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| Descrizione fisica      | 1 online resource (312 p.)   |
| Collana                 | Wiley series on mass spectrometry  |
| Disciplina              | 610.28/4<br>610.284  |
| Soggetti                | Mass spectrometry<br>Biophysics<br>Biomolecules - Spectra<br>Electronic books.   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references at the end of each chapters and index.   |
| Nota di contenuto       | <ul> <li>MASS SPECTROMETRY IN STRUCTURAL BIOLOGY AND BIOPHYSICS:</li> <li>Architecture, Dynamics, and Interaction of Biomolecules; CONTENTS;</li> <li>Preface to the Second Edition; Preface to the First Edition; 1 General</li> <li>Overview of Basic Concepts in Molecular Biophysics; 1.1 Covalent</li> <li>Structure of Biopolymers; 1.2 Noncovalent Interactions and Higher</li> <li>Order Structure; 1.2.1 Electrostatic Interaction; 1.2.2 Hydrogen</li> <li>Bonding; 1.2.3 Steric Clashes and Allowed Conformations of the</li> <li>Peptide Backbone: Secondary Structure; 1.2.4 SolventSolute</li> <li>Interactions, Hydrophobic Effect, Side-Chain Packing, and Tertiary</li> <li>Structure</li> <li>1.2.5 Intermolecular Interactions and Association: Quaternary</li> <li>Structure1.3 The Protein Folding Problem; 1.3.1 What Is Protein</li> <li>Folding?; 1.3.2 Why Is Protein Folding So Important?; 1.3.3 What Is the</li> </ul> |

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|                    | <ul> <li>Natively Folded Protein and How Do We Define a Protein Conformation?;</li> <li>1.3.4 What Are Non-Native Protein Conformations?: Random Coils,<br/>Molten Globules, and Folding Intermediates;</li> <li>1.3.5 Protein Folding<br/>Pathways;</li> <li>1.4 Protein Energy Landscapes and the Folding Problem;</li> <li>1.4.1 Protein Conformational Ensembles and Energy Landscapes:<br/>Enthalpic and Entropic Considerations</li> <li>1.4.2 Equilibrium and Kinetic Intermediates on the Energy Landscape1.</li> <li>5 Protein Dynamics and Function;</li> <li>1.5.1 Limitations of the Structure<br/>Function Paradigm;</li> <li>1.5.2 Protein Dynamics under Native Conditions;</li> <li>1.5.3 Is Well-Defined Structure Required for Functional Competence?;</li> <li>1.5.4 Biomolecular Dynamics and Binding from The Energy Landscape<br/>Perspective;</li> <li>1.5.5 Energy Landscapes Within a Broader Context of<br/>Nonlinear Dynamics: Information Flow and Fitness Landscapes;</li> <li>1.6<br/>Protein Higher Order Structure and Dynamics from A Biotechnology<br/>Perspective: References</li> </ul>  |
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|                    | <ul> <li>2 Overview of Traditional Experimental Arsenal to Study Biomolecular<br/>Structure and Dynamics2.1 X-Ray Crystallography; 2.1.1 Fundamentals;</li> <li>2.1.2 Crystal Structures at Atomic and Ultrahigh Resolution; 2.1.3<br/>Crystal Structures of Membrane Proteins; 2.1.4 Protein Dynamics and<br/>X-Ray Diffraction; 2.2 Solution Scattering Techniques; 2.2.1 Static and<br/>Dynamic Light Scattering; 2.2.2 Small-Angle X-Ray Scattering; 2.2.3<br/>Cryo-Electron Microscopy; 2.2.4 Neutron Scattering; 2.3 NMR<br/>Spectroscopy; 2.3.1 Heteronuclear NMR; 2.3.2 Hydrogen Exchange by<br/>NMR; 2.4 Other Spectroscopic Techniques</li> <li>2.4.1 Cumulative Measurements of Higher Order Structure: Circular<br/>Dichroism2.4.2 Vibrational Spectroscopy; 2.4.3 Fluorescence:<br/>Monitoring Specific Dynamic Events; 2.5 Other Biophysical Methods to<br/>Study Macromolecular Interactions and Dynamics; 2.5.1 Calorimetric<br/>Methods; 2.5.2 Analytical Ultracentrifugation; 2.5.3 Surface Plasmon<br/>Resonance; 2.5.4 Size Exclusion Chromatography (Gel Filtration); 2.5.5<br/>Electrophoresis; 2.5.6 Affinity Chromatography; References; 3 Overview<br/>of Biological Mass Spectrometry; 3.1 Basic Principles of Mass<br/>Spectrometry; 3.1.1 Stable Isotopes and Isotopic Distributions<br/>3.1.2 Macromolecular Mass: Terms and Definitions</li> </ul> |
| Sommario/riassunto | The definitive guide to mass spectrometry techniques in biology and<br>biophysics The use of mass spectrometry (MS) to study the<br>architecture and dynamics of proteins is increasingly common within<br>the biophysical community, and Mass Spectrometry in Structural<br>Biology and Biophysics: Architecture, Dynamics, and Interaction of<br>Biomolecules, Second Edition provides readers with detailed, systematic<br>coverage of the current state of the art. Offering an unrivalled overview<br>of modern MS-based armamentarium that can be used to solve the<br>most challenging problems in biophysics, structural biol  |