

RESOURCES

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

Air-Stable Polymeric Precursors:

Chemat Technology's series of polymeric organic precursors for solid-state thin films are more stable in the atmosphere than pure metal alkoxides. The precursors are soluble in hexane, toluene, and alcohol, and they are applied to the substrate through spin-on and dip-coat technique to facilitate control of hydrolysis during thin film preparations. Polymeric precursors for BaTiO₃, PbTiO₃, SnO₂, In₂O₃, ZrO₂, PZT, ITO, and ATO are available.

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Advanced Intermetallic Melting Process:

Oak Ridge National Laboratory's Exo-Melt™ process uses exothermic reactions to melt nickel and iron aluminides. For Ni₃Al-based aluminides, the nickel is split into two parts. The top part combines aluminum with nickel to form NiAl, with the remaining nickel at the bottom. The heated aluminum melts and comes into contact with heated nickel, and NiAl formation generates large amounts of heat. Superheated NiAl liquid dissolves alloying elements, and molten aluminum continues to react with heated nickel to form NiAl. An exothermic reaction occurs, with its heat used to heat the remaining melt stock.

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Ferroelectric Nonvolatile Memory Films:

Epoxy Technology's method for making ferroelectric thin-film coatings (such as PZT) consists of an advanced metal polymer solution that can be applied by dipping, spinning, or spray coating. Upon evaporation of the solvent, the coating is fired at 400°C to form an amorphous metal oxide thin film that is pin-hole free. Heating to 550°C or higher will form the required Perovskite structure. Films on the order of 0.05–2 μm can be available, and the technology allows for accurate stoichiometric compositions.

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High-Rate Ge Detector Gamma Spectroscopy:

Free 20-page application note from EG&G ORTEC provides tips on selecting a gamma spectroscopy system with the optimum combination of performance parameters for high-count-rate applications. Experimental methods are given for testing system performance parameters. A figure-of-merit comparison of detection limits for throughput-limited systems shows that MDAs can be improved by a factor of three with the selection of optimum detector and electronic elements.

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Microscopy and Histology Catalog:

Electron Microscopy Sciences' 400-page catalog features chemicals, supplies, accessories, and equipment for microscopy and histology applications. Nineteen chapters cover chemicals, embedding kits, grids, staining supplies, calibration standards, microanalysis element standards, specimen preparation supplies, photography supplies, scanning and cryo supplies, and illuminators and magnifiers.

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Boiling Solvent Evaporator: The S-EVAP™ Model 12035 five-position evaporator from Organomation Associates features individual KD flasks and insulated concentrator tubes with a central 2.5-liter solvent collection vessel. The glassware arrangement uses Hopkins-type condensers with Teflon® tube fittings leading to the central vessel, eliminating the need to empty five collection flasks. The device handles 500 ml or 250 KD flasks and is suitable for applications that do not require segregation of collected solvent.

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Interactive Technical Memo Library:

Lam Research's Fast Access to Critical Solutions™ (FACS) is an interactive CD-ROM-based multimedia software service consisting of Lam's technical memos and data pertaining to process equipment used to manufacture advanced semiconductor chips. FACS features multilevel search capabilities and facilitates acquisition of customer-specific information. The FACS service also includes historical memos for the Advanced Capability Rainbow™ and Transformer Coupled Plasma™ (TCP™) series of plasma etch systems.

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High-Voltage Amplifier: Trek's Model 20/20A features an output range of 0 to ±20 kV and a peak current of 20 mA. The solid-state design offers high bandwidth, high slew rate, and low noise operation. The four-quadrant output stage sinks or sources current into resistive or reactive loads throughout the output voltage range. The unit is configurable as a noninverting, inverting, or differential amplifier with a fixed gain of 2,000. Applications include electrostatic scanning, electrostatic levitation, and pulse field electrophoresis.

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Metal-Organics Catalog: Gelest's 432-page catalog features silanes and silycones, metal-containing acrylates, methacrylates, acetylenes, and olefins. Information on metal-organic monomers and polymers covers physical properties, references and structures, CAS numbers, and hazardous material rating information. Scholarly reviews of metal-organic chemistry are included.

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Multiconductor Thermocouple Feedthrough:

The hermetically sealed "bull-dog" from Three E. Laboratories is suitable for environmental chambers and furnaces, under vacuum or pressurized, including those requiring multiple connections. The unit supports up to four pairs of thermocouple wires, eight electrical connections, or four mineral insulated compression thermocouples in a hermetic package. Various headers are available, including an eight-pin terminal glass-to-metal seal header and a header that uses compression fittings.

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Thick Film and PTFE Catalog: Free eight-page catalog from Barry Industries features high-power resistors, terminations, and attenuators; chip resistors; custom thick film circuits; microwave chip terminations; and custom PTFE (Teflon®) circuit boards. Component specifications and photographs are included.

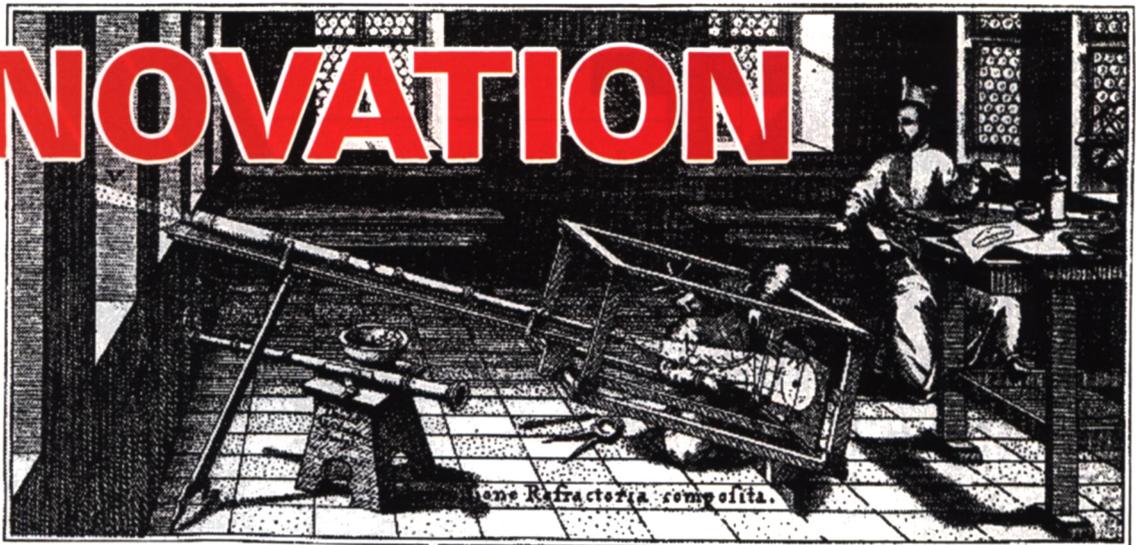
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Vacuum Accessories Catalog:

Balzars' vacuum accessories catalog features more than 800 products. Included are a line of CF (UHV) flanges up to 16.5-in. OD; KF clamp flanges and fittings manufactured in accordance with ISO standards; ISO flanges and fittings for large tubing; CF, KF, and ISO vacuum hardware; compact gauges and controllers; valves; and residual gas analyzers.

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INNOVATION

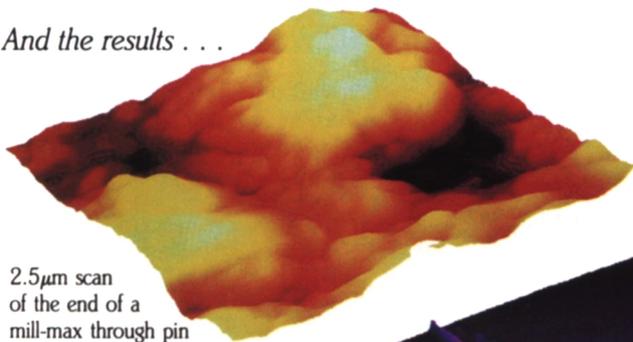


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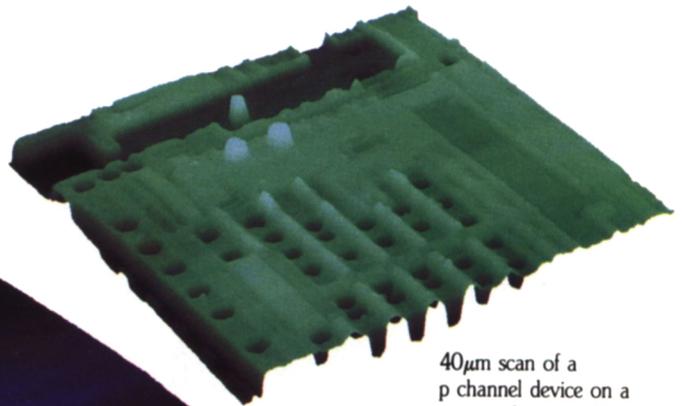
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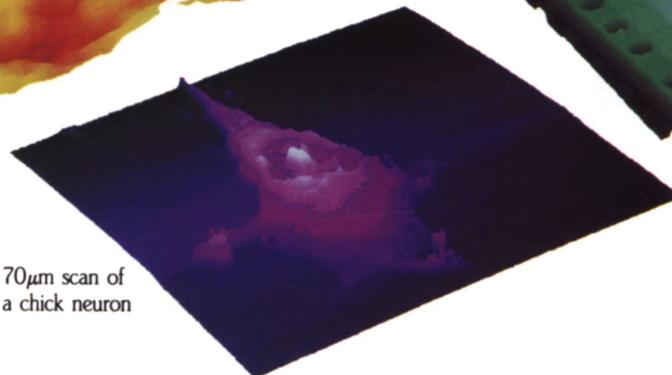
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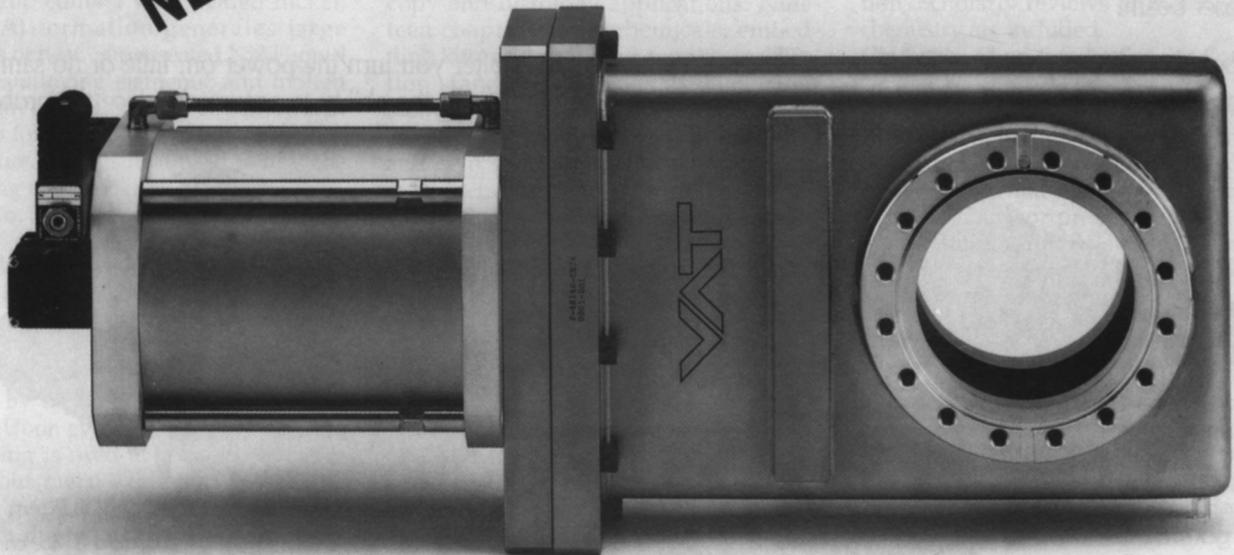
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