

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 Liquid Helium Level Meter

American Magnetics is offering its new Model 150A portable, battery-operated liquid helium level meter. The Model 150A is a lightweight, hand-held meter for use with helium storage dewars on loading docks and storage rooms or in remote helium level operations where line power is unavailable. The Model 150A can measure helium level sensors with active lengths of up to 60 inches. Battery life has been expanded so that over a thousand level readings can be performed with fully charged batteries.

The Model 150A includes a 3.5-digit LCD display with readout accuracy of 0.1% and a switch that allows level measurements to be made within seconds. The unit is powered by a quick-charge lead-acid battery pack. Batteries can be charged to 90% capacity within two hours and fully charged within four hours. Also, a Model 150A with fully charged batteries can be stored for up to a year before battery charging is required. The Model 150A is outfitted with battery charger and sensor hook-up cable. *American Magnetics, PO Box 2509, Oak Ridge, Tennessee 37831-2509*

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Alpha Spectroscopy for Environmental Contamination

The new Ordela Model 8210A gridded ionization chamber is designed to screen soil, water, air-filter and smear samples for radioactive contamination by means of rapid, direct alpha spectrometry. Sample preparation does not require toxic, labor-intensive radiochemistry or special laboratory equipment. Soil samples are finely ground, mixed with solu-

tion, sprayed onto 10-inch, mirror-finish stainless steel planchets and dried under heat lamps. Then a sample is placed in the sliding tray assembly and inserted into the chamber by way of a horizontal access port.

One can get alpha energy resolutions of 50 keV. Water samples up to 15 milliliters can be sprayed directly onto the planchets for counting. Air-filter samples and smears, up to 10 inches, may be counted directly, with no sample preparation and without introducing inconsistencies due to trimming.

Short assay times are made possible by the 2 π counting geometry and low backgrounds of the Model 8210A. The gridded ionization chamber is constructed of mild steel. It is completely nickel-plated for low-background environmental counting and ease of decontamination. The detector uses P-10 counting gas at up to 200 kPa absolute pressure. All valves and gauges for P-10 gas management, a low-noise preamplifier and a high-voltage filtering and biasing circuit are included with the instrument. *Ordela, 1009 Alvin Weinberg Drive, Oak Ridge, Tennessee 37830*

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Industrial Dual-Beam Spectrometer

The new Model MD5 from American Holographic is an industrial dual-beam spectrometer designed for inclusion in equipment built by other manufacturers. The MD5 module has two spectra on a single 256-element photodiode array. The pre-aligned module needs no optical or mechanical adjustment. It works with either fiber optic or conventional optical input. The spectrometer can be used in transmission, reflection or fluorescence without modification.

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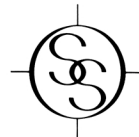
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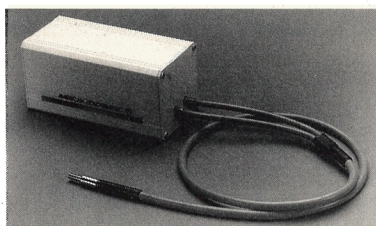


Marketing and Sales

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* Applies to members of AIP Member Societies.



The MD5 can do dual-beam spectral measurements over four separate wavelength ranges: the medical diagnostic colorimeter range (340–650 nm), the UV/HPLC range (190–350 nm), the industrial color range (340–720 nm) and the NIR process monitoring range (600–110 nm). The module interfaces to a host computer through a standard RS232C port.

A system version of MD5 includes electronics, software and cabling for use with MS-DOS on Macintosh-compatible computers, including portables. Routines for control of systems functions, C-compatible libraries for data transfer and manipulation, and an example program for spectral display or analysis are included. Internal to the module is a 16-bit analog-to-digital converter. *American Holographic, 521 Great Road, PO Box 1310, Littleton, Massachusetts 01460*

Circle number 182 on Reader Service Card

Pulse Preamp for Counting Photons or Charged Particles

The new Models F-100E and F-100T from Advanced Research Instruments are fast-pulse amplifier-discriminators designed to process low-level pulses from photo-multiplier tubes at counting rates up to 100 MHz.

The F-100E or F100-T combine the functions of preamplifier, linear amplifier and low-level discriminator into one instrument, eliminating many controls, dials and cables. Model F-100E has a pulse-pair resolution of less than 100 nanoseconds. Its output is a standard ECL signal.

The Model F-100T preamplifier-discriminator outperforms the F-100E in lower equivalent input noise level and it has a TTL output signal that is compatible with virtually any rate meter or frequency counter. However, to meet TTL specifications, the pulse-pair resolution had to be somewhat relaxed.

In both models the output pulse width can be extended to meet minimum pulse width requirements of the rate meter. *Advanced Research In-*

struments, 2434 30th Street, Boulder, Colorado 80301

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Small Biaxial Clinometer for Robotics

Applied Geomechanics is offering its new Model 900 biaxial clinometer for manufacturing, robotics and other machine-positioning and control applications. The Model 900 incorporates a gravity-referenced tilt sensor. It is $2 \times 2 \times 0.64$ inches. It functions over a 40° measurement range, resolving angular displacements smaller than 0.01 in two orthogonal directions. The Model 900 accommodates a wide input voltage range, and it is available with a temperature sensor. *Applied Geomechanics, 1336 Brommer Street, Santa Cruz, California 95062*

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Multiyear Computer Astronomical Almanac

The US Naval Observatory has introduced MICA, a multiyear interactive computer almanac. MICA is a software system that provides high-precision astronomical data in tabular form for a wide variety of celestial objects. It calculates in real-time much of the information tabulated in the benchmark annual publication, *The Astronomical Almanac*. However, MICA goes beyond traditional almanacs by enabling the user to calculate data for user-specified locations and times within a ten-year interval (1990–1999).

Specifically, MICA can provide nine types of positions of celestial objects, including geocentric and topocentric apparent places, astrometric places and topocentric horizon coordinates; time and Earth orientation data, including sidereal time, nutation components and obliquity of the ecliptic; times of rise, set and transit of celestial objects and times of civil, nautical and astronomical twilight; size, illumination and orientation of the Sun, Moon and planets; and a summary of the instantaneous configuration of the Sun, Moon and major planets at user-specified times.

The data provided by MICA match the high precision and accuracy of *The Astronomical Almanac*. MICA has a ten-year solar system ephemeris, an internal catalog of the 21 brightest stars and Polaris, and five

NEW PRODUCTS

additional catalogs of astronomical objects. It can access specialized catalogs created by a user. MICA tables can be generated in either of two different time scales, with either civil or Julian dates. The software is accompanied by a comprehensive user's guide that contains an explanatory chapter on modern astronomical calculations.

MICA is available in versions for IBM and compatible PCs and Apple Macintosh systems. The DOS version features a menu-driven interface. The Macintosh version offers a graphical user interface.

Both versions are distributed for the Naval Observatory by the National Technical Information Service. Each version costs \$55. *US Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161*

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Low-Mass Probes for Integrated Circuits

Tektronix has introduced three new surface-mount-device probes (the P656X series) that let digital design engineers probe small-geometry integrated-circuit packages with lead spacing to 19 mils. Digital designers face the problem of probing the shrinking test points of fine-pitch packages with custom probing devices that are usually time-consuming and costly. It often involves trading accuracy for convenience.

Tektronix's new SMD probes are scaled to be compatible with current surface-mounted integrated circuits. They are matched to Tektronix TAS, 2400 and TDS series oscilloscopes. These low-mass SMD probes have a probe body only 1.5 inches long and 100 mils wide. A miniature probe head houses a custom hybrid connecting the probe's 25-mil socket and the thin Kevlar-reinforced coaxial cable. The socket forms the probe's basic contact and accepts any 25-mil pin or adapter. With its short ground

wing, the probe connects directly to typical signal-ground-pair test points. A Klip Chip accessory facilitates probing of SOIC- and PLCC-style packages with 50-mil lead spacing.

For hand probing of 25-mil-pitch and smaller packages one simply connects the probe tip guide. Its miniature plastic tines align with the leads on the device before the probe makes contact. These tines form a shield between IC leads, preventing the probe tip from shorting adjacent pins.

A low-profile, right-angle adapter, coupled with a flexible probe cable, permits direct probing of integrated circuits in the tight space of a card cage or system enclosure. That makes it possible to do accurate timing measurements under true system conditions. The effects of temperature, bus loading and system power can be measured directly through the use of SMD probes with oscilloscopes, eliminating the need for card extenders. *Tektronix Test and Measurement Group, PO Box 1520, Pittsfield, Massachusetts 01202*

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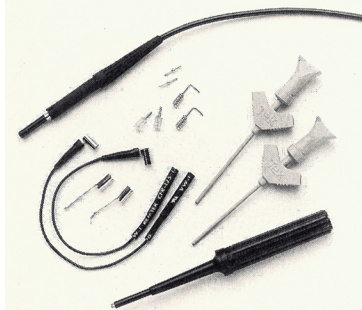
Eight-Cell Multiplexer for Electrochemistry

EG&G Princeton Applied Research has introduced its Model 314 computer-controlled eight-cell multiplexer for use with a portable or laboratory potentiostat-galvanostat. The new multiplexer facilitates instrument data collection by allowing fast switching of a main potentiostat to one of eight different test cells.

Optional potentiostat modules allow potential control of a cell when it is disconnected from the main laboratory potentiostat-galvanostat. Different functions can be performed simultaneously. For example, a constant potential can be applied to one cell while the main potentiostat runs a Tafel plot on another cell.

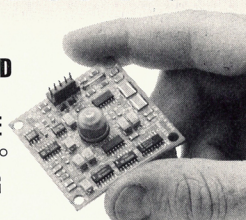
Eight channels are standard with the Model 314. Each includes the following wire configuration: three shielded wires for the working, counter and reference electrodes; one ground wire; and four wires for other signals such as thermocouple inputs. The multiplexer can be used with a variety of potentiostats-galvanostats, including the firm's 263 and 273 A models. *EG&G Princeton Applied Research, Electrochemical Instruments Division, PO Box 2565, Princeton, New Jersey 08543*

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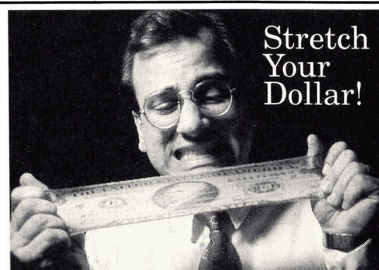
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