Books

Nuclear Magnetic Resonance

by John D. Roberts
McGraw-Hill $6.00

Reviewed by Harden M. McConnell

In this book John D. Roberts, professor of organic chemistry at Caltech, is primarily concerned with applications of high resolution nuclear magnetic resonance spectroscopy to problems of modern organic chemistry. Chapter I is a concise but remarkably clear qualitative introduction to the magnetic resonance phenomenon. Each of the following four chapters deals in turn with the principal characteristic phenomena of the high resolution spectra of molecules in liquids: Chapter II deals with nuclear shielding, Chapter III with indirect nuclear spin-spin coupling, Chapter IV with the effects of molecular kinetic phenomena on resonance spectra, and Chapter V is concerned with nuclear quadrupole relaxation and double resonance experiments.

The exposition of each of these subjects is accomplished largely by means of illustrative spectra, many of which are taken from Professor Roberts' own research work.

For organic chemists

As an introduction to the structural applications of nuclear magnetic resonance this is an excellent book for organic chemists, particularly since so many illustrations are given in terms of structures and concepts that the organic chemist is familiar with. A physical chemist may perhaps feel just a little frustrated in reading the book, however. This is largely because so many of the subjects that are discussed here could have been treated quantitatively with relatively simple mathematics and physical principles.

All in all, however, the interests of the general reader and the organic chemist are doubtless best served by Professor Roberts' qualitative but lucid introduction to the subject.

Harden M. McConnell, associate professor of physical chemistry, received his PhD from Caltech in 1951.