

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.

Stabilization Add-ons for Ion Laser

Coherent has added Mode Tune, another CPU-based feature, to its Innova 300 ion laser system. For single frequency applications, Mode Tune automatically sets the etalon operating temperature to the level that gives the highest-power single-frequency output. A combination of Mode Tune, Mode Track (a stabilization feature) and Power Track (an actively stabilized optical cavity) is said to provide hours of stable, single-frequency performance. *Coherent, 3210 Porter Drive, P. O. Box 10321, Palo Alto, California 94303.*

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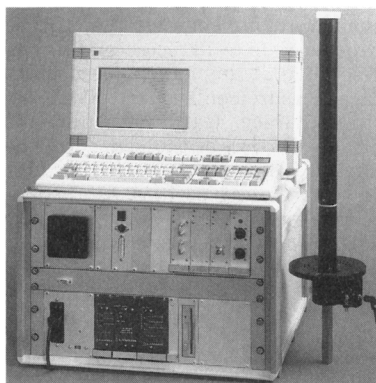
Magnetic-Field-Mapping System

The FMU-500 from Resonance Research is an nmr mapping system for analysis of inhomogeneities in superconducting magnets with flux densities of up to 14 tesla (600 MHz) and with clear bore diameters above 38 mm.

Operated at the proton resonance frequency and equipped with a high-resolution electromechanical probe, the FMU-500 completes a full mapping and analysis cycle in less than one hour. The unit's small field-sensing sample volume (less than 1 mm³) offers reliable analysis up to spherical harmonic coefficients C8 and S8.

Direct digital frequency synthesis and computer-controlled frequency sweep for resonance localization and optimization of data-acquisition patterns give this self-contained, computer-controlled, data-acquisition-and-analysis system automatic and unattended operation capability.

The system console is equipped with a magnetic-field-immune package. It can be operated at fields exceeding 30 gauss. Optional high-



resolution probe-making attachments and horizontal-bore probes are available. *Resonance Research, 46 Manning Road, Billerica, Massachusetts 01821.*

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Programmable Real-Time Hardcopy Oscilloscope

Model 2252 from Tektronix is a 100-MHz bandwidth oscilloscope with four channels, automatic setup, dual time bases and a full complement of automatic measurements. It is fully programmable over the standard IEEE-488.2 interface bus, allowing remote instrument control from a personal computer. The 2252 is also capable of repetitive waveform digitizing using a proprietary sampling technique, thereby providing hardcopy printouts or waveform transfer.

The 2252's sequential sampling technique digitizes a repetitive signal for hardcopy output. All displayed channels, scale factors and active measurements are acquired and transferred via a Centronics interface to an Epson-compatible printer. Each channel is acquired using a 500-point record length and up to 12-bit vertical resolution. A proprietary peak-detection process is said to ensure anti-aliasing and the detection of repeti-

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T = T < 3K
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- diagnostic ray plots
- least squares optimizer
- Monte Carlo ray generator

BEAM THREE \$289

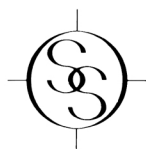
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tive events as narrow as 10 nanoseconds at any sweep speed.

All oscilloscope functions, including instrument setup, signal acquisition and measurement controls, are accessible over the bus. Digitized waveforms and measurement results can be transferred back to a personal computer. Integrated test routines can be developed with EZ-Test PC development software.

The 2252 combines measurement cursors, a digital voltmeter and a precision counter-timer. All measurements with the 2252 are made on the real-time analog signal. With its time-averaging counter, the 2252 is capable of up to 10 picosecond timing resolution at any sweep speed. Voltage measurements exceed 10-bit vertical accuracy. Gated measurements on any portion of the signal can be made by adjusting an intensified zone to any size and position on the displayed signal. *Tektronix, P. O. Box 1700, Beaverton, Oregon, 97075.*

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Thin-Film Analysis

Charles Evans & Associates has introduced three new analytical end stations for materials analysis: models RBS-100, RBS-200 and RBS-400. They are used for routine quantitative, non-destructive analysis of the composition and thickness of thin films on semiconductors, optics, polymers and high-temperature superconductors. Analyses include Rutherford back-scattering spectrometry, hydrogen forward-scattering, proton



recoil detection and particle-induced x-ray emission and channeling.

The end stations are complete hardware and software systems, designed to be used with an electrostatic accelerator to measure the thickness of films on the order of 20 nm. The accelerator produces a beam of high-energy (3-MeV) helium ions, which collide with the sample in the end station. The back-scattered helium

ions provide information on the composition and depth distribution of elements in the sample.

The entry-level RBS-100, the fully automatic RBS-200 and the full-featured RBS-400 all consist of a vacuum chamber, sample holder, controlling electronics and a control-data-acquisition-and-analysis computer. Each model is available with a variety of options, including full automation for unattended data acquisition of up to 40 samples, particle-induced x-ray-emission channeling analyses and a high-magnification viewing system for microbeam analysis. *Charles Evans & Associates, 301 Chesapeake Drive, Redwood City, California 94063.*

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Graphics System for FORTRAN

IMSL has introduced the Exponent Graphics system, designed for the graphics programming needs of scientists and engineers who use FORTRAN. It provides more than 150 user-callable FORTRAN subroutines and three levels of functionality, including: low-level, GKS-based subroutines supporting standard graphics programming techniques; advanced subroutines using a hierarchical tree data structure for rapid plot customization; and applications-level routines allowing "two-call" plotting.

The system contains subroutines for applications ranging from automatic three-dimensional contour rendering to controlling graphics primitives. It can be used with IMSL's mathematical and statistical subroutines, the user's own FORTRAN code or other graphics packages. *IMSL Sales, 2500 Permian Tower, 2500 CityWest Boulevard, Houston, Texas 77042-3020.*

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Software/Hardware for Multidimensional Problems

Wavetracer says that it has developed low-cost advanced software and hardware tools for solving complex physics problems at performance levels normally associated with supercomputers. The most recent products include:

▷ The Data Transport computer, a three-dimensional, massively parallel computer designed for highly efficient data transport, processing and visualization of multidimensional problems

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and other computationally intensive applications.

▷ **MULTIC**, a programming language created for developing multidimensional, data-parallel software applications. *Wavetracer*, 289 Great Road, Acton, Massachusetts 01720

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Cooled Diode Array Infrared Detector

Princeton Instruments has introduced its Model GE-128 cryogenically cooled diode array. The detector is based on a 128-element germanium array, each diode being 100 μm (wide) $\times$ 2500 μm (high). The array provides a 12.8-mm focal-plane coverage and responds to radiation in the 0.8- to 1.5- μm spectral range. The instrument's response is linear for low-to-medium light levels. The detector can be used as an add-on to previously purchased Princeton controllers. *Princeton Instruments*, 3660 Quakerbridge Road, Trenton, New Jersey 08619

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Real-Time Applications Software For Handling Data

Laboratory Technologies has introduced applications software for data acquisition, analysis and control, which runs on nine new UNIX platforms, including several RISC-based workstations. The UNIX versions will be available for both Labtech Notebook, a scientific data-acquisition and analysis software package, and Labtech Control, the company's family of industrial monitoring-and-control software products. The software is compatible with the following PC and PS/2-based UNIX operating systems:

▷ Interactive Systems' 386ix operating system and

▷ VenturCom's VENIX/386 operating system with real-time extensions.

Labtech Notebook for UNIX includes a comprehensive set of laboratory automation functions, including real-time data collection; on-line mathematical, statistical and signal processing analyses; graphical, real-time data display; and closed- or open-loop control. Notebook supports such I/O functions as analog input; analog output; digital I/O; counter, frequency, clock and calculated channel functions; and historical replay of data. *Laboratory Technologies*, 400 Re-

search Drive, Wilmington, Massachusetts 01887

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New Literature

Seals—Nor-Cal has produced a new catalog with 200 pages of prices and specifications for CF and wire seal components, NW and ISO components, ASA components, vacuum chambers and accessories, valves, fore line traps and weld fittings. *Nor-Cal Products*, 1967 South Oregon Street, P. O. Box 518, Yreka, California 96097.

Optics—Oriel has published *Optics and Filters*, a 280-page catalog containing 50 pages of technical information, application notes and product descriptions. Some of the new products are GRIN, Best Form and Fresnel lenses; reflecting microscope objectives; crystal and silver in glass polarizers; and new IR-lens and window materials such as sapphire and zinc sulfide. Listings of filters, beam splitters and prisms have been significantly expanded. The catalog uses exploded-view illustrations, detailed specifications and product comparisons. *Oriel*, 250 Long Beach Boulevard, Stratford, Connecticut 06497.

Thermistor housing—Fenwal Electronics has released its updated NTC/PTC Thermistor Standard Housing Catalog (L-15). The catalog complements the company's NTC/PTC Thermistor Standard Products Catalog (L-12B), which lists the basic family of thermistors. This new 24-page free offering is divided into three sensing-applications sections: surface, air-gas and immersion. The beginning of each section has a table of thermistors and compatible housings. The chart also tabulates time constant, dissipation constant and maximum temperature. Seven pages of comprehensive technical copy, charts and graphs complete the catalog. *Fenwal Electronics*, 450 Fortune Boulevard, Milford, Massachusetts 01757.

Waveform measurements—LeCroy's condensed catalog of waveform measurement and generation products is oriented to research and measurement applications. Product areas covered include both portable and bench-top digital oscilloscopes, modular digitizing systems and fast signal generators. The catalog highlights LeCroy's most recent measuring devices. Specifications are abbreviated but substantial. *LeCroy*, 700 Chestnut Ridge Road, Chestnut Ridge, New York 10977-6499. ■

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