

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

X-Ray Microanalysis System: The PowerMX™ from EDAX can be configured with the EDAM II data acquisition module and an EDAX detecting unit to offer capabilities such as word processing, spectral collection, qualitative and quantitative analysis, statistical analysis, 3D modeling, desktop publishing, and database management. Users have the option of third-party intuitive graphics-based programs that run on the Macintosh, as well as programs designed for PC systems. The PowerMX will permit system setup, peak identification, ratemeter, and region-of-interest functions. A free brochure is available.

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Internet Engineering Community: Engineering Information Village™ from Engineering Information is constructed around 11 locales to make locating information faster and more intuitive, to provide a shortcut to Worldwide Web and Gopher sites, and to offer formal information sources such as technology news, and access to more than 150 on-line databases, including summaries of journal articles and conference papers. The Ei Village also provides a forum for idea exchange through interactive peer services such as talk, news groups, full Internet access, and e-mail.

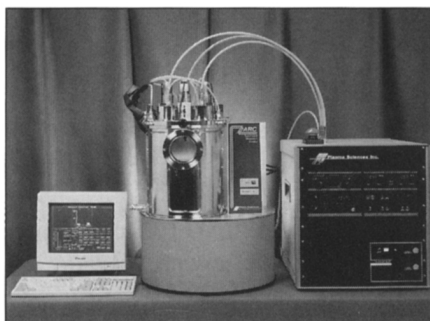
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Materials Evaluation and Corrosion Monitoring Catalog: Free 48-page catalog from Metal Samples features products such as corrosion monitoring probes and instrumentation, mechanical test specimens, coupon insertion systems, and test racks. The company, which specializes in manufacturing parts from exotic and conventional materials, also offers precision machining services such as laser cutting and welding, and grinding. The catalog includes a list of alloys and technical information regarding corrosion testing.

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Vacuum Products: Free 1996 catalog from Balzers-Pfeiffer provides information on vacuum pumps, gas analyzers, leak detectors, vacuum gauges, and other products for the production, measurement, and control of medium to ultrahigh vacuum. Performance characteristics, applications, dimensional drawings, and accessories lists are included. A pocket-size vacuum conversion chart is also included.

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▲ **Planar Magnetron Sputtering System:** Plasma Sciences' ARC-12M is designed for simultaneous or sequential sputtering from three 5.08 cm-diameter (2 in.-diameter) planar magnetron sources with RF and DC power. The tabletop turbopumped system provides uniform adherent thin films of nonconductive and conductive materials. Sample sizes up to 20.3 cm (8 in.) in diameter can be coated on the variable height biasable planet with substrate heaters to 600°C. Applications include CV dot processes, biomedical coatings, sensor devices, and energy storage devices.

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Focused-Beam Dual-Laser Ellipsometer: Rudolph's FE-VII measurement system provides stability of 0.075 Å short term and 0.15 Å long term on 30 Å gate oxides. The unit requires no internal reference wafers or periodic calibrations. The spot size is 7 × 12 μm, and pattern recognition features such as recipe transportability and adaptive pattern recognition reduce programming time.

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Fusion-Bonded Silicon Membranes: Ultra Bond™ membranes from Virginia Semiconductor are made of separately manufactured silicon membranes and substrates that ensure control on thickness uniformity and dopant concentration during production. The interface layer measures less than 2 μm and can be made with or without oxide. The membranes can withstand misorientation-induced stress caused by cleaving along one of the substrate's crystallographic axes and can be polished along the cleaved edge without flaking. Steady state of resistivity is held throughout each layer. The membranes are available in diameters ranging from 5.08–10.16 cm (2–4 in.), with top thicknesses of 10–200 μm.

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Test and Measurement Products: Free 268-page catalog from Tucker Electronics features more than 5,000 new and used instruments plus hundreds of components and specifications. Products include standards and calibrators, power supplies, oscilloscopes, amplifiers, environmental chambers, analyzers, signal generators, books, and microwave components.

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Pulse Preamplifier-Discriminator: Advanced Research Instruments' F-100T/E Version 6.2 processes pulses from a photomultiplier tube or electron multiplier and replaces a preamplifier, a linear amplifier, and a low-level discriminator. The hand-sized device can be placed adjacent to a detector to reduce noise. Sensitivity is 50–100 μV for TTL or ECL output pulses. Maximum pulse repetition rate for equally spaced pulses is 100 MHz. Applications include photon, electron, and ion counting; fast PMT pulse processing; SIMS; ISS; and x-ray.

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Ceramic Materials Analysis Software: Argonne National Laboratory and JSK Associates have developed software to predict the orientation of grains, or crystals, in dual-phase ceramic materials—complex materials containing two distinct chemical components. The software and x-ray diffraction data will enable users to quantify and analyze the internal structure of composite ceramics. This information can then be combined with knowledge of single-crystal properties of the individual chemical components to predict the properties of the entire composite, including strength and stiffness.

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Energy Analyzer: The EA125, now manufactured by OMICRON Electron Spectroscopy Ltd., is a 180° double-focusing hemisphere analyzer equipped with five selectable pairs of entrance/exit slits and two different 11-element lines. The Universal zoom lens offers variable magnification from ×1 to ×5, respectively, and an angular acceptance range from ±1° to ±8° with a working distance of 30 mm. A minimum area sampled by the lens is approximately 200 μm in diameter. The device is suitable for XPS, AES, UPS, and synchrotron applications.

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