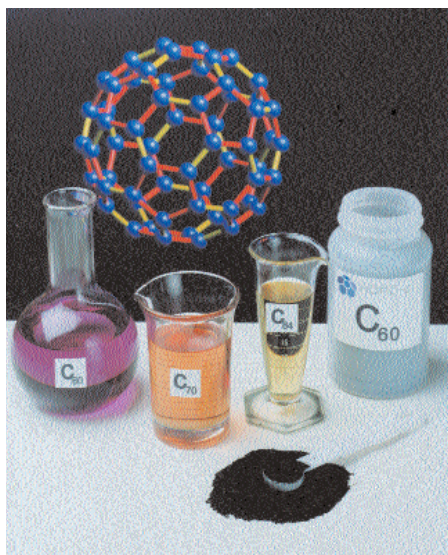
Lachine, PQ, H8T 3H7

Canada

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## Fullerenes

Nano-C has introduced a new line of commercial-grade, solvent-free  $C_{60}$ ,  $C_{70}$ , and  $C_{84}$  fullerenes. The all-carbon mole-



cules are manufactured with a proprietary combustion system that yields a >95% soluble powder. The distinct chemical, electronic, and optical properties of fullerenes enhance the performance of many products. They have applications in coatings and films; nonlinear optics; polymer photoelectronics (where they are used as electron acceptors in plastic solar cells and photodetectors); drugs and biomedical devices (such as stents, where their ability to scavenge free radicals and serve as drug delivery platforms is useful); and in antiaging creams as antioxidants.

Nano-C, LLC  
33 Southwest Park  
Westwood, MA 02090  
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## New Literature

### Temperature Calibration

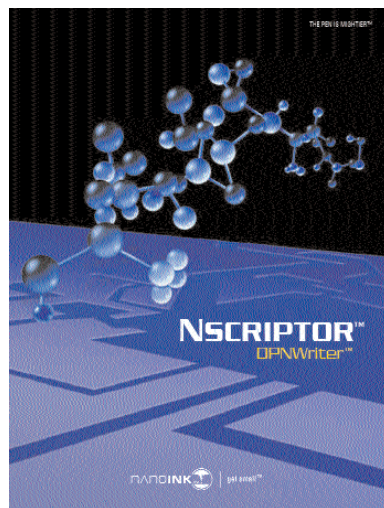
Hart Scientific has released its new catalog, which contains a wide range of temperature calibration products, including several new items. The catalog lists products in six major categories: primary standards, such as standard platinum-resistance thermometers (SPRTs) and fixed-point cells; precision thermometers, including plat-

inum-resistance thermistors, thermocouples, and readouts; fluid temperature baths; dry wells and other industrial temperature calibrators; software; and humidity standards. New products include temperature calibration software that can be integrated with Fluke's MET/TRACK software, a new SPRT, new metal fixed-point cells, fluid baths, a dry well that achieves 700 °C, and infrared blackbody calibrators.

Hart Scientific, Inc.  
799 East Utah Valley Drive  
American Fork, UT 84003-9775  
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### Dip Pen Nanolithography

Nanoink's four new application notes address the challenges of dip pen nanolithography (DPN). The two-page papers



explain the potential capabilities of DPN in building nanoscale patterns, layers, and structures using almost any small molecule, including organics, metals, salts, colloids, and proteins. DPN provides a low-cost,

direct-write method that uses a chemistry similar to that of microcontact printing to build structures from the bottom up. The notes cover four topics: direct deposition of DNA nanostructures, chemical patterning of templates for nanofabrication, convert-

ing images to nanostructures, and the alignment of multi-ink and multilayer nanostructure patterns.

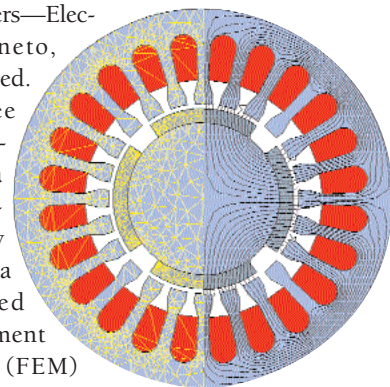
Nanoink, Inc.  
1335 Randolph Street  
Chicago, IL 60607  
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## New Software

### Electromagnetic Solvers

Integrated Engineering Software has released versions 6.1 of its two-dimensional, low-frequency electric and magnetic solvers—Electro, Magneto, and Oersted.

All three incorporate a new technology based on a hybridized finite-element method (FEM) and boundary-element method (BEM) called FEBEM, which provides superior power and performance compared with FEM- or BEM-only software. Users of the three packages can select the FEM, BEM, or FEBEM mode to solve almost any electromagnetic problem with confidence. The 6.1 versions also significantly reduce the need to build experimental prototypes, and they enable design engineers to improve product performance and reduce engineering time and cost.



Integrated Engineering Software  
220-1821 Wellington Avenue  
Winnipeg, R3H 0G4 Canada  
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**The New Products section is based on information supplied by the manufacturers. The Industrial Physicist can assume no responsibility for its accuracy. To facilitate inquiries, a Reader Service Card is attached between pages 28 and 29. Only a few new product press releases can be selected for each issue. High-quality color art is taken into account in the selection process, as well as newsworthiness and relevance to physicists in industry. Mail releases to New Products, The Industrial Physicist, One Physics Ellipse, College Park, MD 20740, or e-mail ccumming@aip.org.**