

tions that can be performed with the mathematical expressions contained in the text.

This book, however, is not meant as a study guide for anyone wishing to learn radiation dosimetry. An extensive list of references is provided where a person unacquainted with the fundamentals of radiation dosimetry may read more extensively on each topic. The authors provide a comprehensive summary of this very important field and draw together all the definitions, mathematical formulas and functions necessary to carry out the extensive numerical calculations involved in evaluating absorbed doses from ionizing radiation and in protecting from it.

The authors have given a course, similar in title to the book, at Stanford University for a number of years. The course and the text are directed at the graduate level to scientists and engineers as well as to persons professionally involved in the measurement of, or the shielding from, photons and charged particles. A particularly attractive feature of this book is that the authors have covered the high as well as the lower energy range of ionizing radiations. Hence, health physicists and others in the medical field will find it a good source of information as will their colleagues at high-energy facilities and nuclear power plants.

At the same time the authors have included a very comprehensive discussion of charged-particle and photon interactions using illustrations from high-energy bubble-chamber pictures. This unique idea is very illustrative of the more subtle points of some rather ordinary concepts and is helpful. In addition, the authors treat the distribution of energy in matter very nicely, using the ideas of linear energy transfer, linear energy-transfer distributions, and energy density distributions.

In summary, this book is a valuable source of information for health physicists, engineers and other professionals involved in the design construction of radiation facilities.

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book notes

The Practicing Scientist's Handbook: A Guide for Physical and Terrestrial Scientists and Engineers. A. J. Moses. 1292 pp. Van Nostrand Reinhold, New York, 1978. \$52.50

The purpose of this book, Alfred J. Moses states in his preface, is "to provide a comprehensive source of materials property data to practicing physicists, chemists, engineers and designers." An introductory chapter (comprising nearly

half the book) provides tabular data on atomic and nuclear structure, electromagnetic radiation, classes of materials, materials-selection criteria, physical properties, electrical and electronic properties, nuclear radiation and radiation effects, and mechanical, chemical, thermal and thermodynamic, magnetic, acoustic and optical properties of materials. Other chapters present properties of the elements, organic and inorganic compounds, alloys, glasses and ceramics, composites, polymers and adhesives, semiconductors, superconductors, the environment and miscellaneous materials.

Craig B. Waff

Crystals for Magnetic Applications. C. J. M. Rooijmans, ed. 139 pp. Springer-Verlag, New York, 1978. \$29.00

This book is the first volume of a new series titled *Crystals: Growth, Properties, and Applications*. An international editorial board has determined that a substantial portion of the series will be devoted to the theory, mechanisms and techniques of crystal growth. In addition, the series will report on general methods of crystal characterization and new applications of crystals—in fields such as electronics, laser technology and nonlinear optics. It will also treat topics related to organic crystals and polymers.

The contributors to *Crystals for Magnetic Applications* are Wolfgang Tolksdorf, Fritz Welz, Frank J. Bruni and Mark H. Randles (magnetic garnets), Ludmila N. Demianets (magnetic oxides) and Mitsuo Sugimoto (magnetic spinel single crystals).

—SCA

new books

Particles, Nuclei and High-Energy Physics

Microscopic Optical Potentials (Proc. of the Hamburg Topical Workshop on Nuclear Physics, September, 1978). H. V. von Geramb, ed. 481 pp. Springer-Verlag, New York, 1979. \$21.30

Recent Developments in Particle and Field Theory (Proc. of the Symp. on Particles and Fields, Tübingen, Fed. Rep. of Germany, 1977). W. Dittrich, ed. 427 pp. Vieweg, Braunschweig, Fed. Rep. of Germany, 1979. DM88

Few Body Systems and Nuclear Forces II. (Papers presented at the 8th Int. Conf. on Few Body Systems and Nuclear Forces, Graz, Austria, August, 1978). H. Zingl, M. Haftel, H. Zankel, eds. 545 pp. Springer-Verlag, New York, 1978. \$25.30

Hadron Structure and Lepton-Hadron Interactions, Cargèse 1977 (Proc. of the NATO Advanced Study Institute, Paris, July, 1977). M. Levy, J. L. Basdevant, D. Speiser,

J. Weyers, R. Gastmans, J. Zinn-Justin, eds. 736 pp. Plenum, New York, 1979. \$65.00

Atomic, Molecular and Chemical Physics

Luminescence Spectroscopy. M. D. Lumb, ed. 375 pp. Academic, London, 1978. \$49.75

Electron Spectroscopy: Theory, Techniques and Applications, Vol. 2. C. R. Brundle and A. D. Baker. 287 pp. Academic, New York, 1978. \$36.25

Photoelectron Spectroscopy and Molecular Orbital Theory. R. E. Ballard. 192 pp. Halsted (Wiley), New York, 1978. \$49.95

Handbook on the Physics and Chemistry of Rare Earths, Vol. 1: Metals. K. A. Gschneidner Jr., L. Eyring, eds. 894 pp. North-Holland, New York, 1978. \$133.25

Molecular Symmetry and Spectroscopy. R. Bunker. 424 pp. Academic, New York, 1979. \$33.00

Constants of Diatomic Molecules (Molecular Spectra and Molecular Structure, Vol. 4). K. P. Huber and G. Herzberg. 716 pp. Van Nostrand Reinhold, New York, 1979. \$27.50

Physical Chemistry (Fifth Edition). R. A. Alberty, F. Daniels. 682 pp. Wiley, New York, 1979. \$19.95

Physical Chemistry (Fourth Edition). G. M. Barrow. 832 pp. McGraw-Hill, New York, 1979 (first ed., 1961). \$23.00

Advances in Atomic and Molecular Physics, Vol. 14. D. R. Bates, B. Bederson, eds. 464 pp. Academic, New York, 1979. \$39.50

Optics and Acoustics

Ocean Acoustics. J. A. DeSanto, ed. 258 pp. Springer-Verlag, New York, 1979. \$37.40

Physics of Musical Sounds. J. Askill. 370 pp. Van Nostrand, New York, 1979. \$15.95

Voice Identification: Theory and Legal Applications. O. Tosi. 182 pp. University Park, Baltimore, 1979. \$19.50

Psychological Acoustics (Benchmark Papers in Acoustics, Vol. 13). E. D. Schubert, ed. 390 pp. Dowden, Hutchinson and Ross, Stroudsburg, Pa. (US distributor: Academic, New York), 1979. \$34.50

Quantum Electronics and Lasers

Chemical and Biochemical Applications of Lasers, Vol. 4. C. B. Moore, ed. 414 pp. Academic, New York, 1979. \$25.00

Fluids and Plasmas

Reviews of Plasma Physics, Vol. 7. M. A. Leontovich, ed. 379 pp. Consultants Bureau (Plenum), New York, 1979. \$32.50

Crystallography, Low-Temperature and Solid-State Physics

Preparation and Properties of Solid State Materials, Vol. 4 (Morphological Stability, Convection, Graphite, and Integrated Optics). W. R. Wilcox, ed. 203 pp. Dekker, New York, 1979. \$29.75

Thermal Conductivity 15 (Proc. of the 15th Int. Conf., Ottawa, Ontario, August 1977). V.