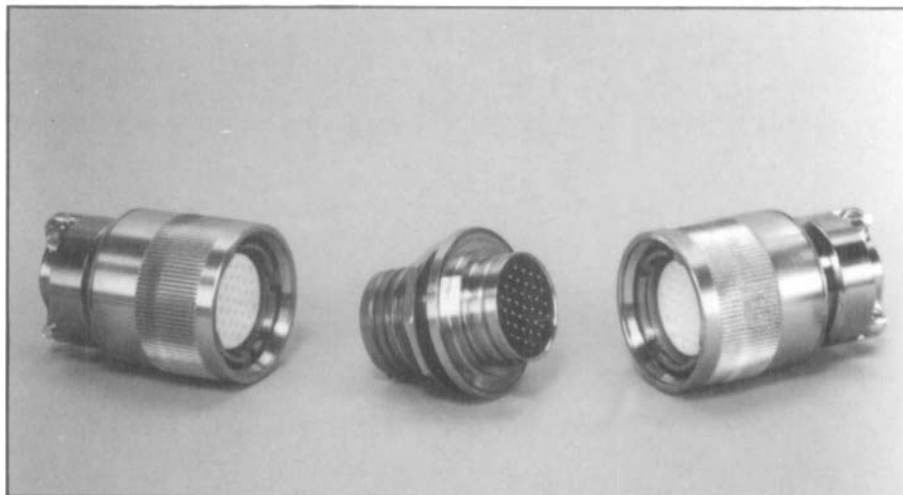


## RESEARCH RESOURCES

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

### **Enhanced High-Density Connector:**

New 37 pin high-density connector suitable for space and space simulation chambers, evaporation systems, thermocycle chambers, freeze drying systems, wafer processing systems, aircraft and mass spectrometers provides capability in probing, monitoring, and operating low and high vacuum chambers and systems. Featuring glass-ceramic construction at the core, assemblies are mounted using TIG welding or a fine thread and viton "O" ring. Conductors in each unit are supplied as copper alloy for 10 A and thermocouple pairs for K, J, and E systems. The connector operates on 600 V dc power, has 75 A maximum capability per conductor—75 A max all conductors loaded. It is bakeable to 200°C and cycleable from -50 to 200°C, can withstand 1,000 psi, and is moisture resistant. Ceramaseal, P.O. Box 260, New Lebanon, NY 12125; (518) 794-7800.



**Enhanced High-Density Connector**

**Research Centers Directory:** Updated with over 11,700 entries, this two-volume set provides information on research activities at universities in the United States and Canada. Entries are listed alphabetically within 17 subject sections that are grouped into five categories covering life sciences, physical sciences and engineering, private and public policy and affairs, social and cultural studies, and multidisciplinary and coordinating centers. A detailed subject index provides access to research in some 4,000 specific areas. Three additional indexes are also included: master name, keyword, and acronym; institutional; and special capabilities. Gale Research Inc., Book Tower, Detroit, MI 48226; (313) 961-2242.

**Raw Materials Information Service:** Offering data in floppy disk, CD-ROM and print formats, Infodex will provide searchable and retrievable information on materials properties, product selection, and product design to the engineering and scientific communities. Already released is a new edition of CenBASE/Materials, which supplies engineering specifications and application data on over 15,000 commercially available grades of raw materials from over 200 manufacturers. Product categories include thermoplastics, thermosets, elastomers and rubbers, composites and laminates, and films, fibers and metals. John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158; (212) 850-6000.

**Lanthanum Aluminate Single-Crystal Substrates:** Newly developed LaAlO<sub>3</sub> single-crystal substrates are now available as an alternative to strontium titanate for depositing superconductor films. The sub-

strates are available up to 15 x 15 mm and 0.5 or 1.0 mm thick, polished one side to a flatness of lambda, parallel to 3 microns, and with a surface finish of 30A. Lanthanum aluminate is available with an orientation of 1,0,0 finished to an accuracy of 1°. Single-crystal substrates of SrTiO<sub>3</sub>, MgO, ZrO<sub>2</sub>, and Al<sub>2</sub>O<sub>3</sub>, and uncut boules are also available. Marketech International, 414 South Craig Street, Suite 300, Pittsburgh, PA 15213; (412) 421-3103.

**High Precision Positioning System for Class 10 Clean Room:** Microglide™ E250 system is designed for applications requiring high position accuracy, stringent velocity control, and precise straightness, flatness, pitch and yaw. Applications include microelectronics testing and manufacturing, inspection processes, hybrid manufacturing, optical disk manufacturing, x-ray lithography, and laser machining. To achieve Class 10 clean room capability, the system incorporates non-contact linear brushless motors, noncontact air bearings, and noncontact transducers. Two interferential linear encoders, a key design element, have a diffraction grating on a steel scale. The scale carrier provides the flatness required for high accuracy. A unique drive system helps to eliminate backlash and mechanical friction problems associated with conventional lead screws or capstan drives. The system's open frame allows bottom illumination and space for mounting other instrumentation. Its low profile allows parts to be loaded by either an operator or robotic device. Anorad Corporation, 110 Oser Avenue, Hauppauge, NY 11788; (516) 231-1995.

**Cryogenic Accessories Catalog:** Combining technical product information and application notes, this catalog highlights hard-to-locate accessory items. Included are current sources, digital thermometers, magnetic field Hall sensors, thermocouples, wires and coaxial cables, metals and tubing, vacuum components and assemblies, and a variety of other instrumentation and assembly accessories. Lake Shore Cryotronics, 64 East Walnut Street, Westerville, OH 43081; (614) 891-2243.

**Computer Controlled Voltage Calibration:** Josephson Array Volt Standard, a complete computer-controlled system, implements the NIST definition of the Legal Volt, achieving traceability without the need to transport standards to NIST for calibration. The operator selects the desired array voltage level and the computer controls the microwave frequency and acquires and processes all data. The array can generate any voltage in the -2.0 to 2.0 volt range with a resolution of 100 nV and an accuracy equal to that of the system time base. Principal components include a voltage standard cryoprobe, a microwave hardware set, a JBS-200A bias source, software, and a liquid helium dewar. RMC Cryosystems, 4400 South Santa Rita Avenue, Tucson, AZ 85714; (602) 889-7900.

**Optics Education Programs:** Comprehensive annual directory of optics education programs in North America and worldwide lists more than 100 educational programs and includes information about grants and scholarships available through SPIE. Available free of charge. SPIE, P.O. Box 10, Bellingham, WA 98227-0010; (206) 676-3290. □