

RESOURCES

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

Plasma Sampling Mass Spectrometers:

Hidden Analytical's PSM series can simultaneously determine generated plasma species and concurrent ion energy distributions. Direct plasma orifice sampling and combined differential pumping enable systems to address multiple process pressure regimes from 10^{-4} to 100 mbar, the ion extraction and energy filtering elements optimizing the characterization of process gases, plasma ions, and neutral species. Features include triple-stage mass analyzers and wide-range pulse ion counting detectors. Mass range options extend to 2500 amu.

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HDTV Digital/Analog Waveform Monitor:

Leader Instruments' Model LV 5150D operates with 1080 and 0135 interlaced systems, with an optional 720-progressive. Two DSI inputs are incorporated, as well as a three-wire input for analog components to monitor decoder outputs or other analog sources. The design provides for waveform, vector, picture, and stereo audio monitoring. Features include monitoring of YCbCr or GBR, decoded monitor outputs of YPbPr or GBR, full line select with a strobe in the picture display, and precision cursors for level and time/frequency.

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Diamond Film for High-Temperature Processes:

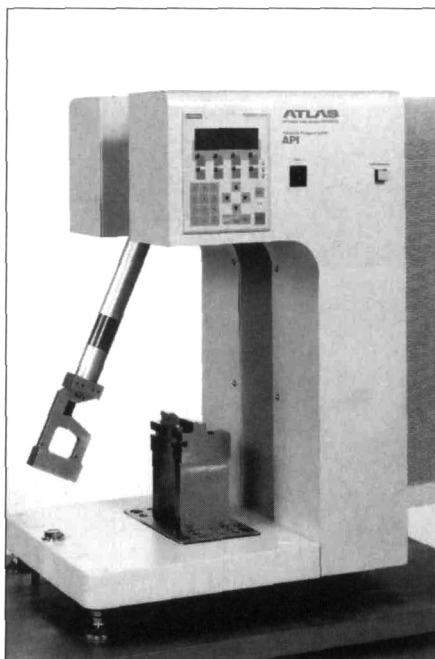
Goodfellow's polycrystalline diamond film prepared by a CVD process is suitable for applications that include use as detectors and windows in high-temperature processes, as heat sinks in microelectrical applications, and as wear-resistant coatings. The film can be supported on a suitable substrate of a given orientation or, depending on the film thickness, can be freestanding. Thermal conductivity, grain size, transparency, and surface roughness vary.

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Furnace and Heating Element Handbooks:

Two free handbooks from Micropyretics Heaters International discuss heating systems, covering custom furnace development, high resistivity heating elements, and standard molybdenum disilicide heating elements. Information is provided on heating systems up to 1900°C , including novel convective systems. Tables for engineering unit conversions and temperature conversions also are included.

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Pendulum Impact Tester:

Atlas Electric Devices' API determines the energy required to rupture standard tension-impact specimens. Interchangeable sample supports and mountings allow for Izod, Charpy, tensile-in-base, or tensile-in-head version. The unit also can determine the resistance of notched plastics and ceramics to breakage by flexural shock. Features include an Izod clamping force adjustment and a continuously variable starting angle and automatic brake feature to prevent secondary impact of the pendulum.

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Nondestructive Coating Thickness Measurement of Ultrathin Coatings:

The TM85 Test Station from Fischer Technology provides nondestructive coating thickness measurement of ultrathin coatings on nonferrous substrates, on either the inside or outside diameters. The system uses the eddy-current measurement principle with an integrated active probe.

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Laser Applications Catalog: Free catalog from the Laser Institute of America lists products and services on laser applications and safety. Included are national laser safety standards, books and reference guides, proceedings, videos, hazard evaluator software, warning signs and labels, safety courses, conferences, and on-site laser safety training.

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Seal Design Guide: Apple Rubber Products 180-page seal design guide is available as a book or CD-ROM. The guide provides information on basics of O-ring design, seal types and gland design, critical operating environmental factors, material selection, special elastomer applications, and troubleshooting. A listing of the company's standard and nonstandard O-rings is included.

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Rotary Position Sensor: Honeywell's HMC1512 high-resolution low-power magnetoresistive sensor can measure the angle direction of a magnetic field from a magnet with an angular range of $\pm 90^{\circ}$ and $< 0.07^{\circ}$ resolution. The sensor measures field direction rather than field strength and is suitable for threshold detection, angular speed, and angular position sensing applications. Advantages include the ability to withstand large variations in the gap between the sensor and magnet, insensitivity to the tempo of the magnet, and decreased sensitivity to shock and vibration.

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Dielectric and Impedance Material Analysis:

The ALPHA from NOVO-CONTROL GmbH can be used as a general purpose precision impedance analyzer but is designed for dielectric/impedance materials analysis. The system has a frequency range of 3×10^{-6} to 10^{-7} Hz, and an impedance range of 0.1 to $10^{14} \Omega$. The accuracy in loss factor $\tan(\delta) < 3 \times 10^{-5}$ (resolution $< 10^{-5}$) provides access to material properties for low loss materials. Optional sample cells incorporate an impedance converter connected directly to the sample by rigid lines, ensuring accuracy up to 10 MHz and enabling optional control of sample temperature.

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Computer-Controlled Ion-Beam Etching:

Leica's EM RES 100 computer-controlled ion-beam etching system features integral video monitoring as standard equipment. All settings are performed by clicking the mouse or keyboard. Preparation sequences can be recorded, saved, and recalled for similar applications. The etching process can be followed on screen and ended when results meet user requirements. Two ion sources ensure short etching times with little heat generation. The vacuum load lock system ensures rapid changeover of specimens.

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