

Acknowledgements Preface

Advanced Lab Practices in Biochemistry and Molecular Biology has been designed for the undergraduate, postgraduate and research scholars in the area of biochemistry, biotechnology, and environmental sciences. The beauty of this book is that it comprises chapters for the beginner's, viz., chemistry and statistics for biologists as well as the incorporation of advanced techniques for postgraduate and research scholars that will help them to clear the PhD entrance test and PhD course work.

This book aims to give detailed information on various instruments, techniques and experiment protocols of biochemistry and molecular biology. Biochemistry and molecular biology are the two important practical oriented subjects in the life sciences and biology curriculum of undergraduate, postgraduate and research scholars. This book provides basic as well as advanced information and in-depth methodology in a simple language to help students and professionals perform experiments with utmost ease.

This manual gives a comprehensive idea about the various instruments, their working, troubleshooting and their applications based on student's feedback, teacher's input and authors' own experience of 14 years of teaching and research. It provides a wide spectrum of 14 chapters covering basic as well as advanced techniques and instrumentation, viz., Gas Chromatography (GC), Mass Spectrometry (MS), Scanning Electron Microscope (SEM), X-Ray Diffraction (XRD) and Fourier Transform Infrared Spectroscopy (FTIR) with detailed protocols of biochemistry and molecular biology.

Most of the experiments are such that they can be easily performed in the laboratory having basic facilities. In the beginning of each experiment, an introduction to the experiment familiarizes students with the historical background, experiment's nature, its principle, step-by-step procedure with diagrammatic representation and important precautions.

Authors welcome the readers and students to give their comments and suggestions towards the improvement of this book.

Swati Agarwal
Dr. Suphiya Khan