

Delivering fundamental insights into the most popular methods of molecular analysis, this text is an invaluable resource for students and researchers. It encompasses an extensive range of spectroscopic and spectrometric techniques used for molecular analysis in the life sciences, especially in the elucidation of the structure and function of biological molecules.

Covering the range of up-to-date methodologies from everyday mass spectrometry and centrifugation to the more probing X-ray crystallography and surface-sensitive techniques, the book is intended for undergraduates starting out in the laboratory and for more advanced postgraduates pursuing complex research goals. The comprehensive text has a strong emphasis on the background principles of each method, including equations where they are of integral importance to the individual techniques. With sections on all the major procedures for analysing biological molecules, this book will serve as a useful guide across a range of fields, from new drug discovery to forensics and environmental studies.

'... a text that delivers the fundamental insights into the most popular methods of molecular analysis in a concise and accessible fashion.'

From the foreword by Robert Huber, Max Planck Institute of Biochemistry, Martinsried

'... a much needed overview ... The authors do an excellent job of integrating relevant theoretical considerations of each technique alongside important applications in the life sciences ... The book will no doubt prove to be a valuable resource to those working in the life sciences including both students and researchers alike.'

Kevin Blackburn, Mass Spectrometry Laboratory Manager, North Carolina State University

'... an invaluable tool for students (and even more advanced practitioners) ... covers in considerable detail a variety of methods and provides very clear explanation on how they can be applied and what can be learned during the process.'

Alexander Wlodawer, Macromolecular Crystallography Laboratory, NCI, NIH

Cover illustration: artist's impression of the binding of a small organic molecule (red) to the ferredoxin reductase type FAD-binding domain (blue). Rendering of the secondary structure elements of the protein has been inspired by the figures of the *RIBBON* program by Priestle and the hand-drawn figures by Richardson in the 1980s. Image concept by A. Hofmann.

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