

RESOURCES

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

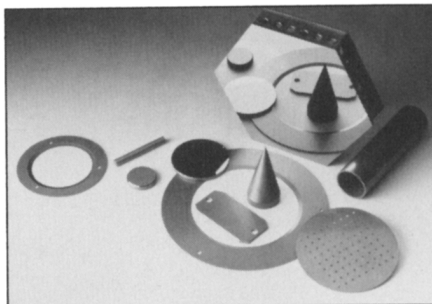


▲ **Focused Ion Beam Workstation with SIMS:** FEI Company's FIB 600 Series Workstation with SIMSmap™ secondary ion mass spectroscopy option enables users to perform *in-situ* chemical identification that includes elemental analysis of submicron features, defects, and particles buried beneath one to several layers; elemental mapping of cross-sectioned areas; dynamic chemical profiling; and material-based end-point detection. The SIMSmap™ module uses a 200 AMU range mass analyzer for positive and negative ions. The workstation features a computer-controlled stage, CAD navigation linkage, electronically variable beam diameter selection, and etch capabilities.
Circle No. 82 on Reader Service Card.

▲ **Vacuum Components Catalog:** MDC Vacuum Products' 360-page catalog details components for high and ultrahigh vacuum systems. Flanges, fittings, valves, roughing components, instrumentation, viewports, and feedthroughs are included. Del-Seal, Wire Seal, and Del-Weld ultrahigh vacuum all-metal seal components are usable to below 10^{-13} torr. ISO Kwik-Flange and Large-Flange O-ring seal systems provide make-and-break connections for use to 10^{-8} torr with tube sizes from 1/2-in. through 20-in. O.D. Also shown are ASA, Del-Base, and Quick-Disconnect systems, bakeable all-metal valves, and a mini-scaffold in-vacuum mounting system.
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▲ **Solder Preforms:** Indium's InTE-GRATED™ preforms are joined in a matrix by fine strands of solder which melt and flow to adjacent pads to effect complete preform separation during the reflow process. The units allow simultaneous placement of all solder preforms needed on connector pins, pin grid arrays, and other multiple pad/pin components. Array pitch tolerance is non-accumulative, and center-to-center accuracy can be held to ± 0.0002 in. (0.0051 mm). The technology can also be used in non-array configurations. Indium, tin, lead, and silver, or any combination of two or more of these, can be made into preforms compatible with most reflow methods.
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▲ **Polymer Materials Modeling Software:** Molecular Simulations' Professional POLYGRAF™ Version 3.1 and seven available modules enable users to explore molecular structure and physical properties of polymers. Using the DREIDING™ force field and advanced molecular builder tools, modelers may create amorphous/crystalline polymers and determine characteristics. With added modules, users can determine specific characteristics affecting the end-use of a simulated material. POLYGRAF™ runs on workstations and other computing platforms, with interactive and background mode operation on IBM RS6000, HP9000, DECStation 5000, and others. It also runs in background mode on CRAY supercomputers.
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▲ **Silicon Carbide Components:** Morton Advanced Materials' CVD SILICON CARBIDE™ is available in preshaped components of many geometries having properties of a cubic (β) material. Morton's CVD process can produce bulk, free-standing substrates several square feet in area and up to 1 in. thick, or to customer specifications. Applications include nozzles, electronic packaging, high-temperature processing tools, seals, and wear parts.
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▲ **Electrostatic Voltmeter:** TREK's Model 368 ESVM provides more than 0.1% accuracy and noncontacting voltage measurements from 0 to ± 2 kV dc or peak ac. The unit has a switch-selectable output monitor ratio of 1/200 or 1/1000 of the measured voltage, an output monitor noise of less than 25 mVrms, and a response speed of less than 200 μ s for a 1 kV step input. The voltmeter tracks changing surface potentials and uses both side- and end-viewing miniature probes. Also available is an optional rack mounting package that allows multichannel service in installations where space is critical.
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▲ **Photoresist Radiometer:** International Light's microprocessor-controlled IL1440 uses low-profile detector probes to automatically program the instrument and display results. The portable device provides integrated and instantaneous irradiance measurements, and features a choice of three 1/2-in.-high detector probes for measuring three photoresist spectral responses: 300–500 nm, 300–400 nm, and 190–315 nm. The IL1440 provides direct readings on a 32-character LCD display and uses 4 AA alkaline batteries.
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▲ **EIA Standards:** Free 120-page catalog from Global Engineering Documents lists more than 1,000 standards, specifications, and publications of the Electronic Industries Association and affiliated groups such as the Telecommunications Industry Association, Joint Electron Device Engineering Council, and EIA Tube Engineering Advisory Panel. Also included are joint standards in collaboration with IPC, ANSI, and NEMA.
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▲ **Custom-Built Beam Electromagnet Systems:** Walker Scientific's beam electromagnet systems include analyzing, deflecting, switching, quadrupole, octapole, corkscrew, Chicane, steering, and custom beam magnets. Dipole magnets for beam handling systems with fields above 5 kG have pole edges contoured to approximate a Rogowski profile, and analyzing magnets can be supplied with homogenizing gaps and field clamps. Quadrupole magnets can be produced with yokes and pole roots that operate at flux densities below 12 kG. Magnetic and geometric centerlines coincide within 0.003 in., and pole-to-pole symmetry and gap uniformity are held to within 0.003 in.
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