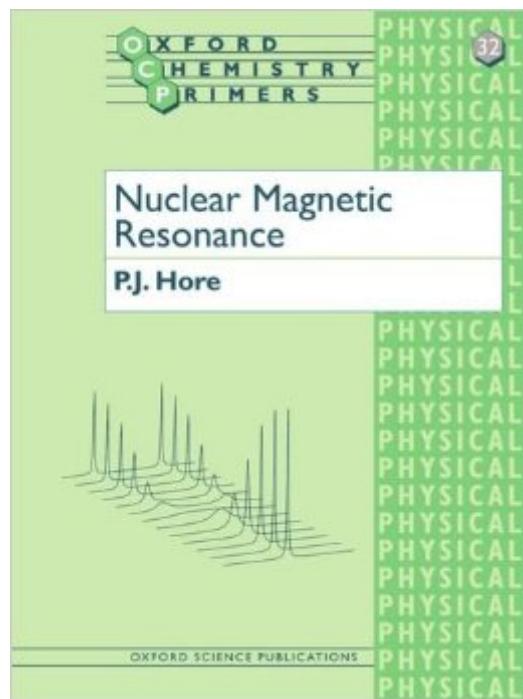


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Nuclear Magnetic Resonance (Oxford Chemistry Primers)



Synopsis

Nuclear magnetic resonance spectroscopy is an enormously powerful and versatile physical method for investigating the structure and dynamics of molecules. This text provides a clear, concise introduction to the physical principles of N.M.R., and the interactions that determine the appearance of N.M.R. spectra. It describes and explains how nuclear spins interact with a magnetic field (the chemical shift) and with each other (spin-spin coupling); how N.M.R. spectra are affected by chemical equilibria (exchange) and molecular motion (relaxation); and concludes with an outline of the workings of some simple one- and two-dimensional Fourier transform N.M.R. experiments. The ways in which N.M.R. may be used to study the structures, motions and reactions of molecules are illustrated and discussed. Only essential mathematics and theory are presented. The emphasis throughout is on understanding the basic principles.

Book Information

Series: Oxford Chemistry Primers (Book 32)

Paperback: 96 pages

Publisher: Oxford University Press; 1 edition (July 13, 1995)

Language: English

ISBN-10: 0198556829

ISBN-13: 978-0198556824

Product Dimensions: 9.6 x 0.2 x 7.5 inches

Shipping Weight: 7.2 ounces

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Best Sellers Rank: #1,320,312 in Books (See Top 100 in Books) #30 in Books > Science & Math > Chemistry > Nuclear Chemistry #343 in Books > Science & Math > Chemistry > Analytic #882 in Books > Science & Math > Chemistry > Physical & Theoretical

Customer Reviews

This is the best introduction I've seen. It's clear and intuitive, but covers all the basics: -- chemical shifts for a variety of binding structures, -- the various isotopes, -- line-splitting and spin coupling, -- equilibria in chemical and physical state, -- Overhauser effect, and lots more. In other words, it covers everything needed for more advanced analyses, but does it without dragging the reader through every wave function. Somehow, the author packs all that into fewer than 90 pages without making it all indigestibly dense. To get the book's full benefit, you'll need some background in chemistry, including a little organic, and maybe some physics. You won't need a lot of either - the

first or second college course in each should be enough. The treatment uses a little algebra, but not a lot in the direct line of its arguments. The real emphasis is on the basic phenomena: on the concepts of electron shielding, on effects of different kinds of bonding, and on interactions between magnetic nuclei. This book won't make you an analytic chemist. It could help, though. The text is well-suited for a prepared novice. It's illustrated with simple and descriptive diagrams. If you need to get the basic ideas of analytic NMR, fast, this book may be the best around. Other books cover advanced topics like NMR for protein structure. Read this book first, like an introductory chapter, and you'll have a much easier time with those more complex discussions. This much information at this price is an incredible deal - it has my highest recommendation.

Pretty good textbook on NMR but the last chapter needs more elaboration.

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