

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.

FORTRAN scientific subroutines for mainframes

IMSL has released SFUN/LIBRARY, a wide selection of user-callable subroutines and function subprograms for use in FORTRAN program development. SFUN/LIBRARY is designed to reduce programming time by allowing the user to select complete, fully tested routines rather than write them.

The subroutine library is said to be the "most comprehensive resource of its kind." It contains routines for evaluating trigonometric and hyperbolic functions, gamma functions, Bessel functions, exponential integrals, error functions and others. The system features independent single- and double-precision versions of the routines. Both versions may be employed in the same program, allowing great flexibility in problem solving and assuring verifiable results through cross-checking. Many functions also have complex-argument versions.

SFUN/LIBRARY is available for FORTRAN 77 compilers on Control Data, Data General, Digital Equipment and IBM mainframes. The subscription price is \$1400 for the initial year, renewable at \$900. Universities are eligible for a substantial discount. *IMSL, NBC Building, 7500 Bellaire Boulevard, Houston, Texas 77036*
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Image analyzer for electron microscopes

A new image analyzer, the Image Analyst, has been introduced by Kevex. The system is designed for use with scanning and transmission electron microscopes, or with probes for quantitative particle analysis, and provides a broad variety of measurement capabilities and output formats. When used with x-ray spectrometers, particle classification may be based on chemical as well



as geometric data. Special circuits provide for slow-scan interfacing and spectrometer automation. Speed and versatility of real-time imaging are obtained through virtual memory management. User interaction is enhanced by easily interpreted menu-driven software as well as by an interactive electronic cursor and mouse. Images are displayed on a color monitor via a user-definable digital frame store.

The Image Analyst may be used for forensic science applications, semiconductor technologies, advanced research and development or x-ray classification. System options include an expandable array interface to optical microscopes and VCRs. Numerous software options are also available. *Kevex, 1101 Chess Drive, Foster City, California 94044*

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Filter for removing higher-order diffraction and noise

Melles Griot introduces a new spatial filter for removing higher-order diffraction patterns and noise from helium-neon and argon laser beams. The standard one-inch, 32 TPI interface will mount directly to Melles Griot and most other lasers.

Five different focal lengths of focusing optics (4.0 to 16.0 mm) and 13 different, interchangeable pinholes (2.0 to 40.0 micron) assure a match to any input beam diameter from under 0.5

Real Time Gamma Analysis

When we finished our new SA-1 we didn't know what to call it . . .

True, for routine batch counting of radioactive samples the SA-1 is as good as conventional multichannel analyzers. With its ultra-fast acquisition speed and powerful equation modification feature many would consider it **better**.

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We think the name we chose was appropriate.



SA-1 Real time gamma analyzer



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new products

mm to 4.0 mm. Two knurled knobs on the housing provide orthogonal positioning adjustments to align the pinhole to the beam; a large knurled center ring provides focusing to the pinhole plane. The spatial filter may be used without a pinhole to provide a divergent output cone. *Melles Griot, 1770 Kettering Street, Irvine, California 92714*

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Arbitrary waveform generator for the IBM PC

The WSB-10 Arbitrary Waveform Generator, a new product of Qua Tech, allows the IBM PC to generate waveforms. In addition, the PC's computing power is available to establish the waveform envelopes.

The user can define up to 2048 data points that can be generated as periodic, single-cycle or burst waveforms in either a single-cycle or continuous mode. A 16-bit software programmable timer is used to set the output rate from 2.4 millihertz to 5 megahertz. The output resolution is 12 bits, with a range of -5 to +5 volts. Once the board is initialized it operates as a stand-alone unit, freeing the PC for other tasks.

The WSB-10, including an application software package containing basic callable drivers, is available for \$595.00. *Qua Tech, 478 East Exchange Street, Akron, Ohio 44304*

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YAG lasers with high power and high repetition rates

A new series of high-average power, high-repetition rate YAG lasers for scientific and industrial applications has been announced by Lasermetrics. The five models of the series 9400 lasers provide high average output power, and utilize a standard optical mounting rail and the Lasermetrics modular design concept. Models in the series are rated at 1 W, 20 W, 100 W, 200 W and 400 W. Modules, such as Q-switches, harmonic generators, spatial filters, up-collimators, dye cells and laser amplifiers may be added at any time without extensive or expensive modifications. The optical rail accepts all current Lasermetrics accessories.

The laser heads use cavity reflectors and dual linear flash lamps, which can be replaced quickly without disturbing the alignment of the laser rods. The flash lamps are simmered for extended operating life, higher efficiency and increased stability.

The solid-state power supplies are computer compatible. Turn-on and output power may be remotely programmed and controlled. Safety features include door and panel interlocks; overvoltage, overcurrent and coolant temperature interrupts; an emission indicator; a fail-safe shutter; and a relative power indicator. The laser heads are cooled by a water-to-water heat exchanger. Optional water-to-water refrigeration units are available. *Lasermetrics, 196 Coolridge Avenue, Englewood, New Jersey 07631*

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Broad-band scanning spectroradiometer system

SPEX Industries have introduced a special scanning radiometer package for the determination of physical characteristics of detectors, filters, sources and other electro-optical components. A broad-band radiation source supplies illumination between 185 and 3000 nm. The scanning spectrometer is supplied with interchangeable gratings and a variety of detectors that permit optimization for uv, visible or ir work. All components are under total control of the DM1B Spectroscopy Laboratory



Coordinator, which includes routines for scanning, storage, data acquisition and radiometric correction. *SPEX Industries, 3880 Park Avenue, Edison, New Jersey 08820*

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Technical word processor for IBM microcomputers

A new word processing system for technical word processing on an IBM personal computer has been developed by Santa Barbara Technology. The TECHFONT system combines a dedicated version of the PROOFWRITER word processor, a custom ROM which plugs into the IBM to allow its monitor to display a complete set of technical characters, and special software to allow these characters to be printed. Included are spelling check, mail merge, and automatic footnote facilities, as well as an interactive tutorial.

The TECHFONT characters were selected and designed for engineers, physical scientists and mathematicians and include the major symbols used in

mathematics and physics.

The TECHFONT system requires an IBM PC (or XT) with at least 192K of memory, two standard dual-sided disk drives (or one and a fixed disk), and DOS 2.0 or 2.1. It is necessary to use a monochrome monitor driven by either a standard IBM monochrome card or a Hercules card. The printer must be a Toshiba P1340, P1350 or P1351. *Santa Barbara Technology, P.O. Box 6075, Santa Barbara, California 93160*
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Laser frequency doubler with continuous scanning capability

Coherent has introduced the new Model 7500 frequency doubler that can transform the single-frequency dye laser spectrum of 267 nm to 412 nm. The doubler also offers continuous scanning capability from 267 nm to 1000 nm, when mounted in the collimated arm of a Coherent CR-699 Series ring dye-laser system.

The angle-tuned phase matching used in the frequency doubler is said to produce exceptional ease of alignment and tuning. Active stabilization of the fundamental frequency with Coherent's patented Autolock frequency stabilization system provides a uv linewidth of less than 1 MHz rms and electronic scanning of up to 60 GHz. *Coherent, 3210 Porter Drive, Palo Alto, California 94303*

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Modular, one-, two- or four-channel signal analyzer

Scientific-Atlanta have introduced the Model SD380 signal analyzer, an expandable modular instrument for structural and acoustical analysis of machinery. Waveforms of signals up to 40 KHz can be analyzed. The signal analyzer is available in one-, two- or four-channel configurations. One- and two-channel versions can be upgraded to two- or four-channel versions to meet expanded measurement requirements. The SD380 signal analyzer is a self-

contained, portable instrument designed to withstand the rigors of use in the field. A large built-in display with a 3-dimensional waterfall capability and digital real-time zoom enables the operator to expand portions of the displayed signal for the higher resolution of specific frequency components. The operator can select 100, 200, 400 or 800 lines of display resolution.

The front-end digital memory can store 56 000 samples of continuous data and can be scanned manually or automatically for subsequent viewing or processing. Direct digital plotter interface for off-line hard copies is a standard feature. *Scientific-Atlanta, 4255 Ruffin Road, San Diego, California 92122*

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Phototubes for large-array scanners

Thomson-CSF announces two new photomultipliers designed for use in large-array medical scanners such as those used in computerized axial tomography. The photomultipliers DM3216 and DM3242 are $\frac{3}{4}$ inch in diameter, and are 10-storage box-and-grid tubes with modified bi-alkali photocathodes and cesium-antimony dynodes. These tubes are claimed to have the wide dynamic range, linearity, long-term stability and low hysteresis required for large-array use.

The modified bi-alkali photocathode has a peak response at 440 nm and provides a good spectral match for sodium iodide, calcium fluoride and bismuth germanite scintillators.

The array photomultipliers can be supplied in matched sets with operating characteristics selected to meet system requirements, and are designed to maintain closely matching operating characteristics throughout the life of the tubes in the set. Linearity, without selection, is typically within $\pm 1\%$. *Thomson-CSF, 301 Route 17 North, Rutherford, New Jersey 07070*

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New Literature

Light-emitting diodes—Hamamatsu's new 4-page brochure describes the L1909 and L1915 series of GaAlAs light-emitting diodes and provides complete information on general and maximum ratings, characteristics and physical dimensions. It includes charted radiation patterns, graphs of spectrum emission, output vs. forward current and ambient temperatures. *Hamamatsu Corporation, 420 South Avenue, Middlesex, New Jersey 08846*

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