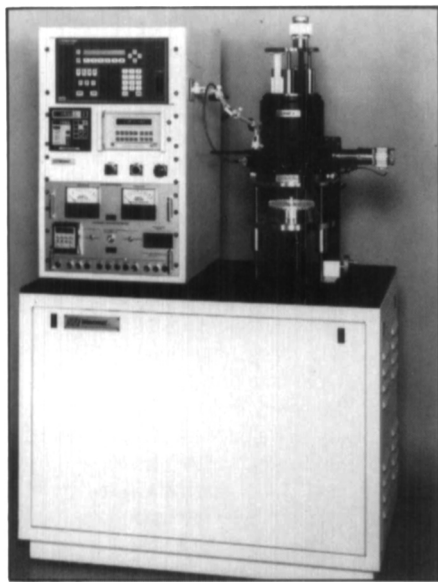


RESOURCES

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



Microwave Thermal Processor

Microwave Thermal Processor:

Wavemat's MCR 220 system is designed to develop thermal process cycles for advanced ceramic materials with microwave energy. The patented internally tuned microwave cavity provides efficient single-mode or controlled multimode operation. The cavity design also provides the ability to control mode patterns and focus high-energy microwave fields to optimize coupling to a given material or shape. The system comes with a substrate loading platform, microwave power source, and microprocessor control housed in a base frame module with integral electronics. **Circle No. 70 on Reader Service Card.**

Filamentless rf Excited Ion Sources and Beam Neutralizers:

Nordiko's rf guns are designed for extended maintenance-free operation for reactive and nonreactive processes. There are no filaments to burn out, and the sources operate at near ambient temperatures. An advanced grid design provides ion beam uniformity, reliability, and long life. The 2 mA/cm² current density allows the sources to be used with a high divergence, covering large areas for etch or assist applications. The gun is especially suited for low-energy ion bombardment of growing thin films in order to improve their properties. Gun sizes range from 5 cm to 20 cm. **Circle No. 65 on Reader Service Card.**

Soviet Journals in English: Several journals from the Soviet Union are being made available worldwide in English translation: *Soviet Archives of Internal Medicine*, *Laser Physics*, *Public Opinion in the Soviet Union: Statistics and Analysis*, *Studies on Soviet Economic Development*, *Mathematical Modeling*, and *Pattern Recognition and Image Analysis*. The distributor promises rapid publication and airlifted delivery. A free catalog describing these journals and their subscription rates is available. **Circle No. 62 on Reader Service Card.**

Solder for Ceramic Superconductors: Indium-based solder can be used to easily solder conventional metallic leads directly to high T_c ceramic materials using almost any temperature-controlled soldering iron. Supersolder Technologies' materials are applied at less than 80°C, eliminating oxygen loss and indium diffusion into the superconductor. A solder for joints between low-temperature metallic superconductors at 4 K is also available. **Circle No. 63 on Reader Service Card.**

Engineering Dissertation Catalog:

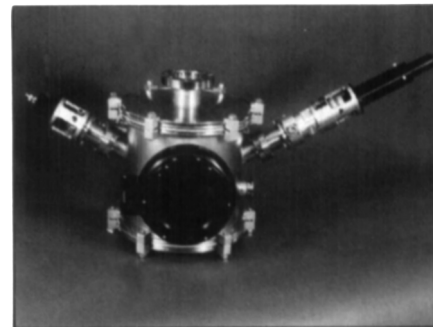
Free catalog from University Microfilms contains citations to 7,638 selected doctoral dissertations and masters theses published between 1986 and 1990 in aerospace, chemical, civil, electrical, electronics, industrial, and mechanical engineering and materials science. The catalog also includes a large section on computer science. Dissertation catalogs in other subject areas are also available. **Circle No. 64 on Reader Service Card.**

Government Inventions Available for Licensing:

Catalog describes over 1,000 inventions developed in federal laboratories during 1990 and available for licensing. Each entry summarizes the invention, names the inventor, and includes information on obtaining additional material about the invention. The catalog is divided into 43 subject areas and provides complete subject and inventor indexes. **Circle No. 69 on Reader Service Card.**

Thin Film Laboratory Services:

Thin film production and development services are available from Microscience's applications laboratory. Available on a daily or contract basis, the laboratory includes equipment for PECVD, RIE, sputtering, and microscopy and ellipsometry analysis. **Circle No. 67 on Reader Service Card.**



High-Speed In-Situ Ellipsometer

High-Speed In-Situ Ellipsometer:

Microscience's high-speed ellipsometer for *in-situ* monitoring and control of thin film growth can be used on moving samples. The model STE70 acquires data in less than 10 milliseconds and produces a reading of thickness and refractive index at 50 ms intervals. It is UHV compatible and can be mounted to any vacuum chamber. Applications include refractive index, film composition and thickness in sputtering, MBE, LPCVD, ion plating, ion milling, and many other film applications. **Circle No. 68 on Reader Service Card.**

High Voltage Power Supplies:

Bertan's catalog includes a large glossary, photos, charts, diagrams, and specifications on more than 300 standard and custom-designed high voltage power supplies and systems. Applications include medical, x-ray, biochemistry and nuclear instrumentation; precision CRT displays; analytical and materials research; industrial process control; automatic test equipment; scanning electron microscopes; and semiconductor manufacturing. **Circle No. 66 on Reader Service Card.**

Robotic Edge Finishing:

Automated edge finishing system developed at Sandia National Laboratories eliminates the expense of accurately fixturing parts. A computer vision system determines the location and orientation of workpieces, and tool paths are calculated by a computer-aided design system based on the design of the part. The system also automatically accommodates for tool wear and has produced chamfers with tolerances within 0.001 inch on aluminum and 304 stainless steel parts. **Circle No. 61 on Reader Service Card.**