

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.

Electrostatic voltmeter

Trek's model 560 ion-coupled electrostatic voltmeter system measures electrostatic potentials with an accuracy of $\pm 0.1\%$. The input voltage range is 0 to ± 1000 volts dc, covered in three switch-selectable ranges. The model 560 is a compact, single-channel, non-contact electrostatic voltmeter, capable of stand-alone operation. Four such meters can be accommodated on an optional rack adaptor for multichannel systems.

The meter's ion-coupled probe technology uses a minute quantity of nickel-63, a weak beta emitter, to form an effective ionized air bridge between the ultra-high-impedance probe amplifier and the dielectric or conducting surface being tested. If there is a potential difference between the probe and surface, it is amplified and integrated to generate a reference potential, which is fed back to the probe housing. The feedback is thus driven to the same potential as the test surface. One obtains an accurate replica of the test surface by monitoring this probe potential. Charge exchange is avoided by this non-contact measurement technique. The 560 is said to be useful for xerographic research, materials evaluation, charge-accumulation measurement, electret and semiconductor research. *Trek Inc., 1674 Quaker Road, Barker, New York 14012*

Circle number 140 on Reader Service Card

Oscilloscope

Hameg stresses the low cost (\$610) of its new dual-trace oscilloscope, model HM312. Both vertical amplifiers offer a bandwidth from dc to 20 MHz, with maximum sensitivity of 1 cm/5 mV. One gets full x-y operation by switching channel 2 into a horizontal-deflection mode. State-of-the-art electronics

is said to ensure drift-free performance. The oscilloscope uses socketed analog and digital integrated circuits in the amplifier and triggering circuitry. It will trigger on a signal deflection as small as 4 mm, up to 30 MHz. The



triggering source can be either channel or an external trigger—automatic or variable level. A TV frame-synchronizing filter is also provided.

Sweep speed periods range from 0.2 seconds down to 40 ns. All critical dc voltages are regulated. The built-in 1-kHz, 0.2-V square-wave generator is used to check probe compensation. The scope can operate from power sources of 110 to 237 volts ac, 50 to 60 Hz. *Hameg Inc., 191 Main Street, Port Washington, New York 11050*

Circle number 141 on Reader Service Card

Energy analyzer

The Comstock model AC-901 is an electrostatic energy analyzer, intended for use in fields such as atomic and molecular physics, chemical physics, surface

TRANSLATORS FOR EVERY NEED



STABLE LAB JACKS

Innovative design virtually eliminates any side play or rocking. Two sizes.



PRECISION TRANSLATORS

Stable rolling ball construction. Quality components. Smooth positioning. 15 models. Prices start at \$70.



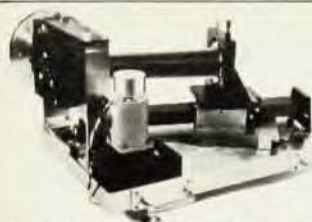
TELESCOPING POST MOUNTS

Stable rugged construction. Coarse and fine vertical positioning and simple rotation. Available in six versions.

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

NRC **Newport Research**
A Dole Company A1803MM

Circle No. 82 on Reader Service Card



FOR PLASMA DIAGNOSTICS

Consider our 1 meter grazing incidence Monochromator Spectrograph Model 310GSMP

- Wavelength range 4A–1250A with choice of classical or holographic gratings.
- Unit is compact — lightweight — will operate in any attitude.
- High resolution with choice of gratings 133–3600 g/mm.
- High vacuum capability and step motor drive.
- All necessary adjustments for optimum focus.
- Filters and windows available for order sorting.
- Manson 04 absolute photon counter for region 1–1100A available as detector.

MINUTEMAN

Laboratories, Inc.

914-916 Main St., Acton, Ma. 01720
617/263-2632 or 263-8888

Circle No. 83 on Reader Service Card

BIC Current Integrators Since 1964



Model 1000-C*

- Highest accuracy
- Widest current span
- Lowest input impedance
- Internal offset & test supply
- Solid state (LED) readout
- Automatic dead-time correction
- Inputs of either polarity
- Ground isolated from case
- Remote control capability
- Pulse integration without external filters

Complete specs on request

BROOKHAVEN INSTRUMENTS CORP.

11124 Jollyville Rd. Austin, Texas 78759
(512) 345-4282

*Also available without internal counter as Model 1000-A

Circle No. 84 on Reader Service Card

new products

analysis and ion scattering, laser-induced ionization and plasma physics. This double-focusing, multipurpose instrument is designed for the energy analysis of electrons and ions (positive and negative). It is compact ($5 \times 10 \times 4$ cm) and bakeable.

Three different sets of interchangeable entrance and exit apertures are provided. With the pair of apertures of 0.5 mm diameter, one gets an energy resolution of 0.4%. The price of the model AC-901 is \$2700. *Comstock Inc., PO Box 199, Oak Ridge, Tennessee 37830*

Circle number 142 on Reader Service Card

Laser power supply

The model LS101 from High Power is a high-voltage power supply intended for use with pulsed or continuous lasers. It provides a kilowatt of average power, and it can charge a capacitor bank at any repetition rate compatible with 3000 joules per second. The device is safety-locked and incorporates fault-detection circuitry to prevent overcharging. It uses optical coupling to eliminate isolation transformers. All high-voltage connections are rated at 50 kV, and cooling is by convection alone.

The power supply operates on 110 volts ac and 60 Hz. The setpoint repeatability is given as 0.1% of full scale, and line regulation is 0.1% per 10% change in line voltage. The supply measures $8 \times 6 \frac{1}{2} \times 14$ ". It can be controlled remotely or monitored by computer. Users vary the voltage with their own potentiometers and read the output voltage on their own dc voltmeters. A medium-power transistor output can be used to signal when the power supply is fully charged. The single-unit price for the LS101 is \$2500. *High Power Corporation, 18 Adams Street, Burlington, Mass. 01803*

Circle number 143 on Reader Service Card

Power supply

Bertan's model EB-30 is a high-voltage, electron-beam power supply, designed for use in scanning electron microscopy, electron-beam lithography, and etching and recording systems. It is said to provide control and monitoring features previously unavailable in a depressed cathode-beam system.

The EB-30 contains three highly regulated power supplies, each of which can be monitored and controlled either remotely or at the front panel. The bias voltage output can be controlled

independently, or it may be used to provide constant emission-current operation. Filament voltage and current can also be monitored and controlled. The cathode output is 0 to 30 kV at 0 to 500 microamps; the bias output is 0 to -1 kV at 50 microamps. The heater supply puts out 0 to 5 volts at 0 to 5 amps. All outputs are protected against arcing and short circuits. *Bertan Associates, 3 Aerial Way, Syosset, New York 11791*

Circle number 144 on Reader Service Card

Magnetic shielding

Amuneal is offering a magnetic-shielding development kit for the evaluation and fabrication of the shielding requirements of magnetically sensitive devices. The kit contains nine fully annealed amumetal shielding components, which can be used singly or in combination to shield transformers,



power supplies, printed circuits, cathode-ray tubes and the like. The price of the kit is \$89. *Amuneal Manufacturing, 4737 Darrah Street, Philadelphia, Pennsylvania 19124.*

Circle number 145 on Reader Service Card

Chip bonding

Epoxy Technology's EPO-TEK P-10 is a new, conductive silver-polyimide system, designed for chip bonding in microelectronic and optoelectronic applications. This bonding material is a soft thixotropic paste that can be applied by screen printing, stamping or machine dispensing techniques. The electrical and thermal conductivities of P-10 are claimed to be the highest in the industry. It behaves well at high temperatures, with a glass-transition temperature of 235 °C. It is designed specifically for chip molding in cerdip packages, transfer molding operations or TC bonding at 300 to 400 °C.

EPO-TEK P-10 requires a cure time of only one hour at 150 °C. It does not need a step cure operation for chip bonding, and it will not cause bleed-out

problems. The volume resistivity, $6 \text{ to } 7 \times 10^{-5} \text{ ohm-cm}$, does not change even after 320 hrs at 350°C . The shelf life of EO-TEK P10 is at least six months at room temperature. A 1-oz trial evaluation kit is available from *Epoxy Technology, 14 Fortune Drive, P.O. Box 567, Billerica, Mass. 01821*

Circle number 146 on Reader Service Card

Cryopumps

Varian describes its new Mark II series as inaugurating a "second generation" of cryopump technology. These cryopumps are said to cut at least a half hour off the time required for cooldown with previously available pumps, thereby reducing regeneration time. Having twice the hydrogen capacity of earlier devices, these new cryopumps have doubled the available pumping capacity. In consequence, regeneration is required only half as often as in the past.

Five configurations are available in the Mark II series, which is intended for general applications as well as sputtering. The two models designed for sputtering are the VK-12B, a 6" pump with integral 8" valve, liquid-nitrogen shroud and variable orifice, and the VK-12F, a 10" valveless pump that does not require liquid nitrogen for sputtering. For more general use, the VK-12A is a 6" pump with 8" integral valve for



maximum conductance; the 6" VK-12C and -12D are valveless pumps, respectively 6" and 10". *Varian Associates, 611 Hansen Way, Palo Alto, California 94303*

Circle number 147 on Reader Service Card

Fiber-optic link

The System 60 from Pulsar Associates is a fast fiber-optic data link intended for use in high-power, pulsed high-voltage systems. It serves to transmit analog data for high-voltage equipment associated with lasers, fusion devices, high-energy capacitor banks, Marx generators—wherever single or multiple transients must be recorded in a harsh electromagnetic environment. Most other fiber-optic links, we are told, are not designed for use in tran-

sient high-voltage surroundings.

The System 60's bandwidth (1 kHz to 50 MHz) will accommodate most pulsed high-voltage requirements. A built-in square-wave calibrator facilitates calibration just before measurement—an important feature with fast analog systems. The step response time is 7 nanoseconds with a 30-meter link; the maximum length available is 150 meters. The dynamic range of the link is about 40 dB. The price is \$3700. *Pulsar Associates, 11491 Sorrento Valley Road, San Diego, California 92121*

Circle number 148 on Reader Service Card

New literature

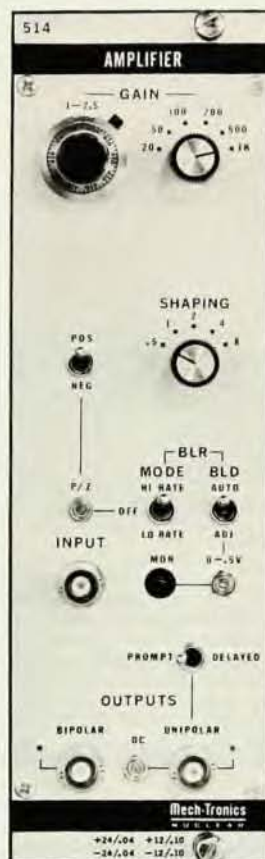
Vacuum products—The Leak Detection Systems 1981 vacuum products catalog stresses the company's support services to users of vacuum technology. The catalog describes its line of high-vacuum and ultra-high vacuum components. *Leak Detection Systems, Building 132, Suffolk County Airport, Westhampton Beach, New York 11978*

Thermal evaporation—Varian's new 16-page booklet, *High Purity Metals and Alloys for Thermal Evaporation*, lists a variety of such evaporants for thin-film production by thermal evaporation techniques. These materials are available in a variety of geometries, usable in most evaporation systems. Varian also invites custom alloy requests. *Varian Associates, Box D-105, 611 Hansen Way, Palo Alto, California 94303*

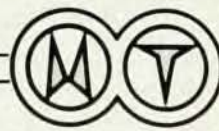
Photon counting is the subject of EG&G Princeton's applications note, *A Photon/Ion Counting System Using Multichannel Scaling Techniques*. The note describes hardware and experimental techniques that employ various amplifier discriminators together with EG&G's new model 4203 signal averager. *EG&G Princeton Applied Research, P.O. Box 2526, Princeton, New Jersey 08540*

Monochromators—Kratos calls its new 24-page brochure, describing the firm's line of ultraviolet and visible-light monochromators, "the most exhaustive collection of descriptive data ever offered by any monochromator manufacturer." In addition to optical specifications and characteristic output curves, the brochure outlines suggested configurations for monochromatic illumination systems, spectroradiometers and sample emission measurement systems. A chart is included, tabulating the specifications of all models. *Kratos, Schoeffel Instruments Division, 24 Booker Street, Westwood, New Jersey 07675*

THE SPECTROSCOPY AMPLIFIER



Model 514
\$800.00



- Bipolar Gated Baseline Restorer accepts Active and Pulse Feedback Preamps
- Built-in Pileup Rejector provides Deadtime Correction and Reject Outputs
- Automatic or Manual BLR Threshold Selection with Setup Monitor Lamp
- Wide Range Gain and Active Shaping Controls

Mech-Tronics

NUCLEAR

430A Kay Ave., Addison, IL 60101

For more information
WRITE OR CALL COLLECT
(312) 543-9304

Circle No. 85 on Reader Service Card