Book Reviews

A Complete Introduction to Modern NMR Spectroscopy. By Roger S. Macomber. Wiley Interscience, New York, NY. 1998. xvii + 382 pp. 21.5 × 28 cm. ISBN 0-471-15736-8. $49.95.

This book is intended for students and professionals in the fields of chemistry, physics, materials science, biology, and medicine. The book fulfills its primary objective to present a complete introduction to NMR spectroscopy. The book contains 16 chapters and two self-tests. It is written using a semiprogrammed approach. The text is clear, interesting, easy to read, and even entertaining.

Each chapter presents material that is well-organized, including example problems with solutions. The end of each chapter includes a brief summary which lists important points discussed, references, additional resources, and a few more review problems. Answers to all of the review problems including those for the two self-tests are found in Appendix 1.

In the first three chapters of the book, the author discusses the fundamentals of NMR signal generation using a simple mathematical approach. It includes some preliminary considerations in spectroscopy, magnetic properties of nuclei, and how an NMR spectrum is obtained.

The next 10 chapters are aimed at those interested in molecular structure elucidation. Spectra examples used in these chapters were contributed by current research groups and include elucidation problems frequently encountered. They also include chemical shift correlations for proton and carbon-13 and a glimpse of correlations for fluorine-19, phosphorus-31, and nitrogen-14. Several interesting spectra include compounds that present heteronuclear couplings. Discussion of dynamic processes nicely covers examples of rotamers, valence isomers, β-diketones, and chemical and chiral shift reagents. There are chapters on EPR and also double-resonance techniques and a chapter dedicated to some common 2D NMR pulse techniques (HETCOR, COSY, NOESY, HOM2DJ and HET2DJ, and INADEQUATE).

The last three chapters were contributed by other authors, but they are organized in a similar style. They give a flavor of solid-state NMR spectroscopy and applications in biochemistry and medicine (biomolecules and NMR imaging).

A couple of errors were detected but they did not distract from the reading. Sharper lines in certain drawings of chemical structure would make the stereochemistry of some compounds more clear.

Overall, the book should make an excellent text for an entry-level NMR introduction course. It gives the reader a solid foundation for solving a wide variety of NMR spectroscopy problems and it includes a good collection of examples that are not easy to find in other books.

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Receptor-Based Drug Design. Edited by Paul Leff. Marcel Dekker, Inc., New York. 1998. xi + 382 pp. 16 × 23 cm. ISBN 0-8247-0162-3. $175.00.

Number 89 in the Dekker series *Drugs and the Pharmaceutical Sciences*, this book introduces readers to a subject beloved by pharmacologists and medicinal chemists. An international panel of distinguished authors from academia and industry, including several who have experienced both sides of the divide, contribute 16 chapters covering the principles of drug−receptor interactions, receptor-based drugs in medicine, experimental and emerging drugs, and new trends in drug design. Of necessity and despite its length, the book omits many potential topics and concentrates upon selected G-protein-coupled receptors and ligand-gated ion channels. Adrenergic, histaminergic, muscarinic, purinergic, serotonergic, angiotensin, and NMDA receptors are featured, and therapeutic areas range from asthma to stroke.

The general standard of the chapters is high, and there is a fine and witty introduction by one of the giants of the field, Sir James Black. Regrettably, the editor, an erudite and inventive "receptorologist", contents himself with a preface. Nevertheless, he has done a good job in assembling a volume that essentially deals with drug hunting and some of the ways and means with which we have approached and will approach the task of discovering potential new therapeutic agents. Almost half of the book is concerned with receptor methodology, and the meat begins for the medicinal chemist on p 135 with David Jack's personal insights into Glaxo's long search for effective treatments of asthma. There are enough structures and illustrations to keep us happy, and the chapters are well-referenced and easy to read. This volume is essential reading for the users of the libraries of pharmaceutical companies and university departments of pharmacology, pharmacy, and medicinal chemistry. Individual scientists may balk at the price.

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