

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers, and in some cases by independent sources. 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.

Stable Capacitance Manometer Pressure Sensors

The new CMH Series capacitance manometer from Vacuum General is a pressure sensor well suited to low-pressure applications such as sputtering, ion milling and ion gauge calibration. For greater zero stability this transducer is maintained at a controlled temperature of 32° C. The instrument provides rf immunity and corrosion-resistant inconel construction. An accuracy of 0.12% is claimed. The full-scale reading is 1 Torr. For processes where condensation within the sensor is a problem, Vacuum General offers the model CMHT. It is controlled at 70° C and provides an accuracy of 0.8%, with 10 Torr full scale. *Vacuum General, 9577 Chesapeake Drive, San Diego, California 92123*

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Mass Spectrometer and Residual Gas Analyzer

Vacuum Technology has introduced the new AERO VAC 1000-magnetic-sector mass spectrometer and residual gas analyzer. The instrument is a computer-controlled mass spectrometer with a fast, menu-driven user interface that utilizes MS-DOS personal computers with monochrome, CGA or EGA color graphics. It is equipped with software for analog scans, histograms, tables and time-base data displays.

The instrument's magnetic-sector sensor has dual filaments, a separate degassing grid, overpressure protection and a soft-start mode to extend filament life. Its prefocused ion source is designed with field-penetration ion optics and shielded filaments to reduce degradation by harsh contaminants. Several models are avail-



able with mass ranges up to 500 daltons and Faraday cup or electron multiplier collectors. *Vacuum Technology, 133 Valley Court, Oak Ridge, Tennessee 37830*

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Rotating Anode for X-ray Diffraction

Nicolet has introduced a new high-power rotating-anode x-ray source of dual-port design, which provides 18 kW of continuous power for high-flux diffraction experiments. Standard operation gives the user dual-port capability with either two-vertical-line or two-spot focusing diffractometers. The system can also be configured for high-brilliance operation with a cathode assembly 0.1 × 1 mm in size.

The rotating anode has a microprocessor controller to monitor system status and regulate operation of the generator. The system is compatible with Nicolet horizontal 2-, 3- and 4-circle goniometers, and it accommodates Nicolet's tuneable x-ray mirrors for use in microdiffraction experiments. For experiments on rapidly decaying crystals, the rotating anode can be used with a Nicolet area detector, providing what Nicolet describes as "the fastest commercially available factory-integrated system for collecting x-ray diffraction data." Horizontal goniometers equipped with position-sensitive detectors can also be employed for high-speed poly-

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crystalline data collection. *Nicolet Analytical Instruments, 5225-1 Verona Road, P.O. Box 4508, Madison Wisconsin 53711.*

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Cooling for Germanium Gamma-ray Detectors

EG&G Ortec's Electricool system for cooling germanium gamma-ray detectors has been enhanced by several new features. It is now compatible with the company's Poptop transplantable detector capsules. Thus any detector capsule can be attached to the Electricool unit for rapid cooling without the use of liquid nitrogen.

The detector element, which formerly could be placed only in horizontal and vertical orientations, can now be used in a wide variety of configurations. The system now also has a temperature controller, which maintains the detector element at constant temperature to optimize energy resolution. The energy resolution and peak-to-Compton ratio for all photon detectors cooled by Electricool is claimed to be within 15% of what one gets with liquid nitrogen cooling for energies up to 600 keV, and within 10% at higher photon energies.

Applications include stack monitoring at nuclear power plants, primary coolant loop monitoring, isotope fabrication and reprocessing, and nuclear waste storage. *EG&G Ortec, 100 Midland Road, Oak Ridge, Tennessee 37831.*

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Langmuir-Blodgett Monomolecular Film Deposition

Connecticut Technology Consultants is offering new Nima modular Langmuir-Blodgett monomolecular layer deposition instruments from Nima Technology Ltd of Coventry, England. Modules include the basic trough, the single dipper mechanism, the alternate-layer dipper mechanism and the compact LVDT Wilhelmy-plate film pressure sensor. By combining modules appropriately, one can configure systems for monolayer analysis, for conventional Langmuir-Blodgett deposition or for alternate layer deposition.

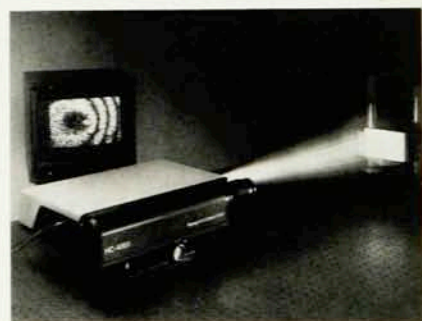
Each system is controlled by a PC using Nima software written in Turbo Pascal 4, with source code included. Film properties and deposition pa-

rameters are displayed in real time on the monitor in both analog and digital forms. Film pressure sensors can be relocated to measure film pressure at selected points adjacent to the barriers, perimeter or center of the trough. Trough tops are fabricated with Teflon and stainless steel components. The systems are described as easy to clean and operate. The alternate-layer system offers computer-controlled deposition sequencing without cross-contamination between films. The trough surface is attached to a rigid aluminum plate with channels for temperature-controlled circulation on top of an anti-vibration mount. *Connecticut Technology Consultants, P. O. Box 524, Stratford, Connecticut 06497*

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Nondestructive Testing by Holography

Newport's new HC-4000 holographic system makes use of electronic speckle pattern interferometry to provide instantaneous holographic data for nondestructive testing and evaluation. The system measures deformations to half the wavelength of the



light. The system includes a powerful laser diode source, and a CCD camera instead of film. Holograms are recorded 30 times a second. Path matching is not required. The system is completely electronic and self-contained. Testing is completed in real time. *Newport, P. O. Box 8020, Fountain Valley, California 92728-8020*

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High-Temperature Superconducting Paint

ZYP Coatings is offering a paintable coating of the ceramic superconductor $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$. The coating is produced with a nonaqueous, non-contaminating medium, yielding a water-resistant coating of "1-2-3" superconductive ceramic when it dries.

Applications include fired-on superconductive circuits in printed circuit boards. The coating can be applied by brush, dip or spray to suitable substances, such as substances, such as high-purity alumina, magnesia or zirconia, and then sintered onto the substrate.

ZYP Coatings is also offering the nonaqueous suspension agent and binder liquid with which the user can create his own paintable coating or paste from superconductive powder. The suspension and binder medium enhances the shelf life of ceramic superconductors by preventing reactions with water and carbon dioxide. ZYP Coatings, P. O. Box 208, Oak Ridge, Tennessee 37831

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Computer-card Lock-in Amplifier

Ithaco has introduced a new PC card, lock-in amplifier. It is a two-phase instrument providing sine-wave response, operating over the frequency range from 10 Hz to 10 kHz. It accepts current and voltage inputs; full scale sensitivity is 10 μ volts or 100 picoamps. It provides x, y, amplitude, phase, ratio, and noise outputs with 16-bit resolution.

Input sources are connected to a small, remote signal-input module that can be located 50 feet or more from the computer itself. This lets the user place the programmable gain current or voltage input module at the detector, avoiding the common problems created by using long cables between a detector and the lock-in input. Four independent channels can be operated from a single PC-, XT- or AT-compatible computer. Each channel can take 100 readings per second. All channels can sample simultaneously. Ithaco, 735 W. Clinton Street, P. O. Box 6437, Ithaca, New York 14851-6437

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Gigasample-per-Second Waveform Digitizer

The new Model 6880B/6010 waveform digitizing system from LeCroy "offers unprecedented accuracy and resolution for recording high-speed waveforms," we are told. It combines 11-bit, single-shot resolution with 1.35 gigasample-per-second digitizing rate, 500 MHz bandwidth and 10 000 point memory. The digitizing system offers better than 14-bit resolution for repetitive waveforms. These performance levels are well suited to pulsed laser

experiments, electromagnetic pulse tests, lightning tests and similar high-speed research requirements.

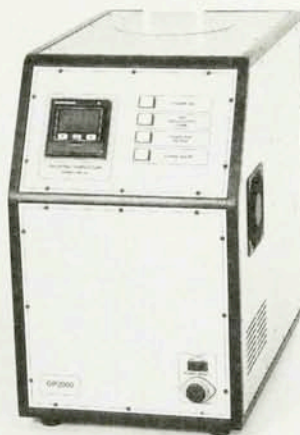
The new digitizer system records transient waveforms with up to 9.6 effective bits of accuracy. The minimum system consists of one 6880B single-shot digitizing front-end module and one 6010 controller/IEEE-488 (GPIB) interface module installed in a CAMAC instrument mainframe. The system can be controlled manually or via RS-232C. Thus, either a host computer or a video monitor completes the system. LeCroy, 700 Chestnut Ridge Road, Chestnut Ridge, New York 10977-6499

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Gas Purifier for Excimer Lasers

Oxford Lasers offers its new GP2000-M gas purifier for excimer laser gas mixtures. The unit is a development of the five-year-old model GP2000. The GP2000-M introduces a gas-handling system controlled by electrically operated valves for greater convenience. The new unit is compatible with the largest excimer lasers.

The GP2000-M is claimed to overcome the problem of short excimer gas lifetimes and enhance the long-

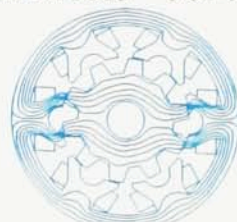


term performance of any excimer laser by cryogenically trapping impurities in the laser gases. The ArF gas fill lifetime, we are told, is typically extended by a factor of ten. This cleansing also improves pulse-to-pulse reproducibility, beam uniformity and window cleanliness. Not only does one save money by reducing the consumption of rare gases; one also has the convenience of less frequent liquid nitrogen fills—typically one per working day. Oxford Lasers, 60/62 Magdalen Road, Oxford OX4 1RD, England

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