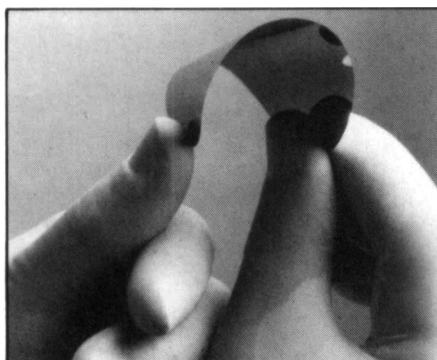


RESEARCH RESOURCES

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

2-4 Micron Thin Silicon Membranes:

Two-inch diameter silicon membranes at thickness (thinness) of 2 - 4 microns are available in experimental quantities. Membranes are prepared by chemical/mechanical polishing of silicon wafers followed by preferential etching. The wafers have excellent parallelism and are free of surface defects including scratches, pits, and mounds. Principal applications include masks for x-ray lithography, silicon-silicon bonding, silicon-glass bonding, laser micromachining, and photonic windows. Virginia Semiconductor, Inc., 1501 Powhatan St., Fredericksburg, VA 22401; (703) 373-2900.



2-4 Micron Thin Silicon Membranes

Chromatography and SPE Catalog:

Free catalog lists new sample preparation products, plus hundreds of columns, accessories, and standards for integrated sample analysis via gas chromatography and high performance liquid chromatography. For gas chromatography laboratories, firm's columns are described for reproducible separations of environmental, petrochemical, food, flavor, pharmaceutical, and general chemical samples. Many new columns for specialized applications such as dioxin analysis are described. The catalog also describes an extensive lineup of Accusphere™ bonded phase columns, including normal and reverse phases, chiral, ion exchange and steric exclusion technologies, in both regular HPLC column formats and easy-to-use cartridge systems. J&W Scientific, 91 Blue Ravine Road, Folsom, CA 95630; (916) 985-7888.

Laser Flash Thermal Diffusivity System:

The fully automated laser flash apparatus is designed for determining thermal properties of materials up to 2000°C. The instrument calculates and outputs thermal diffusivity, specific heat, and thermal conductivity of advanced materials, including high-temperature ceramics, composites, plastics, graphites, and heat-resistant metals and alloys. Only a small test sample, 10 mm diameter by 1 to 3 mm thick, is required. The laser flash comes with a built-in microprocessor which controls the vacuum, valve sequencing, heating, and laser systems, as well as data acquisition and analysis. The system comes with sophisticated menu-driven software along with a unique furnace design. Holometrix, Inc., 99 Erie St., Cambridge MA 02139; (617) 868-8050.

Infrared Bakeout Lamp and Controller:

Infrared bakeout lamp and controller quickly and uniformly bake out vacuum chambers. The infrared lamp is put directly into the vacuum chamber, where the stainless steel chamber walls absorb the heat that is produced by the light in the infrared range. The whole chamber, including any parts hanging inside, is rapidly heated by direct or reflected infrared rays. Gases and moisture are more quickly released, and the chamber can be pumped down to a lower vacuum much faster. The heat applied from the inside of the chamber is slow to diffuse out, resulting in a faster, more uniform bakeout. For certain applications, the infrared lamp can be fitted with a linear motion feedthrough to enable it to be retracted from the chamber cavity after bakeout without breaking vacuum. A shutter device can be added to shield this port from a sputter source. Huntington Mechanical Laboratories, Inc., 1040 L'Avenida, Mountain View, CA 94043; (415) 964-3323 or (800) 227-8059.

Engineering Dissertations Catalog:

Engineering, a free catalog, contains citations to 5,025 selected doctoral dissertations and master theses published between 1986 and 1989. Among the specific interest areas is materials science. Others are aerospace engineering, artificial intelligence, chemical engineering, civil engineering, electrical engineering, electronics engineering, and industrial engineering. Free catalogs in many other subject areas are also available. University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106. In the continental U.S. and Hawaii, call (800) 521-0600, ext 410; In Michigan or Alaska, call collect (313) 761-4700, ext 410; In Canada, call (800) 343-5299, ext 410.

Scanning Force Microscope and New Scanning Tunneling Microscope Literature:

Literature describes the Model SFM-BD2 scanning force microscope and Model STM-SA1 scanning tunneling microscope instruments that operate in air rather than under vacuum. These instruments provide greater resolution across a wider range of conditions than the best optical or scanning electron microscopes currently available. Park Scientific Instruments, 476 Ellis Street, Mountain View, CA 94043; (415) 965-2946.

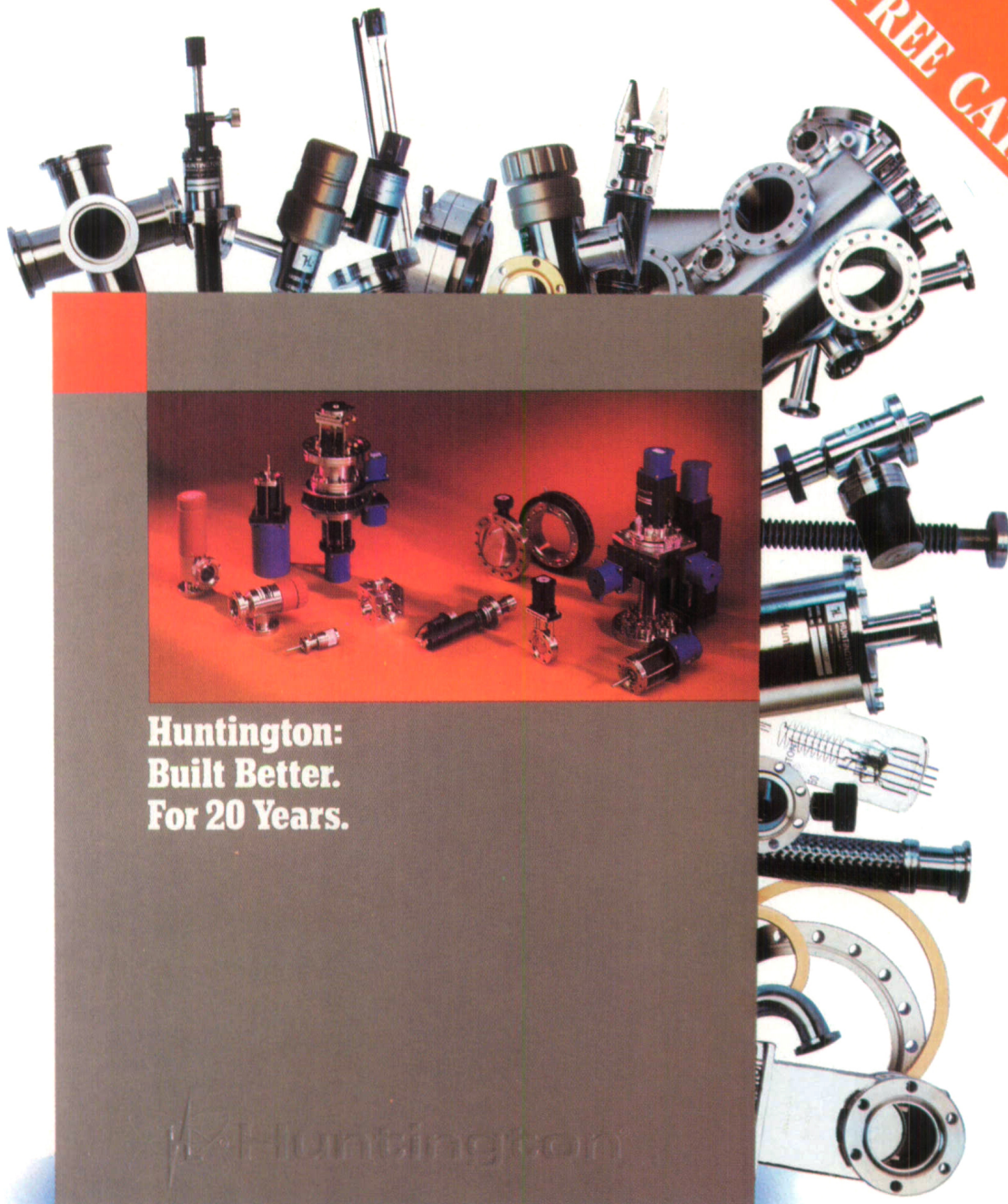
Spectroradiometer System:

The IL Solar Hazard Detection System features a 1 billion to 1 rejection ratio of the sun's visible and infrared irradiance which can interfere with measurements in the chemically and biologically active region. (According to the manufacturer, this ratio is 1,000 times greater than previously thought attainable.) The system is capable of accurately measuring shorter wavelengths down to 200 nm, making it possible for the system to isolate UV hazard radiation. The system can conduct studies in the carcinogenic zone of radiation (200 nm to 310 nm) which is greatly affected by ozone absorption and is equally well suited for evaluating the impact of solar degradation on materials. International Light, Inc., 17 Graf Rd., Newburyport, MA 01950; (508) 465-5923.

Fully Automatic STM:

The Tunnelscope™ 2400, a fully automatic scanning tunneling microscope for surface examination to atomic levels, is a compact desktop system that scans areas up to 10 x 10 μm, with a vertical resolution better than 0.01 nm; typical lateral resolution is 0.01 nm. Instrument has a wide range of applications, including R&D of surfaces and layers requiring atomic resolution, microscopic surface roughness measurements, and component development such as optics, electronics, semiconductors, and catalysts. Coarse and fine positioning of the tip and resulting measurements are fully controlled by electronics. Specialized design gives the system a very high natural frequency, producing an extremely fast and stable scan, while the construction and use of resilient mounting help minimize distortion of measurements caused by factors such as temperature, vibration, and acoustic radiation. Struers, Inc., 261000 First Street, Westlake, Ohio 44145-1438; (216) 871-0071. □

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