

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.

Spectrofluorometer

The Fluorolog 2 from Spex is a spectrofluorometer designed primarily for luminescence measurement. The optics of the instrument can also accommodate double-beam absorbance measurements. The system consists of two double spectrometers, photon-counting instrumentation, and a dual-beam sample compartment with synchronous choppers for comparing two samples in real time. All functions are controlled by the Spex Datamate processor.

Operated in either the single or double-beam mode, the Fluorolog 2 system combines signals and compares them with a reference quantum counter for excitation correction. The system can store up to 16K 32-bit spectral data points, display them on the CRT, and manipulate them prior to output. The data processing package includes non-volatile memory for radiometric correction. Accessories include a flash-lamp phosphorimeter for the measurement of lifetimes from a millisecond down to a microsecond. *Spex Industries, P. O. Box 798, Metuchen, New Jersey 08840*

Circle number 140 on Reader Service Card

Lock-in amplifier

Ithaco's model 397EO/488A is a programmable electro-optical lock-in amplifier. The instrument is said to be well suited for such diverse applications as photoacoustic spectroscopy, low-energy electron diffraction, scanning electron microscopy, fiber optics and the monitoring of film thickness. Ithaco stresses the fact that the amplifier is completely compatible with the IEEE 488 bus. One can therefore make use of the high-sensitivity signal-recovery capability of this amplifier in a broad range of electro-optical experiments.

Among the functions addressed un-

der the control of the IEEE bus are input sensitivity and expansion, overload, loss of reference, lock-in and output polarity. The model 397EO/488A is priced at \$6500. The price of the IEEE 488 bus for interfacing with the lock-in amplifier is \$995. *Ithaco Inc., 735 West Clinton Street, Ithaca, New York 14850*

Circle number 141 on Reader Service Card

Multichannel analyzer

The model ND SIX from Nuclear Data Inc. is described by the manufacturer as "the first truly portable, completely self-contained multichannel analyzer designed specially for field use." The instrument is microprocessor controlled. Its rechargeable batteries permit about eight hours of operation between recharges.

The ND SIX is a complete multichannel analyzer system, including a spectroscopy amplifier, a 50 MHz analog-to-digital converter and a 2048-channel data memory. Output is displayed on a 7-cm (diagonal) CRT and a liquid-crystal digital display. In addition to the battery power supply, the system includes a function keyboard, a minicassette mass-storage unit and an RS-232



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Mod. 7420/G, the fastest Wilkinson type ADC, 400 MHz clock rate



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- 400 MHz clock rate
- 0.3% differential non linearity
- 0.025% integral non linearity
- 0.002% /°C gain stability
- Two inputs available for zero and gain correction
- Output buffer register
- Designed for easy interfacing to digital computers
- AEC standard double-width NIM module.

For high stability spectrometry
Mod. 7915 Digital Spectrum Stabilizer



When connected to SILENA's ADC's and MCA's, the Mod. 7915 maintains the stability of the nuclear spectrometer system by automatically correcting either the zero level or conversion gain of the system.

The regions used for spectra stabilization are over-intensified on the CRT. A high-stability Dual Pulse Generator can be added to the Mod. 7915 to generate reference peaks.



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new products

serial input/output interface. The entire package, housed in a high-impact case, weighs 15 pounds.

The multichannel analyzer accepts data from a variety of detector types, including germanium and sodium iodide detectors. The built-in minicassette permits mass storage of spectral data in the field for later processing. *Nuclear Data Inc., Instrumentation Division, Golf and Meacham Roads, Schaumburg, Illinois 60196*

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Digital oscilloscope

Nicolet's new model 4094 digital oscilloscope is said to answer the need for more resolution and dynamic range, more storage capacity, and multiple channel capability. The instrument offers a mainframe memory of 16 K words, with 16-bit word length. The memory can be subdivided into halves or quarters, and it can accept one or two-channel plug-in units. In the two-plug-in configuration, each plug-in can operate independently on its own trigger and timebase—making the 4094 effectively two oscilloscopes in one



package. The mainframe includes cursor-interactive waveform coordinate display and a limited selection of key-stroke data-manipulation functions. It can also be down-loaded from an optional disk-storage unit with data manipulation programs controlled by a push button. As they are developed, these programs will be offered for sale on diskettes.

Two plug-in units are available: The model 4851 provides a sensitivity of ± 64 millivolts, 15-bit resolution, 16-K buffer memory and 10 kilohertz sampling rate. The model 4562 plug-in offers ± 100 mV sensitivity, 12-bit resolution, 16-K buffer memory and 2-

MHz sampling rate. Both units include two simultaneous inputs with independent pre- and post-trigger selection, sweep averaging and point averaging. *Nicolet Instruments, Oscilloscope Division, 5225 Verona Road, Madison, Wisconsin 53711*

Circle number 143 on Reader Service Card

Heavy-ion accelerators

High Voltage Engineering Europa, a Dutch firm, has introduced a new series of 400 and 500-keV heavy-ion accelerators, suitable for ion implantation and back-scatter spectroscopy. They can accelerate ions with masses up to 250 daltons. These accelerators are claimed to be "highly versatile for a wide variety of particle-accelerator applications."

The accelerators can employ either a heavy-ion source with integral oven, or a long-life Penning ion source. The Penning source, for gases only, is said to be especially efficient at producing multiply charged ions for channeling or deep implantation. The two sources are interchangeable.

These heavy-ion accelerators can be provided with either standard or ultra-high-vacuum beam lines, and with multiple beam lines for maximum versatility. An ultra-clean, oil-free environment is maintained inside the accelerators by three turbomolecular pumps, placed in the source area, acceleration area and beam line. Prices start at \$410 000. *High Voltage Engineering Europa B. V., Amsterdamseweg 61, Amersfoort, Netherlands*

Circle number 144 on Reader Service Card

Charge sensitive preamp

Amptek describes its new hybrid charge-sensitive preamplifier-discriminator (model A-111) as a "first of its kind." Originally designed for use in deep-space probes, this tiny device (TO-8 package) should find further application in particle detection, mass spectrometry, imaging, medical electronics and electro-optical systems. The A-111 is used with microchannel plates, channel electron-multiplier arrays, photomultiplier tubes and other charge producing detectors in the pulse-counting mode. Mounted near the detector anode, it can simplify complex multi-detector systems.

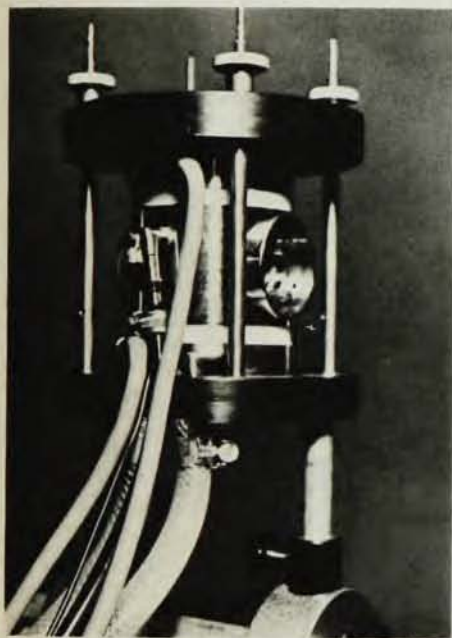
This hybrid amplifier typically requires a power input of only 5 milliwatts. The unit interfaces directly with C-MOS and low-power TTL logic. Input sensitivity can be externally adjusted. An analog signal is provided for monitoring gain fluctu-

ations. The A-111 is screened to MIL-STD-883B. In applications where reliability, low power and lightness are important, the A-111 is claimed to be well suited to replace larger units. Its sensitivity is 0.06 picocoulombs. The price for 100 units is \$195. *Amptek, 6 De Angelo Drive, Bedford, Mass. 01730*

Circle number 145 on Reader Service Card

Optical source

The new GAT lamp from Marco Scientific is described as a "unique" optical radiation source. It is designed to provide high intensity and stability in such applications as microlithography, fluorescence spectroscopy, solar simulation, multi-element absorption, photoanalysis and the like. The GAT lamp is a plasma arc source with exceptional arc brightness in the ultra-violet. It



can however be used over a very broad spectrum (up to a wavelength of 10 microns). At 210 nanometers it is said to be 30 times as bright as a typical 500-watt incandescent lamp. The window material can be changed for different spectral regions. The stability of the lamp is claimed to be exceptional, because the GAT lamp does not suffer from the arc-wandering problems of other sources. It can therefore be used with pinholes and slits. *Marco Scientific, 1031 H East Duane Avenue, Sunnyvale, California 94086*

Circle number 146 on Reader Service Card

Plasma spectrometer

The Plasma-spec from Leeman Labs is a microprocessor-controlled plasma spectrometer. Instead of a traditional nebulizer, it makes use of a graphite

filament for sample introduction. The instrument is designed to provide the versatility of a programmable sequential instrument with the cost effectiveness of a multi-element system offering up to 48 simultaneous channels. The interactive microcomputer control is said to assure superior elemental analysis.

The sampling technique of the Plasma-spec eliminates the difficulties of sample introduction that are said to plague nebulizers. The graphite filament plasma deals with the multiphase process of sample metering, desolvation and introduction by performing each step independently. The sample-carrying filament itself ultimately becomes a part of the plasma discharge—thus providing maximum sample excitation. This is claimed to result in a marked increase of analytical efficiency, with significantly higher elemental sensitivity. The system offers the high resolution of an echelle spectrometer for maximum wavelength specificity. Computer controlled wavelength selection is provided for about 300 wavelengths, representing 70 elements. Background correction for each individual wavelength is a standard feature. *Leeman Labs, 540 Main Street, Tewksbury, Mass. 08176*

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New Literature

Crystals—Crystal Technology announces three revised and up-dated data sheets for its lines of single crystals. The three sheets deal with optical crystals, acoustical crystals and surface wave crystals. *Crystal Technology, 1035 East Meadow Circle, Palo Alto, California 94303*

Pulse generators—A new short-form catalog from Berkeley Nucleonics describes the firm's complete line of NIM module pulse generators. These devices are said to offer pulse-shaping, pulse-rate and pulse-amplitude features that permit quick and easy testing of both amplitude and time domains. *Berkeley Nucleonics, 1198 Tenth Street, Berkeley, California 94710*

Transient phenomena—An illustrated short-form catalog from LeCroy, *Instrumentation for the Study of Transient Phenomena*, summarizes the performance of nine transient digitizers. The catalog also discusses the associated IC memory modules, programmable amplifiers, clock generators, and computer interfaces. *LeCroy Research Systems, 1806 Embarcadero Road, Palo Alto, California 94303*

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