

## RESOURCES

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

### **Electron Beam Evaporation Sources:**

e-Vap® sources from MDC Vacuum Products are available in 6, 10, and 15 kW versions and feature permanent magnet poles that allow 270° beam deflection. The magnetic field forms plano-convex field lines with the beam, and the beam has one focal point. In the self-aligning emitter assembly, the entire filament is exposed while filament legs remain hidden, and the assembly is attached to heat sinks which are indirectly water-cooled. The flush top design eliminates shadowing of the vapor cone during deposition.

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### **UHV Equipment and Parts Catalog:**

Duniway Stockroom's 44-page 1994 catalog features UHV equipment and replacement parts. Items include feedthroughs, flanges and fittings, bell jars, leak detector parts, copper gaskets, thermocouple gauges, inert fluids, transformers, and more. Surplus equipment is also featured, subject to availability, and includes mechanical vacuum pumps, blowers, cryopumps, rebuilt turbopumps and converters, valves, ionization gauge control units, and more. Pump rebuilding is also available.

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### **UV/VUV Beam Delivery Systems:**

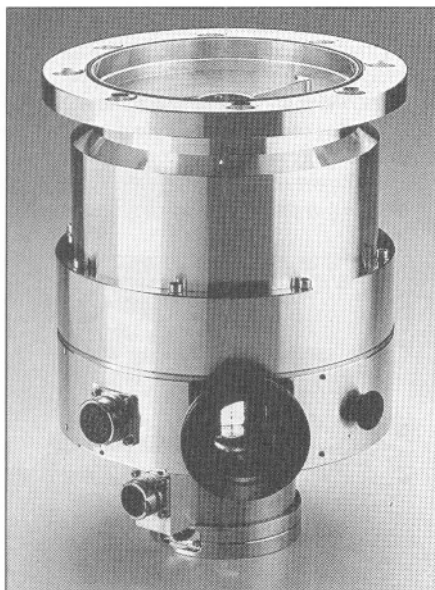
Resonetics' beam delivery systems and optics allow users to build systems using field-tested components and to upgrade existing systems. Products offered include UV/VUV optic chambers, ball and socket turning mirror blocks, lens focus adjustment heads, telescopic beam tubes, rectangular variable apertures, motorized multiple mask positioners, resonator slide valves, and select grade optics such as mirrors, lenses, and prisms.

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### **Tabletop Sputtering System:**

Plasma Sciences' CrC-150 features planar magnetron sputtering, a turbomolecular vacuum pump, and manual control. The 150-mm-diameter substrate platform and 200-mm-diameter vacuum chamber accommodate irregular substrates and wafers up to 6 inches in diameter. Source shutters protect the sample surface from contamination while providing a pure thin-film coating. Optional stage heaters can heat a substrate to 600°C during deposition, while a water-cooled stage protects sensitive samples. An RF etch option precleans substrates prior to deposition.

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### **Maintenance-Free Turbomolecular Pump:**

The Turbovac® 1000MC from Leybold Vacuum Products is designed for research, instrumentation, particle beam accelerator, plasma etch, and coating applications. A permanent magnetic passive bearing suspends the pump rotor, and the pump shaft position is monitored by an axial sensor which continuously adjusts the rotor position in the event of deviation. The device features convection cooling and two lubricant-free bearings which stabilize the rotor shaft.

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### **Microprocessor-Controlled Dosing Unit:**

Struers' Multidoser™ external dosing unit uses peristaltic pumps to dispense diamond suspensions, lubricants, and oxide polishing compounds during materialographic sample preparation. The measured liquid is transported through the tubes and drips onto the polishing cloth, without mist or waste. Oxide polishing suspensions are also dispensed without clogging.

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### **Computer-Based Lab Automation Products:**

Free 528-page 1994 catalog from National Instruments describes software and hardware for automating lab instrumentation applications on computers and workstations. The catalog is divided into five sections: instrumentation software, GPIB, data acquisition, VXI/MXI, and customer education. The first four sections feature tutorials and application

examples, and the catalog also contains listings of application notes, demo disks, and free software tools for PC-based systems. New products include multiplatform versions of LabWindows®/CVI and LabVIEW®, GPIB controller interfaces, and more.

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### **Motorized Microscope Stage:**

The SmartStage™ from Cell Robotics replaces manual stages in standard upright and inverted microscopes, while providing 0.1 µm resolution. The device features a 75 x 50 mm range of motion along the X-axis and Y-axis, respectively, and simultaneously accommodates three standard microscope slides. Petri dishes, culture flasks, and other devices may also be used. An optional motorized focus allows three-axis control of all parameters using a single trackball interface.

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### **AFM, STM, and UHV/STM Systems:**

Burleigh Instruments' Personal SPM™ Series systems provide 3-D measurement and imaging of surface features for routine applications. TrueContour™ scan control circuitry minimizes overshoot and undershoot when scanning over sharp features. Scans are automatically linearized with active feedback to provide undistorted images. Electronics incorporate ULN™ ultralow noise PZT control technology, and Windows-based True Image™ software includes image processing algorithms. Scan range modules can be exchanged, and systems are expandable.

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### **Image Archiving Workstation:**

Carl Zeiss' AxioDoc workstation combines measurement and image database functions in one environment, using Zeiss ICS optics with a color video digitizer to create an image management system. The unit features a video camera, a computer-controlled frame grabber, and an image database management package. Windows-based software runs on a 486-compatible processor, while on-line display of the video image allows users to adjust intensity and color balance. Morphometric measurements can be made interactively, and the measured data can be linked to images in the database. Statistical information can also be linked to Excel™, and an encoded nosepiece tells the system what objectives are in use.

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