

Nölting, B.: **Methods in Modern Biophysics**. – Springer Verlag, Berlin – Heidelberg – New York 2004. ISBN 3-540-01297-4. 243 pp., € 39.95, sFr 68.50, GPB 68.50.

The recent advancements in life sciences are inseparably associated with the ongoing progress of mainstream physical measurement methodologies, biochemistry and physical chemistry, and the novel nanofabrication techniques. The reviewed book covers essential technological details of a selection of biophysical methods in a rare brilliant way. It is best suited as a textbook for both undergraduate and graduate students for its richness in graphics and comprehensiveness of the text, but will certainly be adored also by researchers and lecturers. The book gives an all-inclusive introduction to the key methods which have become indispensable tools in deciphering the work of the molecular machines involved in energy transduction, signal transfer, and information processing within the living cells. Among them, it concentrates on those suited for studies of heterogeneous analytes and extremely complex biological phenomena. The book guides with ease the reader through its eleven chapters giving a near complete picture of current biophysical techniques including X-ray crystallography, scanning probe microscopy, near field and electron microscopy, infrared spectroscopy, ion mobility spectro-

metry, mass spectrometry, chromatography, and proteomics.

The book starts off with “The three-dimensional structures of proteins” followed by “Liquid chromatography of biomolecules” that presents major chromatographic methods for the preparation of biomolecules. Chapter 3 “Mass spectrometry” demonstrates analytical application of mass spectrometry for the quality control in preparations of biomolecules. Chapters 4–7 concentrate on methods for the chemical and structural characterization of biomolecules. Chapter 8 “Biophysical nanotechnology” brings details on the application of nanotechnology methods for mechanical characterization of individual biomolecules and for the engineering of novel nano-technological structures and devices. Chapter 9 “Proteomics: high throughput protein functional analysis” introduces the basic concepts behind the technique. Chapter 10 “Ion mobility spectrometry” concentrates on two types of analytical methods for the characterization of complex samples such as human cells and bacteria. Chapter 11 outlines possible interaction of electromagnetic radiation with human body.

D. KAFTAN, F. ADAMEC (*Nové Hradý*)