

Preface

This brief book is the outgrowth of some forty lectures in which it was attempted to explain the phenomenon of nuclear magnetic resonance absorption and the uses of high-resolution nuclear magnetic resonance spectroscopy to organic chemists whose background, like that of the author, has often been deficient in nuclear and electromagnetic theory. Quite a number of suggestions were received for presentation of the material in printed form with illustrations based on the lecture slides. This has now been done, and it is hoped that the result will be of service to practicing chemists and students as a guide to various applications of NMR spectroscopy and an introduction to more authoritative works. Throughout, the coverage is illustrative rather than comprehensive.

The author apologizes for choosing rather too many examples of applications from his own research, but it is always easiest to write about what one knows best. He is greatly indebted to Dr. W. D. Phillips of the E. I. du Pont Company for helping to kindle his interest in NMR research and to Dr. James N. Shoolery of Varian Associates and Professors V. Schomaker and H. M. McConnell for many patient hours of explanation with respect to both simple and difficult points of theory. The Office of Naval Research supported much of the research described herein which was carried out at the California Institute of Technology.

Dr. Shoolery kindly supplied material for several of the figures, and Dr. Marjorie C. Caserio helped greatly with many of the details in getting the book together. Helpful suggestions were received from Professors D. Y. Curtin, R. Breslow, and D. E. Applequist. Professors William S. Johnson and E. E. van Tamelen supplied several unpublished spectra for Chapters 2 and 3.

John D. Roberts