

New Products

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. PHYSICS TODAY can assume no responsibility for their accuracy. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

Lawrence G. Rubin

Focus on Materials

Scintillation Crystals

Saint-Gobain Crystals has developed two new scintillation crystals—lanthanum chloride and lanthanum boride. The advantage of LaCl_3 compared to the more standard sodium iodide crystals is improved energy resolution (by a factor of two at 662 keV) that enables detectors to better distinguish radiation energies. LaCl_3 crystals are also ten times faster than NaI, so acquisition times can be significantly reduced. The company has manufactured 1-inch diameter $\times$ 1-inch high LaCl_3 crystals and is planning to introduce larger crystals later this year. LaBr_3 crystals produce images faster than LaCl_3 and are also denser, which helps to detect the radiation with a minimum thickness of material. They are especially useful in some positron emission tomography (PET) applications. *Saint-Gobain Crystals and Detectors, 12345 Kinsman Road, Newbury, Ohio 44065, <http://www.detectors.saint-gobain.com>*
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Fiberoptic Coating

Flex-10 multimode fiber coating from OFS is made from a dual-layer, UV-curable, acrylate polymer. The coating minimizes the attenuation of fiber cables, particularly for tight buffer designs that can otherwise cause light loss due to microbending. Flex-10 also reduces field attenuation under normal and extreme conditions, including low-temperature environments. The new coating, whose superior mechanical properties make it easy to strip and install, will be used with all OFS multimode products—for example, the company's line of LaserWave fibers designed for 1- and 10-Gb/s systems and OFS laser-optimized 62.5- μm fibers. Flex-10 is compatible with all multimode cable used in data communications and telecommunications, including 50/125 fiber that is now preferred for high-speed network applications. *OFS, 50 Hall Road, Sturbridge, Massachusetts 01566, <http://www.ofsoptics.com>*
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Machinable Ceramic

Aremco Products has announced Aremcolox 502-1550, a low-expansion, zirconia phosphate machinable ceramic. The new ceramic is used for producing specialized brazing fixtures, induction liners, wafer chucks, and combustion nozzles for applications to 1550°C. The 502-1550 features a very low coefficient of thermal expansion—0.5 ppm/°F—much lower than those of alumina and zirconia



and is offered in both low (60–70%) and medium (70–80%) density compositions. Both forms exhibit high mechanical strength and electrical and thermal insulation. The zirconia phosphate ceramic is inert, will not outgas in UHV, and does not react with most molten metals, salts, and acids. Aremcolox 502-1550 is available in the form of rods from 0.5 to 2.5 inches o.d. and plates from 0.25 to 1 in. thick. *Aremco Products Inc, P.O. Box 517, 707-B Executive Boulevard, Valley Cottage, New York 10989, <http://www.aremco.com>*
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Polymer-Metal Laminate

Goodfellow has introduced a PEN (polyethylene naphthalate)/aluminum laminate that is superior to PEN/copper laminates for use in medical sensors. PEN is a polymer that is chemically similar to PET (polyethylene terephthalate) but provides better high-temperature resistance than the PET laminates in applications such as flexible circuits. For example, PEN/Al laminates are

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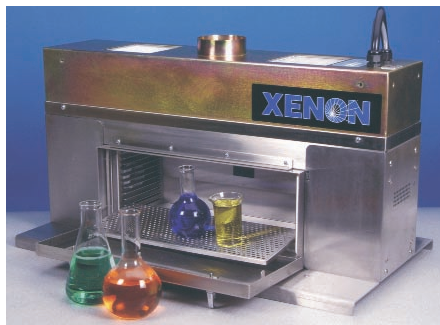
certified for long-term electrical use at 155°C, rather than the 105–130°C of PET/Al laminates. PEN also offers better UV resistance and barrier properties and is more resistant to hydrolysis in alkaline conditions. The polymer thickness of the PEN/Al laminate is 0.012 mm, the backing material is 0.018 mm of Al, and the overall thickness is 0.047 mm, including the polyurethane adhesive. Pieces as small as 100 mm × 100 mm are in stock. *Goodfellow Corp., 800 Lancaster Avenue, Berwyn, Pennsylvania 19312-1780, <http://www.goodfellow.com>*
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Gels for Refractive Index Matching

Dow Corning has added the OE-4000 and OE-4100 products to its Photonics Solutions optoelectronics line. OE-4000 is a two-part, high-purity, compliant, transparent gel for optical coupling applications. It is used for refractive index (n) matching for silica-to-fiber and other optical junctions in optical and fiberoptic components. The high thermo-optic coefficient of the company's OE-4100 one-part optical elastomer offers a high degree of refractive index shifting for planar silica-on-silicon optical components. Applications include offsetting the differential in thermo-optic coefficient of other materials and exploiting the high dn/dT of OE-4100 to provide refractive index change in specific device designs for signal shaping, switching, or blocking. *Dow Corning, 2200 West Salzburg Road, Midland, Michigan 48686, <http://www.dowcorning.com/photonic>*
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Pulsed UV Sterilization System

The SteriPulse-XL3000 from Xenon Corporation is a benchtop, pulsed UV light system that consists of a sterilization chamber, a slide-out shelf, lamp module, and a control unit. It is capable of rapidly killing viruses, bacteria, fungi, and protozoa. Only a few pulses



are sufficient to accomplish the eradication, and the system is said to provide a much higher rate of sterilization than standard continuous UV lamp exposure. The rapid, high-intensity light (up to a peak energy of 6 J/cm² per pulse) emitted by the SteriPulse-XL3000 lamp possesses sufficient quantum energy to break organic molecular bonds. The resulting molecular rearrangements and dissociation of a microbe's DNA cause cellular damage and thereby inhibit reproduction. *Xenon Corp., 20 Commerce Way, Woburn, Massachusetts 01801, <http://www.xenoncorp.com>*
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Particle Filtration System

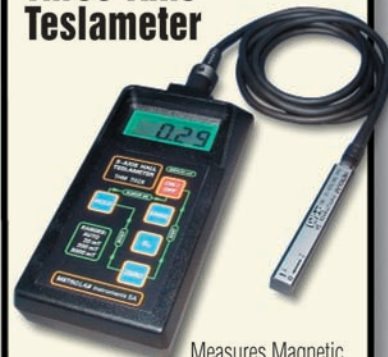
Dynaflow Inc has announced the DynaPerm system for enhanced filtration of particles from liquids. The system has applications in many process stream and effluent treatment roles, such as pretreatment, polishing, liquid reuse, materials recovery, and treatment for discharge. The new system is a cross-flow microfiltration concept that uses thick-walled microporous plastic tubes. The micrometer range pore size and structure can be controlled during manufacturing and the tubes, made from a variety of extrudable thermoplastics, are rugged and chemically and biologically inert. DynaPerm increases the efficiency and economy of particle removal of suspended solids and primarily toxic heavy metals from liquid by combining features of cyclone separation, flow interruption, and cross-flow filtration. *Dynaflow Inc, 10621-J Iron Bridge Road, Jessup, Maryland 20794-9381, <http://www.dynaflow-inc.com>*
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Dissolved-Oxygen Controller

Kernco Instruments Company has developed the 15D10 digital dissolved-oxygen and atmospheric-oxygen controller. The galvanic electrode measures up to 100 ppm dissolved oxygen in aqueous solutions and up to 100% concentration in atmospheric environments. It features a low flow rate sensitivity, that requires an 0.5 ft/s flow for accurate measurements. The sealed electrode is manufactured with a gold cathode and will not be poisoned by hydrogen sulfide, chlorine, or sulfur dioxide. However, because carbon dioxide will neutralize the electrode's electrolyte, the model 15D11 should be used where

Magnetic field

Three-Axis Teslameter



Measures Magnetic Field (B) and the three components B_x , B_y and B_z . Suitable for fringe field mapping and safety surveys. RS-232 interface.

Price: \$1990 ea. USA list.

www.gmw.com

GMW

955 Industrial Road, San Carlos, CA 94070

650-802-8292 sales@gmw.com

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Please send information on these selected items:

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255. ☐ 15D264 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	256. ☐ 15D265 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
257. ☐ 15D266 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	258. ☐ 15D267 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
259. ☐ 15D268 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	260. ☐ 15D269 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
261. ☐ 15D270 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	262. ☐ 15D271 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
263. ☐ 15D272 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	264. ☐ 15D273 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
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271. ☐ 15D280 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	272. ☐ 15D281 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
273. ☐ 15D282 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	274. ☐ 15D283 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
275. ☐ 15D284 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	276. ☐ 15D285 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
277. ☐ 15D286 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	278. ☐ 15D287 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
279. ☐ 15D288 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller	280. ☐ 15D289 Digital Dissolved-Oxygen and Atmospheric-Oxygen Controller
281. ☐ 15D290 Digital	

operation with CO₂ is required. The controller incorporates time proportioning and proportional control modes with two independent set points and several standard and optional control outputs. *Kernco Instruments Company Inc, 420 Kenazo Avenue, El Paso, Texas 79928-7339, <http://www.kerncoinstr.com>*
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Variable Pressure SEM

LEO Electron Microscopy Group, a subsidiary of Carl Zeiss SMT AG, has introduced the XVP (extended variable pressure) technology as a part of its new EVO family of scanning electron



microscopes (the 40, 50, and 60 series). XVP enables the imaging of hydrated, insulating, and outgassing specimens in a SEM by providing the capability to image in either water vapor or air at pressures from 1 Pa to 750 Pa. The EVO 50EP and 60EP models offer an extended pressure range up to 3000 Pa. Any LEO EVO microscope, if initially purchased as a high-vacuum instrument, can be upgraded to XVP operation—or to EP operation for the 50 and 60 series. In the XVP mode, a user can exploit the enhanced VPSE detector for true secondary electron imaging. *LEO Electron Microscopy Inc, One Zeiss Drive, Thornwood, New York*

10594, <http://www.leo-usa.com>

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Vertical Electron-Beam Evaporators

MBE-Komponenten GmbH now offers the EBVV63-4 and -5 UHV electron-beam evaporators for vertical mounting on a DN63CF flange. The EBVV63 is an ideal evaporator for any low- or very low-vapor-pressure material, including refractory metals or dopants such as boron or carbon. Due to its compact design, the EBVV63 can be installed instead of an ordinary effusion cell on any MBE system having DN63CF ports with an i.d. of 60 mm or greater. The new evaporator includes a complete electromagnetic x- and y-dynamic beam deflection system and can deliver beam powers up to 3 kW at 6 kV. Crucible capacities are 4 cm³ for the EBVV63-4 model and 5 cm³ for the -5. The EBVV63-5 is recommended for silicon germanium MBE because its hearth capacity and geometry have been optimized for that application. *Dr. Eberl MBE-Komponenten GmbH, Gutenbergstrasse 8, D-71263 Weil der Stadt, Germany, <http://www.mbe-komponenten.de>*

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On the Web

Boston Bioproducts has launched a Web site, Reagents-and-Buffers, to provide information on its product line of ready-to-use reagents for protein analysis, molecular biology, immunology, histology, bacterial media, and agar plates, and custom reagents and buffers for research needs. *Boston Bioproducts Inc, 9 Short Street, Worcester, Massachusetts 01604, <http://www.reagents-and-buffers.com>*

Circle number 191 on Reader Service Card

New Literature

Alfa Aesar has published a new 300-page *High Purity Metals and Materials Catalog* that highlights the company's range of metals and alloys from aluminum to zirconium, with purities up to 99.9999%. Products are offered in a wide variety of physical forms. *Alfa Aesar, a Johnson Matthey Company, 26 Parkridge Road, Ward Hill, Massachusetts 01835, <http://www.alfa.com>*

Circle number 192 on Reader Service Card

A new, 80-page catalog from Scott Semiconductor Gases illustrates a diverse line of high-purity specialty gases, gas mixtures, and gas-handling equipment required for etching, ion implantation, and other semiconductor manufacturing processes. *Scott Semiconductor Gases, 5121 Brandin Court, Fremont, California 94538, <http://www.scottsemicon.com>*

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Linear Actuator

New Scale Technologies has introduced the Squiggle motor, a pen-sized actuator that uses a piezoelectric ceramic tube, electrically driven at an ultrasonic frequency. The tube supports two threaded nuts that hold a threaded shaft. The nuts orbit and the shaft rotates and translates in and out. Squiggle motors move both very slow and very fast. Smooth motion is achieved at microscopic speeds and also at several millimeters per second. Miniature motion control is useful because miniature systems move faster, resist vibrations, and have lower thermal distortion. Squiggle motors can be exploited for nanotechnology tools in microelectronics testing, optical alignments, and biological research. *New Scale Technologies Inc, 10 East Main Street, Suite 301, Victor, New York 14564, <http://www.newscaletech.com>* ■

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