

Nonporous Uniform Silica Spheres: Monospher® particles from EM Industries can be used as modifiers for bearing or sliding surfaces and as surfactant or lubricants. They are especially suited for light diffusion from sources such as LEDs. The particles are available in pure silica or with surface modification, with diameters from 250 to 1,200 nm, and as a powder or as dispersions in water, ethylene glycol, or polyethylene glycol.

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Technical Application Notes: Five free application notes are available from National Instruments® on the following topics: (1) methods for transferring data between GPIB controllers and VXIbus instruments linked by GPIB-VXI interface kits; (2) the use of thermocouples for measuring temperature; (3) the use of a high-speed analog-to-digital converter in real-time data acquisition; and (4) the use of signal conditioning hardware with PC-based data acquisition systems.

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Lanthanide Elements Booklet: Molybdenum’s free 61-page booklet, A Lanthanide Lanthology, Part I, A—L, is an alphabetically ordered collection of notes covering sources, production, nature, and uses of lanthanides and related elements. The notes emphasize the properties underlying practical applications, but each item contains its own footnote references for further information. A second booklet on lanthanide elements, letters M through Z, will be available at a later date.

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Ion Pumps and Controllers: Varian’s VaClon Plus ion pumps and controllers are available with four pumping elements: (1) noble diode, which combines noble gas pumping with high UHV pumping speed; (2) diode, which provides high pumping speeds for hydrogen and getterable gases; (3) triode, which provides better noble and getterable gas pumping speed at higher pressures; and (4) StarCell, which provides the highest overall speed for noble gases and methane. Sizes range from 20 to 500 l/s. Custom-designed systems are available.

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Excimer Laser Workstation: The Projex™ MicroMachining Center™ from Resonetics can drill holes to less than 2 μm. Its integrated system package includes a microprocessor-controlled laser, beam delivery, CAD/CAM, and X/Y positioner, all within a tabletop footprint. The unit offers a 150-mm focal length, power density fluences of up to 50 joules/cm², a modular design, and up to 300X on-target camera viewing. The system is suitable for microfabrication tasks on hard materials such as ceramics, diamonds, and metals.

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Online Access to UMI Databases: University Microfilms International (UMI) databases are now available to libraries who are patrons of DYNIX (through the VISTA system), CARL Systems, and WLN. The ABI/INFORM® database contains bibliographic information, indexing, abstracts, and selected full text for more than 1,000 business publications. Periodical Abstracts Research II cites more than one million articles in 1,500 business, academic, and general-interest publications. Newspaper Abstracts cites articles in 27 regional and national newspapers.

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Multi-Zone Furnaces: Mellen’s furnaces create and translate a controlled thermal profile without moving parts, allowing the furnace and work charge to remain stationary. Systems are available with 1000, 1400, and 1600°C temperature ratings and allow directional solidification techniques such as dynamic gradient freeze and zone melting. Applications include semiconductor processing, zone refining, crystal growth, fiber optic production, temperature gradient analysis, and more. Complete package consists of a 16-zone, 1000°C, 3-in. I.D. by 24-in. EDG10 furnace, mounting frame, and ADAPT computer control system.

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