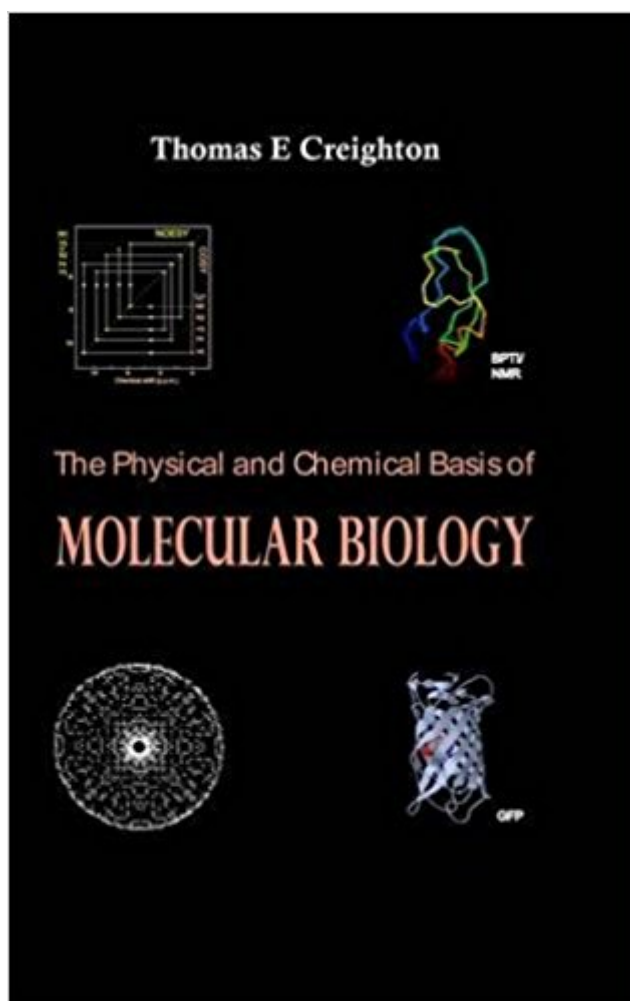


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The Physical And Chemical Basis Of Molecular Biology



Synopsis

The twenty-one chapters of this volume present a comprehensive description of the fundamental physical and chemical phenomena that form the basis of molecular biology. The topics include the fundamental thermodynamic and kinetic properties of biochemical reactions in solution; the physical properties of aqueous solutions, including the hydrophobic effect; both individual and cooperative noncovalent interactions between atoms and molecules; mass spectrometry; and radioactivity. Methods for observing the structures of nucleic acids and proteins, including microscopy, scanning probes, crystallography and NMR, are explained in detail. The interactions of macromolecules with radiation of various types are described in terms of the information that they yield. The hydrodynamic properties of proteins and nucleic acids in aqueous solution and in molecular sieves are described to explain centrifugation and electrophoresis. The interactions of macromolecules with other molecules in solution and when attached to solid supports are described, explaining chromatography, blotting, affinity labeling, and cross-linking.

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