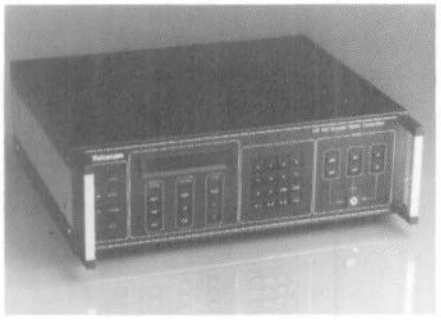
Research Resources

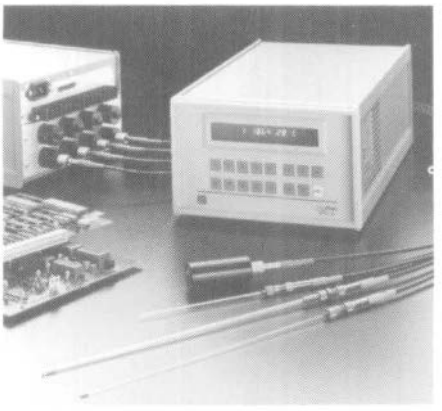
A summary of new products and services for materials research...

Recording Balances: The Cahn 1000 and the Cahn 2000 utilize taut band suspension, making them accurate yet rugged. The Cahn 1000 handles samples to 100 g. Resistant to corrosive atmospheres, it also permits weighing under high vacuum. The Cahn 2000 has a small (3.5 g) capacity, with sensitivity to 0.1 μg. A computer interface is available for both balances. Cahn Instruments, Inc., 16207 S. Carmenita Road, Cerritos, CA 90701; telephone (800) 423-6641.

Vacuum Gauge/Controller: GPT 450 Penthervac auto-ranging vacuum gauge measures pressure continuously from atmosphere to 2×10^{-8} torr. Ultra-resilient sensor heads and solid-state circuitry make this gauge highly dependable. The GPT 450 uses metal sensors, eliminating the safety hazard associated with a Bayard-Alpert ionization gauge sensor. The gauge uses thermistor and penning (cold cathode) sensors, also eliminating the need for hot filaments and frequent tube change. It can be used in a broad range of production and laboratory applications, including vacuum coaters, casting furnaces, and gas analyzers. CVC Products, Inc., P.O. Box 1886, Rochester, NY 14603; (716) 458-2550.



Stepper Motor Controller: Tekscan SM Series Stepper Motor Controller offers unparalleled flexibility and economy for driving four-coil hybrid stepper motors. The system features an integral programmable controller which uses the powerful Z8671-based microcomputer with on-chip BASIC interpreter. RS 232 interfacing is provided with IEEE 488 as an option. In addition to manual and programmable modes, a powerful interactive mode allows the user to select a sequence of movements to be duplicated by the controller via the front panel. Microscience, Inc., Forbes Business Center, 182 Forbes Road, Braintree, MA 02184; (617) 849-1952.

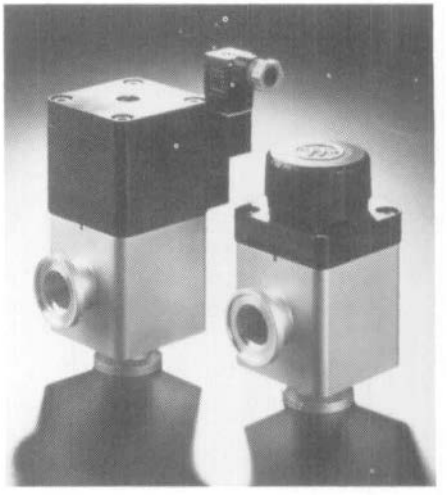


Optical Fiber Thermometer: Model 100 optical fiber thermometer provides multichannel (1–8) temperature measurement and control from 300°C to 1900°C. Several input modules offer a standard resolution (0.1°C), high resolution (0.01°C), or wide bandwidth (0–10 kHz) capability for applications in research and industrial process control. A new optical pyrometer front end is being introduced for this model for multichannel noncontact optical temperature measurements. The Model 100 can be remotely controlled from a terminal or controller. The wide range of output features includes digital (via RS 232), 0–10 volts, 4–20 mA, and simulated thermocouple outputs. Accufiber, Inc., 2000 East Columbia Way, Bldg. 7, Vancouver, WA 98661-7753; (206) 696-1602.

Sintered TiB_2 with High Wear Resistance: Sintered titanium diboride retains excellent hardness, strength, and toughness at high temperatures. Both pressureless sintering and hot isostatic pressing can be applied, and the ceramic can be machined by EDM (electrodischarge machining) to form intricately shaped products. The ceramic can be used for cutting tools, pipe-drawing dies, high-pressure nozzles, and other parts requiring high resistance to wear. Nippon Kokan, c/o Charles E. Butler & Associates, 60 East 42nd Street, New York, NY 10165; (212) 687-2480.

Small Flange Couplings: KF Fittings are available in aluminum, carbon, and stainless steel for fast, easy mounting of vacuum systems in laboratories and industrial plants. Lightweight, bakeable, self-centering, and high-vacuum tight, they feature ISO standard nominal bore sizes from 10 mm to 50 mm and can be used with pressures to 10^{-8} Torr. Leybold-Heraeus Vacuum Products Inc., 5700 Mellon Road, Export, PA 15632; telephone (412) 327-5700.

CO_2 Waveguide Laser: CM 2054 eight-watt laser has an integral modular rf power supply for industrial, military, and scientific use. The laser is based on a precision bored ceramic with all-metal vacuum seals incorporated in a housing suited for hostile environments. The lastest configuration for the laser gives OEMs added flexibility in system design. Typical applications for this laser include fusing optical fibers, delicate machining, microcircuit soldering, mask fabrication, engraving wood and plastics, welding and cutting plastics, and surgery. Ferranti Industrial Electronics Ltd., Professional Components Department, Dunsinane Avenue, Dundee DD2 3PN, United Kingdom; 0382 89311.



Aluminum Block Valves for Vacuum Systems: Right-angle aluminum valves are designed for rough-vacuum and high-vacuum environments in semiconductor manufacturing, research and development, and industrial vacuum systems where low cost, compact size, and reliable sealing are required. The block valves come in three frequently used sizes (NW 16, NW 25, and NW 40) and are available with manual or electropneumatic controls. Designed for long life, the valves feature actuation mechanisms with short strokes in the opening and closing cycles, extending the life of the bellows that seal the valve stem. The valves are guaranteed for a minimum of 250,000 cycles. Varian Associates, Inc., Vacuum Products Division, 121 Hartwell Avenue, Lexington, MA 02173; (617) 861-7200.