

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 LABORATORY EQUIPMENT

Abbe Refractometer

Kernco Instruments has introduced the model 2WA Abbe refractometer. The lightweight, compact instrument measures a refractive index from 1.3000 to 1.7000 with an accuracy of ± 0.0002 R.I. and a readability of 0.001. It also can measure Brix (sugar) content in aqueous solutions from 0 to 95% with an accuracy of $\pm 0.1\%$ and a readability of 0.25%. For greater accuracy, a thermometer mounted in a metal shield is attached to the instrument and covers a temperature range of 0–50°C. The 2WA requires no separate light source (and hence no light source transformer); it uses natural light, because light can be transmitted through the sample or reflected on it through a mirror reflector. The instrument includes a glass test piece and contact solution. A calibration liquid is available as an option. *Kernco Instruments Co Inc, 420 Kenazo Avenue, El Paso, Texas 79928-7339, <http://www.kerncoinstr.com>*

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Digital Flow Instruments

Teledyne Hastings Instruments has announced digital versions of its high-capacity flow instruments. The new digital models allow measurements and/or control up to 2500 standard liters/minute. The new line complements the company's existing lower-flow Digital Metaline models, so that the two series provide flow meters and controllers from 0.005 to 2500 sl/m, with an accuracy of better than $\pm 0.5\%$ of reading. Multiple gas calibrations and stored gas conversion factors distinguish the digital from the analog versions. The digital units are available with an RS232 or RS485 interface. The instruments offer self-diagnostics, including warnings and alarms for flow, sensor, and valve status. *Teledyne Hastings Instruments, P.O. Box 1436, Hampton, Virginia 23661, <http://www.hastings-inst.com>*

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Micro Rheology Compounder

The Thermo Haake MiniLab Micro Rheology Compounder from Thermo Material Characterization combines compounding and rheological measurement of micro amounts (as little as 8 g) of material. Based on conical twin-screw technology and a new rheological measurement method, the MiniLab offers the advantages of both a mixer and an extruder in a batch process. The instrument includes features such as continuous viscosity measurements in the back-flow channel at up to 350°C, automatic bypass operation for circulation and extrusion, inert gas flush of the feeding area and barrel, and pneumatic feeding. Available with conical co- and counter-rotating screws, the



Minilab's 400-W motor provides a maximum torque of 5 Nm per screw, a speed range of up to 360 rpm, and a maximum pressure up to 200 bar. *Thermo Material Characterization, 5225 Verona Road, Madison, Wisconsin 53711, <http://www.thermo.com/haake>*

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Nuclear Radiation Meter

Berkeley Nucleonics Corporation is offering the palmRAD 904 for precision radiation detection, surveillance, and measurement. The instrument is a general purpose Geiger-Mueller

monitor that detects and measures alpha, beta, gamma, and x-ray forms of radiation. The palmRAD 904 provides multiple monitoring and surveying options in a handheld device and is outfitted with a mica end-window sensor. It enables users to toggle between millirads per hour, counts per minute, and accumulated counts, and has a digital display, LED, audio alarm, and audio chirp features. The palmRAD 904 is designed for emergency response, domestic preparedness, hazardous material safety, law enforcement, and compliance verification applications. It also allows users to protect themselves from radiation leaks and contamination. *Berkeley Nucleonics Corp, 3060 Kerner Boulevard, #2, San Rafael, California 94901, <http://www.berkeleynucleonics.com>*

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Rheometer

Bohlin Instruments has introduced the Gemini rheometer system incorporating the company's new Rotonetic drive that enables testing in all conventional strain- and stress-controlled modes including stress relaxation, creep, and viscometric modes. Oscillation testing is available in either direct-strain or stress-controlled modes. Direct-strain operation of oscillation allows preset strain amplitudes to be imposed on the test sample without iterative adjustment of the stress on a cycle-by-cycle basis. A new feature, partial wave sampling, also enables rheological data to be gathered using just part of a full oscillation cycle. The Gemini system is available with the company's EasySwap temperature controllers to allow testing on a full range of materials including polymer melts, composites, fluids, and semisolids. *Bohlin Instruments, 11 Harts Lane, Suite I, East Brunswick, New Jersey 08816, <http://www.bohlinusa.com>*

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Lake Shore Magnetics



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614-891-2244
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marketing@lakeshore.com

Film Densitometer

Nuclear Associates is offering its model 07-444 (The Little Genius) scanning densitometer, which allows both scanning and single-point measurements with the same optics. It automatically measures, calculates,



and displays average gradient, contrast index, relative speed, speed index, base plus fog, and maximum optical density. The instrument supplies information in a matter of seconds, along with control charts and density vs. energy curves without the use of a computer; it also provides easy calibration. The model 07-444 helps the user quickly find and correct any processing problems as it shows which parameter is out of tolerance. Its ability to track, measure, and store for 31 days, daily film strips of up to 20 different x-ray film processors is important for facilities with multiple processors. *Nuclear Associates, 120 Andrews Road, Hicksville, New York 11801, http://www.nucl.com/nuclear_associates/index.html*

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Particle Sizing System

Wyatt Technology has announced the Eclipse system for separating submicrometer macromolecules and colloidal particle suspensions in solution. For polymers and particles, the Eclipse uses a field-flow fractionation separation technique that is analogous to liquid chromatography, but has the advantage of being able to separate both soluble and colloidal components over a wide size range (from a few nanometers to a few micrometers). The instrument can separate and size proteins and their aggregates, liposomes, viral particles, polymer latex particles, humic and fulvic acids, and many other samples. The Eclipse interfaces with the company's DAWN multiangle light-scattering instruments and software and concentration detectors. *Wyatt Technology Corp, 30 South La Paterra Lane, B-7, Santa Barbara, California 93117-3253, <http://www.wyatt.com>*

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Goniometer with Nanometer Accuracy

Advanced Design Consulting has developed the model GO-100 goniometer for applications in which nanometer accuracy is required. Goniometers position crystals or other elements that must be aligned with very high precision and scanned over tiny angular ranges ($\pm 8^\circ$ total for the GO-100). The ADC goniometer achieves accurate resolution (70 nanoradians), repeatability (0.7 nanoradians), orthogonality of motion, and stability, all over a wide range of load capacities. The device is a highly rigid, inverted joystick mounted on three spherical bearings; a motor puts it into precise motion. The GO-100 can be combined with other positioners, such as translation and rotation stages to extend its use to large adjustment ranges. *Advanced Design Consulting Inc, 126 Ridge Road, P.O. Box 187, Lansing, New York 14882, <http://www.adc9001.com>*

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Research Microscope

The Motic Digital/Analog Research microscope with infinity optics from Scientifics is an all-in-one image capturing and analyzing system that features infinity-plan oil-immersion, achromatic objectives 4, 10, 40, and 100 times magnification. It is equipped with a digital camera that transmits microscopic images at ultrahigh speeds through a firewire cable system to a firewire-equipped PC and incorporates a CMOS sensor with 1.3 megapixels (1280×1024 pixels) resolution. Microscope features include a reversible quintuple nosepiece, a slide-in centerable 1.25-N.A. Abbe condenser with an iris diaphragm, and a mechanical stage with 140×135 mm surface area. The company's Motic software enables the capture and saving of images, the viewing of 3D models of 2D images, and the transmission of real-time images across the Internet. *Scientifics, 60 Pearce Avenue, Tona-wanda, New York 14150-6711, <http://www.scientificsonline.com>*

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Mechanical Analyzer

Mettler Toledo has announced the DMA/SDT861 benchtop dynamic mechanical analyzer, a new member of the company's Star family. Instruments of this type are used to measure the elastic and damping properties of a sample as a function of time, temperature, and frequency. These measurements allow characterization of materials and model-based predictions about materials behavior. The DMA/SDTA861 features a maximum force of 40 N, the accommodation of sample sizes up to 100 mm, and the use of an extended frequency range of up to 1000 Hz. It measures absolute sample deformations, applied forces, and sample temperatures. A variety of clamping systems enables the handling of samples ranging from oily liquids or melts to stiff carbon fiber composites and ceramic components. *Mettler Toledo Inc, 1900 Polaris Parkway, Columbus, Ohio 43240, <http://www.mt.com>*

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New Literature

Terra Universal's minicatalogs feature product updates on glove boxes and vacuum chambers (vol. 3), clean room storage and transport (vol. 4), benches and clean room furnishings (vol. 5), hoods and wet stations (vol. 8), and modular clean rooms and change room products (vol. 10). *Terra Universal Inc, 700 North Harbor Boulevard, Anaheim, California 92805, <http://www.terrauniversal.com>*

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A new product guide from Kanthal covers electrical heating elements, element materials, and a complete listing of thermocouple alloys. Globar silicon carbide and the company's Super molybdenum disilicide heating elements are included. *Kanthal Palm Coast, 1 Commerce Boulevard, Palm Coast, Florida 32164, <http://www.kanthalpalmcoast.com>*

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A 68-page catalog from The Grieve Corporation describes laboratory, bench, cabinet, truck, walk-in and conveyor ovens, clean room and pharmaceutical ovens, environmental test chambers, furnaces to 2700°F, and custom-designed systems. *The Grieve Corp, 500 Hart Road, Round Lake, Illinois 60073-2898, <http://www.grievecorp.com>*

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- "10...Most convincing arguments about performance. Lowest price too" *University of Virginia*
- "10...Price, quality, features" *University of Maryland*
- "10...We have two others" *University of California*
- "10...Reputation, other tables in department" *Massachusetts General Hospital*
- "10...Price, performance, design of tiebar & casters" *Denison University*
- "10...Reputation" *University of Texas*



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