

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.

Scanning Electron Microscope

Topcon Technologies has introduced the ABT-323, a scanning electron microscope selling for about \$50 000. The system features Windows-based computer control and computer-hardware independence. The manufacturer claims that the ABT-323 is capable of averaging up to 128 frames per image to reduce noise and improve image quality. Images have a resolution of 2048×2048 pixels.

We are told that the computer-hardware independence of the system allows the user greater flexibility in computer choice and makes computer upgrades easier. The microscope's Dual Control system allows the user to control the instrument either from the computer keyboard or by using the operating panel. *Topcon Technologies Incorporated, 6940 Koll Center Parkway, Pleasanton, California 94566*

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High Resolution Electron-Energy-Loss Spectrometer

The Electron Analyzer Company has introduced a new high-resolution electron energy loss spectrometer, the Model IB-2000. The 35-mm-radius, double pass design, we are told, promises an ultimate resolution of 0.98 meV and guarantees a resolu-

tion of 2 meV for electrons with energies between 2 eV and 200 eV in a suitable chamber.

Other features of the spectrometer include an enlarged 40-mm-diameter sample space, electro-optical isolation, 16-bit digital-to-analog converters for precision voltage control, and keyboard control of the spectrometer via a graphical user interface. The system can be retrofitted to existing surface-science chambers, or it can be installed as a complete system with a mu metal shielded ultrahigh-vacuum chamber. *The Electron Analyzer Company, 99 Derby Street, #303, Hingham, Massachusetts 02043*

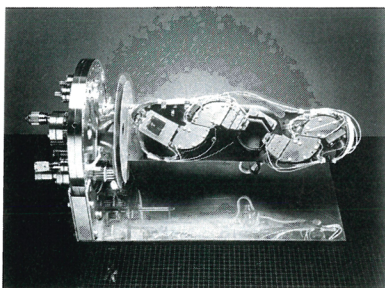
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X-Ray Imaging CCD Cameras

Microphotronics has introduced a new series of CCD cameras for x-ray imaging. This X-Ray Imager series is manufactured in Britain by Photonic Science. The imagers comprise CCD cameras fitted to square x-ray scintillators with diagonal measure of 12 mm, 18 mm, 50mm or 150 mm, coupled to image intensifiers. According to the supplier, these cameras put out intensified images at video rates (30 frames per second), and so they are suitable for many x-ray imaging applications, including crystallography, micro-radiography, phase transition studies and interferometry.

The standard scintillator is polycrystalline gadolinium oxysulphide, sensitive in the energy range from 5 to 200 KeV. It can be removed from the camera and replaced by high-energy, low-energy or high-resolution scintillators available from the manufacturer. The highest resolution imager has a resolution of better than $30 \mu\text{m}$, according to the manufacturer. *Micro Photonics, 4949 Liberty Lane, Suite 170 Allentown, Pennsylvania 18106-0129*

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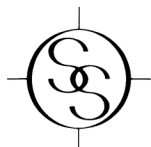
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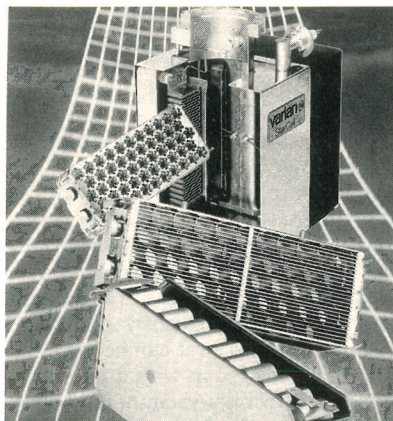
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Ion Pumps for Getterable and Noble Gases

Varian has introduced a new family of ion pumps, the VacIon Plus series, available with four different pumping elements: noble diode, which combines noble-gas pumping with high-speed ultrahigh-vacuum pumping; diode, with the highest pumping speeds for hydro-



gen and other getterable gases; triode, for pumping getterable or noble gases at higher pressures; or Star-Cell, with the highest overall speed for noble gases and methane as well as superior hydrogen capacity. Pumping speeds range from 20 to 500 liters per second. Accessories include integral non-evaporable getters, titanium sublimation pumps, heaters and alternative inlet and roughing-port configurations.

The VacIon Plus family also includes two new controller units: the Multivac high-power, modular controller, which can operate any two ion pumps simultaneously and independently, and allows reliable pressure reading down to 10^{-10} mbar, and the MiniVac controller for operation of VacIon pumps down to the 10^{-6} torr. *Varian Vacuum Products, 121 Hartwell Avenue, Lexington, Massachusetts 02173-3133*

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Inexpensive Entry Level Supercomputers

Intel's Supercomputer Systems Division has added four new supercomputer systems to its Paragon series. The new Paragon XP/E systems are available in configurations ranging from 8 to 28 nodes. They offer a theoretical peak performance of 600

Mflops to 2.1 Gflops, and prices run from \$370 000 to \$725 000.

The new systems are intended for small institutions needing low-cost supercomputing, as well as consortia needing local development platforms for larger remote Paragon systems. The XP/E systems offer the standard Paragon software set. Applications developed on the new machines are binary compatible and scalable just as on the XP/S machines. The units are housed in a single compact cabinet, and they do not require a raised-floor computer room. *Intel Corporation, P. O. Box 58119, Santa Clara, California 95052-8119*

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Low Noise Differential Voltage Preamplifier

EG&G Instruments has introduced its Model 5187, a high-performance, low-noise voltage preamplifier providing true differential input and three gain settings. EG&G says that the device has a high common-mode rejection ratio, wide frequency response and low input noise. The preamplifier can be powered by its own internal batteries, an optional external power supply or from the preamplifier power output port of most EG&G lock-in amplifiers. We are told that the Model 5187 is particularly suitable for low-noise signal amplification in applications where the signal is derived from a low impedance source. *EG&G Instruments, Sorbus House, Mulberry Business Park, Worthingham, Berkshire. RG11 2GY, United Kingdom*

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Electro-optical Laser-Pulse Extraction, Gating and Chopping

The Lasermetrics Division of FastPulse Technology has introduced its new 5046 electro-optic systems for mode-locked pulse extraction and regenerative amplifier seeding. The system can operate effectively at any voltage between 250 and 8000 V without degradation in its 3-nanosecond rise and fall times or its 10 kHz repetition rate.

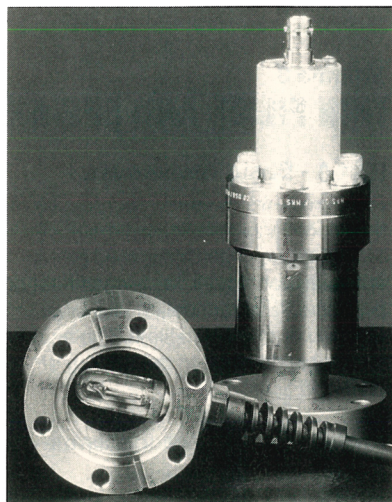
The system is sensitive to wavelengths between 350 nm and 1.3 microns. We are told that it should be particularly useful for regenerative amplifier seeding, laser-pulse chopping, gating and slicing or extracting mode-locked pulses with either continuous or pulse-pumped lasers.

NEW PRODUCTS

Lasermetrics Division, FastPulse Technology, 220 Midland Avenue, Saddlebrook, New Jersey 07662
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Ultrahigh-Vacuum Cold Cathode Starting Device

HPS has released a 220-volt model of its IgniTorr cold-cathode starting device, which is designed to speed up starting times for cold-cathode sensors. The device starts and maintains the ionization process in the cold cathode by emitting ultraviolet photons of a precise energy. We are told that at 10^{-10} torr, the device can cut down the



time necessary to initialize the ionization process from two hours to three minutes. *HPS Division, MKS Instruments, 5330 Sterling Drive, Boulder, Colorado 80301*

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Solid-State High-Power Pulse Amplifier

American Microwave Technology is offering a solid-state, water cooled radio frequency pulse amplifier for linear accelerators and other high-power applications. The Model 1669 operates at 201.25 MHz, and it has a maximum pulse width of 1.25 msec with a 15% duty cycle. It is rated at 5.5 kW peak pulse power in class AB.

The pulse amplifier is protected against exceeding pulse-width, duty-cycle and RF output power limits. Other standard features include a peak-power meter, built in insulator and water cooling. *American Micro-*

wave Technology, 3080 Enterprise Street, Brea, California 92621

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Compact High Current Laser Header

EVI has developed a system, the LM 302, that integrates a laser mount, high-speed current driver and temperature control elements in a single package measuring $1.65" \times 2.5"$. The device is intended for use with high-power single-stripe diode lasers. It provides 300 mA drive at data rates up to 325 Mbps. Modulation and bias levels are set by DC control voltages.

A thermoelectric cooler and thermistor on the header facilitate accurate temperature control, and the laser socket accepts most standard packaged lasers. *EVI, 7138 Columbia Gateway Drive, Columbia, Maryland 21046*

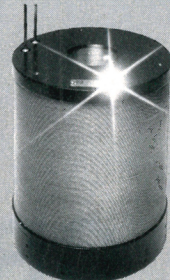
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New Literature

Thermodynamic database—The National Institute of Standards and Technology has made available a computerized database, IVTANTHERMO, with information on the thermodynamic properties of 2300 individual substances over a wide temperature range. The data, originally compiled by the Soviet Academy of Sciences in the 1950s, are calculated from measured values of molecular and thermochemical parameters. The database contains the following information: chemical formula, isobaric heat capacity, entropy, enthalpy, Gibbs energy function, and equilibrium constant. Contact: *Standard Reference Data Program, A320 Physics Building, NIST, Gaithersburg, Maryland 20899-0001*

Materials Publications Catalog—The Materials Research Society has published its 1994 Publications Catalog, listing books, videotapes, databases and journals dealing with interdisciplinary research on advanced materials. Topics include biomedical materials, catalysts, ceramics and composites, computational methods, electronic materials and processing, glasses and insulators, materials characterization, metals and alloys, novel processing, nuclear waste management, polymers, sensors, and education. *Materials Research Society, 9800 McKnight Road, Pittsburgh, Pennsylvania 15237.*

SUPERCONDUCTING MAGNET SYSTEMS



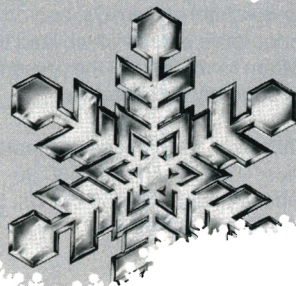
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