

## PREFACE

In the past twenty years, there has been tremendous progress in life sciences. During the same period, NMR has emerged as a major tool, which has catalysed this growth. There are several good books, which deal with the basics of modern NMR and its diverse applications. This book is aimed at providing knowledge of NMR as applied to all aspects of life sciences in an integrated fashion.

When we received a grant to set up a National Facility for High Field NMR in India, one of the conditions of the granting agency was that we undertake training and education of scientists in India in the area of biological NMR. For this purpose, our Facility has been conducting a number of workshops and schools in India. We had the honour of having Professor Richard Ernst and Professor Kurt Wüthrich on the Faculty of some of these schools. The scientists who have attended these schools were either young research scholars aspiring to enter the field of biological NMR or professional biochemists, pharmaceutical chemists and medical doctors who wanted to know how NMR can be helpful in getting more information in their respective fields. In addition, our Institute runs regular Ph. D. programs where too some of our students head for a career in NMR as applied to biological systems. Though, most of these scientists were familiar at handling NMR in applications to Chemical Sciences, they required additional guiding experience when the issues to be addressed involved Biological NMR. This has been the motivation for this monograph.

During the organization of such programs and our constant interaction with researchers, we consistently felt the need for a text-book which can cover modern trends in NMR of biological systems. The available books either cover only the techniques in NMR or cover a particular aspect of biological NMR at a fairly high research level. This book mainly caters to the needs of: (i) graduate level students as a graduate course who mostly learn such techniques from senior post-docs in the laboratory; (ii) those who wish to understand if a particular problem they have in medical and pharmaceutical sciences would be answered by NMR, but have no intention to become professional NMR spectroscopists and (iii) those who are experts in biochemistry and yet do not know how NMR can help to provide them information on structural or functional aspect of proteins, nucleic acids, cells and tissues, human and plant organs and other biological materials. We hope that this book builds a means of knowledge transfer between the beginners and the experts in NMR as applied to all aspects of life sciences.

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