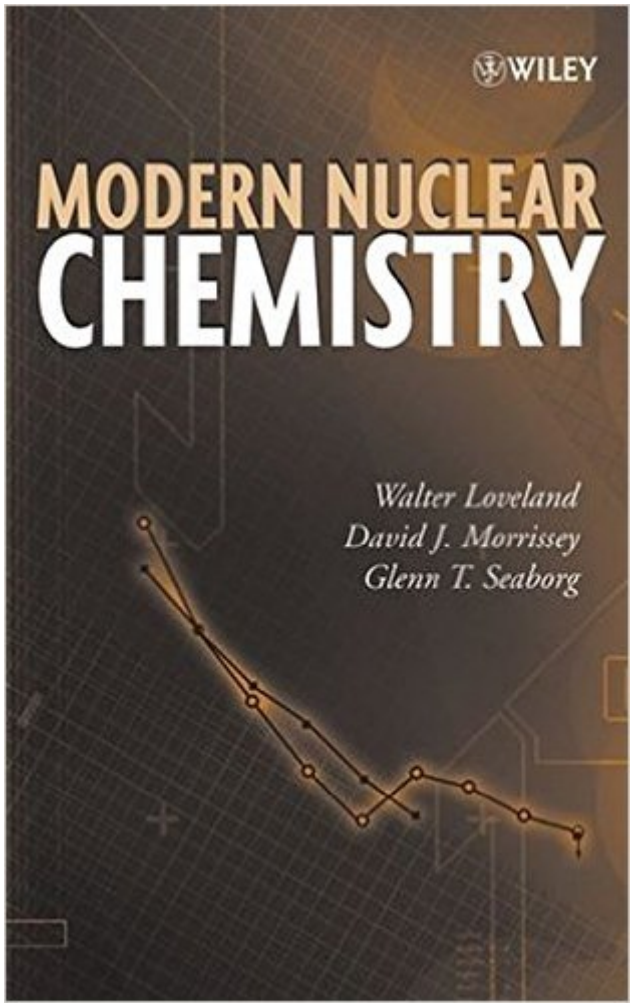
Modern Nuclear Chemistry



Synopsis

Modern Nuclear Chemistry provides up-to-date coverage of the latest research as well as examinations of the theoretical and practical aspects of nuclear and radiochemistry. Includes worked examples and solved problems.Â Provides comprehensive information as a practical reference. Presents fundamental physical principles, in brief, of nuclear and radiochemistry.

Book Information

Hardcover: 704 pages

Publisher: Wiley-Interscience; 1 edition (November 18, 2005)

Language: English

ISBN-10: 0471115320

ISBN-13: 978-0471115328

Product Dimensions: 6.4 x 1.5 x 9.6 inches

Shipping Weight: 2.4 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 starsÂ Â See all reviewsÂ (7 customer reviews)

Best Sellers Rank: #464,854 in Books (See Top 100 in Books) #11 inÂ Books > Science & Math > Chemistry > Nuclear Chemistry #234 inÂ Books > Science & Math > Reference #278 inÂ Books > Science & Math > Chemistry > Physical & Theoretical

Customer Reviews

The three authors of this book, one of which (Glenn T. Seaborg, 1912-1999) is a Nobel prize winner (Chemistry, 1951), have crafted a well balanced and comprehensive text (19 chapters, 670 pages) of modern nuclear chemistry. The first twelve chapters cover the basic scientific concepts behind nuclear science (structure of the nuclei, nuclear forces and decay) while the remaining seven chapters deal with applications (analytical applications of nuclear chemistry, reactor chemistry, and radiochemical techniques). There are plenty of figures, diagrams and tables throughout the book. The appendix of the book contains the so called nuclear wallet cards each summarizing the properties of a specific radioactive nuclide. By having four cards per page, however, the size of the text of each card is too small and therefore difficult to read unless one does not use a lens. Anyway, a part from this glitch, the book is worth reading and represents a key reference in the field of nuclear science. Figure 15.9 is a nice picture of the late professor Seaborg pointing to the element seaborgium (Sg, Z=106). For a biography of Glenn Seaborg, see the book Adventures in the Atomic Age: From Watts to Washington (2001).

The book is fine but it CANNOT DESERVE FIVE STARS given the known errors it contains and the failure of the publisher to update this book. Instructors who assign this know about the errors (or at least they should) and continue to assign it because of the mix of topics and they way they are presented are pretty good compared to other texts that can be somewhat skewed.Edited Sept 2014:As an aid to buyers of the book, the erratum can be found online at either of the two following university webpages:http://oregonstate.edu/instruct/ch374/ch418518/LMSerrata.pdfhttp://www.murr.missouri.edu/nncss/files/Textbook_Errata.pdf

I bought this book to expand upon my education from a course I took on Radiochemistry as an undergraduate student. The fact that Glenn Seaborg, a co-discoverer of plutonium, is a co-author influenced my selection of this book. The book is a comprehensive overview of the scope and definition of nuclear chemistry and where it is applied in the modern world. It covers in detail nuclear properties and structure, nuclear reactions, fission, radioactive decay, radiation detectors, radiochemical techniques, the interaction of radiation with matter, and much more. The chapter on Nuclear Reactor Chemistry was particularly informative about the radiochemistry of uranium, nuclear fuel processing and radioactive waste disposal; the latter a national problem that still needs to be solved. I recommend it to all undergraduate chemistry students, professional chemists in other branches of chemistry, and chemical and nuclear engineers who wish to understand just what constitutes nuclear chemistry. The references and bibliographies are very helpful for further research. The book exceeded my expectations in technical content.

I almost applied to be a Ph.D student in nuclear chemistry in the university in Oregon that the author works in. Too bad it was in the middle of nowhere. The book is pretty well organized and I feel that I learned a lot during the course and especially from the book. There seemed to me to be a lot of focus on the nuclear shell model. There are a number of mistakes though, but I had been given an erratum which I think the author has available. At any rate, you won’t be disappointed.

PROTECTION IN THE NUCLEAR AGE Nuclear Reactor Design (An Advanced Course in Nuclear Engineering) Nuclear techniques in analytical chemistry, (International series of monographs on analytical chemistry) Ace Organic Chemistry I: The EASY Guide to Ace Organic Chemistry I: (Organic Chemistry Study Guide, Organic Chemistry Review, Concepts, Reaction Mechanisms and Summaries) Ace General Chemistry I and II (The EASY Guide to Ace General Chemistry I and II): General Chemistry Study Guide, General Chemistry Review Ace General Chemistry I: The EASY Guide to Ace General Chemistry I: (General Chemistry Study Guide, General Chemistry Review) Modern Nuclear Chemistry Radiochemistry and Nuclear Chemistry, Fourth Edition Radiochemistry and Nuclear Chemistry Crucibles: The Story of Chemistry from Ancient Alchemy to Nuclear Fission Radiochemistry and Nuclear Methods of Analysis (Chemical Analysis: A Series of Monographs on Analytical Chemistry and Its Applications) Nuclear Magnetic Resonance (Oxford Chemistry Primers) Radiochemistry and Nuclear Chemistry, Third Edition High Resolution Nuclear Magnetic Resonance (Advanced Chemistry) Makers of Modern Strategy from Machiavelli to the Nuclear Age (Princeton Paperbacks) (Paperback) - Common