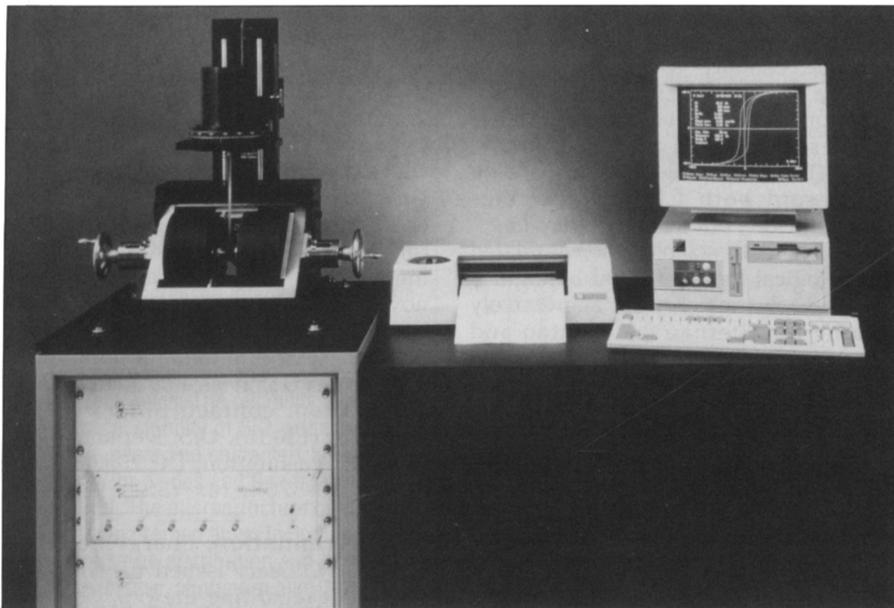


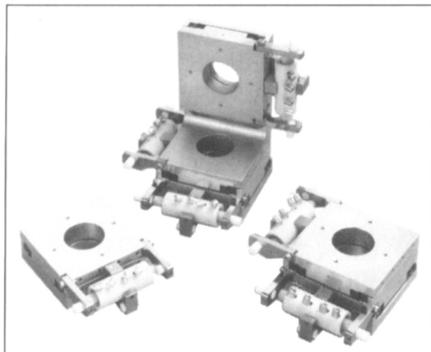
## RESOURCES

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



▲ **Vibrating-Sample Magnetometer:** Princeton Measurements' MicroMag™ Model 3900 provides a sensitivity of  $5 \mu\text{emu}$  at 1 second per point and comes with a four-quadrant power supply and operating software. A quick-release collet and XYZ translation stages facilitate sample interchange and placement. A driver head that provides continuous rotation about the Z-axis makes the system suitable for anisotropy studies and orientation measurements.

Circle No. 85 on Reader Service Card.



▲ **Ultrahigh Vacuum Positioning System:** Burleigh Instruments' MicroInch-worm® allows mounting of single- or multiple-axis systems into vacuum chambers while minimizing space. The miniature vacuum stage eliminates mechanical feedthroughs and offers X, X-Y, and XYZ stage operation for UHV use. Range of travel is 10 mm, and the maximum payload is 0.25 kg for the vertical axis and 0.50 kg for each horizontal axis. Applications include surface science, in-vacuum inspection, and scanning tunneling microscopy.

Circle No. 80 on Reader Service Card.

**PC Oscilloscope Boards:** Single-channel 420 Series and dual-channel 430 Series oscilloscope cards from PC Instruments occupy one PC/AT expansion slot and provide up to 200 MHz bandwidth, 200 gigasample/second equivalent sampling rate, and programmable timebase ranges and vertical ranges. Both series offer seven voltage ranges, ac/dc coupling, dc offset, and a problem compensation signal. BenchCom™ software, included with every oscilloscope card, allows users to view and print the waveform, translate the waveform data file to an ASCII list or spreadsheet format, and more.

Circle No. 83 on Reader Service Card.

**Scanning Probe Microscopy Artifacts:** TopoMetrix's 20-page report examines sources of scanning probe microscopy image artifacts and their interpretation. Topics include probe/cantilever artifacts, scanner and piezoelectric ceramic artifacts, artifacts resulting from instrument mechanical and electronic design, artifacts resulting from data manipulation, and artifacts created by scanning probe microscopy samples.

Circle No. 84 on Reader Service Card.

**Sputtering Targets:** Tosoh's product selection guide lists targets made from materials such as aluminum, cobalt, chromium, indium/tin oxide, nickel/vanadium, silicon, titanium disilicide, tungsten disilicide, and more. A chart of target geometries for various sputtering systems lists data on dimensions, thickness, geometry, and mounting. Targets can be fabricated in almost any material for custom sputtering configurations, and a target recycling program is available for users of targets containing precious metals.

Circle No. 86 on Reader Service Card.

### Dielectric, Superconducting, and Magnetic Single Crystals:

Single crystals from ATOMET, with diameters up to 25 mm, include  $\text{Sm}_3\text{Ga}_5\text{O}_{12}$ ,  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ ,  $\text{CoGa}_2\text{O}_4$ ,  $\text{Nd}_3\text{Ga}_5\text{O}_{12}$ ,  $\text{SrTiO}_3$ ,  $\text{TiO}_2$ ,  $\text{LaAlO}_3$ , and  $\text{Fe}_2\text{O}_3$ . Highly textured crystal boules of high-temperature superconductors such as  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ ,  $\text{YBa}_2\text{Cu}_4\text{O}_{8-x}$ , and  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8-\delta}$  are grown using a concentrated, focused light float zone process which allows melt temperatures of up to  $3000^\circ\text{C}$  and permits blending of incongruently melted materials under pressures to 100 atm. Other ferrite, gallate, titanate, and aluminate crystals can also be grown by this methodology.

Circle No. 75 on Reader Service Card.

**Vacuum Technology Booklet:** Free 78-page booklet from Leybold explains fundamental concepts, principles of vacuum processes in the chemical industry, rough and medium vacuum sizing techniques, leak testing, low-pressure measuring, and flange fittings. The book also contains tables, diagrams, illustrations, pumping curves, process schematics, and application information.

Circle No. 76 on Reader Service Card.

### Vapor Phase Decomposition Reactor:

Gemetec VPD reactors from Hologenix provide surface and oxide contamination monitoring in silicon wafer processing. Inside the PVDF reactor, the wafer is exposed to hydrofluoric acid vapor, which dissolves the  $\text{SiO}_2$  surface layer. Surface impurities contained in the resulting water droplet or moisture film can then be analyzed. A transparent window provides visual control of the reaction. A water-cooling system and hot-water heating are integrated in the reactor, along with a series of DI rinse jets for cleaning and gas valves for purging.

Circle No. 77 on Reader Service Card.