

NEW PRODUCTS

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. 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.

LAWRENCE G. RUBIN

FOCUS ON SPECTROSCOPY

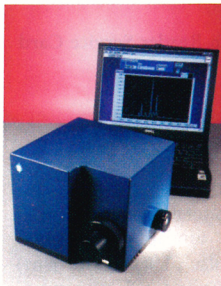
Imaging Spectrograph for Raman Use

Roper Scientific has introduced the Acton Research SpectruMM for Raman, a modular system consisting of a 300-mm focal length f/4 imaging spectrograph and a 1024×128 pixel back-illuminated CCD detector. The company's InPhotonics RamanProbe includes a 90- μ m laser delivery fiber with laser filtering and rejection filters and a 200- μ m return fiber. The probe normally operates with a 785-nm laser excitation (not supplied); it can also be used with 514- and 632-nm laser wavelengths. The probe provides a spectral coverage of between 200 and 3300 wavenumbers, with approximately 8 wavenumber resolution using the 785-nm excitation; it is particularly useful for making measurements on solid and liquid samples in the 1% concentration range. The instrument comes with the company's SpectraSense spectral-acquisition and data-treatment software. *Roper Scientific, Acton Research Corp., 530 Main Street, Acton, Massachusetts 01720-3301*

►Circle number 181 on Reader Service Card

UV/VIS/IR Spectroradiometer

The IL2000 SpectroCube spectroradiometer from International Light features double-pass, single-grating optics, which provide a million-to-one scatter figure from 250 to 1100 nm with 2-nm bandwidth and 0.2-nm resolution. The instrument folds an optical path length of approximately



three feet into a 10-inch cube; it can measure light levels from moonlight to full sunlight, autoranging over eight decades—from 200 pW/cm²/nm to 40 mW/cm²/nm

at 500 nm. The IL2000 includes an f/4 aperture ratio, provides 0.5-nm wavelength accuracy, and can be controlled remotely via telephone line or serial port. Standard features include firmware for optical wavelength self-calibration and a LabView data acquisition and analysis software user interface. *International Light Inc., 17 Graf Road, Newburyport, Massachusetts 01950*

►Circle number 182 on Reader Service Card

Mass Spectrometry System

Micromass has introduced the Q-ToF electrospray LC-MS-MS system that combines the selectivity of a quadrupole with the ultrahigh efficiency of an orthogonal acceleration time-of-flight (oaTOF) mass analyzer. The instrument's oaTOF configuration enables the simultaneous detection of ions across the full mass range. Q-ToF is said to offer up to 100 times more sensitivity than tandem quadrupole instruments when acquiring full product ion (MS-MS) mass spectra; it features a mass-to-charge ratio upper limit exceeding 20 000 in both MS and MS-MS modes. The mass analyzer's high resolving power of 10 000 leads to improved mass measurement accuracy for peptides and charge state identification of multiple charge ions. *Micromass UK Ltd, Floats Road, Wythenshawe, Manchester M23 9LZ, England*

►Circle number 183 on Reader Service Card

Miniature Spectrometers

Data Optics has announced the JETI line of Specbos miniature spectrometers, imported from Jena, Germany. An example is the Specbos 2000, a fiber-coupled spectrometer with an internal light source, photodiode array, and operating in the wavelength region of 380–760 nm. With a 100 μ m fiber slit, the spectral resolu-

1.7K to 800K

Cryostats



Displex®
Helitran®

Optical
Resistivity
Mossbauer
Spectroscopy
Hall Effect
EPR, NMR
UHV

www.arscryo.com

Advanced Research
Systems, Inc.

905 Harrison Street
Suite 109
Allentown, PA 18103
610 439 8022
Fax 610 439 1184
e mail: arsc@arscryo.com
Visit our website @ www.arscryo.com

Check out our 800k displex
and helitran interface

Circle number 26 on Reader Service Card

AIP APS CONGRESSIONAL SCIENCE FELLOWSHIPS 2001-2002

THE AMERICAN PHYSICAL SOCIETY AND THE AMERICAN INSTITUTE OF PHYSICS are currently accepting applications for their Congressional Science Fellowship Programs. Fellows serve one year on the staff of a senator, representative or congressional committee. They are afforded an opportunity to learn the legislative process and explore science policy issues from the lawmakers' perspective. In turn, Fellows may lend scientific and technical expertise to public policy issues.

QUALIFICATIONS include a PhD or equivalent in physics or a closely related field, a strong interest in science and technology policy and, ideally, some experience in applying scientific knowledge toward the solution of societal problems. Fellows are required to be U.S. citizens, members of one or more of the AIP Member Societies for the AIP Fellowship, and APS Members for the APS Fellowship.

TERM OF APPOINTMENT for both fellowships is one year, beginning in September of 2001, with participation in a two-week orientation. Choice of congressional assignment is reserved to Fellows.

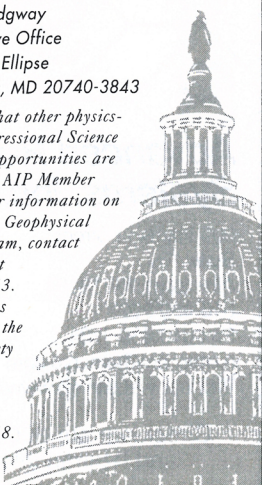
A STIPEND of up to \$49,000 is offered, in addition to allowances for relocation, in-service travel, and health insurance premiums.

APPLICATIONS should consist of a letter of intent, a 2-page resume, and three letters of reference. Please see either the AIP website (<http://www.aip.org/pubinfo/>) or the APS website (http://www.aps.org/public_affairs/fellow.html) for detailed information on materials required for applying and other information on the programs. Unless otherwise specified in the letter, the applicant will be considered for both APS and AIP fellowships.

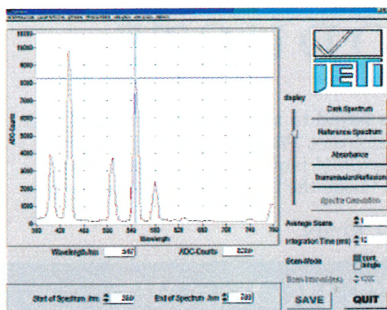
ALL APPLICATION MATERIALS MUST BE POSTMARKED BY JANUARY 15, 2001 AND SHOULD BE SENT TO THE FOLLOWING ADDRESS:

APS/AIP Congressional Science
Fellowship Programs
c/o Erika Ridgway
APS Executive Office
One Physics Ellipse
College Park, MD 20740-3843

Please note that other physics-related Congressional Science Fellowship opportunities are sponsored by AIP Member Societies. For information on the American Geophysical Union program, contact Daryl Tate at 202-777-7513. For programs sponsored by the Optical Society of America, contact Matt Puglisi at 202-416-1418.



Circle number 35 on Reader Service Card



tion is 9 nm, increasing to 6 nm with an optional 50- μ m fiber. The spectrometer features a stray light of 10^{-4} , high dynamic range and sensitivity, and high photometric precision and accuracy. The company's Specbos software is suited for spectra acquisition and transmission or reflection calculations, and provides single and continuous measurement modes, as well as averaging. *Data Optics Inc, 115 Holmes Road, Ypsilanti, Michigan 48198-3020.*

►Circle number 184 on Reader Service Card

Mobile Ambient Air Monitor

The Aries Roaming Air Monitor System from MIDAC can provide real-time detection of hundreds of ambient OSHA-regulated compounds. Designed initially to evaluate air cleanliness in semiconductor clean rooms, the monitor's applications have expanded to include hospitals, research laboratories, and industrial and government buildings. The Aries consists of the company's I Series Fourier transform infrared (FTIR) spectrometer, which exploits the unique absorptivity characteristic of each chemical in the mid-infrared, and an "open White cell" with removable walls for purge and background collection. The system's resulting 80-m optical path length allows for detection of compounds at parts-per-billion levels in most cases. Fiber optic interfacing allows the operator to control the instrument and analyze data remotely in "safe" atmospheres. *MIDAC Corp, 17911 Fitch Avenue, Irvine, California 92614*

►Circle number 185 on Reader Service Card

Fourier Transform Near-IR Spectrometer

Bruker Optics' new process instrument, the MATRIX, is a Fourier transform near-IR (FT-NIR) spectrometer useful for determining analytic concentrations in liquids, emul-

sions, powders, and pellets. It provides a spectral range of 4000–12 800 wavenumbers (2500–780 nm), with an option for 9000–15 500 wavenumbers (1100–650 nm). The spectrometer has a resolution of up to 2 wavenumbers (0.3 nm at 1250 nm) and can acquire up to 5 spectra per second at 8-wavenumber resolution. A new version of the MATRIX includes the option of equipping the instrument with either a single, dual, or a six-port fiber optic multiplexer. With built-in and external multiplexer options, up to 48 reactions can be monitored by a single instrument. The company reportedly has improved its process control software to provide more flexibility. *Bruker Optics, 19 Fortune Drive, Billerica, Massachusetts 01821*

►Circle number 186 on Reader Service Card

Spectroradiometer for LED Measurements

Ocean Optics has configured its miniature fiber optic spectrometer into an accurate spectroradiometer for measuring the absolute spectral intensity



and color parameters of LEDs. The LED Measurement System covers the wavelength range 300–1050 nm. It includes an integrating sphere to collect light and funnel it to an optical fiber, an LED power supply with a NIST-traceable adjustable drive current, and a NIST-traceable calibrated tungsten light source that provides known absolute intensity values at multiple wavelengths. The company's software allows users to acquire, manipulate, and manage data. *Ocean Optics Inc, 380 Main Street, Dunedin, Florida 34698*

►Circle number 187 on Reader Service Card

UV-Visible Spectrophotometer

Spectronic Unicam has introduced the GENESYS 10 spectrophotometers, available in both visible (325–1100 nm) and UV-visible (190–1100 nm) versions, and featuring a 5-nm spec-

tral bandwidth. All spectrophotometer models use an optical design that reduces stray light and produces a precisely focused image on the sample; this imaging allows the use of microcells without special cell holders. The GENESYS 10 UV-Visible model features a high-powered, long-



lasting xenon lamp, dual detectors, and split-beam optics. The instrument contains the company's software that provides programs for standard curve, absorbance ratio, survey scan, and kinetics and performance validation. *Spectronic Unicam, Mercers Row, Cambridge CB5 8HY, England*
 ▶Circle number 188 on Reader Service Card

Raman Spectroscopy System

The CDIR785-1024 Raman system from Control Development features a thinned, back-illuminated thermoelectric-cooled FFT-CCD array detector incorporated into an f/3.0 spectrograph. The excitation source is a 180-mW, 785-nm diode laser with external cavity stabilization, narrow line width, high stability, and reportedly, long life. A high-throughput probe includes a two-fiber confocal design with greater than 10^8 laser line rejection. The Raman system has a spectral coverage of 200–2800 wavenumbers, a spectral resolution of 5 wavenumbers, and can provide real-time analysis for process samples (sampling accessories are available). The company's Windows-based software enhances the CDIR785's use in teaching systems, laboratory, and quality control applications. *Control Development Inc, 3702 West Sample Street, South Bend, Indiana 46619*
 ▶Circle number 189 on Reader Service Card

Atomic Absorption Spectrophotometer

Shimadzu has announced the AA-6650 series atomic absorption spectrophotometers, which are available as flame-only or furnace-only combustion modes. The flame atomization is equipped with a pure titanium burner

head, ceramic impact bead, and polypropylene-coated spray chamber. The high-sensitivity furnace atomizer unit allows detection of lead to sub-0.1 ppb levels. The AA-6650 provides a wavelength range of 190–900 nm, a six-step switchable bandwidth from 0.1–5 nm, and eight automatically switched lamps, and features the company's AA Wizard software that enables measurement parameters and analysis procedures. Reportedly, the reliability of the measured results is ensured by quality assurance and quality control functions that conform to Environmental Protection Agency methods. *Shimadzu Scientific Instruments Inc, 7102 Riverwood Drive, Columbia, Maryland 21046*
 ▶Circle number 190 on Reader Service Card

Online Spectral Search Service

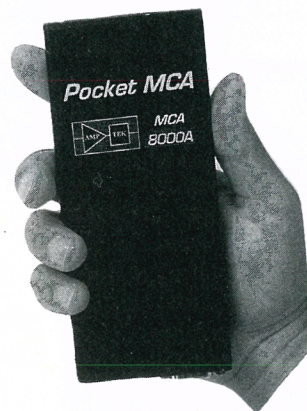
FTIRsearch.com is a pay-per-use online service allowing an Internet search of spectral libraries, which include more than 71 000 Fourier transform infrared (FTIR) and almost 16 000 Raman spectra. The database is constructed entirely from the collection of Nicolet Instrument and Sigma/Aldrich spectral libraries; the search service is built around Galactic Industries Spectral Server software. Users can perform both text and spectral searching of the complete database; the latter option automatically recognizes the data file formats from almost every major vendor's instrument software, eliminating the need to export data. The site includes detailed descriptions of the various library collections, as well as documentation on the mathematical principles of spectral searching. FTIRsearch.com is cosponsored by Nicolet Instrument and Galactic Industries. *Nicolet Instrument Corp, 5225 Verona Road, Madison, Wisconsin 53711. Galactic Industries Corp, 395 Main Street, Salem, New Hampshire 03079*
 ▶Circle number 191 on Reader Service Card

On the Web

A. Daigger & Co has launched Labuniverse.com to provide a forum for scientists to post research, exchange ideas, share opinions, submit editorial material, and access scientific resources such as industry news, product information, and career openings. *A. Daigger & Co Inc, 675 Heathrow Drive, Lincolnshire, Illinois 60069-4206* ■

▶Circle number 192 on Reader Service Card

Multichannel Analyzer World's Smallest 'Pocket MCA'

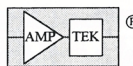


Size: 6.5" x 2.8" x 0.8"
 (165mm x 71mm x 20mm)
 Weight: <300 grams (including batteries)

The **MCA8000A** is a full featured, low power Multichannel Analyzer intended to be used with a wide variety of detector systems.

- 16k data channels
- Stores up to 128 spectra
- 24 hours of continuous data acquisition from two 1.5V AA batteries
- Conversion time $\leq 5 \mu\text{s}$ ($\geq 200,000$ cps)
- Two stage input analog pipeline
- Differential nonlinearity $< \pm 0.6\%$
Integral nonlinearity $< \pm 0.02\%$
Sliding-scale linearization
- Two peak detection modes:
First peak after threshold (nuclear spectroscopy)
Absolute peak after the threshold (aerosol particle detection)
- Two TTL compatible gates for coincidence & anticoincidence
- Stand-alone data acquisition
- Date-time stamp - Y2K Compliant
- Stored spectra protection via software security & serial ID number
- 115.2 kbps serial interface

Free Windows & DOS software



AMPTEK INC.

6 De Angelo Drive, Bedford, MA 01730-2204 U.S.A.
 Tel: +1 (781) 275-2242 Fax: +1 (781) 275-3470
 e-mail: sales@amptek.com www.amptek.com

Circle number 34 on Reader Service Card