

BOOK REVIEWS

A SUMMARY OF RECENT PERGAMON BOOKS OF INTEREST TO REACTOR PHYSICISTS

Radiation and Life (2nd Edn), ERIC J. HALL. College of Physicians, Columbia University, U.S.A. (1984) £19.25. 225 pp.

This book is written at a level useful for a range of readers, from the intelligent layman to the practising scientist. It is especially concerned with the medical effects of nuclear radiation but covers many peripheral areas of general interest. It is valuable for those wishing to obtain a rapid overview of radiation and its role in life on Earth—both beneficial and deleterious.

Table of contents: (1) Our Radiation Heritage; (2) The Invisible Rays; (3) Of Cells, Mice and Men; (4) What Comes Naturally; (5) The Not-So-Friendly Skies; (6) The Healing Rays; (7) Power from The Atom; (8) Some Risk-Free Benefits; and (9) Risk Versus Benefit.

Atoms, Radiation and Radiation Protection, JAMES E. TURNER. Oak Ridge National Laboratory, U.S.A. (1986) £26.00 (softcover). 324 pp.

This book was written from material developed by the author while teaching courses at the Oak Ridge Resident Graduate Program of the University of Tennessee's Evening School. The courses dealt with introductory health physics, preparation for the American Board of Health Physics certificate and related specialized subjects such as microdosimetry and the application of Monte-Carlo techniques to radiation protection. This is a very comprehensive book and deals with the interaction of radiation with matter in a quantitative and practical way.

Table of contents: (1) About Atomic Physics and Radiation; (2) Atomic Structure and Atomic Radiation; (3) The Nucleus and Nuclear Radiation; (4) Interaction of Heavy Charged Particles with Matter; (6) Phenomena Associated with Charged Particle Tracks; (7) The Interaction of Photons with Matter; (8) Neutron Fusion and Criticality; (9) Methods of Radiation Detection; (10) Radiation Dosimetry; (11) Chemical and Biological Effects of Radiation; (12) Radiation Protection Criteria and Standards; (13) External Radiation Protection; and (14) Internal Dosimetry and Radiation Protection.

Introduction to Health Physics (2nd Edn), HERMAN CEMBER. Northwestern University, U.S.A. (1985) £28.00 (softcover—revised and enlarged). 516 pp.

This is a very comprehensive text on health physics and radiological health, i.e. that area of environmental health engineering that deals with the protection of the individual and population groups against the harmful effects of ionizing and non-ionizing radiation. The depth of coverage is great and topics are considered in both physical and quantitative aspects.

Table of Contents: (1) Introduction; (2) Review of Physical Principles; (3) Atomic and Nuclear Structure; (4) Radioactivity; (5) Interaction of Radiation With Matter; (6) Radiation Dosimetry; (7) Biological Effects of Radiation; (8) Radiation Protection Guides; (9) Health Physics Instrumentation; (10) External Radiation Protection; (11) Internal Radiation Protection; (12) Criticality; (13) Evaluation of Protective Measures; and (14) Non-Ionizing Radiation.

There are many detailed problems.

AEROSOLS: Formation and Reactivity—Proceedings of the Second International Aerosol Conference, 22–26 September 1986 (W. Berlin), G. ISRAEL, HOST. Technische Universität, Berlin FG Luftreinhaltung (1986). 1227 pp.

This volume contains the extended abstracts of papers delivered at the conference. It is divided into four parts: (I) Atmospheric Aerosols, Inhalation and Health Effects; (II) Basic Properties and Sampling; (III) Clean Room Technology, Measurement Techniques, Filtration, Aerosol Chemistry; (IV) Industrial Application, Aerosol Generation and Characterization.

The contents have particular relevance to nuclear aerosols and the book will therefore be of considerable interest to those concerned with the nuclear source term arising from reactor accidents.

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