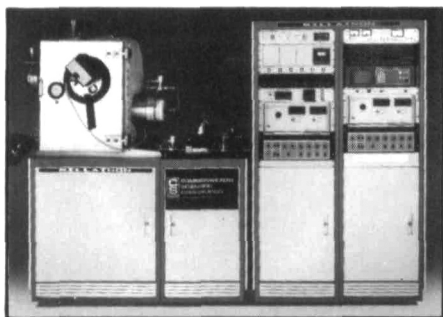
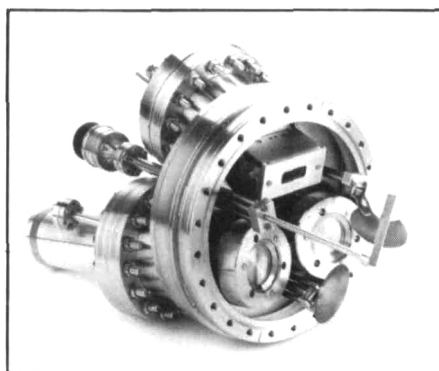


RESEARCH RESOURCES

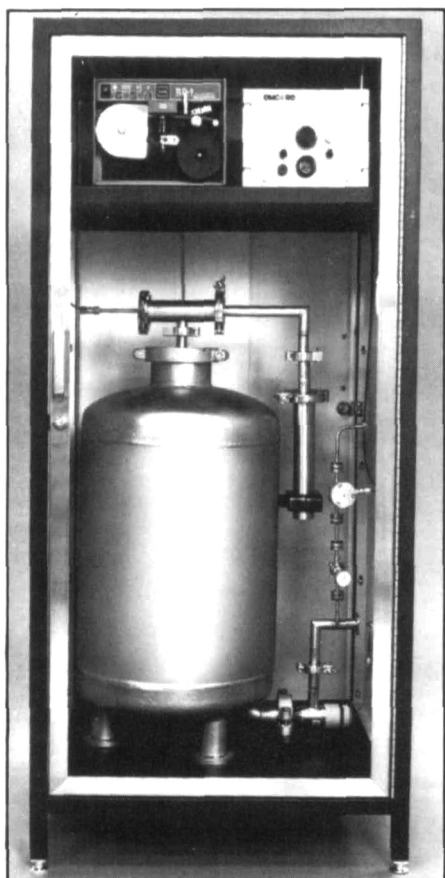
A summary of new products and services for materials research...



Ion Beam Deposition System



High Performance Planar Magnetrons



Toxic Gas Adsorber for MOCVD Systems

Ion Beam Deposition System: Model 830 system offers increased control of film properties through independent ion beam energy, beam current, and incident angle variations. An 8 cm Kaufman-type ion source is used for sputter deposition from a four-sided, 5" target assembly. The 3 cm ion-assist deposition source provides property enhancement of deposited films through increased surface activation of the sample and is also used for sample pre-cleaning. Cathode electron sources and a photometer are also provided. Commonwealth Scientific Corporation, 500 Pendleton Street, Alexandria, VA 22314.

Toxic Gas Adsorber for MOCVD Systems: Component for new or existing metal organic chemical vapor deposition (MOCVD) systems uses activated carbon to oxidize toxic gases, rather than the traditional caustic-liquid scrubbing process. The TGA-300 Series component is resistant to power failures, has over-temperature interlocks, a toxic gas monitor port, and an optional toxic gas detector. Leak-free adsorber has minimal maintenance and is currently used at more than 30 facilities. The 160 lb canister can be quickly and easily emptied and refilled with fresh adsorbent. Several models and sizes are available. EMCORE Corporation, 35 Elizabeth Avenue, Somerset, NJ 08873; (201) 271-9090.

High Performance Planar Magnetrons: Planar magnetrons, dc and rf, are available for high and ultrahigh vacuum operation, including large area and specialized deposition processes. Design of the 300 series ensures extended and economical target utilization, and allows a target as small as 20 mm diameter to be sputtered. Compounds, alloys, multilayers and complex materials such as high T_c superconductors can be produced by simultaneous or sequential deposition from a flange-mounted cluster of 3 or 4 magnetrons. Clusters can also include a Saddle Field[®] fast atom beam cold cathode source for substrate cleaning, film densification or reactive depositions. Ion Tech Limited, 2 Park Street, Teddington, Middlesex TW11 OLT, England; 01-977 8275.

Ion Implanter For Submicron Semiconductor Devices: High-current ion implanter for fabricating submicron semiconductor devices features 100% monitoring of implant dose; mean uptimes in excess of 250 hours (90% availability); adjustable implant angle; fully automated, intelligent, clampless air handling system with three independent load locks; automatic diagnostics; and real-time process

control. Users interact with implanter from the clean room or gray area via color touch-screen monitors featuring real-time updates. The Extrion 1000 has an energy range of 2-200 keV and a standard beam current range from microamperes up to 27 mA. Available early in 1989. Varian Associates, Inc., Semiconductor Equipment Group, 611 Hansen Way, Palo Alto, CA 94303; (300) 544-4636.

Thin Film Evaporation Systems: Ten-page brochure includes complete technical specifications for a wide selection of deposition systems for R&D and high throughput, including belljar evaporators, front loading systems, an optical coater, lift-off evaporation system, and load lock evaporation system. Accessories such as electron beam guns and power supplies, numerous fixture configurations, and sputtering sources are detailed. CVC Products, Inc., 525 Lee Road, P.O. Box 1886, Rochester, NY 14603; (716) 458-2550.

PC-Controlled Plasma Systems: Six-page brochure describes PC-controlled plasma systems for PECVD, RIE, plasma etching, ion etching, and triode plasma process development. Systems feature ramping and data logging of process parameters, 100 recipe storage capability, removable gas safety pod, and a 4.6 ft² footprint. Two substrate electrodes, 12-inch and 18-inch diameter, are offered on reactors. Also described are two application-specific process chamber modules for ion and GaAs via hole etching. Various pumping, power, gas line, and temperature control configurations are available. Microscience, Inc., 41 Accord Park Drive, Norwell, MA 02061; (617) 871-0308.

Ion Beam Optical Coating System: State-of-the-art system incorporates two Kaufman-type ion sources for high reflectance, anti-reflection and beam splitter coatings, ring laser gyro mirrors, semiconductor lasers and detectors, and for diamondlike carbon, superconductor, and magnetic materials. System includes ion-beam sputtering, ion-assisted deposition, and ion-beam pre-cleaning, in which near-bulk material properties are possible. Options for computer process control and data logging, reactive deposition, and substrate temperature control are possible. The system provides for contamination control and is clean room compatible. Commonwealth Scientific Corporation, 500 Pendleton Street, Alexandria, VA 22314; (703) 548-0800.

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