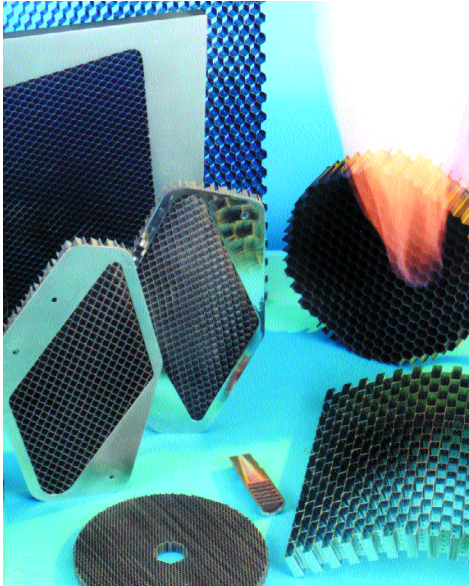


Flow Control Components

Eldim offers its line of custom-engineered Honeycomb Flow Control Components, which utilize a metal honeycomb design for various flow conditioning,



straightening, redirecting, and mixing applications. Particularly useful in corrosive and high-temperature environments, the devices can handle fluids at temperatures of up to 2,200 °F. The components' cells can be profiled with a specific aspect ratio so as to achieve precise flow properties. Units can be fabricated from a wide range of metals, including stainless steel, titanium, inconel, and other nickel-base alloys. Eldim's components almost entirely eliminate airflow back pressure. Cells can be fabricated in sizes of 1/32 to 1 in., with overall tolerances to ± 0.005 in., depending on individual configuration.

Eldim, Inc.

6 Centennial Drive
Peabody, MA 01960

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Fiber-Optic Probe

Ocean Optics announces a heat-resistant fiber-optic probe that couples with the company's miniature fiber-optic spectrometers for measuring the in situ emission spectra of dissolved metals, high-tempera-

ture plasmas, and other samples. Called the FL-400 Flame-Resistant Fiber Probe, the probe consists of a 400- μm , gold-jacketed, ultraviolet/visible light optical fiber in an 8-in.-long nickel sleeve. The probe can measure emission spectra in environments up to 750 °C. Users can insert a standard platinum- or nickel-wire loop into the FL-400 sleeve to observe flame-emission spectra of metals such as sodium, potassium, calcium, and copper. The new probe can also serve as a useful emission-spectroscopy teaching tool when coupled with Ocean Optics' CHEM2000 series of inexpensive teaching spectrophotometers.

Ocean Optics, Inc.

380 Main Street
Dunedin, FL 34698

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Sputter Source

Genco has introduced the VT75, the newest in its Vtech line of ultrahigh-vacuum, variable magnetron sputter sources designed for use by the thin-film industry. The Vtech sources vary magnetic field strength and shape over the target surface to generate different plasma properties, and the sources can move from balanced to unbalanced operation without the use of additional electromagnets. This feature can be utilized during the process with manual or automated control. The VT75 allows variation in the degree of ion bombardment during the growth of thin-film coatings, which enables users to rapidly determine the optimum plasma-processing conditions and to optimize the growth process at different stages. Applications of magnetron sputter technology include the reflective surface on compact discs, antireflective surfaces for computer displays and aircraft canopies, antiwear coatings on high-speed steel and carbide cutting tools, low-friction coatings on automobile engine parts, and interconnects on computer processor chips.

Genco Ltd.

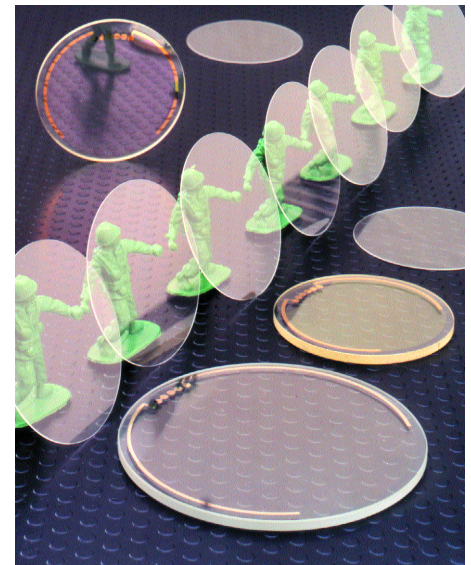
4 Wavertree Boulevard South
Liverpool, L7 9PF, England

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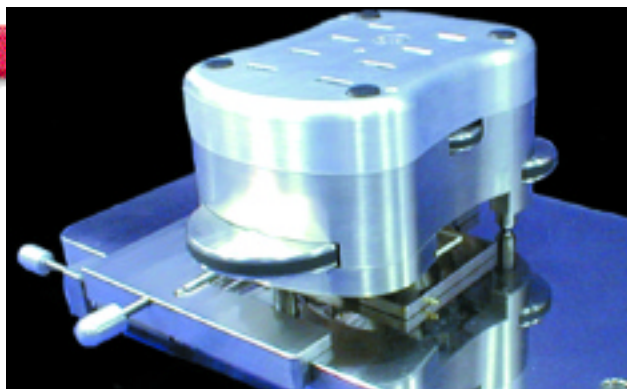


Sapphire Wafers

Meller Optics offers its ultraflat sapphire wafers for use as base plates for mounting substrates in the manufacturing of semiconductor devices. These wafers have flatness to 0.5 fringes of helium-neon light and parallelism from 20 s to 1 s with $\pm 1.2 \mu\text{m}$ piece-to-piece uniformity. Meller's sapphire wafers are resistant to caustic etching agents and permit total thin-film processing. They can be ordered with diameters of 50 to 82 mm, a thickness between 0.5 and 3.0 mm, and with tolerances to ± 0.05 mm. The wafers are suitable for mounting, lapping, polishing, etching, and the final dicing of gallium arsenide, silicon, and other mate-



rials. They are transparent to the infrared and easily fit most photo aligners. Clear, hard and chemical-resistant, they can be polished on one or both sides to surface



finishes approaching scratch-free at 70 \times magnification.

Meller Optics, Inc.

P. O. Box 6001

Providence, RI 02940

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Stylus Profilers

Digital Instruments' Veeco Metrology Group has expanded the measurement capabilities of the Dektak Series V stylus profilers, which were originally designed to measure the entire surface metrology of semiconductor wafers up to 300 mm in diameter. The new Dektak V400 profiler has a specially designed chuck and xy -theta programmable stage that allows the automatic measurement of substrates up to 400 mm², including printed circuit boards and flat-panel displays. The V400 can also handle heavier samples, such as chemical-mechanical polishing plates and precision-machined parts. Its measurement repeatability provides the precision needed for measuring thin films less than 500 Å thick and films more than 500 μ m thick. And the V400 can perform long scans for measuring substrate flatness or planarity, as well as surface-roughness measurements with high horizontal resolution.

Digital Instruments, Veeco

Metrology Group

112 Robin Hill Road

Santa Barbara, CA 93117

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Molecular Force Probe

Asylum Research announces its new Molecular Force Probe (MFP), which the company describes as the first commercially available single-axis force-measuring instrument with piconewton sensitivity. The MFP uses a flexible cantilever with a sharp tip that deflects in response to the small forces resulting from interactions between the tip and sample. With a sensitivity five times that of commercially available atomic-force microscopes, the probe fills an instrumentation gap. The MFP has an open mechanical design that allows access for a wide range of samples and mounting

schemes. Applications include measurements of soft samples used in biology, pharmacology, biomaterials, polymers, and nanoindentations. The MFP can be purchased as a stand-alone unit containing integrated video optics or included in the Epi-Force Probe configuration, which mounts atop an inverted optical microscope. This arrangement provides high-resolution optical observations, including epifluorescence imaging.

Asylum Research

601-C Pine Street

Santa Barbara, CA 93117

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Quartz Sample Pans

Ruska's new molding operation provides fused-quartz sample pans and crucibles with a consistency in dimensions not previously available with hand-blown pans. Customers can choose from a variety of configurations, including circular, oblong, and square, and select either a flat or curved bottom. The pans and crucibles come in heights and diameters that range from 3 to 500 mm, and customers can specify a wall thickness as small as 0.1 mm for the sample pans and 1 mm for the crucibles. Ruska's Quartz Technology Group also offers quartz helical-spring balances and complete mass sorption systems, and it also provides custom design and fabrication of specialty fused-quartz components for original equipment manufacturers.

Ruska Instrument Corp.

P.O. Box 630009

Houston, TX 77263

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New Literature

High-Purity Metals

Alfa Aesar offers its new 300-page aluminum-to-zirconium catalog, "High-Purity

Metals," which features more than 3,000 metals and alloys. It covers a range of product types, including wires, foils, shots, targets, powders, and thermocouple wires, which have a purity of up to 99.9999%. The catalog also includes mesh-size conversion tables, the periodic table, a table of atomic weights, and reference data on such things as the physical properties of metals. The company accepts bulk and special orders, and supplies quantities and sizes not listed in the catalog.

Alfa Aesar

30 Bond Street

Ward Hill, MA 01835-8099

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Metals and Materials

Goodfellow, which specializes in providing a few grams to a few kilograms of metals and materials for research or prototype development, announces its updated CD-ROM catalog. The disc lists more than 40,000 products, including pure metals, alloys, polymers, ceramics, and composite materials, which come in various forms and sizes. Comprehensive data tables have been added to the new edition, which also includes complete technical specifications. The CD is compatible with PC and Macintosh formats. The company can meet the needs of those who want small quantities of products from its standard range within 24–48 hours. It also can supply customers with larger quantities and items manufactured to specific requirements.

Goodfellow Corp.

800 Lancaster Avenue

Berwyn, PA 19312-1780

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This section is based on information supplied by the manufacturers and in some cases by independent sources. *The Industrial Physicist* can assume no responsibility for its accuracy. To facilitate inquiries, a Reader Service Card is attached between pages 30 and 31.