

## RESOURCES

*A summary of new products and services for materials research...*

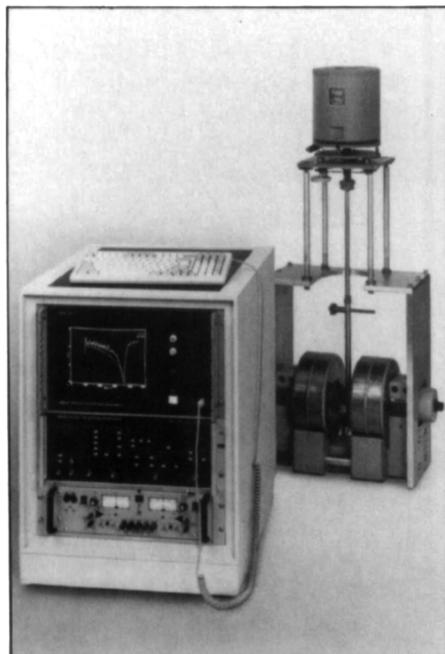
### **X-Ray Fluorescence Spectrometer System:**

Low-cost energy dispersive x-ray fluorescence spectrometer system PV9550 from Edax is designed for fast, reliable, simultaneous, multi-element analysis on a wide variety of specimen types. Ten samples can be loaded at once, and a wide range of routine analytical functions can be done, including analysis of up to 10 samples, different analyses on each of up to 10 samples, and/or multiple analyses of each sample. Unusual, nonroutine tasks can be done as well.

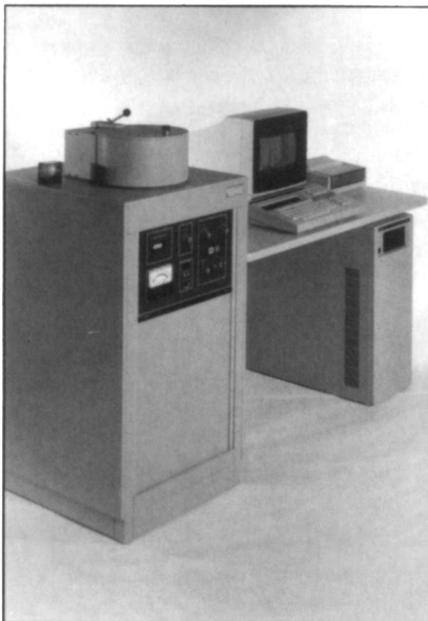
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**Compact Magnetometer:** Compact, low-cost magnetometer from EG&G Princeton Applied Research has most of the features found in larger, more expensive models. Model 4500-30 offers some significant advantages of its own, as well, such as reduced power requirements, air cooling, a more rugged rack system and a smaller "footprint." The new model was designed for use in laboratories and industrial facilities where space is at a premium. With a small 300-pound magnet, the unit is comparatively light in weight, and its modular configuration allows unusual design flexibility. The air-cooled 4500-30 eliminates the need for water lines and alleviates related environmental concerns. It also requires relatively little power for efficient operation: the smallest version, for example, uses only 115 V/20 A.

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**Compact Magnetometer**



**X-Ray Fluorescence Spectrometer System**

**Superconducting Magnets and Cryogenic Supplies:** American Magnetics' catalog contains over 440 standard magnet designs and a full line of power supplies, power supply programmers, liquid helium level meters, and cryogenic instrumentation. Free custom design of superconducting magnets is available.

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**Custom Vacuum Chambers:** Huntington Laboratories' design automation service lets vacuum system users develop custom ultrahigh vacuum chambers much more quickly than before. Users specify the chamber dimension parameters, port configurations, and other specifications, and do not go through a time-consuming two-dimensional design stage. A software program linked to a CAD system rapidly translates the customer's raw chamber "idea" into an actual 3-D view with an accurate cost quotation, all without any manufacturing operations. Chamber documentation is also available on tape, disk, or plots.

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**Electron Microscopy:** Catalog from Electron Microscopy Sciences features over 3,000 items, showing a complete line of chemicals, supplies, accessories, and equipment for light and electron microscopy in biology and materials science.

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### **Electrochemical Atomic Force Microscope:**

The Nanoscope EC-AFM attachment from Digital Instruments can image surfaces undergoing electrochemical reactions with an electrically neutral probe and allows simultaneous AFM imaging and voltammetry with atomic resolution. The user can change microscope and potentiostat parameters without pausing the experiment. The EC-AFM can observe deposition of single atomic layers, imaging of adsorbates, surface diffusion, nucleation, and corrosion processes.

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### **IR Camera with 256 × 256 Pixel Resolution:**

Amber Engineering's model AE-4256 camera system with a 256 × 256 indium antimonide InSb focal plane array is sensitive from 1 to 5.5  $\mu\text{m}$ . A support electronics unit supplies all drive, acquisition, processing, and display functions. The AE-4256 provides variable frame rates up to 50 Hz and user-selectable integration times. The focal plane array is available with a liquid nitrogen dewar or closed-cycle refrigerator, and the electronics unit can be operated at the front panel or via an interface. Lenses and optional configurations are available.

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### **Cold Cathode Gauge:**

SensaVac™ Series 953 Pirani/Cold Cathode Gauge System from MKS Instruments delivers continuous vacuum measurement from atmosphere to  $10^{-9}$  torr. Two nonvolatile, independently adjustable set points provide fast system control. A third, internal, fixed set point automatically turns the cold cathode high voltage on and off, prolonging the life and accuracy of the cold cathode tube.

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### **Electrically Conductive Sintered SiC Sputtering Targets:**

Carborundum's Hexoloy® SG SiC targets can provide a high-performance alternative to traditional Al, Ti, and Si targets. The targets, which yield a 20-30  $\text{\AA}/\text{s}$  deposition of hard, diamondlike SiC coating, contain no free silicon metal and can be used to sputter on metals, plastics, glass, composites, and ceramics in high-vacuum nitrogen, hydrogen, or argon at room temperature. When sputtered in hydrogen, Hexoloy SG SiC can produce an optically transparent dielectric coating with a 2.5 index of refraction. Targets are available in a variety of shapes and sizes.

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