

design, construction, and initial operation of the Vallecitos Boiling Water Reactor and was manager of the Reactor Technical Operation unit. Before joining GE, he spent nine years at the Enrico Fermi Institute for Nuclear Studies, University of Chicago, where he was Chief Engineer and was responsible for the design, construction, operation, and maintenance of a 170-inch synchrocyclotron. A graduate of MIT, he is currently Secretary of the Reactor Operations Division of ANS.

A LIMITED AID TO TRANSLATION

Title Dictionary of Nuclear Physics and Nuclear Chemistry

Editor Hans Rau

Publisher Reinhold Publishing Corp., 1965, second edition

Pages 350

Price \$8.75

Reviewer Hartmut Wiedersich

A rapidly expanding field such as nuclear science and technology creates a multitude of new and highly specialized terms. Thus, specialized and up-to-date dictionaries are desirable. The present German-English/English-German dictionary, an enlarged and revised edition of a previous one, was intended to serve this need. Despite the title, it appears primarily directed toward engineers concerned with reactor technology and uranium mining, since the areas of engineering, mining, and minerals are covered especially well.

However, some areas lack complete coverage. A quick check revealed as missing: exclusion principle, epithelial, laws of thermodynamics, parity, quadrupole, statistics, straggling, scavenger, and many more. Nevertheless, about 8000 terms (according to the preface) are included. The dictionary has limited value for engineers with interests in materials since few metallurgical and radiation damage terms are included. For example, some words from these fields, which are not found in the book include: anneal, forging, precipitation hardening, steel, knock-on, interstitial, thermal spike, and displacement spike.

In general, the translations are precise. Yet, it is news to me that "metallurgical engineering" is "Eisenhüttenwerk" (steel works) or that the deuteron has the atomic number 2. There are cases where additional translations should have been added, e.g. "dislocation" is given only as "Verlagerung" (geologic) but not as "Verseztung" (crystal defect).

An extensive section containing symbols and abbreviations is useful. The excessive employment of abbreviations in our time is reflected by this section which requires 80 pages—more than 20% of the volume. Whereas usually only the full name of an object is given

in the English column, frequently the item is characterized briefly in German. For example, BEPO reads British Experimental Pile Operation in the English column, while the German column contains the equivalent of: graphite-moderated, gas-cooled uranium reactor, 6 MW, in Harwell, Berkshire, England.

As with all specialized dictionaries, a good general knowledge of the language (or a general dictionary) is required for profitable use.

Hartmut Wiedersich, technical staff member of the North American Aviation Science Center's Theoretical Chemistry Group since the Center's inception in 1962, has been in research with Westinghouse Electric (1954-60) and Atomics International (1960-62) since receiving his PhD in Physics and Metallurgy from the University of Göttingen, Germany, 1954. His best-known scientific contributions are in the fields of plastic deformation and of applications of the Mössbauer effect to magnetic and metallurgic problems. He has co-authored a review article on radiation damage in reactor materials which will soon be published by ASTM.

GRACEFUL AND COMPENDIOUS

Title Electrodeposition and Corrosion Processes

Author J. M. West

Publisher D. Van Nostrand Co., Inc., 1965

Pages xii + 189

Price \$7.50

Reviewer Clemens Auerbach

The stated purpose of this short book is to present a unified picture of the processes of electrodeposition and corrosion in terms of the same basic phenomenon: the transfer of a metal ion through an energy barrier existing at a metal-electrolyte interface. The author approaches this task by dividing the subject matter into seven chapters. The first two chapters present, respectively, a concise treatment of equilibrium at a metal-solution interface and of departures from such equilibrium. These chapters introduce such basic topics as exchange current density, the structure of the double layer, the role of adsorption, and the influence of structural features of the metal surface. The third chapter turns to the treatment of electrochemical corrosion, about half of it being devoted to a discussion of the major types of cathodic processes. The related topic of surface films, leading up to the subject of passivity, is presented in the following chapter, which makes liberal and effective use of potential-pH (Pourbaix) diagrams. Chapter 5 consists of a discussion of electro-polishing and bright electrodeposition from the unifying viewpoint of random (noncrystallographic) dissolution and deposition. Chapter 6 deals systematically with corrosion prevention, and the final chapter gives an introduction to the complex and controversial field of phenomena involving stress. A few rather conventional numerical