

BOOK REVIEW

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.



Radioisotope Engineering

Editor: Geoffrey G. Eichholz
Publisher: Marcel Dekker, Inc.
95 Madison Avenue
New York, N.Y. 10016
Pages: 418
Price: \$26.50
Reviewer: Benjamin M. Ma

Radioisotope Engineering begins with an introductory presentation of radioisotopic energy sources, radiation therapy, surgical sterilization, and industrial applications of radioisotopes (Chap. 1, Introduction). It proceeds with large-scale production of radioisotopes, radioactive source encapsulation, and design of teletherapy units (Chaps. 2, 3, and 4). The book then presents the industrial technology of design procedures for irradiators and gamma irradiation systems (Chaps. 5 and 6), and concludes with the economic comparison and utilization of radioisotopes or particle accelerators applied to radiation therapy, industrial radiography,

and radiation processing to change the properties of materials (Chap. 7). The content of each chapter is presented with an independent style and system by individual contributors. References to each topic are given at the end of each chapter. There are two appendixes for useful physical constants and conversion factors and a condensed glossary of nuclear terms for the user's convenience. This book gives current information for radioisotopes or radiation equipment in medical and irradiator applications.

Due to the large volume of production, development, and availability of radioactive materials from accelerators, nuclear fission reactors (especially thermal power reactors), and nuclear reprocessing facilities, radioisotope utilization is continuing to expand in various fields. In the meantime, radioisotope engineering is also expanding to cover various fields, including automatic control systems.

However, the book (from Chaps. 2 through 7) covers mainly the special fields of production and preparation of radiation sources, design of medical radiation therapy equipment,

design of radiation irradiators, and economic comparison and utilization of radioisotopes or particle accelerators in medical and industrial applications. Radioisotopes used in common engineering applications such as thickness radiogauging, density radiogauging, leak and moisture content radiogauging, etc. were practically omitted. Although most of the contributors to the book are involved in radioisotope research, little discussion has been given to radioisotopes for use in engineering research.

There are some unavoidable misprints in the book (for example, pp. 109, 245, etc.) which may be corrected in the next impression.

Benjamin M. Ma (Eng. D. aeronautical engineering, Stanford University; PhD, Nuclear engineering, Iowa State University) is a professor at Iowa State University. Previously he taught at South Dakota State University and the University of Michigan. Dr. Ma has strong interests in radioisotope engineering, plasma stabilization of controlled fusion, and safety aspects of liquid metal fast breeder reactors.