

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.

Portable Magnetometer and Gaussmeter

Walker Scientific is offering a new hand-held combination magnetometer/gaussmeter that can be equipped with a wide selection of transverse and axial Hall probes for a full range of dc field readings. The Walker MG-7D portable magnetometer/gaussmeter accepts a variety of interchangeable probes for measuring dc



magnetic fields up to 150 kG. The meter has four full-scale bipolar ranges, a sealed touch keypad and an LCD display.

Providing 0.05% resolution in all ranges, the MG-7D has an offset capability to provide field suppression up to 4 kG with standard 1X probes, expandable up to 50 kG with special probes. It weighs only 9 oz. The Walker MG-7D sells for \$653. Walker Scientific, Rockdale Street, Worcester, Massachusetts 01606

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Integrated PC-Based Data Acquisition Products

Keithly Asyst has released a series of data-acquisition systems that include both hardware and software. These new systems range from the entry-level EASYEST System 8, designed for basic applications such as data logging and product testing, to the high-

end VIEWDAC Dystem 575, designed for complex applications on a 32-bit 386- or 486-based PC. Each system includes startup sequences, which can test for proper system configurations, and allows the use of such tools as a software spectrum analyzer, an oscilloscope or a signal monitor. Keithly Asyst, 100 Corporate Woods, Rochester, New York 14623

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Automated Alpha Spectroscopy

EG&G Ortec's Alphamat, which runs on a single personal computer, can provide automated control and analysis of alpha spectra collected from up to 128 silicon charged-particle detectors. By means of pseudo-multitasking, the user gains simultaneous yet asynchronous control of multiple detectors in an MS-DOS environment.

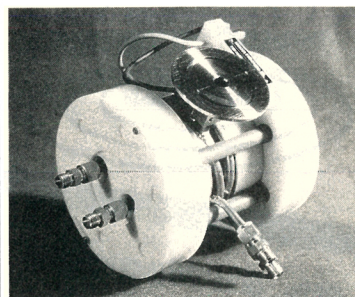
The analyses can be based on regions of interest or peak fitting. One can use tracer or tracerless techniques. The peak-fitting algorithm has been optimized for low-level applications. Templates facilitate analysis of large numbers of samples. The report generator also employs templates to modify output reports for different requirements. EG&G Ortec, 100 Midland Road, Oakridge, Tennessee 37831-0895

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Infrared Imaging Video Camera

Cincinnati Electronics has initiated a new line of infrared imaging video cameras with the introduction of the Model IRC-64. This camera has a major advantage over optical scanning products, we are told, because it uses a multiplexer-driven 64×64 pixel focal-plane array of high-sensitivity indium antimonide. This sensitivity is exemplified by the ability to distinguish a 0.1° F temperature difference between features of an image.

VACUUM UV LIGHT SOURCES



Model PDS (photo):

- * Penning discharge lamp
- * covers 10 to 30 nm
- * lines from gas & cathode
- * stable DC discharge
- * replaceable cathode
- * compatible with v.u.v. monochromators

Model GDS (not shown)

- * hollow cathode lamp
- * spans 30 to 300 nm
- * lines from source gases
- * excellent stability
- * compatible with v.u.v. monochromators

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The array will record radiation in the 1- to 5-micron wavelength range. Standard analog and digital outputs are included. Output to a VGA monitor provides the image in real time at a 30-Hz frame rate, while an internal NTSC converter provides simultaneous video recording capability.

The new video camera makes possible a broad range of radiometric and spectroscopic applications with special spectral filters. The camera includes an f/2 optic assembly, a pour-fill LN₂ dewar and a module to house the signal processing boards. The IRC-64 is easily mounted on a standard tripod. It weighs less than nine pounds, and costs less than \$17 000. *Cincinnati Electronics, 7500 Innovation Way, Mason, Ohio 45040-9699*
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200 kHz Fourier Signal Analyzer

Tektronix has introduced its new Model 2642A Fourier analyzer. The 2642A provides precision time-domain waveform analysis, spectral analysis and network analysis. It is also an arbitrary waveform generator. The measurement performance and accuracy of the 2642A exceeds that of stand-alone, single-function instruments, we are told. Its PC-based architecture and single-user interface facilitate learning and operation.

The 2642A is designed for electrical engineers doing sophisticated, low-



frequency (below 200 kHz) and mixed-signal (analog and digital) design. Engineers utilizing DSP chips in conjunction with A/D or D/A converters can use the 2642A for design and performance evaluation. It offers a 200 kHz frequency range, two or four input channels and high computational bandwidth. Its input dynamic range exceeds 90 dB with available 16-bit input modules. For network response measurements the dynamic range exceeds 150 dB. The 2642A has a fully programmable complementary signal generator with greater than 90 dB spectral purity.

Network gain and phase measurements, spectrum analysis, signal distortion and other analysis functions—plus up to three and a half million samples of continuous waveform recording—suffice to characterize a system's performance. The experimentally determined system characteristics can be compared to design predictions by utilizing standard data interfaces. *Tektronix, PO Box 500, Beaverton, Oregon 97077*

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Optical Diode Array Detector

Oriel's new InstaSpec III diode detector array can capture entire linear images or spectra in the visible, ultraviolet and near infrared at rates up to 60 per second. The detector is specifically designed for the analysis of transient and time-dependent optical changes. With very low noise and a 15-bit converter supply, the detector has sufficient dynamic range to measure intensities on the order of femtowatts per cm² and absorbances of 0.0002 AU.

Data can be displayed in real-time as two-dimensional, three-dimensional or *y-t* plots. The scrolling-screen strip chart can monitor the continuous output of up to 1024 diode elements. The systems Autotrigger feature can capture picosecond laser pulses or even lightning flares without any need for electrical synchronization.

A fiberoptic data link is provided for noise immunity and long-distance remote control. Full software support is included for linear imaging, spectroscopy and calibrated radiometric measurements, along with a full on-line hypertext help manual. An internal control language is included for customized automated control. *Oriel, 250 Long Beach Boulevard, Stratford, Connecticut 06497*

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Demonstration Cloud Chamber

Supersaturated Environments has introduced a cloud chamber for classroom demonstration. The chamber creates a volume of supersaturated alcohol vapor that condenses on ions left in the wake of charged particles. This supersaturation is accomplished by establishing a large vertical temperature gradient with dry ice. Alcohol evaporates from the warm top side and diffuses toward the cold bottom. The gravitationally stable

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temperature distribution creates a layer of supersaturation near the chamber bottom. Tracks of droplets indicate trajectories of charged particles from nuclear decay, cosmic rays or accelerators.

The device is large enough to provide an abundance of tracks from natural background alone. High-energy cosmic rays are frequently seen passing across the entire 51 cm × 51 cm sensitive area. This can be watched by students even in a large lecture hall. Fiducial marks spaced 10 cm apart allow measurement of alpha-particle energy. Thirty pounds of dry ice will cool the display for over eight hours. The chamber is hand crafted to a design that optimizes track visibility and pedagogic demonstrations. The price is \$995. *Supersaturated Environments*, PO Box 55282, Madison Wisconsin 53705

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Video Image Acquisition System

KMS Fusion, is offering a new video-image acquisition system, VIA-100. It was designed by people whose primary research interest was inertial-confinement fusion. This digital on-line image processing and display system is designed to analyze two-dimensional data. VIA is an 80286 or 80386 DOS-based system that accommodates up to three vidicon or CCD cameras for multiple imaging. It is suitable for many applications that must capture, convert or intensify images.

VIA acquires images by operator command or automated event triggers. It is compatible with most cameras for a variety of image formats. On-line image retrieval and analysis use local hard disk storage and VIA software. VIA can be linked with an external computer system for final analysis and archiving. Special configurations can include many hardware options, a network link and user-defined interfaces for the event trigger and identification code. *KMS Fusion*, 3621 South State Road, PO Box 1567, Ann Arbor, Michigan 48106-1567

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Dual Range Laser Diode Current Source

The LDC-3209 is the third generation of ILX Lightwaves' widely used laser-diode power supply. It is a high-speed current source offering 16-bit preci-

sion and 0.01-mA display resolution. This low-noise, dual-range 100/250 mA current source operates at either constant current or constant power. The user can bias the laser's monitor photodiode up to 5 volts.

The instrument's front panel displays the laser diode's operating parameters, such as forward voltage and optical power from the calibrated monitor photodiode. The LDC-3209 provides "smart" turn on, front panel compliance-voltage setting and laser-diode protection. *ILX Lightwave*, 920 Technology Boulevard West, PO Box 6310, Bozeman, Montana 59771-6310

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New Literature

Polymers—Perkin-Elmer is offering a reference handbook for surface scientists and researchers using static secondary-ion mass spectrometry. *The Static SIMS Handbook of Polymer Analysis* provides information useful for obtaining, understanding and interpreting positive static SIMS spectra. It consists of SIMS spectra obtained from more than 80 commercially significant polymers. The spectra were collected for a wide variety of materials, ranging from hydrocarbons to halogenated polymers. All the data were acquired on Perkin-Elmer PHI quadrupole static SIMS equipment.

The SIMS data for each compound are presented in a two-page spread consisting of a complete 0–250-amu spectrum on one page with expanded 0–100- and 100–200- amu displays on the facing page. An interpretation of the major fragment ion peaks is also included with each set of spectra. The handbook also includes a technical discussion of static SIMS analysis. *Perkin-Elmer, Physical Electronics Division*, 6509 Flying Cloud Drive, MS E/11, Eden Prairie, Minnesota 55344

Pulse Generators—Avtech Electro-system offers its new 1991 general catalog of nanosecond waveform generators and accessories. The 113-page catalog describes over 300 models of ultra-high-speed pulse generators, impulse generators, monocyte generators, samplers and delay generators. It also covers accessories such as transformers, power splitters and scope probes with frequencies up to 250 MHz, rise times from 40 psec to 100 nsec, pulse widths from 130 psec to 100 μ sec and amplitudes from 2 to 3000 volts. Approximately 40% of the models are new, and the applications information section has been enlarged. *Avtech*, P. O. Box 265, Ogdensburg, New York 13669

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