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

Federal Regulations for Medical Devices: Excel Partnership offers a free pocket guide of FDA Quality System Regulation (QSR) Part 820 of Title 21 of the *Code of Federal Regulations* for Medical Devices. Medical device manufacturers are required to have in place a system for the design, production, and service of commercially distributed medical devices in the United States. The 32-page guide should be used in conjunction with interpretation of the QSR.
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UHV Scanning Probe Instruments: Free 24-page product guide from OMICRON groups systems and instruments according to techniques and applications. The four sections of the booklet are multitechnique SurfaceScience UHV systems; scanning probe microscopes, such as variable-temperature SPM, low-temperature STM, large-sample SPM, and UHV AFM/STM; electron and ion spectroscopy/microscopy, including XPS, UPS, ISS, AES, SAM, SEM, and LEED; and sample preparation and thin-film growth such as sputter sources and evaporators. Website: www.omicron-instruments.com.
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X-Ray System for Coating Thickness Measurement: The Fischerscope XDL from Fischer Technology is designed for measuring coating thickness and coating composition on single coatings, binary alloy coatings, ternary alloy coatings, double coatings, double coatings with one alloy layer, and triple coatings. Analysis can be done on alloys containing up to four elements. Three models are available: one with a fixed specimen support plate and fixed x-ray tube mounting, one with a manually adjustable *XY* table and motorized tube height adjustment, and one with programmable *XYZ* travel.
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Chemical Inventory Software: Professional Analytical and Consulting Services' Chemical Inventory Plus provides managers with access to their chemical inventory and resources. Resources include instrument types and numbers, vendors, and maintenance records. The database provides immediate status of IUPAC name, CAS number, common and bottle names, formula, amount, reordering, user names, hazard code, personal and service notes, and vendors. Data can be printed on labels or in reports based on storage area, total stock, or classes of stock.
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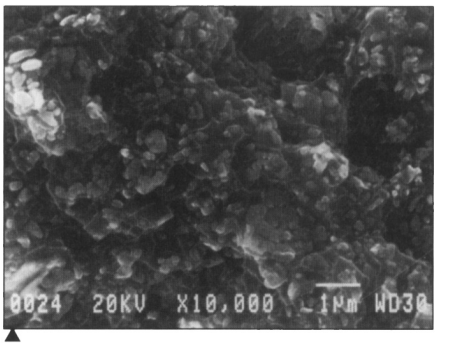

Synthetic Metal Alloys: Chesapeake Composites' DSC™ aluminum billets are 3 in. (~7.62 cm) diameter and 6 in. (~15.2 cm) long. The traditional metal alloy strengthening mechanisms are replaced or augmented by incorporation of stable ceramic dispersoids. Uniformly dispersed particles are less than 1 micron in most metal alloy systems. The low-density material is twice as stiff as aluminum and can withstand temperatures of 600°C for more than 100 h with no significant loss of properties.
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Indium Properties: Free color poster from Indium Corporation of America is a quick reference to key properties of indium. Topics include mass characteristics, thermal and electrical properties, and mechanical properties. Indium retains its malleable and ductile characteristics at cryogenic temperatures. Use of indium facilitates the joining of materials with different coefficients of thermal expansion. Website: www.indium.com
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Benchtop Analytical Raman: LabRam from Instruments S.A. records Raman spectra with 1-μm spatial resolution. Using confocal line scan, the system can create maps of chemical and crystalline species, stress, and other physical properties. Components include a motorized *XY* stage and piezo *z* focus for 3-D confocal imaging, a microscope extension with Schwarzchild objective for working distances to 5 cm, remote fiber probe, and capabilities for low-frequency down to 50 cm^{-1}.
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Capillary GC Columns: Free 400-page catalog from J&W Scientific features more than 1,000 columns and laboratory supplies for gas chromatography. Included is a reference and troubleshooting section on topics such as terms and definitions, and method development. More than 300 chromatograms are featured with common analyses for environmental, industrial chemicals, life sciences, chiral, NIOSH methods, and petroleum. Website: www.jandw.com.
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Aspheric Mirrors: Lambda/10 produces custom aspheric mirrors for use in beam expanders, telescopes, and other applications. The mirrors improve image quality and collimation in applications with a narrow FOV. Convex and concave masters can be produced for optics with diameters up to 40 in. (~1.0 m) Zerodur™ is the blank material used, but materials such as silicon, copper, and aluminum can also be worked. All elements are custom ground. Website: www.mcphersoninc.com/lambda.
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Variable-Frequency Microwave Curing System: The MicroCure 5100 from Lambda Technologies is designed for curing standard polymeric adhesives and encapsulants. Cure rates are improved by a factor of 10 or more over forced convection systems in 30–40% less floor space. Uniform energy distribution eliminates hot spots, and selective frequency targeting reduces stress due to thermal mismatch, resulting in improved interconnect reliability and high yields.
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Four-Layer Metal Interconnect for SOI ASIC Gate Arrays: Honeywell provides a four-layer metal interconnect for silicon on insulator (SOI) application specific integrated circuits (ASIC) gate arrays. The additional layer of metal increases by 50% the number of usable gates for existing ASIC products with the same form, fit, and function. Honeywell offers high gate count, low power SOI ASICs down to 2.5 V, and provides radiation hardened capability to 1 megarad total dose. Website: www.ssec.honeywell.com.
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FTIR Real-Time *In-Situ* Spectroscopic Reflectometer: The IRon-Line™ from On-Line Technologies delivers information on evolving thin film sample properties such as doping concentration, film thickness, composition, and molecular bond density. The system can be mounted on a process chamber equipped with normal or oblique ports and provides polarized or nonpolarized measuring modes. Covered is the mid-IR (500–6000 cm^{-1}) range with 10 scans/s at 8 cm^{-1}.
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