BOOK REVIEWS

Selection of books for review is based on the editors' opinions regarding possible reader interest and on the availability of the book to the editors. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.

Nuclear Radiation Physics

Authors	Ralph E. Lapp and Howard L. Andrews
Publisher	Prentice-Hall, Inc. (1972)
Pages	447
Price	$18.95
Reviewer	Eric Haskin

This fourth edition, like the previous editions of *Nuclear Radiation Physics* is designed as a text for introductory undergraduate courses in nuclear science. The scope of the book is indeed large, encompassing radiation detectors, quantum theory, atomic and nuclear structure, radiations and their interactions with matter, charged particle accelerators, fission reactors, fusion, space radiation, and the transuranium elements. The presentation is as nonmathematical as possible; however, a basic physics sequence and calculus through ordinary differential equations would be required prerequisites for complete coverage.

This edition of the text differs from the previous editions in both content and order of presentation. Material on health physics and reactor economics has been eliminated in order to make room for material on space radiation and the transuranium elements. The chapters on radiation detectors now come at the beginning of the text. More problems have been added at the ends of the chapters—some with answers given.

One would expect the fourth edition of a text to be well organized with few conceptual or technical errors. Unfortunately, this is not the case here. The book is scattered into twenty-one chapters, each containing from six to fifteen subsections. There is a frequent tendency to digress; for example, a chapter entitled "Classical Mechanics, Relativity, and Quantum Theory" contains subsections devoted to "Natural Isotopic Abundance" and "Isotope Separation." There are many errors; a few will illustrate. In Sec. 3.10 the band gap in semiconductors is referred to as the width of the conduction band. In Sec. 4.12 we are informed that the "velocity" of light is independent of its direction of propagation—an interesting property for a vector! On p. 128 a typographical error implies that the element lead, $Z = 82$, has five isotones. Actually, there are seven stable isotones at $N = 82$, Fig. 7-2 being out of date.

The authors have made a commendable attempt to introduce many concepts of current nuclear science and technology without getting bogged down in theoretical detail. Naturally some topics are glossed over; however, for the most part the discussions presented are pertinent, interesting, and understandable. For an instructor willing to organize, fill in the details, and watch out for the mistakes, the book might make a good text for a broad survey course. Those wishing to quickly refresh their memories with respect to the topics covered might also find the book useful.

Eric Haskin (PhD, nuclear engineering, Kansas State University, 1971) is the author of technical papers in the fields of radiation chemistry, activation analysis, and nuclear by-product management. He has worked in the Product Exploration Division of the Boeing Company and is currently a visiting assistant professor in the Nuclear Engineering Department at the University of Arizona.

Irradiation Effects in Fissile Materials, Vol. 6

Authors	J. Leteurtre and Y. Quéré
Publisher	North-Holland Publishing Company; American Elsevier Publishing Company, Inc.
Pages	128
Price	$15.50
Reviewer	Richard E. Faw

The authors of *Irradiation Effects in Fissile Materials* are located at the Centre d'Etudes Nucléaires, Fontenay-aux-Roses, France. This book is Vol. 6 in the series *Defects in Crystalline Solids*, edited by S. Amelinckx, R. Gevers, and J. Nihoul of the Studiecentrum voor kernenergie, Mol, and the University of Antwerpen, Belgium. As might be