BOOK REVIEWS

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

Materials Characterizations: Metals Handbook (Vol. 10, 9th ed.)

Coordinator Ruth E. Whan

Publisher American Society for Metals, Metals Park, Ohio (1986)

Pages 761

Price $92.00

Reviewer Geoffrey G. Eichholz

This encyclopedic volume on materials characterization is a worthy member of the well-known Metals Handbook series. In a single volume the reader will find a concise but fairly detailed description of all major techniques used to characterize materials. The subject headings cover optical and X-ray spectrometry, mass spectroscopy, electrochemical and radiochemical analysis, resonance methods, metallographic techniques, diffraction methods, electron optical methods, electron or X-ray spectroscopy, sputtering or scanning phenomena, and chromatography. A guide is provided to indicate applicable methods for each type of sample, and the sampling process itself is discussed.

Within each group, every method is explained by principle and instrumentation, the procedure is outlined, and typical applications are presented. Diagrams are used to illustrate the procedure, and typical results are shown, whether they are spectral plots, micrographs, or chromatograms. Most of the newer methods have selected references updated to 1985 in many cases. A review table at the head of each chapter summarizes the applications, sample types, limitations, sensitivity, and capabilities of related techniques for the particular method described.

Most of the methods discussed here find widespread application in nuclear technology where characterization of materials is a key operation in quality assurance and material evaluation. Though, obviously, the format of the book makes the treatment of any method rather compressed and may send the reader to more detailed references for actual implementation, it is hard to think of any other single volume that would provide such a useful description of the various methods or such a convenient presentation for comparing the applicability of competing techniques. The volume is very competently edited, carefully indexed, and attractively presented. It will be a valuable reference book for any materials technologist or engineer and a useful reference book for courses on instrumental analysis or surface phenomena.

Geoffrey G. Eichholz is a Regents' Professor of Nuclear Engineering at the Georgia Institute of Technology, which he joined in 1963. He obtained his PhD in physics at the University of Leeds, England, and was awarded the DSc degree in 1979. He edited the book Radioisotopes Engineering *and is the author of* Environmental Aspects of Nuclear Power *and* Principles of Nuclear Radiation Detection, *both published by Lewis Publishers. His research interests include the migration of radioactive wastes, environmental surveillance problems, radiation detector development, industrial radiation applications, nuclear materials technology, and the health physics of nonionizing radiations.*

Radioactive Waste Management: Technical Hazards and Public Acceptance

Publisher Oyez Scientific & Technical Services, Limited, London (1985)

Pages 229

Price $75.00 (softbound)

Reviewer Geoffrey E. Eichholz

This volume constitutes the proceedings of a conference held in London in 1985 and consists of the direct reproduction of the 14 papers presented and a transcript of the panel discussions that followed the four sessions. Although the intended audience is not identified, the papers are clearly directed to the general public rather than the specialist. As the subtitle indicates, a fair proportion of the conference and