

new products

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.

Thin-film polarizers for high-energy laser light

Melles Griot has introduced two new high-energy laser polarizers. Both are covered by a laser radiation damage warranty up to their stated damage thresholds. These thin-film plate polarizers use reflection sensitivity differences at Brewster's angle to separate the s and p polarizations.

50-mm-diameter polarizers are available for ruby (694 nm) and YAG(1064 nm) lasers. Stated damage thresholds are 1.5 GW/cm² in 30-nsec pulses and 4 joules/cm² in 1-nsec pulses. Polarization efficiency is 99% minimum in reflection, 95% minimum in transmission for both. The price for either is \$380. Melles Griot, 1770 Kettering Street, Irvine, California 92714

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Three compact dye laser modules

Laser Science has introduced three compact dye-laser modules in its VSL series, the DCM-1, DCM-2 and DCM-3. Only 4.5×3×2.5 inches in size, the VSL-DCM modules are designed to be pumped by pulsed ultraviolet or visible lasers (nitrogen, excimer or frequency-doubled YAG) for outputs in the visible.

The DCM-1 is tunable by means of a grating, with a direct wavelength readout. Its wavelength coverage is from

360 to 950 nm, using the firm's VSL-337 nitrogen laser as the pump source. Typical conversion efficiency is 15% in the green, with an output bandwidth of 3 Å. The DCM-2 is a grating-incidence, grating-tunable dye laser with an output bandwidth of less than 0.1 Å in the visible. The DCM-3 is nontunable and designed for applications where a broad-band (3 to 10 nm) output near the dye's peak gain is needed. All three VSL-DCM modules use standard 1-cm spectrophotometer cuvettes; dyes can rapidly be interchanged to cover the entire visible spectrum. Prices range from under \$1000 to under \$2000. Laser Science, 80 Prospect Street, Cambridge, Massachusetts 02139

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Continuous dynode electron multipliers

Detector Technology has introduced a line of continuous dynode electron multipliers, sometimes referred to as channel electron multipliers, for use in mass spectrometers, surface studies (SAM, SIMS, ESCA and AES), space physics and other physics applications. This family of detectors has been developed for high performance and reliability in applications ranging from low-gain analog amplification to high-gain pulse-counting requirements.

Lead-glass multipliers of this kind are widely used to detect and amplify positive and negative ions, positive and negative electrons, vacuum uv and soft x rays. Signal-to-noise ratios are maximized with dark counts typically less than 0.2 counts/sec. Operating in vacuum at gains of 10³-10⁵ for analog work, typical for mass spectrometers, or up to the 10⁸ range for pulse-counting applications such as single-event counting in nuclear physics, these detectors are suited to a wide range of uses.

DeTech detectors provide air stability. They have been extensively tested,

Announcing Physics Today's Buyer's Guide

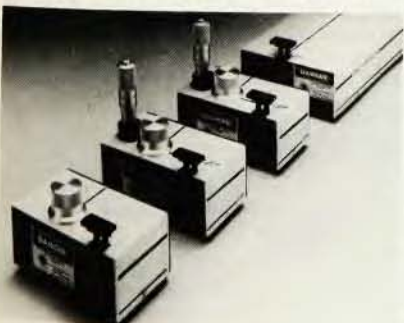
...A directory of equipment for physics research, offering easy access to over 2,000 "physics" products, many of which have not appeared elsewhere.

Designed and edited for physicists, and counseled by a select Advisory Committee, the Guide will draw from the many thousands of items available from North American and European sources.

The first edition will be an integral part of the August '84 issue of Physics Today.

For information on listings (product and company), write to Ms. Elaine Cacciarelli, % American Institute of Physics, 335 East 45th Street, New York, N. Y. 10017.

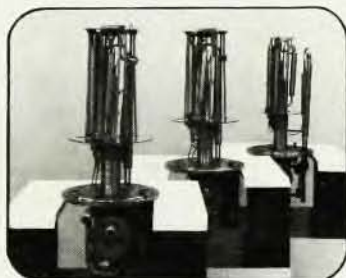
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new products

we are told, to maximize longevity and minimize dark currents. They have been designed to manufacturers' specifications for directly fitting into many mass spectrometers and surface analysis systems. They are priced from \$550 for a standard electron multiplier with no cone input. *Detector Technology, Inc., PO Box K-300, Brookfield, Massachusetts 01506*

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Spectroscopy amplifier offers triangular or gaussian shaping

The Tennelec model TC 243 is claimed to be the first commercially available spectroscopy amplifier that gives the user the choice of either triangular or gaussian shaping in a single-width NIM module. Triangular shaping is said to give intrinsically better signal-to-noise ratios and superior high-count-rate performance. The TC 243 is particularly intended for high-resolution germanium and silicon charged-particle detectors, scintillation detectors, proportional counters and pulsed ion chambers.

The amplifier incorporates eight-active-filter networks (six complex, two real) to generate triangular or near-gaussian shaped unipolar pulses with selectable peaking times of 1, 2, 4, 8, 16 and 24 microsec. One selects the shaping mode by means of a slide switch accessible through the side panel. A gated baseline restorer with automatic restoration rate provides good performance at high count rates, we are told, without sacrificing resolution at low count rates, while the automatic threshold adjusts as a function of input noise. The unipolar decay level is maintained at 0 ± 5 mV, while the bipolar dc level is 0 ± 10 mV. A symmetrical-asymmetrical baseline switch is provided to enhance resolution and count-rate performance. The dc stability of the TC 243 is said to eliminate spectrum boardening. Improved overload-recovery and spectrum-shift features promise consistent performance over a wide dynamic input range. The gain range is continuously variable from $\times 2.5$ to $\times 3000$. *Tennelec, PO Box 2560, 601 Turnpike, Oak Ridge, Tennessee 37830*

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High-resolution multislit vacuum monochromator

Acton has designed a new high-performance vacuum monochromator—the model VM-521-SG. The instrument is a high-resolution, 1.0-meter, normal-incidence vacuum monochromator with a useful wavelength scanning range from less than 30 nm up to the infrared with standard gratings.

The VM-521-SG has a patented multiple-slit arrangement that permits standard 15° operation, or operation with 180° between entrance and exit



ports by means of an internal beam-diverting mirror controlled from outside the instrument. Another feature that is said to optimize performance is a dual indexable grating holder that enables either of two gratings to be moved into position while the instrument is under vacuum operating conditions. The monochromator is of stainless-steel construction, with an externally located grating drive screw for maximum vacuum system cleanliness and external focus adjustments. Aluminum, magnesium fluoride and osmium coatings are supplied by Acton's in-house coating facilities. *Acton Research Corporation, PO Box 215, Acton, Massachusetts 01720*

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Array processing minicomputer for APL

Analogic's new APL computer is described as "the first stand-alone, general-purpose computer using array architecture." The APL machine runs the powerful APL programming language at speeds comparable to large mainframe computers at about one-tenth their cost. Its design is said to combine the high computing speed of an array processor with the input/output and display flexibility of the IBM PC, creating a cost-effective workstation for solving complex problems in such fields as robotics and artificial intelligence.

The APL language offers an efficient method of programming complex tasks, we are told. To support this surface

simplicity, however, APL requires an extensive and complicated internal structure. While this substructure is transparent to the user, it places heavy demands on the computer—demands that would overtax the capabilities of a conventional minicomputer. Although conventional minicomputers can run APL, execution has been too slow to apply the power of APL to the large-scale problems it was designed to solve.

The APL machine achieves high-speed execution of APL language in a minicomputer-size package by matching the computer architecture to APL's internal architecture. At the heart of the machine, an AP500 array processor provides the computing speed and power necessary to make APL practical. A typical installation would also include an 84-megabyte hard disk, a dual-mode tape drive, an I/O processor supporting up to 16 terminals, and IBM personal computers as programmers' workstations. Such a configuration, costing from \$80 000 to \$100 000, offers performance comparable to million-dollar mainframes, we are told. To increase the utility of the APL machine even further, Analog has also developed the InSight operating environment for the PC workstations. The operator, using this sophisticated software package, can display up to ten concurrently running tasks, each in overlapping and sliding windows. *Analog, Audubon Rd., Wakefield, Massachusetts 01880*
Circle number 145 on Reader Service Card

Multi-tasking array processor for VAX computers

CSPI has introduced the Mini-MAP Plus4, a multi-user multi-tasking array processor system for use with VAX-11/780, 750 and 730 computers. The Mini-MAP Plus4 system consists of up to four 32-bit, floating-point array processors interfaced to one VAX. Each array processor can be accessed by a separate user with different task requirements. The VAX computer can accommodate up to four separate, computationally intensive tasks simultaneously, each with 7 megaflops of processing speed.

The basic configuration includes four Mini-MAP array processors, each with 64 kilobytes of on-board data memory, packaged in a single 10.5-inch chassis



suitable for mounting in a DEC cabinet. Larger configurations including up to 16 megabytes per Mini-MAP are also available. The system provides extensive software development tools comprising a scientific sub-routine library of over 225 algorithms, an assembler for writing new routines, the MAP control language, a linker and a debugger. The basic system, consisting of four array processors, a 10½" chassis with power supply and Unibus interface cabling, is priced at \$78 700. *CSPI, 40 Linnell Circle, Billerica, Massachusetts 01821*

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'Intelligent' radiometer with no controls

EG&G Gamma Scientific tells us it has developed the first radiometer with no controls—the model GS 4100 Intelligent Radiometer, with its own microprocessor. This is said to be a new concept in instrumentation for optical radiation measurements. It has no adjustments, no dark current, no zero and high voltage controls, no range switches, no displays, no indicators, no calibration controls and no shutter or time-constant selection switches. It is simply a black box with an on/off control.

The GS 4100 can be controlled by any host computer via a two-way RS-232 interface at rates up to 9600 baud. Desktop computers as small as the HP 85 can operate the GS 4100. It is designed to work with any of EG&G Gamma Scientific's detector assemblies, both photomultiplier and silicon.

Included in the GS 4100 is complete logic and control circuitry for spectral and spatial scanning applications. It will operate any of EG&G Gamma Scientific's NM series of digital holographic monochromators or the firm's new GS 2110 digital scanning telemicroscope. *EG&G Gamma Scientific, 3777 Ruffin Road, San Diego, California 92123*

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New literature

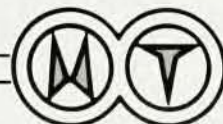
Computer protection—A new 40-page catalog (No. 831) from Electronic Specialists presents a variety of products designed to eliminate computer problems often wrongly blamed on software. Such protection devices include equipment isolators, ac power-line filter suppressors, ac line-voltage regulators and modem protectors. Descriptive material outlines particular software problems and suggested solutions. *Electronic Specialists, 171 South Main Street, Natick, Massachusetts 01760*

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