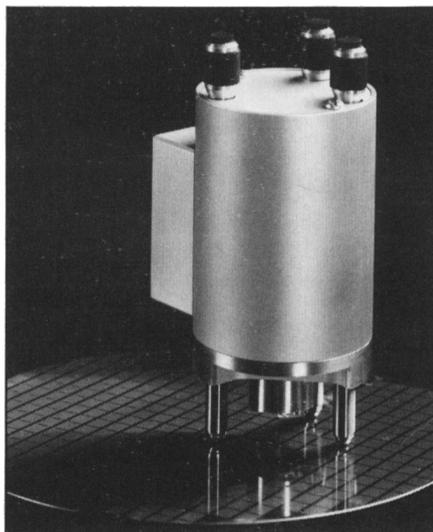


*A summary of new products and services for materials research...*

**Freestanding Atomic Force Microscope:** NanoScope StandAlone Atomic Force Microscope from Digital Instruments can be used to examine samples ranging in size from a transistor on a semiconductor wafer to a turbine blade on a jet engine. The small, lightweight NanoScope SA-AFM can be easily adapted for unusual applications simply by placing the instrument on almost any sample surface and scanning the area of interest. Applications include integrated circuit wafers, diamond-turned optics, magnetic and optical memory disks, precision-machined parts still in the lathe, and many more. The NanoScope SA-AFM is an option to the NanoScope II and III scanning probe microscopes and may be added at any time. **Circle No. 55 on Reader Service Card.**



**Particle Sizer for Powder Metallurgy:** Extended size range of Malvern Instruments' Mastersizer X covers 0.1 to 2,000 microns. Modular construction permits users to select manual or automatic accessories for handling dry powders, suspensions, emulsions, and sprays. Particle sizing of direct analysis of the dry powder can be done by using the Mastersizer MS65 dry powder feeder together with a range of sample cassettes optimized to individual sample characteristics. During analysis the sample is contained in a specially designed air cell with self-cleaning windows, preventing contamination from atmospheric particles and minimizing turbulent stirring within the crucial measurement zone. The IP55 version is additionally protected against the ingress of dust and moisture and is ideal for industrial environments. All Mastersizer models feature integrated 80386-based hardware, enhanced VGA color graphics, and software. Fully automatic analysis schemes can frequently be initiated by a single key command. **Circle No. 56 on Reader Service Card.**

### Freestanding Atomic Force Microscope

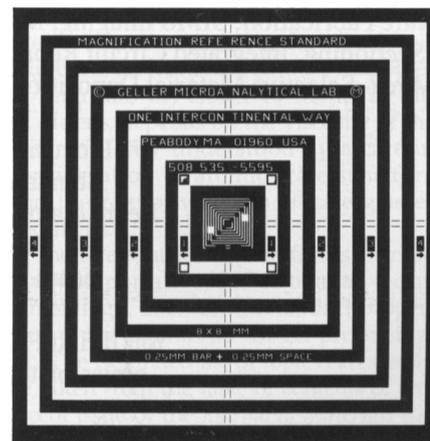
**Rapid Thermal Processor:** Manually loaded RTP system from AG Associates can process silicon III-V wafers up to 150 mm in diameter for ion implant monitoring and development. Equipped with a graphic user interface, the Heatpulse 610i offers menu-driven recipe management, real-time data acquisition and graphics plotting, and system diagnostics. Major system features include a gas panel with two or four MFCs (maximum of two corrosive), control of multiple heating zones, semiconductor-grade quartz processing chamber, 21 tungsten halogen lamps in upper and lower arrays, and an extended range pyrometer (400-1300°C). Applications include silicide formation and annealing, PSG and BPSG reflow, alloying, metallization, donor annihilation, formation of thin oxides, III-V processing, and more. **Circle No. 58 on Reader Service Card.**

**High-Performance Image Acquisition and Display System:** Full-color six-page brochure describes Amber Engineering's Pro-View Professional Imaging System that allows users to generate real-time image displays from all types of non-standard IR, UV and visible sensors, or focal plane arrays. The brochure thoroughly explains the system's capabilities, complete with diagrams that illustrate how sensor input is converted into image displays and that show how configurations can be applied to different applications. Specifications for all Pro-View models are included. **Circle No. 54 on Reader Service Card.**

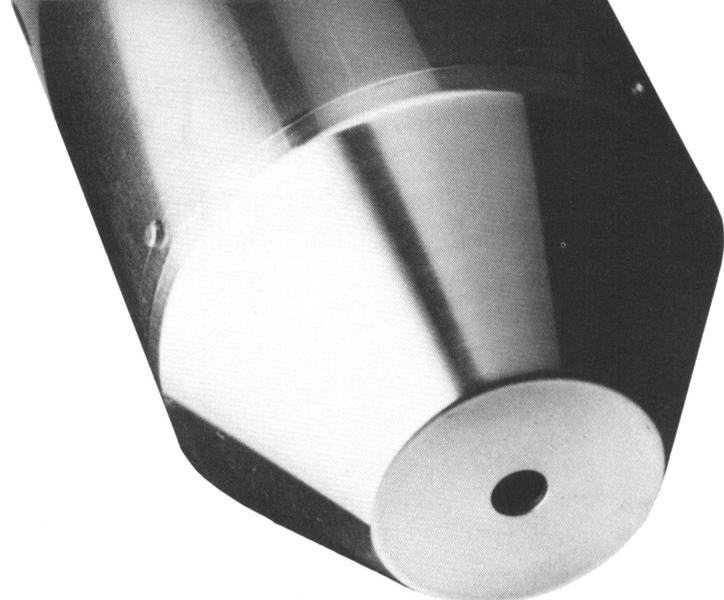
**Industrial Instruments Guide:** Free 20-page brochure from Nikon features products for industry, such as semiconductor inspection equipment; stereo, research, polarizing, measuring, and materials microscopes; high-temperature microhardness testers; video and other measuring systems; comparators; confocal microscopes; and photographic systems. Most of the instruments and systems feature Nikon CF optics, which replace the conventional compensation system found in other microscopes for dramatically improved optical quality. All Nikon optics are chromatic aberration-free and suited for environments where color fidelity, resolution, contrast, and sharpness are critical. **Circle No. 53 on Reader Service Card.**

**TOF System with Analog and Pulse Counting Modes:** LeCroy's 7200 Series precision digital oscilloscope allows data to be gathered in both analog and pulse (ion) counting modes. The data acquisition package includes calibration of the horizontal axis in mass units and extensive post-processing of TOF data, with a long record length (up to 1 million points, depending on plug-in) and excellent resolution (resolves 500 ps while maintaining a maximum flight time of 500  $\mu$ s). In pulse counting mode, the 7200 acts like a multi-hit time interval analyzer with up to 50 ps resolution. In addition, the 7200 emulates a discriminator front end by rejecting pulses lower than a software selectable threshold. In analog mode, the 7200 can do synchronous averaging with automatic background subtraction. The system is easily customized with dedicated software and offers processing on an internal hard disk and storage on an MS DOS-compatible floppy disk. **Circle No. 51 on Reader Service Card.**

**Magnification Reference Standard for X and Y Areas:** Geller MicroAnalytical's Magnification Reference Standard, the MRS-2, allows calibration in both X and Y axes. Specifically designed for both optical and scanning electron microscopy, this NIST traceable standard contains an assembly of square boxes (with line widths of 250, 25 and 1  $\mu$ m) allowing magnification calibration from 10 to 50,000X. The standard can be imaged in reflected and transmitted light, and in secondary and backscattered electron modes at virtually any accelerating voltage without the pattern changing. Linearity, orthogonality, pincushioning, barreling, and CRT resolution can also be determined. **Circle No. 69 on Reader Service Card.**



**Magnification Reference Standard for X and Y Areas**

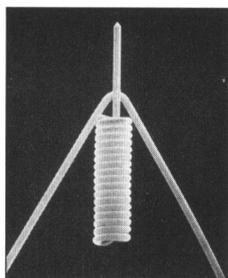


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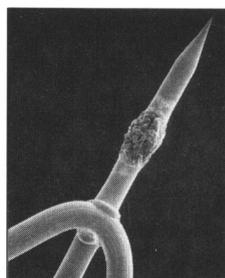
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*SEM micrograph of Gallium LMI source.*

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*SEM micrograph of Schottky field emission cathode.*

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