

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

## Scanning Electron Microscope:

Philips Electron Optics' SL40 FEG combines a field emission electron source (with a Schottky-based gun design), a 150 × 150 mm stage, and Windows-based computer control for high-resolution examination of large specimens. The electron source is designed for high brightness/high beam current operation and extends the use of high spatial resolution combined with elemental analysis, especially in the low kV range of operation. A motorized stage and the sample chamber's free ports provide flexibility. Capabilities can be expanded by integrating an EDX system and by using automation software for unattended multiple-sample analysis.

Circle No. 61 on Reader Service Card.

## Circular Pulsed UV Curing Lamp:

Xenon's high-intensity 360° lamp can evenly radiate objects having circular and cylindrical shapes or nonparallel geometry. Customized versions can be shaped to conform to irregular products for controlled, even uv radiation in high-speed dispensing and production line applications. The lamp incorporates a quartz source that provides uv and visible light for rapid curing of various adhesives and sealing products. Customized versions offer peak power levels up to 10,000 W/cm<sup>2</sup> with on/off cycles of 2 μs.

Circle No. 64 on Reader Service Card.

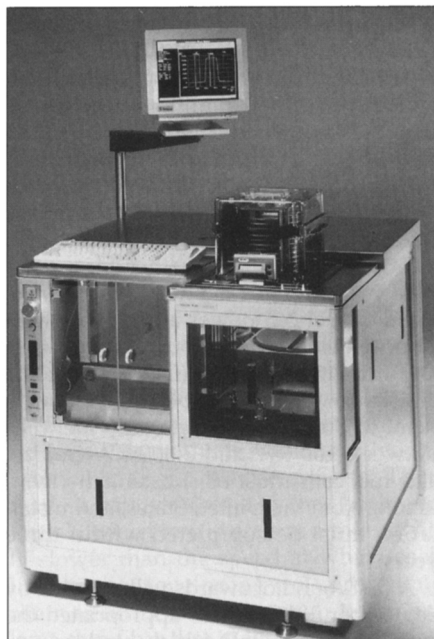
## 12-in. (0.31 m) Wafer Processing:

Lam Research has developed an advanced wafer fabrication tool for processing 12-in. (0.31 m) silicon wafers, depositing high-quality dielectric films onto 12-in. (0.31 m) wafers using a Lam Integrity<sup>®</sup> LPCVD system. Lam engineers used a standard Integrity chamber equipped with a platen designed to hold the larger wafers. A layer of Ta<sub>2</sub>O<sub>5</sub> was deposited, and the film exhibited 2.1% film thickness non-uniformity over the full surface of the wafer.

Circle No. 67 on Reader Service Card.

**UV-A Lamp:** The Spectroline<sup>®</sup> AP-800 UltraWand™ 30-in. (0.76 m) lamp from Spectronics provides long-wave uv illumination. The 1-lb. (0.45 kg) device is suitable for detecting foreign matter or flaws between jet-engine turbine blades, inspecting ID pipeline welds, and conducting internal wet-magnetic-particle and liquid-penetrant examinations. The AP-800's emission from its 8 W, 12-in. (0.31 m) integrally filtered tube located near one end of the 30-in. (0.76 m) anodized aluminum probe concentrates the uv light and delivers a steady-state irradiance of 4800 μW/cm<sup>2</sup> at one inch (2.54 cm).

Circle No. 62 on Reader Service Card.



## Surface Profiler with Integrated SMIF Technology:

The Tencor<sup>®</sup> P-30 SMIF profiler provides better than a Class 1 mini-environment and supports the latest process technology within a less stringent cleanroom environment. The unit features a built-in vibration isolation table for precision measurements and advanced pattern recognition to reduce alignment and measurement errors. Used with Tencor's automated substrate handler, a full cassette of wafers can be measured without operator intervention. The P-30 also features Tencor's MicroHead™ II low-force measurement head, with stylus forces as low as 0.05 mg.

Circle No. 63 on Reader Service Card.

**Exotic and Specialty Metals:** Research and PVD Materials Corporation offers fabricated forms of elemental materials, metals, and alloys. Included are wrought products such as sheet, foil, rod, and wire, as well as specially prepared single crystals and custom-manufactured items. Also produced are nonmetallic materials such as chemical compounds, cermets, and precision-machined ceramics.

Circle No. 68 on Reader Service Card.

## High-Density Switching System:

Keithley's Model 708 system takes up 3.5 vertical in. (8.9 cm) in a 19-in.-wide (48.3 cm) rack but can handle up to 96 channels with a single 8 × 12 matrix card. Engineered for automated production test applications in harsh industrial environments, the design eliminates the need for vent holes in the housing and an internal fan. Dust and contaminants are sealed outside the enclosure,

and elimination of the fan makes the system suitable for cleanroom applications. With 16 digital inputs, the system can be used to monitor the operation of devices such as microswitches, logic devices, and external TTL circuits.

Circle No. 60 on Reader Service Card.

**Microwave Plasma Source:** Wavemat's MPDR 325i electron cyclotron resonance plasma source offers automatic closed-loop tuning for production processing of large substrates. The source generates a stream of low-energy ions, atomic neutrals, and activated species that can be used to obtain thin film properties in various applications. Stepper motors, sensors, and a control module permit continuous automatic tuning of the plasma source to compensate for multiple or changing process conditions.

Circle No. 65 on Reader Service Card.

## Fluorescence Microscopy Variable Light Control:

Carl Zeiss offers the AttoArc™ variable intensity light control for HBO 100 mercury lamps used in Zeiss fluorescence microscopes, enabling users to control the intensity of 100 W fluorescence illumination systems. The unit replaces the conventional power supply and provides continuously variable intensity control from 100 to 15%. The light control eliminates the need for neutral density filters and increases the mercury lamp bulb life.

Circle No. 66 on Reader Service Card.

## Automatic Sample Feeders for Insulation Measurement:

Laser-Comp's automatic feeding system for thermal conductivity measurement is suitable for use with the FOX200, which measures samples 0–2 in. (0–5 cm) thick and is designed for testing R values of insulation. Up to 21 1-in. (2.54 cm) samples can be loaded for automatic testing, and additional samples can be added during testing without interruption. Two thickness options are available for each sample. Users can select automatic thickness or enter the thickness for each sample.

Circle No. 69 on Reader Service Card.

**UVH Products:** Johnsen<sup>®</sup> Ultravac's 64-page catalog lists UVH products that include linear motion devices, XYZ manipulators, sample stages, chambers, portable electron energy analyzer systems, MBE vacuum systems, sputtering systems, and accessories. All flanges are the metal seal type unless otherwise requested. Internal vacuum components consist of various materials such as molybdenum or tantalum, and routinely pass leak check rates to 2 × 10<sup>-10</sup> std.cm<sup>3</sup>/s.

Circle No. 70 on Reader Service Card.