

BOOKSHELF

Kwan Chi Kao: *Dielectric Phenomena in Solids*.

Elsevier, Amsterdam, the Netherlands, 2004, 579 pages.

In general, a dielectric is considered as non-conducting or insulating material, such as a ceramic or polymer). This CD book describes the laws governing all dielectric phenomena. The areas that are covered are: Electric polarization and relaxation, Optical and electro-optic processes, Ferroelectrics, Piezoelectrics and pyroelectrics, Electrets, Electrical conduction and photoconduction, Electrical aging, Discharge and breakdown phenomena. The book will be of value to electrical engineers, material engineers and scientists and graduate students working in the area of material science and material manipulation.

M. Bignami: *Elsevier's Dictionary of Engineering*.

Elsevier, Amsterdam, the Netherlands, 2004, 1496 pages, hardbound, price: E295.00, US\$ 295.00.

The Dictionary contains terms covering the following fields: architectural engineering and buildings, civil engineering, geology, geotechnical engineering, hydraulics, hydrogeology, hydrology, mechanical engineering, mechanics, mining engineering, petroleum engineering, science and technology, surveying.

J. Svoboda: *Magnetic Techniques for the Treatment of Materials*.

Kluwer Academic Publishers, Dordrecht, the Netherlands, 2004, 656, pages, hardbound, price: E230.00, US\$ 253.00, GBP 159.00.

This book reflects changes that have occurred during the last two decades in theoretical understanding and practical implementation of magnetic techniques in materials treatment. Research and development needs, based on the current strategic thinking and on principles of sustainable development are outlined. Development of magnetic separators based on powerful permanent magnetic materials, construction of reliable superconducting separators, design of efficient eddy-current separators and industrial implementation of magnetic carriers and magnetic fluids are examples of innovative changes that have taken place during the last twenty years. The book mirrors the current technological trends and re-positions the research, development and practice of magnetic methods of material treatment in such areas as minerals beneficiation, recycling, waste treatment and biomedical and clinical applications.

F. Herlach and N. Miura (Editors): *High Magnetic Fields: Science and Technology. Volumes 1 and 2.*

World Scientific 2003, hardbound, price: US\$ 55.00, GBP 41.00, each.

These are the first two volumes of a three-volume set intended to provide a comprehensive review of experiments in high magnetic fields, which can be generated only with special magnets. Volume 1 is devoted to magnet technology and experimental techniques, while volumes 2 and 3 contain reviews of the different areas of research where strong magnetic fields are an essential tool. Volume 3 is scheduled to appear at the end of 2004.

J. Matricon and G. Waysand: *The Cold Wars: A History of Superconductivity.*

Rutgers University Press 2003, hardbound, US\$ 65.00, paperback US\$ 26.00.

The book charts the progress of cryogenic physics and superconductivity after the liquefaction of helium at 4.2 K in 1908 opened up a new frontier. The book concludes with the emergence of the new cuprate high-temperature superconductors and describes the search for superconductors at still higher temperatures.

S. Judd and B. Jefferson: *Membranes for Industrial Wastewater Recovery and Re-Use.* Elsevier 2003, Oxford, UK. 256 pages, hardbound, price E138.00/\$138.00.

The book is a comprehensive account of the use of membrane technology in the cleaning of industrial water. It covers the principles, mechanisms, applications and case histories. Special attention is paid to the textile, food/beverage, pharmaceutical, oil and pulp and paper industries, where such membranes are in regular use.

F. Fiorillo and I. Mayergoz: *Characterization and Measurement of Magnetic Materials.*

Academic Press 2004, 500 pages, hardbound, price £100.00.

The objective of this book is to provide a comprehensive overview of the properties of hard and soft magnetic materials relevant to applications, and thorough discussion of modern methodologies employed in the measurement of these properties. The book will be of interest to scientists and practitioners working in the fields of power engineering and material and mineral science.

S. Ahuja: *Handbook of Bioseparations.*

Academic Press 2004, 722 pages, hardbound, price: £115.00.

In this handbook, the separation of proteins, nucleic acids and oligonucleotides from biological matrices is covered from analytical to process scales. Also included is a chapter on the separation of antibodies, which have found numerous uses as therapeutic and diagnostic agents. The book serves as an essential reference and guidebook for separation scientists and practitioners working in the pharmaceutical and biotechnology industries and academia.

R. D. Noble and P. A. Terry: *Principles of Chemical Separations with Environmental Applications*.

Cambridge University Press 2004, 336 pages, paperback, price: £ 40.00.

This book is an introduction to chemical separations, focusing on their use in environmental applications. The authors first discuss the general aspects of separation technology as a unit operation. They also describe how property differences are used to generate separations, the use of separating agents and the selection criteria for particular separation techniques. The book is divided into nine chapters: Introduction; Separations as unit operations; Separations analysis fundamentals; distillation; Extraction; Absorption and stripping; Adsorption; Ion exchange; Membranes.