

Book Reviews

Radioisotope Applications Engineering. By J. KOHL, R. D. ZENTNER, AND H. R. LUKENS. Nuclear Science Series. Van Nostrand, Princeton, N. J., 1961. 562 pp., \$16.50.

The authors, Jerome Kohl, Coordinator of Special Products, General Atomic Division of General Dynamics Corporation, René D. Zentner, Attorney at Law in Berkeley, California, and H. R. Lukens, Jr., Radiochemist, Shell Development Company, were previously associated with Tracerlab, Inc. They have, in common, training and experience in chemistry and radiochemistry and have engaged in radioisotope application course presentation at the University of California, Engineering and Sciences Extension.

This adequately illustrated publication presents a summary of major reported radioisotope applications in the instrumentation, petroleum, chemical, radiation, pharmaceutical, and food processing industries. The introductory chapters dealing with basic radiation physics, production of radioisotopes, measurement of nuclear radiation, statistics of radiation measurements, and tracer selection can serve as background information for persons not trained in radioisotope technology who desire to gain an understanding of how the radioactivity of radioisotopes is usefully applied.

The intermediate chapters dealing with calculations for a tracer experiment, legal aspects of atomic energy, radiological safety, radiation attenuation, radioisotope radiography and process uses of radiation, in this reviewer's opinion, are the highlights of the book because of their content and fine presentation. This material should interest those who understand the basic principles behind isotope application and seek information regarding the practical problems associated with procuring and using them.

The final chapters dealing with flow and leakage measurements, concentration measurement, wear studies, density thickness gaging, and process instrumentation serve as a compilation of reported demonstrations and applications of isotopes to these fields. The summaries could save much time for radioisotope workers by quickly leading them to the more complete works which have been referenced for each application discussed.

This publication could serve well as a textbook for courses where otherwise trained individuals are familiarized with the utility of radioisotope technology to industrial applications. It is written in a manner also amenable to individual reading for those who cannot attend a supervised training program. Once read, it should serve as a valuable reference since it contains over 135 general technological references and over 530 references to work specifically mentioned in the text.

Summing up, this book is recommended reading for engineers and other industrial personnel desiring to ac-

quaint themselves with what can be done with radioisotopes and how it is done.

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(About the Reviewer: J. P. Danforth is a senior research engineer with the General Motors Research Laboratories. He is engaged in development of industrial radioisotope applications, coordination of radiological training of engineering personnel, and direction of radiological safety and isotope control at the Research Isotope Laboratory in Warren, Michigan.)

Nuclear Radiation Measurement. By J. SHARPE. Nuclear Engineering Monograph. Simmons-Boardman, New York, 1960. 71 pp., \$2.75.

The book is well printed in readable type. There are few typographical errors, if any. This volume of 71 pages contains 27 figures, 13 tables, and 54 references. The illustrations are well reproduced, all of them being line drawings. Spot-checked references were found to be correct. It was gratifying to note the large number of references, including many original references. The table of contents is rather brief, but there are adequate subheadings in each chapter. The editorial foreword states, "The writing style in this monograph is intended for university and technical college students, research assistants, and qualified technicians who require a broad understanding of those topics of nuclear engineering outside their own field of study." The writing is considered quite readable and useful at this and higher technical levels.

The author, J. Sharpe, has also written "Nuclear Radiation Detectors" (Methuen, London, 1955) and numerous papers on radiation detection. He is active as a developer and designer of photomultiplier tubes and radiation detecting instruments and is currently employed by EMI Electronics, Ltd. Mr. Sharpe is well qualified by virtue of his long experience and leadership in the field of radiation detectors.

Chapter 1 contains a compact one and one-half page summary of the following chapters, as well as distinguishing between the basic types of radiation detectors and the basic types of nuclear radiation. This brevity is indicative of the pace maintained throughout the rest of the book.

Chapter 2 deals with the Interaction of Radiation with Matter and is the longest portion of the book. From the standpoint of radiation detectors, Chapter 2 constitutes a good review, but achieves this by assuming a considerable