

RESOURCES

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

Test and Measurement Products:

Free 1995–1996 catalog from Keithley Instruments contains 264 pages of technical data, specifications, selection guides, and application information on test instruments and accessories. Products include 6¹/₂-digit and 8¹/₂-digit multimeters and compatible plug-in scanner cards; electrometers; a programmable counter/timer; high-density multiplexer switching cards; semiconductor matrix switching cards; and the Flash Memory Test System, which applies a turnkey approach to memory device characterization and production monitoring tasks.

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Electronic Structure Calculation Program:

BIOSYM Technologies' Plane Wave 2.0 offers two kinds of pseudopotentials, with full coverage of the periodic table. Users can make electronic structure calculations on bulk solids, thin films, wires, surfaces, molecules, and clusters. The code calculates properties intrinsic to the electrical behavior of solids (particularly semiconductors) such as band structures, band offsets, densities of states, and electron densities. The BFGS geometry optimizer determines geometric structures in solids, at surfaces, and heterostructures, and can be used with cluster boundary conditions to determine the structure of molecules.

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Co-Cr-Mo Alloy for Orthopedic Implants:

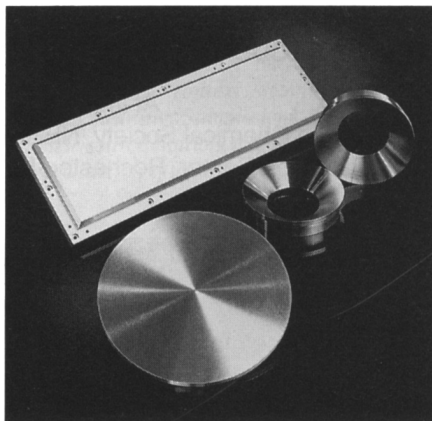
Carpenter Technology's BioDur™ CCM Plus™ nonmagnetic alloy offers higher annealed strength and more uniform mechanical and physical properties than conventional Co-Cr-Mo alloys. The alloy is produced by vacuum induction melting followed by inert gas atomization and hot isostatic pressing to yield 100% dense billets, which are then processed by specialty steelmaking practice. The alloy has a fine austenitic grain size, typically ASTM E112 grain size number 12 and finer. Parts manufacturers can use the alloy to make various sizes and shapes when producing orthopedic devices and implants for joints.

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Magnetic Measurement Primer:

Free monograph features Quantum Design's Magnetic Property Measurement System (MPMS) and offers a practical introduction to magnetic units of measure and types of magnetic behavior. The monograph provides an overview of the MPMS and principles on which it is based.

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▲ **Precious Metal Targets:** Tosoh's conical and planar precious metal targets provide consistent thin-film uniformity and are available for most sputtering systems. Tosoh also offers reclamation services to reduce materials cost and to minimize total target cost of ownership.

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Plastics Materials Databank: The MSC/MVISION GE Plastics Databank from General Electric Plastics and MacNeal-Schwendler focuses on plastics technical information for design and analysis, covering more than 140 grades of plastics. Updated quarterly, the databank emphasizes enhancements to facilitate structural and thermal analysis of plastic components. It will be free to any MSC/MVISION users on the MSC/MVISION Q1-1995 Databank CD.

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Noncarcinogenic Crystalline Silica:

General Chemical and Plastic Services' PumaSil is a noncarcinogenic, nonquartz crystalline silica. The amorphous material is ground from volcanic glass and is resistant to many chemicals and high temperatures. The material also has a high bulk value and absorption in both oil and aqueous systems. It is readily dispersed, thereby reducing resin demand.

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Programmable Logic Tester:

Megatest's Model 1149 tests a broad range of logic device types with a pin count of up to 768 pins and offers a built-in parallel test capability. The configurable system can meet the testing needs of FPGAs, PLDs, ASICs, and microcontrollers. Features include built-in support for serial and boundary-scan testing, turnkey parallel test, and expandable vector memory.

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Advanced Materials: CD-Rom from Engineering Information, Inc. and Materials Information lists 2,500 materials engineering abstracts, including journals, reports, and conferences, focusing on non-metallic engineered materials, including polymers and plastics; ceramics and refractories; wood products such as paper, textiles, and fibers; rubber and elastomers; and composites intended for use in design, construction, and operation of structures, equipment, and systems.

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Wafer Inspection System:

With Nikon's Microstation™, inspection program routines can be automated for repeatability. The system consists of a Nikon wafer loader designed for single-cassette operation; a Nikon microscope, such as the Optiphot 200; a motorized, programmable microscope stage; and a shuttle assembly that removes the wafers from the transfer arm of the wafer loader to the motorized stage. Users can add Nikon's DART™ software to store video images, print via video printer, and save video images of defect areas to disk.

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Resistivity Meter:

The Loresta HP from Optical Associates is a microprocessor-based four-point probe surface and volume resistivity meter that contains in memory all data required to calculate the resistivity correction factors affecting measurements. Users can select output in Ω/cm^2 for surface resistivity or $\Omega\text{ cm}$ for volume resistivity. A material's inherent resistivity can be separated from dimensional factors affecting resistivity, and measurements can be made on thin films and specialty materials such as graphite or ceramics.

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InGaAs Photodiode Line Scan Imaging Arrays:

Sensors Unlimited's InGaAs near-infrared line scan arrays are available with 50- μm square pixels in array lengths from 128 to 512 elements. They feature wavelength response from 0.8 to 2.5 μm , with readout rates of up to 10^7 pixels/second. The arrays' static shift registers, on-chip analog amplification, and double-correlated sampling make them suitable for applications ranging from high-frame-rate on-line process control to slow-scan near-infrared spectroscopy and hot-spot imaging.

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The Western New York Section of the Materials Research Society

presents a

Short Course on Polymers and Photonic Applications

Sunday, October 22, 1995, 8:30 a.m. - 4:30 p.m.

At the

Northeast Region American Chemical Society, NERM 25 - Silver Anniversary Meeting
Rochester Convention Center, Rochester, NY, October 22 - 25, 1995

Who Should Attend:

This course is intended for scientists, engineers and managers who are present or potential users of organic materials for electronic and photonic applications.

Registration Fee: \$350.00 per attendee (includes course materials)

Enrollment by September 22, 1995

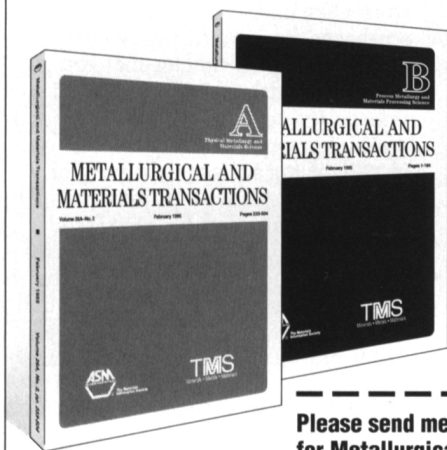
Course Description:

This intensive short course emphasizes the chemical aspects of polymers for electronic and photonic applications. Sessions focus on polymers for use as photon, electron, and x-ray resists in lithography, IC device encapsulants, encapsulation techniques, interlayer dielectrics, second and third order non linear optical devices, polymer reliability in device applications and on the applications of high temperature polymers to microelectronic packages.

Instructors: C.P. Wong, AT&T Bell Labs, NJ; C. Grant Willson, U of Texas, Austin TX

For enrollment and further information contact: Santosh Kurinec, Department of Microelectronic Engineering, Rochester Institute of Technology, Rochester NY 14623

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