

“Hypersensitive Transitions in *f*-Electron Systems”. A chapter by M.J. Weber on “Lanthanide and Actinide Lasers” surveys the lanthanide and actinide ions and transitions involved which have been used or may be used for lasers. R.G. Denning and co-workers present detailed single crystal polarized electronic spectra of the uranyl ion and conclude that both *f* and *d* orbitals participate in the actinyl bond. R.H. Banks and N.M. Edelstein discuss the physical and optical properties of the borohydrides of Pa, Np and Pu which is followed by a chapter by J.P. Hessler and W. T. Carnall entitled “Optical Properties of Actinide and Lanthanide Ions”. R.T. Paine and M.S. Kite, in a short chapter, discuss the photochemistry of uranium compounds. A very powerful technique for determining important physical properties of heavy atoms including ionization potentials, energy levels, lifetimes of levels and other properties, is discussed in a chapter entitled “Multistep Laser Photoionization of the Lanthanides and Actinides” by E.F. Worden and J.G. Conway. The volume concludes with a short chapter by B.W. Veal and D.J. Lam entitled “Photoelectron Spectra of Actinide Compounds”.

As stated in the preface, the purpose of this volume is to “introduce the nonspecialist chemist to recent trends in lanthanide and actinide chemistry and spectroscopy, to summarize this work, and to identify directions for future study”. This book admirably meets this goal. One caveat, the book was reproduced by photographing chapters sent in by the authors. Unfortunately, some chapters contain a frustrating number of typographical errors.

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NMR Spectroscopy. An Introduction. H. Günther, Wiley, Chichester, 1980, xiv + 436 pages, £7.95.

This is a translation of a 1973 text published in German, with some additions intended to cover later developments up to 1979. The additions do not greatly alter the balance of the book, however, which is principally concerned with the methods of ^1H NMR spectroscopy as applied to organic molecules. There is no significant treatment of organometallic or inorganic molecules (ca. 1 page) and the coverage of ^{13}C NMR spectra amounts to only 25 pages of text at the end of the book.

The account of ^1H NMR spectroscopy is quite detailed, the explanations are clear, and the significant portions of many of the diagrams are usefully highlighted in red. Whilst, therefore, the book can be recommended as an excellent introduction to ^1H NMR spectroscopy for students of organic chemistry, additional sources would be required to cover present day applications of NMR methods.

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