

RESEARCH RESOURCES

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

Excimer Laser for Microlithography:

Highly automated line-narrowed tunable KrF excimer laser is engineered for high resolution microlithography. Designed to enhance the processing efficiency of deep UV optical wafer stepper systems, the LAMBDA 248L produces 2 W (10 mJ, 200 Hz) of stabilized power at 248.4 nm (tunable over 0.4 nm), with a bandwidth of 0.003 nm having a stability better than 0.001 nm. A computer continuously monitors wavelengths. It adjusts tuning optics, controls the gas handling system, and interfaces with the laser's trigger and safety interlock system. Service is simplified because key components are easily accessible; optics are interchangeable, prealigned and modular. Lambda Physik, 289 Great Road, Acton, MA 01720; (800) 262-1100; (617) 263-1100.

Optical Fiber Thermometers: Low-cost Model 10 system includes both optical and conventional thermocouple capability that expands the low temperature operating range to room temperature and provides redundancy at higher temperatures. Model 100 includes an integrated multi-loop control system and employs a sophisticated control algorithm and a 16-bit controller. Temperature measurement and control to better than 0.1°C is common. Both models feature self-tuning control. Accufiber, 9550 S.W. Nimbus Ave., Beaverton, OR 97005-7141; (503) 626-1700.

High Vacuum Dessicator: Designed to reach vacuum levels to 10^{-6} torr, the Vac-U-Storr provides controlled storage and transportation of reactive/sensitive materials either under vacuum or in a gaseous environment. Ideal for maintaining IC wafers in a dry atmosphere or for storing superconductors or die in an inert gas, the Vac-U-Storr is available in four sizes ranging from an outer diameter and height of 2.0 x 2.8 inches to 5.5 x 6.0 inches. Geller MicroAnalytical Laboratory, One Intercontinental Way, Peabody, MA 01960; (508) 535-5595.

"Slow-Scan" Real-Time Pulse Measurement System: A slow-scan option is now available for real-time measurement of ultrafast laser pulse widths at repetition rates below 10 KHz. Designed for use with F-center, cavity-dumped, and mode-locked lasers or high repetition rate laser diode sources, the Model 5-14 Autocorrelator can measure picosecond pulses at very low repetition rates by combining precisely controlled, electronically selectable delay rates with a new sample and hold system. Can be used with pulse extractors, pulse amplifiers, or cavity dumpers with no loss



Optical Fiber Thermometers

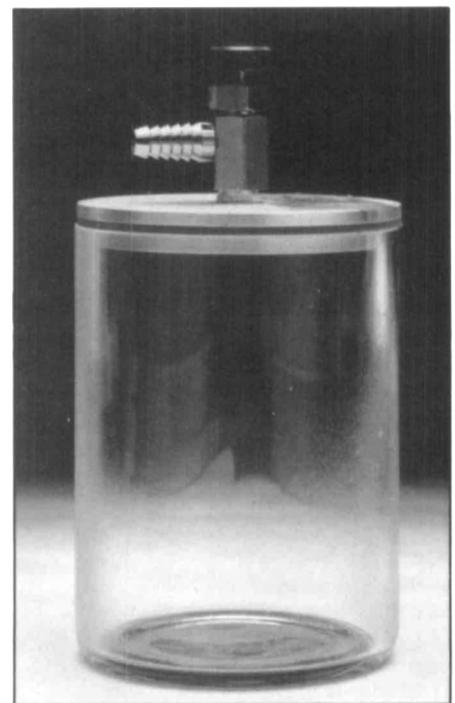
of resolution or linearity. Inrad, 181 Le-grand Avenue, Northvale, NJ 07647; telephone (201) 767-1910.

Vertical Furnaces for Semiconductors:

Designed by Tokyo Electron Ltd. for producing next-generation semiconductor devices, these furnaces have a vertical configuration that helps reduce particle contamination and ensure thickness uniformity for very thin films. Improved gas flow characteristics reduce oxygen back-streaming to the parts per million range, and advanced robotics contribute to improved wafer loading and unloading. To enhance maintainability, utility sections and pumps are mounted on removable carts. Furnaces are available for atmospheric processes and for LPCVD. Varian Semiconductor Equipment Group, 611 Hansen Way, M/S D-105, Palo Alto, CA 94303; (415) 424-5781.

Emissivity and Temperature Calibrator:

Emissivity and temperature calibrator eliminates the use of a metal thermocouple in the wafer processing chamber. Designed to work with the manufacturer's rapid thermal processing systems, the calibrator corrects for batch-to-batch emissivity changes and adjusts for accurate pyrometer temperature measurement by matching actual wafer emissivity to the emissivity adjustments of AG's Heatpulse



High Vacuum Dessicator

systems. Self-contained cooling system provides consistent temperature measurement. Calibrator weighs 95 pounds, is mounted on a portable cart, and has a small footprint (19" x 47" x 19" deep). A.G. Associates, 1325 Borregas Avenue, Sunnyvale, CA 94089; (800) 841-7699 (outside CA), or (800) 242-7762 (in CA). □