

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.

Hydrogen Flash Arrestor

The Matheson Model 6103 Series flash arrestor protects hydrogen supply lines from explosive flashback when air enters the system. It has been approved by Factory Mutual for hydrogen systems in which air can be the oxidizer.

When an explosive wavefront in a supply line reaches the flashback arrestor, a check valve latches shut and ensures that no flammable gas is released to the work area; the latch also provides a positive indication that a flashback has occurred. Removed from the line, the Model 6103 Series arrestor is easily reset with a probe that unlatches the valve. *Matheson, 1275 Valley Brook Avenue, P. O. Box E, Lyndhurst, New Jersey 07071*

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Rheometers

Tekmar offers two new rheometers for making measurements of viscosity and flow behavior. The Rheomat 15T-FC



features low price and a broad measuring range, while the Rheomat 30 is designed to meet the most sophisticated requirements of variable-shear viscosity measurements.

Both instruments use a bob rotating in the test substance to produce a uniform shear stress. The torque to maintain this stress serves to measure the viscosity. By using the instruments' programmers one can automatically obtain the flow behavior of thixotropic, dilatant or rheopectic substances. The Rheomat 30 provides 30 rotational speed steps in geometric progression. *Tekmar Company, P. O. Box 37202, Cincinnati, Ohio 45222*

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Ion lasers

Coherent has introduced a new series of ion lasers, the INNOVA 90 Series. These are designed for scientific or medical use and provide between two and five watts of cw output power.

The design features solid tungsten disks inside a conduction-cooled ceramic envelope—a single piece of hardened alumina. All laser functions, such as discharge current and output power, are controlled and monitored from a remote, hand-held module, which also contains all system diagnostics. A separate power supply features plug-in transistors that can easily be tested with a built-in diagnostic circuit. The laser tube, cathode and anode have all been designed for maximum life expectancy, ruggedness, high output power and low noise, we are told. *Coherent, 3210 Porter Drive, Palo Alto, California 94304*

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Pulse generators

Avtech has introduced two new pulse generators—drivers, Models AV-120 and AV-121. They are designed to produce output pulses with fast rise and fall times when driven with slow TTL-level input pulses. The output



NRC Mini-Mounts can save you time, space and money

NRC Mini-Series components are high quality, low-cost devices, are extremely versatile, and are delivered from stock. Experimentalists appreciate the total modular concept that allows them to satisfy their test set-up needs — time after time!

Well-thought-out system



Featuring building-block versatility, this low-profile rail is compatible with existing NRC Mini-Series mounts and with a wide selection of sliding or translating carriers. The standard 0.5-in. diameter posts fit imported optical rail systems having 13.7 mm post holders. One end of the post has a 1/4-20 hole for attaching optical mounts.

Fibre-Optic positioners too!

A more specialized member of the family. This 5-axis fiber positioner is a good example of the breadth of the Mini-Series line. The typical mount features extremely fine 80-pitch adjustment screws, and kinematic design for smooth precise setting of optic position.



Circle number below for a new 128 page catalog. Or write to Newport Corporation, 18235 Mt. Baldy Circle, Fountain Valley, CA 92708, or phone (714) 963-9811.

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Send for complete technical data. Call (201) 534-2226; write GLASSMAN HIGH VOLTAGE, INC. at Route No. 22 (East) Salem Park, P.O. Box 551, Whitehouse Station, New Jersey, 08889; or use inquiry number below.



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new products

pulses have the same width as the input pulses—from 10 to 500 nsec.

The Model AV-120 produces pulses with 1 nsec rise and fall times whose amplitude (to 50 ohms) is variable from 0 to 5 V; it requires a 15 V dc bias supply. The Model AV-121 provides an output variable from 0 to 20 V, with rise and fall times of 2.5 nsec; it requires a 24 V bias supply. *Avtech Electrosystems Ltd., P. O. Box 5611, Station F, Ottawa, Ontario K2C 3M1, Canada*

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Scaler-ratemeter

Nuclear Enterprises has introduced the SR7, a microprocessor-based scaler and ratemeter for counting and analyzing pulses from radiation detectors. It will operate with many commonly used scintillation and Geiger-Mueller detectors.

The SR7 accumulates counts in two channels simultaneously, calculates count rates and produces both visual and electronic outputs in four modes of operation. It can be used to plot spectra automatically via HV scan. The microprocessor greatly enhances the



versatility of the instrument, allowing the user to preset counting times, alarm rates, counts, or chart ranging, for example, as well simplifying the set-up procedures. It also provides the SR7 with built-in diagnostic facilities. *Nuclear Enterprises Ltd., Sighthill, Edinburgh EH11 4BY, Scotland*

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Cryostats for esr

Three new continuous-flow cryostats, designed for esr spectroscopy, are available from Oxford Instruments. Two of the cryostats, types ESR-900 and ESR-10, are designed for cooling samples within an X-band resonant cavity; the ESR-35 allows solid samples to be

cooled within a Q-band cavity. The base temperatures are 1.9 K for the ESR-10, 3.7 K for the ESR-900 and 5 K for the ESR-35.

The low heat capacities and relatively simple design of the sample-cooling units provides for rapid cool-down—typically 15 min—as well as easy sample handling, we are told. The temperature is continuously variable from the minimum to 300 K to within 0.1 K. Temperature is varied via a wire-wound heater and controlled by a VC30-DTC temperature and gas-flow controller. Helium consumption ranges from 1 to 1½ liters per hour. *Oxford Instruments, Osney Mead, Oxford OX2 0DX, England*

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Monochromatic illuminator

The MIS 1000 is a new kilowatt monochromatic illumination system from Kratos, capable of producing high-intensity illumination at wavelengths from 180 nm to 3000 nm with 0.2 nm resolution. The 1 kW arc lamp (Xe or Xe-Hg) is powered by a regulated dc power supply. Its output is focused



onto the entrance slit of a ¼-meter monochromator by quartz condensers. Interchangeable gratings provide a total range of 180–3000 nm; an accessory computer-compatible stepping motor permits automated spectral scans. The output focus is controlled by an adjustable quartz lens.

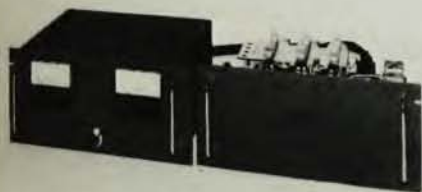
The high power of the MS 1000 is useful for spectrophotometry and spectrofluorometry, as well as photobiology, solar-energy research, fiber optics, and other fields, we are told. *Schoeffel Instruments Division, Kratos Inc., 24 Booker Street, Westwood, New Jersey 07675*

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Power supplies

The MARS Power supply from NuTek can deliver up to 250 kW at 1000 amps, continuously variable from zero to full load. Designed specifically for physics laboratories, the power supply may be

used for, among others, plasma-confinement solenoids, beam-bending magnets, resistive furnaces and dc motors. It is 98% efficient, water cooled, and weighs only 70 lbs. The current regulation is better than 0.1%. A ten-turn potentiometer con-



trols the output. Options include digital panel meters, external programming and remote control. *NuTek Industries, Inc., P. O. Box 651, Mountain View, California 94042*

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Transient recorder

Transiac's model 2010 is a CAMAC transient recorder with 8196 words of memory. It digitizes at a 20-MHz rate, with 10 bits of dynamic range/accuracy. Pretrigger sampling, onboard crystal clock, 25-psec jitter, track-and-hold, importance sampling, and partial memory recording are some of the features that are claimed to make this instrument the most powerful transient recorder offered in a CAMAC package.

With a sensitivity of 1 millivolt per count and a small signal bandwidth of 30 MHz, the Model 2010 with 8K of memory is priced at \$4260. Transiac also offers a nine-bit, 20 MHz transient recorder (model 2009) with 8K memory for \$3400. A memory display output permits the 2010 to serve as a digital storage oscilloscope, with cost-effective channel expansion for many laboratory uses. The extended dynamic range is said to be particularly useful in large CAMAC systems for fusion research, where only 8-bit recorders are available at present. *Transient Signal Acquisition Corp., 560 San Antonio Avenue, Palo Alto, California 94306*

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Dye laser

EG&G Princeton's model 2100 Dyescan is a tuneable dye laser system intended for use in spectroscopic applications requiring a precision, narrow

linewidth, scanable, uv-visible source. The system is said to be the first to house its nitrogen pump laser, dye-laser assembly, and complete microprocessor control in a single cabinet. The nitrogen pump laser, using TEA design, eliminates the need for vacuum systems. The optically coupled, grazing-incidence dye laser provides output pulses of 1 nanosecond duration and 25 kilowatts peak power. The linewidth is .03 nanometers at 590 nanometers.

The system is under complete microprocessor control. A tuning range of 360 to 800 nanometers is currently available. Access to the uv region will be provided by frequency-doubling accessory. Scans between operator-specified limits can be linear in either wavelength (nm) or energy units (cm^{-1}). A unique optogalvanic calibration technique is said to provide rapid, highly accurate wavelength calibration while dye laser power is continuously monitored. All parameters and commands are entered through a simple key-



board. The Model 2100 includes an optical trigger for gated detection. The price of the system is \$15 000. *EG&G Princeton Applied Research P.O. Box 2565, Princeton, New Jersey 08540*

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New literature

Laser annealing—A 10-page brochure describes Coherent's System 5000 laser annealing station. The brochure provides an introduction to cw laser annealing, sections contrasting liquid and solid-phase epitaxy, pulsed vs. cw annealing, and a discussion of large grain growth with cw annealing.

Trace metals in air, an environmental health problem, are the subject of an applications note by Trevor McKenzie, offered by Varian. He describes the use of atomic absorption spectrophotometry by furnace atomization to analyze airborne trace metals. Collection was done with a Varian CRA-90 carbon-rod atomizer. This note discusses a variety of sample collection methods. *Varian Instruments Group, D-070 10060 Burbank Road, Cupertino, California 95014*

RTE-4&8 REFRIGERATED BATH CIRCULATORS



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