

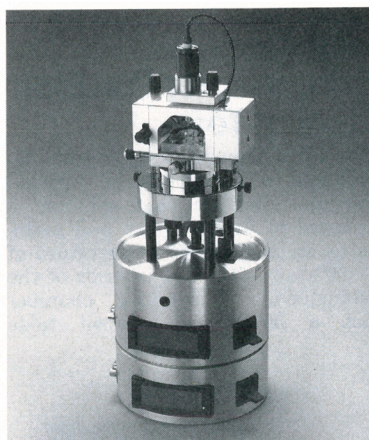
NEW PRODUCTS

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.

Helium Liquefier for Small Laboratories

Quantum Technology is offering a series of helium liquefiers with liquefaction rates of 7, 14 and 20 liquid liters per day. The Quantum liquefier is compact and self-contained with an internal 20- or 40-liter liquid-helium reservoir and helium purifier. It is designed to sit in a laboratory, reliquefying the boil-off gas 24 hours a day. Liquid may be transferred out of the liquefier to any dewar. The system is designed for use with superconducting magnets, squid magnetometers and low-temperature cryostats. *Quantum Technology, 250 H Street, P. O. Box 8110-183, Blaine, Washington 98230*

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cally neutral probe for imaging surfaces undergoing electrochemical reactions. The unit incorporates a potentiostat-controlled electrochemical cell, allowing simultaneous imaging and voltammetry with atomic resolution. Its controls are logical and fully interactive, permitting the user to change microscope and potentiostat parameters without interrupting the experiment. The EC-AFM can be used to observe deposition of single atomic layers, imaging of adsorbates, surface diffusion, nucleation and corrosion processes. The accessory comes with software and all standard NanoScope real-time control and image-processing capabilities. *Digital Instruments, 6780 Cortona Drive, Santa Barbara, California 93117*

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Near-IR Laser Diode Lens

Rodenstock Precision Optics is offering a high-precision, three-element collimating lens for a wide range of laser-diode applications at wavelengths of 630, 830, 1300 or 1500 nm. All air-to-glass surfaces are high-efficiency AR coated. Specifications include a 5.0-mm focal length, 0.5 numerical aperture, 0.14-field-of-view diameter and 0.045-rms imaging quality. The elements are mounted in a compact, durable aluminum housing. *Rodenstock Precision Optics, 4845 Colt Road, Rockford, Illinois 61109-2611*

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Electrochemical Atomic-Force Microscope

Digital Instruments now offers the EC-AFM, an electrochemical atomic-force microscope attachment for use with the company's NanoScope system. The attachment has an electri-

Polynomial Curve-Fitting Software

Dynacomp has released a new version of Regression I software for polynomial curve fitting using IBM PC and compatible computers. Processing speed, data capacity, and graphics features of version 2.0 have been increased. Regression I is compiled for the interactive analysis of linear and nonlinear x - y data, permitting

Cryo

QUALITY

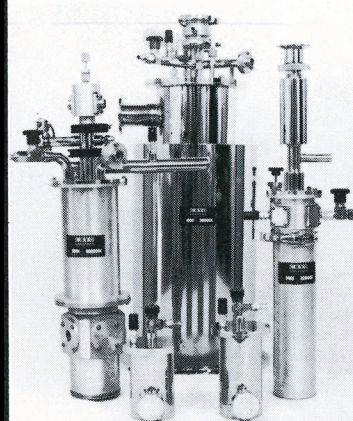
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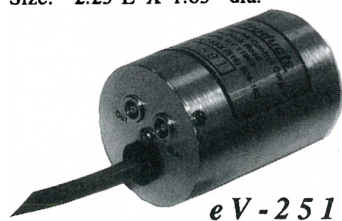
QUALITY CONSTRUCTION WITH LOWER PRICES THROUGH EFFICIENT MANUFACTURING.

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NEW

Large-Area Gamma-Ray Detector

18x18x18mm CsI(Tl)
Scintillator
Size: 2.25" L X 1.65" dia.



eV-251

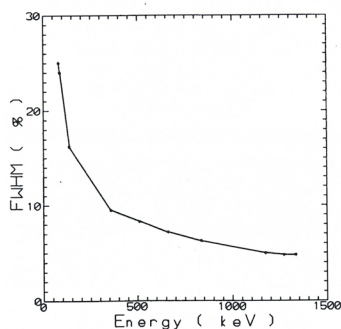
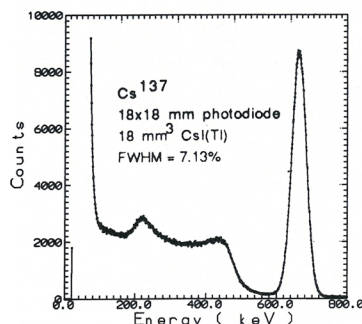
Replaces PMTs

30 Day evaluation period!

- One year warranty -

The eV-251 is a complete package:
crystal, photodiode and preamplifier

- Works in Magnetic Fields
- Low Voltage Operation
- Low Power Consumption
- No Gain Drift



eV Products

Division of Electron Control Corp

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Wales 7131122; India: Con-Serv Enterprises,
Danabundar, Bombay 8725589; Italy: Data Max
s.r.l., Catania 441203; Japan: Niki Glass Co.,
Ltd, Tokyo 4564700

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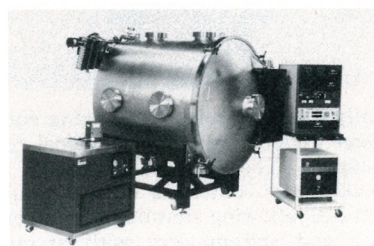
considerable latitude to experiment with fitting functions and different orders of approximation.

A special low round-off error algorithm determines polynomial coefficient and eliminates the need to preprocess the data. Any analysis can be immediately repeated using a different order of fit or a different data transformation. Regression I guards against misleading R^2 coefficient error estimates. *Dynacomp, 178 Phillips Road, Webster, New York 14580*

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High-Vacuum Chamber for Precision Optical Tests

Key High Vacuum Products has introduced a stainless-steel thermal vacuum chamber that achieves a vacuum of 5×10^{-7} torr and maintains an instrument temperature of $-50^\circ\text{C} \pm 1^\circ\text{C}$. The interior of the 50-inch-OD $\times$ 60-inch-long chamber has a 30 $\times$ 50-inch optical table



mounted on precision bearings, which permits the table to be withdrawn from the chamber and returned to within 0.1 mm of its previous position. Two motion stages are mounted on the optical table to provide rotation in the horizontal and vertical planes with an accuracy of 0.05° . Different sizes and configurations are available. *Key High Vacuum Products, 36 Southern Boulevard, Nesconset, New York 11767*

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Small Spectrometer with Many Features

Spex Industries' recently introduced 220M spectrometer has $f/4.5$ optics, a 6 $\times$ 25-mm flat spectral field, 0.2-nm resolution and high throughput. Its aspheric design is said to eliminate aberrations, making the 220M compatible with multichannel detectors, especially two-dimensional CCD systems. The 220M is automated, and its drive design provides self-calibrating

start-ups and 70 mm/sec scans. The spectrometer has computer-controlled slits, a twin-grating turret, swing-away side mirrors and shutter options. The grating in the turret rotates about its face for maximum throughput and broad-band wavelength calibration.

The 220M comes with its own control software, or it can be interfaced to computers through optional RS232 or IEEE 488 interfaces. The unit is compatible with the Spex DM3000 spectroscopy computer. *Spex Industries, 3880 Park Avenue, Edison, New Jersey 08820*

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High-Critical-Current High- T_c Superconductors

HITC Superconco announces a new line of high-temperature, high-current-carrying superconductors made from melt-powder-melt-textured growth materials. HITC uses a pinning-phase purification that uses the magnetic properties of the superconductor to clean the crystal grain boundaries and reduce the incidence of microcracks. The new materials are produced in a variety of sizes: small spheres (for magnetic launch experiments); machined shapes, such as frictionless magnetic bearings; rods, tubes and bars (for use as current leads) and large superconducting tiles and discs (for levitation and magnetic-shielding applications). The material has a critical current density of 3500 amps/cm² at 77 K and 100 000 amps/cm² at 4.2 K in a 1-tesla field. *HITC Superconco, 140 Borden-town Road, Tullytown, Pennsylvania 19007*

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Dose Calibrators for Radionuclide Measurements

Atomic Products has introduced the Atomlab 100 and Atomlab 200 dose calibrators for use in the nuclear medicine industry. The calibrators' electronics and software facilitate accurate radionuclide measurements, which surpass regulatory performance requirements. The calibrators have 13 isotope selection keys—ten preprogrammed for the most commonly used radionuclides and three that can be user-programmed. Any one of the ten preprogrammed keys can also be reprogrammed.

Activity measurements are updated every 0.5–1 sec and are displayed

NEW PRODUCTS

on a four-digit LED readout in Curie or Becquerel units.

The Atomlab 200 has the same functions as the Atomlab 100 and also performs lab-management and record-keeping tasks, inventory control, pharmaceutical quality assurance and high-precision dose calculations, including volume determination and decay charts. *Atomic Products, P. O. Box 702, Shirley, New York 11967-0917*

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Software for Rheometer Control and Data Analysis

Rheometrics is now offering two software packages for rheological testing and data analysis: RHROS controls rheometer operation, and it collects, stores, displays and transfers data. For convenient analyses, data are organized in pages. The software provides the following capabilities: mouse or keyboard interface; wysiwyg graphic display; data storage for lengthy tests; plot annotation; data-editing of plotted data; data management from a built-in 3-D spreadsheet; data smoothing using either an FFT algorithm or a spline; correction for fluid-inertia effects and parallel-plate data for homogeneous strain and strain rate. The other package, RHECALC, is used for data analysis and comes in two modules. *Rheometrics, One Possumtown Road, Piscataway, New Jersey 08854*

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Windows-Type Network System

Canberra Nuclear has introduced the X:Genie Network System for data collection, real-time display and analysis of gamma spectroscopy, alpha spectroscopy, neutron-activation analysis and whole-body counting applications. It combines the X-Windows user interface and X-Terminal Display with Canberra's complete library of analysis software. The system's offers simultaneous control of data-collection devices and viewing of spectra and associated parameters. Experiments can be controlled, applications executed or data reviewed from any X-terminal connected to the system. Application programs can be used to facilitate calibration, operator feedback and use. The system's architecture allows multiple X-Terminals to be connected to an Ethernet LAN, supporting data collection stations without a multi-CPU environment.

Data acquisition is performed through either the Q-bus ADC interface or the 556 acquisition interface module. The system is fully compatible with all DEC VAX computers. *Canberra Industries, One State Street, Meriden, Connecticut 06450*

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Real-Time Sputter Process Monitor

Balzers has made available the SPM400, real-time sputter-process monitor for *in-situ* monitoring and controlling of impurities during VLSI sputter deposition. The monitor detects contaminants such as water and oxygen down to parts-per-billion levels at 10^{-3} to 10^{-2} torr, without valves, capillaries or orifices between the process chamber and the diagnostic tool. The system's valveless construction is said to virtually eliminate outside contamination. The ion-source design permits sampling of the gases directly from the process chamber. The SPM400 uses Balzers' QUADSTAR software for displaying analytical results on-line, permitting data storage and retrieval via the user's PC. *Balzers, 8 Sagamore Park Road, Hudson, New Hampshire 03051*

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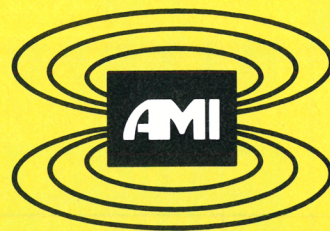
New Literature

Scanning temperature controller—A new brochure describes Can-Tron's STC-12-channel temperature controller, which has a scan of 10 milliseconds and built-in seven-day calendar-clock. The STC-12 includes LEARN-mode software that analyzes each channel to determine its characteristics. Additional features are auto-tuning proportional control, self-calibration and front-panel, toggle-switch programming. Hardware includes 12 RTD inputs and solid-state switch outputs and alarms. *Can-Tron, P. O. Box 51515, Pacific Grove, California 93950*

Aluminum target metallurgy—Materials Research is offering a technical note on the effects of metalworking techniques on the performance of aluminum sputtering targets. The 30-page report covers the company's CCH target-manufacturing process, which optimizes grain size and crystallographic orientation of the target material for faster deposition rates, improved film resistivity and higher-purity films. *Materials Research, Orangeburg, New York 10962*

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