

Review of Organic Structure Analysis, Second Edition

Organic Structure Analysis, Second Edition. By Phillip Crews. (University of California, Santa Cruz), Jaime Rodríguez. (Universidade da Coruña, Spain), and Marcel Jaspars. (University of Aberdeen, UK). Oxford University Press, Inc.: New York, NY, USA. 2010. xvii + 636 pp. 21.5 × 27.5 cm. \$149.00. ISBN: 978-0-19-533604-7.

This book was written to be “the most up-to-date integrated spectroscopy text for advanced undergraduates, graduate students, and practitioners”, according to the authors, and may be judged to have been a success in this endeavor. There are many helpful tables and figures in the text, which will be referred to many times after initially working one’s way through the book. Like the first edition, the text chiefly focuses on nuclear magnetic resonance (NMR) spectroscopy and secondarily on mass spectrometry (MS). Also included are chapters covering infrared spectroscopy and ultraviolet–visible spectroscopy, incorporating chiroptical techniques. The penultimate chapter consists of worked structure elucidation problems, and the final chapter of text consists of over fifty unsolved structure elucidation problems ranging from simple monofunctional organic compounds to complex natural products.

The authors make a concerted effort to be pedagogical in their handling of the methods discussed in the book. By building from the basic theory behind the method used, to explaining its use, and finally walking the reader through structure analysis problems with experimental data, the authors successfully bridge the gap between theory and real-life applications. This process, combined with the problems given at the conclusion of each chapter, as well as those comprising the entirety of the final two chapters of the book, should prepare any beginning graduate student in a natural products laboratory for the structure elucidation problems that surely lie ahead.

Those familiar with the first edition of the text will find this edition a worthy update with reacquired and reprocessed spectra for the problem sets, clearly denoting the chemical shifts in the NMR spectra, for example. Advances in the field of NMR spectroscopy are addressed with an expansion of the chapter concerning 2D NMR, and an extra chapter is added for mass spectrometry to better cover advances in that field, such as hyphenated methods and newer ionization techniques.

This text should be of great use to any individual beginning research in a natural products laboratory and would be an ideal text for a class focused on structural determination of organic compounds or as a supplement to a practically oriented chemical instrumentation class. The book should also serve as a good reference for both the theory and application of these spectro-analytical methods for those more acquainted with natural products research.

Joshua N. Fletcher

The Ohio State University
 Columbus, Ohio

10.1021/np2001336

Published: March 17, 2011

