

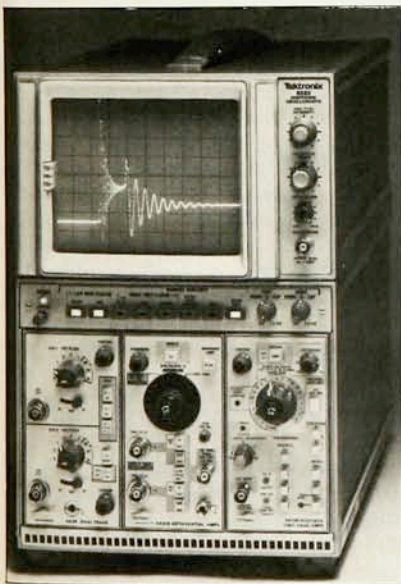
# new products

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.

## Digitizing oscilloscope

The Tektronix model 5223 is a digitizing oscilloscope compatible with a general-purpose interface bus. It offers plug-in flexibility and digital storage. Sampling at rates up to  $10^6$  per second, the oscilloscope can digitize, store and display repetitive signals at frequencies up to 10 MHz, and single-shot events up to 100 kHz. It has a 10-bit vertical resolution and a full kilobyte of memory per vertical compartment, along with a new 5B25N plug-in base. The instrument provides pretrigger viewing, bislope triggering, a waveform roll mode, memory and display expansion, and fast x-y measurement capability.

The pretrigger feature permits one to examine information occurring before the trigger point at sweep speeds up to



100 microsec/division. The bislope triggering, which lets the user select a trigger voltage window, serves to eliminate missed trigger events; single-shot data are easily captured. Bislope trig-

gering is particularly useful where signals of interest occur sporadically. Because of the instrument's GPIB compatibility, acquired signals can be sent to other instruments for processing or data reduction. The 5223 can be interface with a variety of recorders or with an intelligent terminal. It can receive recorded waveforms for comparison and reference. The price is \$4995. Tektronix, PO Box 500, Beaverton, Oregon 97077

## Detector amplifiers

EG&G Ortec's model 575 is a general-purpose NIM amplifier. With selectable time constants from 0.5 to 3 microseconds, it can be used with almost any nuclear detector. Its automatic, gated baseline restorer (unusual, we are told, at the 575's low price) stabilizes amplifier output in applications with high counting rates, such as alpha, beta and gamma spectroscopy.

The model H242 is a small, fast preamplifier, intended for use with silicon surface-barrier detectors. Its 1-nanosecond rise time is said to be five times faster than that of conventional preamps. Despite its unusually small size (1 by 2 inches), the H242 is claimed to have good energy resolution, and noise characteristics as low as any of its rivals. EG&G Ortec, 100 Midland Road, Oak Ridge, Tennessee 37830

## Light guides

The Maxlight T series fiber-bundle light guides are intended for applications that require high optical transmission in the middle ultraviolet. From 350 to 1000 nanometers, total light transmission at 10 meters is typically

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- ▶ Thermostatting option
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## Typical Applications

- ▶ Raman and other frequency-shifted scattering
- ▶ Exacting radiometry
- ▶ High-resolution luminescence
- ▶ Inductively coupled plasma analysis



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## new products

60%, except for absorption bands at 725 and 942 nm. These fiber bundles are claimed to be particularly useful for applications where secondary fluorescence of the light guide is a major concern.

Each bundle consists of closely packed optical-waveguide filaments, with a packing fraction in excess of 60%. Each filament consists of an elastomeric organic cladding fused to a modified, ultra-pure, synthetic fused-silica core. This construction is said to produce extremely low scattering and high optical throughput, in a flexible, rugged, radiation-resistant optical waveguide. The filament bundle is enclosed in a PVC monocoil sheath, and terminated in stainless steel-ferules. Standard temperature range is  $-20$  to  $+100^{\circ}\text{C}$ , and bundle diameters range from 1 to 5 mm, in lengths up to 10 meters. More heat-resistant bundles are available. *Maxlight Optical Waveguides, 3035 North 33rd Drive, Phoenix, Arizona 85017*

## Electron microscope

Amray stresses the low price (\$43 200) of its model-1200B high-resolution scanning electron microscope. With 50 Å resolution, the microscope is said to be suitable for applications in microelectronics, materials science and biology. The 1200B has a one-piece column vacuum liner, which simplifies cleaning and maintenance. To facilitate rapid examination of specimens, the microscope offers single-load coverage with a  $70^{\circ}$  tilt for wafers up to 4 inches. Furthermore, a high-speed vacuum system pumps the chamber down to  $10^{-6}$  torr in about a minute. For higher vacuum ( $10^{-7}$  torr), a liquid-nitrogen cryopump is available.

Standard features of the Amray 1200B include alphanumeric printout on micrographs, TV display, raster rotation, and digital magnification readout. Power supplies are the same as those used in the most expensive Amray SEMs. *Amray, 160 Middlesex Turnpike, Bedford, Mass. 01730*

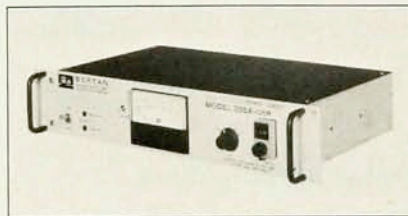
## Microwave bridge

Varian's E-102E microwave bridge is offered as a moderately priced electron-paramagnetic-resonance bridge for epr spectrometer systems operating at 9.5 GHz in the X-band. This bridge has reference-arm capacity and increased dynamic range. The reference-arm

bias increases the efficiency of the crystal detector at low microwave power, and it establishes a broader dynamic range of critical capacity coupling for use in a wide variety of operating conditions. This reference arm-capability permits, for example, the extension of the dynamic attenuation range to 60 dB. These expanded capabilities are said to enhance the accuracy and reproducibility of epr measurements. *Instruments Group, Varian Associates, 611 Hansen Way, Palo Alto, California 94303*

## Power supplies

Bertan's series 205A/210 high-voltage laboratory power supplies offer an optional capacity for remote digital programming. The high-voltage output can be programmed either by means of a four-decade BCD or a 16-bit binary TTL-compatible computer input. Power supplies in this series offer output voltage ranges from 0–1 kV dc to 50 kV dc. The series 205 provides power



outputs up to 30 watts, while the series 210 goes up to 225 watts.

Standard features of both series include digital voltage controls, front-panel metering and remote monitoring of voltage and current, remote voltage and resistance programming, and reversible polarity. Proprietary linear circuit techniques are said to result in unusually accurate and stable high-voltage output. Regulation and ripple are given as 0.001%, and the temperature coefficient is 50 parts-per-million/ $^{\circ}\text{C}$ . Prices start at \$595. *Bertan Associates, 3 Aerial Way, Syosset, New York 11791*

## Photomultiplier supply

The PS-10 high-voltage supply from CMS Inc is designed specifically for use with photomultiplier tubes. The manufacturer refers to the PS-10 as the "Energy Saver," because of its exceptionally low power requirements. The power supply is a dc-dc converter. With an input voltage of 6 V dc, the device requires less than half a milliamp of input current to provide a kilovolt of dc

output. This low current drain means that a single battery can power a photomultiplier for just about as long as the battery's shelf life. This makes the PS-10 attractive for remote sensing instruments, hand-held monitors, or wherever low power consumption is important.

The system consists of the power supply, dynode voltage divider and pulse-shaping circuit. Input voltage can be from 4 to 15 V dc; the output is adjustable from 700 to 1200 V dc. Equal increments are provided to accommodate up to 12 stage multipliers. Ripple is claimed to be less than 5 mV under load. *CMS Inc, 6446 Caroldale Lane, Goleta, California 93017*

## Millimeter-wave attenuators

Thomson-CSF is entering the millimeter-wave market. Their line of passive components include the "75" series of millimeter-wave variable attenuators, covering the frequency band from 18 to 140 GHz. These devices are claimed to be suitable for radioastronomy, molecular spectroscopy and meteorology.

The model 75-110A, with a power capability of 0.3 watts, is designed for the 75–110-GHz band. Its insertion loss is low (0.5 dB), and its maximum standing-wave-ratio capability is 1.2. The desired attenuation is set by means of a precision knob-tuned mechanism that provides smooth tuning by varying the metallized microleaf in the wave guide. Maximum attenuation is more than 25 dB.

The model 75-110AE, with an attenuation range 0–50 dB, is intended for precision direct-reading applications. The 75-110AV has a micrometer-tunable mechanism offering high-resolution tuning for precision measurements in the attenuation range 0–30 dB. Each attenuator is supplied with a calibration chart. *Thomson-CSF, Electron Tube Division, 750 Bloomfield Avenue, Clifton, New Jersey 07015*

## Function generator

The MDE-8000 from Medical Data Electronics is a microprocessor-based function generator intended for users who need to create low-frequency electrical waveforms of varied shapes and durations. The user digitizes the desired wave form by drawing it on a digitizing pad. This provides a resolution of 0.2 mm per digitized sample. The time base may be selected to generate the drawn waveform in a time



interval ranging from less than a second to over 100 seconds.

One can set the generator to repeat the desired waveform continuously, or one can (through a keyboard) elect to cascade several waveforms in a particular sequence. With the generator operating at a speed of 25 mm/sec, up to 32 seconds of unique (non-repetitive) data can be stored. The program can make calls to any part of the waveform memory, in any order, before repeating a



cycle. The generator can put out four simultaneous waveforms of different shapes. Output frequency response ranges from dc to 50 Hz. Digitized waveforms can be filed in the system's digitized cassette recorder for later recall. *Medical Data Electronics, 4726 Daleridge Road, La Canada, California 91011*

### New literature

**Signal averagers**—EG&G Princeton offers a new 24-page brochure on its model-4202 and 4203 multipoint signal averagers. The latter was introduced earlier this year. In addition to specifications and operational descriptions, the brochure discusses applications such as magnetic spectroscopy, evoked neural-response studies and digital interfacing. *EG&G Princeton Applied Research, P.O. Box 2565, Princeton, N.J. 08540*

**Radiation standards**—A 40 page catalog from Isotope Products laboratories describes their line of radiation standards, including alpha sources suitable for studying "soft error phenomena" caused by naturally occurring radioactive thorium and uranium in solid-state devices. Also included are high-intensity sources prepared from artificial radionuclides. *Isotope Products Laboratories, 1800 North Keystone Street, Burbank, California 91504*

**Hazardous chemicals**—Lab Safety Supply Co is offering a wall chart that lists 300 hazardous and toxic chemicals found in industry and laboratories. The chart gives information on handling, storage and disposal of these substances, as well as details of health and fire hazards. The chart is accompanied by a synonym reference guide. *Lab Safety Supply Co., P.O. Box 1368, Janesville, Wisconsin 53545*

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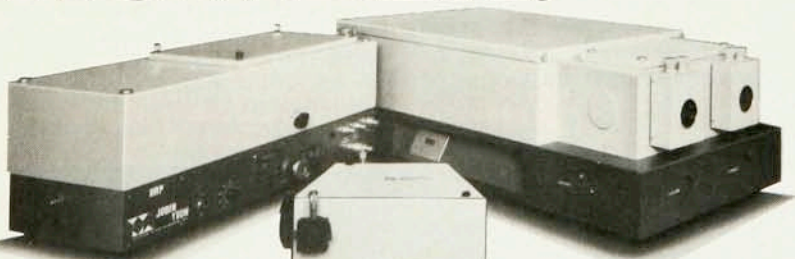
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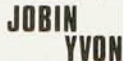
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