**BOOK REVIEW**

MODERN NMR TECHNIQUES AND THEIR APPLICATION IN CHEMISTRY
(Practical Spectroscopy Series /11)
Edited by Alexander I. Popov and Klaas Hallenga
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NMR spectroscopy has advanced enormously in recent years. High field magnets, improved probe design, new pulse methods, and modern data processing techniques and technology have contributed to permit structure determination of complex molecules (including 3D-structural detail), studies of kinetics and equilibria in solution, applications to the solid state, and studies of most elements of the periodic table. This book consists of 10 chapters written by a total of 12 authors (including the 2 editors). It gives an up-to-date account of NMR spectroscopy and its applications in an authoritative and thorough manner, with good referencing to original literature.

The first two chapters deal with the fundamental basis of NMR and the Fourier transform method of measurement. There is a comprehensive background with the introduction of most of the concepts to be encountered in the subsequent chapters. The next two chapters (198 pages) deal with the theory and practice of NMR for solid-state samples, including some applications to quadrupolar nuclei. The fifth chapter discusses quantitative analysis using NMR with particular reference to experimental parameters with examples from $^{1}H$, $^{13}C$ and $^{31}P$ measurements. The next two chapters deal with applications to structural problems in organic and inorganic chemistry of the full range of NMR techniques in one and two frequency dimensions. Chapter 8 describes studies of equilibria in solution, and Chapter 9 describes studies of kinetics and exchange processes. The final chapter describes applications to biopolymers, including the 3-dimensional structural information obtainable for proteins.

The book is very well produced and there is a coherence in style and presentation which is not always found in multi-author books. Theoretical principles are thoroughly presented. The preface describes an aim of the book to address chemists who need NMR as a tool. It is likely that many non-NMR experts will find the book too mathematical in appearance and style. There are several recent books which address chemist users of NMR in a more practical way. This book is very comprehensive and is likely to be of great use to

chemists with a good background in at least some aspects of NMR. To deepen understanding, or as an entry to an unfamiliar aspect such as solid-state work, biopolymer applications, or complex structure determination, then this book should be most valuable reading.

M.J.E.Hewlins
School of Chemistry and Applied Chemistry
University of Wales College of Cardiff
P O Box 912, Cardiff CF1 3TB
UK