

## RESOURCES

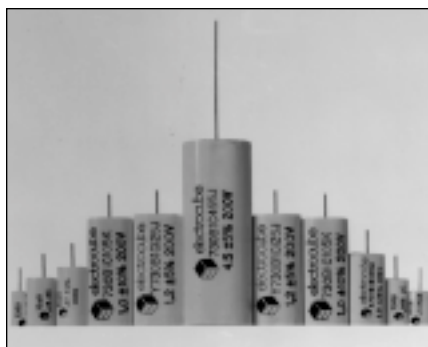
A summary of new products and services  
for materials research...

**Transmitted Light Microscope:** The Axiostar from Carl Zeiss is equipped with the same infinity optical system found in the larger Carl Zeiss microscopes to guarantee bright, high-resolution images with high contrast. Homogeneous illumination for objectives 2.5 times through 100 times is achieved up to a field of view of 20 mm. The addition of sliders for phase contrast or darkfield and simple polarization equipment extend application possibilities. The condenser NA 0.9/1.25 is built onto the stand, and it is height adjustable and can be centered for Koehler illumination. Contact: [micro@zeiss.com](mailto:micro@zeiss.com); [www.zeiss.com](http://www.zeiss.com).  
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**Custom and General Purpose Reactors:** H.S. Martin offers a line of general purpose reactors from 12- to 200-l sizes. The reactors consist of standard flasks, columns, and condensers with provisions for charging, feeding, stirring, cooling, and heating. Units may be used in either endothermic or exothermic reactions, and are fitted with a reflux splitter that permits reactions to be carried out under reflux conditions followed by product recovery. The reactors can be modified to fit specific applications, and custom designs with matched control modules are available. Contact: [info@hsmartin.com](mailto:info@hsmartin.com); [www.hsmartin.com](http://www.hsmartin.com).  
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**Lab Supplies Catalog:** Daigger's 2000 catalog features more than 1,500 new products, with discount pricing on most of the 18,000 products listed. Featured are a 48-page safety section and products such as titration systems, centrifuges, freezers, cryogenic dewars, clothing, ovens, lamps, and microscopes. The catalog is also available online with an enhanced quick-order form and a cross-reference feature. Contact: [daigger@daigger.com](mailto:daigger@daigger.com); [www.daigger.com](http://www.daigger.com).  
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**Nondestructive Testing Technique:** Indigo Systems' ThermoSoniX combines IR imaging and ultrasonic energy to detect cracks and defects in materials. The system applies a short pulse of high-frequency sound on the surface of the part under test to create minute amounts of localized frictional heating in the defect area. An IR camera then produces a sequence of real-time images of the defect. Images are displayed on a PC data acquisition system and can be recorded. The sonic energy injected into the part under test can be as low as  $\approx 1\text{--}10\text{ J (W/s)}$ . Contact: [indigo@indigosystems.com](mailto:indigo@indigosystems.com); [www.indigosystems.com](http://www.indigosystems.com).  
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**Replacements for Polystyrene Capacitors:** Electrocube's Series 730 capacitors are designed to replace hard-to-find and obsolete polystyrene film capacitors. The capacitors are offered up to 200 VDC and are available in round and oval axial lead styles. This metallized combination series of flame retardant, wrap-and-fill capacitors exhibit similar properties as polystyrene capacitors. They provide stable capacitance over a temperature range of 0–45°C and are suitable for high-density packaging applications. Contact: [sales@electrocube.com](mailto:sales@electrocube.com); [www.electrocube.com](http://www.electrocube.com).  
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**Silver Brazing Alloys:** Chung I Silver Solder manufactures silver solder alloys, silver brazing alloys, and wire accessories, all under ISO 9002 certification. The company's brochure, written in both Japanese and English, features brazing filler metals such as Ag, Cu, Zn, and Cd. Included is information on flux-coated silver brazing rods, flux powder and paste, automatic brazing equipment, and precious metals, as well as gold, silver, and aluminum/silicon wire materials. Contact: [cisscl@ms23.hinet.net](mailto:cisscl@ms23.hinet.net); [www.chung-i.com](http://www.chung-i.com).  
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**Servo-hydraulic Testing Systems and Software:** Instron's FastTrack™ 8800 test systems and software are suitable for fatigue and fracture testing of gas turbine components. The systems are available for a range of test frequencies, force capacities, and test temperatures to 2000°F (~1082°C). Load frames range from 1000 to 22 million lb and include many tension-torsion models. Accessories include high-temperature chambers and grips and extensometers for high-temperature materials testing. FastTrack 2 Windows® software offers 18 applications ranging from fracture mechanics-stress corrosion to low cycle fatigue to simulated loading profiles that mimic service conditions. Contact: [info@instron.com](mailto:info@instron.com); [www.instron.com](http://www.instron.com).  
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**Nondestructive XRF Liquid Analysis Scanner:** The portable CT 8000 non-destructive XRF scanner from EDAX Portable Products can provide elemental analysis for solids, powders, slurries, liquids, and petrochemicals. Up to 24 elements can be analyzed in less than one minute, down to sulfur in low concentrations. Advanced encapsulation techniques and peltier cooling give the product excellent reliability and low detection limits. Contact: [info@edaxppd.com](mailto:info@edaxppd.com); [www.edaxppd.com](http://www.edaxppd.com).  
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**Color Measurement Spectrophotometer:** The ColorQuest® XE from HunterLab features diffuse/8° geometry and measures both reflectance and transmittance. Double-beam optics and a xenon lamp virtually eliminate lamp replacement. Metrics such as APHA (Hazen), Saybolt, Gardner Scale, ASTM D1500, and Yellowness or Whiteness Index can be quantitated. Accessories include transmission cells for measuring clear liquids, a reflectance shelf for measuring powders, a transmission flow cell for continuous measurement of fluids, a transmission clamp for measuring thin films, and a preform holder for measuring plastic preforms. Contact: [info@hunterlab.com](mailto:info@hunterlab.com); [www.hunterlab.com](http://www.hunterlab.com).  
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**Metals and Materials CD-ROM Catalog:** Goodfellow's CD-ROM catalog of metals and materials provides information on more than 40,000 items and technical data. Users search for products by chemical name or formula, or by item number or trade name, and are then linked to forms, properties, and pricing. Comparative data tables for metals, alloys, ceramics, polymers, and composites list physical and mechanical properties. The CD is available in both PC and Apple Macintosh formats. Contact: [info@goodfellow.com](mailto:info@goodfellow.com); [www.goodfellow.com](http://www.goodfellow.com).  
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**Infrared Light Sources:** Ion Optics reflectIR® broadband IR light sources provide stable, efficient in-band IR emissions for the ranges of 2–5  $\mu\text{m}$ , 2–12  $\mu\text{m}$ , and 2–20  $\mu\text{m}$ . A tightly wound spiral filament mounted along the axis of the parabolic reflector provides increased optical coupling, and the light radiation pattern is independent of the rotation of the reflector. This enables the sources to provide excellent IR output while operating at temperatures of less than 850°C. The light sources typically are pulsed at rates from 0.1s to 10 Hz and are suitable for use in NDIR gas and chemical sensor systems. Contact: [info@ion-optics.com](mailto:info@ion-optics.com); [www.ion-optics.com](http://www.ion-optics.com).  
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For further contact information for these products, check [www.mrs.org/publications/bulletin/resources](http://www.mrs.org/publications/bulletin/resources)