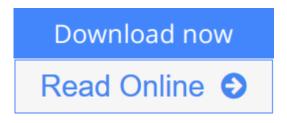


### **Problems in Organic Structure Determination: A Practical Approach to NMR Spectroscopy**

By Roger G. Linington, Philip G. Williams, John B. MacMillan



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At a point where most introductory organic chemistry texts end, this problemsbased workbook picks up the thread to lead students through a graduated set of 120 problems. With extensive detailed spectral data, it contains a variety of problems designed by renowned authors to develop proficiency in organic structure determination.

This workbook leads you from basic problems encountered in introductory organic chemistry textbooks to highly complex natural product-based problems. It presents a concept-based learning platform, introducing key concepts sequentially and reinforcing them with problems that exemplify the complexities and underlying principles that govern each concept.

The book is organized in such a way that allows you to work through the problems in order or in selections according to your experience and desired area of mastery. It also provides access to raw data files online that can be downloaded and used for data manipulation using freeware or commercial software.

With its problem-centered approach, integrated use of online and digital resources, and appendices that include notes and hints, **Problems in Organic** Structure Determination: A Practical Approach to NMR Spectroscopy is an outstanding resource for training students and professionals in structure determination.



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#### **Editorial Review**

#### Review

"This book is a practical introduction to the world of NMR structure elucidation, starting at a level where organic chemistry students will feel comfortable, and finishing off with challenging *de novo* structure elucidation problems at a level where most organic chemists should be able to improve their skillset."

Prof. Dr. D. Müller, Managing Director of the Helmholtz Institute for Pharmacoutical Passages Sporter

- **Prof. Dr. R. Müller**, Managing Director of the Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Head of the Department of Microbial Natural Products.

"Drs. Linington, Williams, and MacMillan have combined their considerable talents and resources to produce an extremely well thought-out book containing organic compound structural determination problems of graduated difficulty that will be genuinely useful. It can be very strongly recommended to students and practitioners of various levels of ability."

– **Dr. A. Douglas Kinghorn**, Professor, and Jack L. Beal, Chair of the College of Pharmacy, The Ohio State University and Editor of *Journal of Natural Products*.

"Nuclear magnetic resonance spectroscopy (NMR)... covers a wide range of scientific areas from physics to medicine, and no single monograph can cover all of its aspects. Drs. Linington, Williams, and MacMillan provide excellent materials for NMR training through a problem-based learning approach in their new book entitled *Problems in Organic Structure Determination, A Practical Approach to NMR Spectroscopy.* ... In summary, this informative NMR-based structure elucidation monograph covers most of the NMR tricks that can assist students and professionals solve structures of simple and complex synthetic and natural product molecules. I highly recommend this monograph as an addition to any personal collection and to university libraries."

- H. Liva Rakotondraibe, The Ohio State University, Columbus, Ohio, United States.

"This well-thought repository of NMR spectra of a huge number of organic compounds of varying structural skeletons serves as a practical guide, not only to the organic chemistry students but to the professionals at all levels as well, in developing their understanding and skill. The authors have worked hard in bringing out this excellent book, and it can be strongly recommended to the readers at all levels of ability."

 - Prof. Dr. Goutam Brahmachari, Chemistry Department, Visva-Bharati (a Central University), West Bengal, India.

#### About the Author

Roger G. Linington, PhD, is a Tier II Canada Research Chair in Chemical Biology and High-Throughput Screening in the Department of Chemistry at Simon Fraser University, Burnaby, British Columbia, Canada. He earned his PhD from the University of British Columbia. His postdoctoral research was a joint appointment between the University of California San Diego and the Smithsonian Tropical Research Institute, which gave him the opportunity to participate in an international neglected disease drug discovery program in Panama City, Panama. He was also a faculty member in the Department of Chemistry and Biochemistry at the University of California Santa Cruz for eight years.

**Philip G. Williams**, PhD, caught the spectroscopy bug as a summer research student at the University of Calgary while working on a series of alkaloids from African plants. He earned his PhD at the University of Hawaii at Manoa. He did his postdoctoral work at the Scripps Institution of Oceanography in San Diego on microbial natural products before returning to the University of Hawaii at Manoa as a faculty member. His research interests are natural products and their applications in the fields of cancer and neurological diseases.

**John B. MacMillan**, PhD, is a faculty member at the University of Texas Southwestern Medical Center. He earned his PhD at the University of California Davis, where his interests in small molecule NMR began by studying the natural products chemistry of marine organisms. He did his postdoctoral work at the Scripps Institution of Oceanography in San Diego with microbial natural products. His research focuses on the chemical and biological characterization of natural products with therapeutic potential in the areas of oncology and infectious disease.

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