

Research Resources

Focus on educational materials...

Ceramic Engineering Education Worldwide: Book by R.C. Bradt and L.C. Klein provides a global view of ceramic educational programs and facilities in 23 countries from Belgium to Yugoslavia. This book is an all-in-one source for U.S. and foreign educators who must judge applications for advanced degrees at universities and for students investigating ceramic educational programs. American Ceramic Society, Book Service Department, 757 Brooksedge Plaza Drive, Westerville, OH 43081-2821; (614) 890-4700.

Engineered Materials Translations: Translations of significant non-English language articles are offered as part of the Engineered Materials series for the field of polymers, ceramics, and composites. Languages include Japanese (the key language in the field), German, French, Russian, and Italian. A list of new translations is published six times a year and is available free. Materials Information, The Institute of Metals 1 Carlton House Terrace, London SW1y 5DB, England; 01-839-4071; also Materials Information, ASM International, Metals Park, OH 44073; (216) 338-5151.

Thesaurus of Engineered Materials: Recently published 132-page first edition is the basis for terminology used in *Engineered Materials Abstracts*. The Thesaurus contains the vocabulary for classification, processing and properties of polymers, ceramics and composites. It can be used for developing online search strategies, building card catalogues, and structuring information files. Materials Information, The Institute of Metals, 1 Carlton House Terrace, London SW1Y 5DB, England; 01-839 4071; also Materials Information, ASM International, Metals Park, OH 44073; (216) 338-5151.

Physics Simulations Programs: PHYSIM, a set of physics simulations developed by Dr. Richard A. Arndt and Dr. L. David Roper (Department of Physics, Virginia Polytechnic Institute and State University), are available on 5 1/4 in. or 8 in. floppy disks. Currently used in lecture demonstrations at Virginia Polytechnic, the PHYSIM programs make extensive use of color graphics. The following programs are available: Mechanics (two separate disks covering trajectories, planetary lander, classical oscillator, relativistic appearance, and classical scattering plus relativity); Electricity and Magnetism and Optics; Optics; Quantum Mechanics; and Mathematical Analysis. GlobalView Incorporated, Route 1, Box 282, Blacksburg, VA 24061.

Video Courses in Microelectronics: Six courses from Stanford Instructional Television Network (SITN) are intended to provide continuing professional education for engineers in microelectronic companies. The six courses, each 27 hours long and taught by leading Stanford professors, cover electronics, principles and models of semiconductor devices, integrated circuit fabrication processes, digital MOS integrated circuits, and an introduction to VLSI systems. SITN provides more than 230 graduate courses per year in all fields of engineering as well as computer science, math, applied physics, and statistics. SITN, Stanford University School of Engineering, Durand Building, Room 401, Stanford, CA 94305; (415) 723-3616.

Scientific and Technical Organizations and Agencies Directory: First edition supplement to *Gale's Scientific and Technical Organizations and Agencies Directory* provides expanded international coverage. The supplement's additional 13 chapters identify over 2,650 organizations and agencies concerned with the physical sciences, engineering, and technology in countries other than the United States and Canada. The first five chapters identify particular types of organizations; the remaining chapters identify international scientific information networks members. A Master Name and Keyword Index consolidates into a single alphabet all organizations listed in the supplement. Gale Research Co., Book Tower, Detroit, MI 48226; (313) 961-2242.

Interdisciplinary Research in Mathematics, Science, and Technology Education: National Research Council committee report recommends making greater use of interdisciplinary research on mathematics and science education. Researchers in different disciplines need to work more effectively with one another and with practitioners and policymakers as well. In developing a physical science curriculum, for example, chemists should collaborate not only with physicists, but with psychologists, curriculum planners, and school officials. Chaired by James G. March, professor of management at Stanford University Graduate School of Business, the committee recommends "working within and around the disciplinary and professional structures rather than attempting a basic reorganization of science and education." Limited number of copies available. National Research Council, Commission on Behavioral and Social Sciences and Education, 2101 Constitution Avenue N.W., Washington, DC 20418.

Optics in Education: Annual guide features up-to-date information on educational opportunities in optical engineering. The 1986-87 guide includes summaries of 50 two-year and four-year programs in optics and related fields in the United States and Canada, and a list of SPIE's 1986 scholarship and grant recipients. Copies are available from: Andrew R. Potter, SPIE, P.O. Box 10, Bellingham, WA 98227-0010; (206) 676-3290.

Education of a Physicist: Special issue of *Physics Today* (June 1986) examines professional education in physics. Authors pursue questions and solutions for the following topics: undergraduate colleges, graduate-level education, foreign physics graduates in the United States, academic training as a basis for a career in industry, statistical overview of physics-degree production and employment of physicists, and women graduates in physics. Single copies are available free; multiple copies are \$3.00 each. Lewis Slack, American Institute of Physics, 335 East 45th Street, New York, NY 10017; (212) 661-9404.

CD-ROM Science and Technical Reference Set: Single 4 3/4 in. compact disk combines the 7,300 articles from the *McGraw-Hill Concise Encyclopedia of Science and Technology* with the 98,500 terms and 115,500 definitions of the *McGraw-Hill Dictionary of Scientific and Technical Terms*, third edition. Optical disk technology combines the 4,000 plus pages of the two reference books, including illustrations, onto one disk to provide concise, convenient coverage of all the physical, earth, and life sciences, as well as all engineering specialties. The user can browse, read, or print an article, or copy it to a file. Special dictionary functions let the user view definitions of any word or phrase while simultaneously reviewing the corresponding article. McGraw-Hill Book Company, Eastern Region, Princeton Road, Hightstown, NJ 08520.

Advanced MOS Devices: Book by Dieter K. Schroder of Arizona State University is part of Addison-Wesley's *Modular Series on Solid State Devices*. The first book to give an integrated view of nonequilibrium MOS devices, it explores in detail the physics of random access memories, and deals with the use of MOS devices as test structures and as circuit elements. Other unique and timely topics include deep-depletion MOS-C and hot electron effects. Addison-Wesley Publishing Company, Reading, MA 01867; (617) 944-3700.

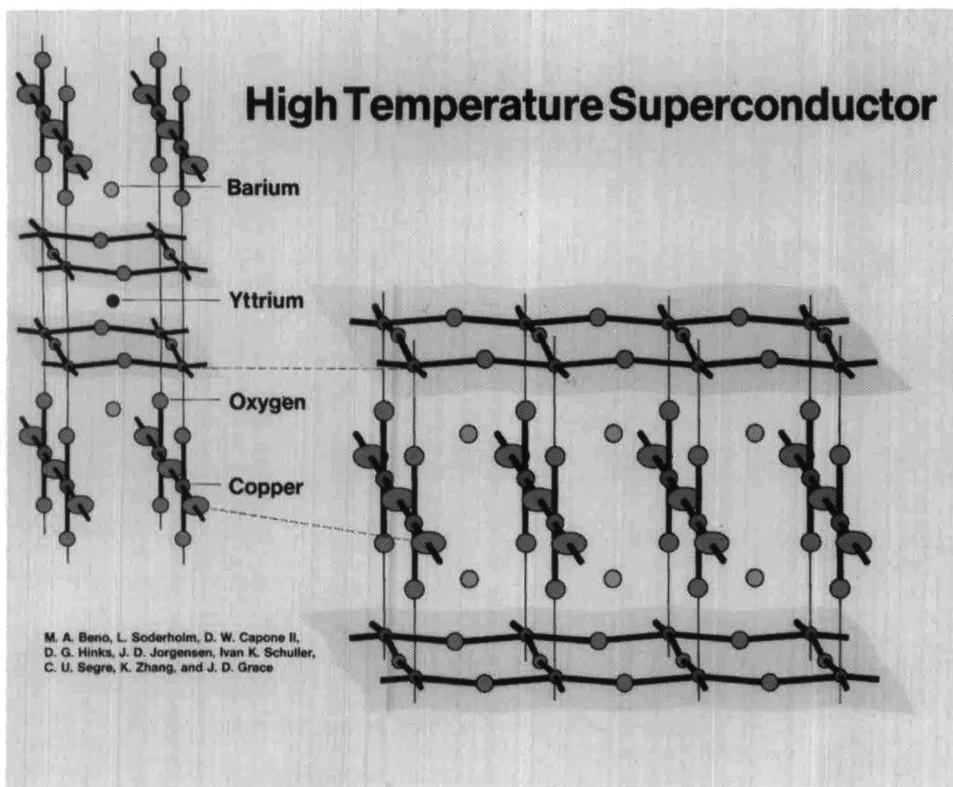
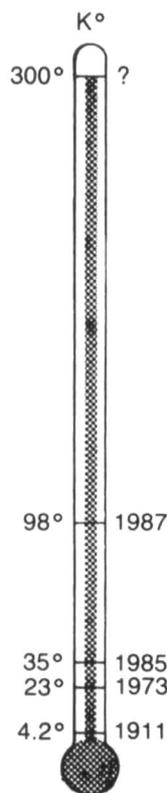


Photo courtesy of Ames Laboratory.

Superconductors Update: New current-awareness bulletin from STN International gives bibliographic references and abstracts for superconductor research published in the scientific literature and accessible online from two STN files: The PHYS FILE produced by FIZ Karlsruhe, and the CA FILE produced by Chemical Abstracts Service, a division of the American Chemical Society. The biweekly publication brings abstracts and bibliographic citations of patent documents, journals, and other publicly available sources. Citations for important recent discoveries dealing with materials such as cuprates, borides, and organic superconductors are provided as soon as the source documents are published. STN-Columbus, c/o Chemical Abstracts Service, 2540 Olentangy River Road, P.O. Box 02228, Columbus, OH 43202; (800) 848-6538.



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