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Nota di contenuto	1. Introduction and theoretical background -- 2. Rheological Aspects of Conformational Change and Molecular Aggregation of Macromolecules -- 3. Elongational Flow Birefringence Investigation of Dynamics of DNA Molecules -- 4. Nonequilibrium Structure Formation of Complex Bilayer Membrane Lamellar Phase Under Shear -- 5. Diffusion and thermal diffusion by means of dynamic light scattering and laser holography -- 6. Diffusion Measurements of Water and Polymers in Hydrogels by Pulsed Field Gradient NMR -- 7. Rheological Basis of Magnetic Resonance Elastography -- 8. Dynamics of Water, Biomaterials, and Skin Investigated by Means of Dielectric Relaxation Spectroscopy -- 9. Dynamics and Glass Transition of Aqueous Solutions of Molecular Liquid, Polymer, and Protein Studied by Broadband Dielectric Spectroscopy -- 10. Biorheological aspect of microcapsules -- 11.

Biomedical Application of Soft Nano/Micro-Particles -- 12. Control of the Multi-Scale Structure of Scaffolds and its Application in Tissue Engineering -- 13. Sensing of Biomolecules and Cells by Semiconductor Device -- 14. From Single-Molecule DNA Imaging to Development of a Gene Delivery System -- 15. Atomic Force Microscopy: Imaging and Rheology of Living Cells -- 16. Supplement.

Sommario/riassunto

Integrating basic to applied science and technology in medicine, pharmaceutics, molecular biology, biomedical engineering, biophysics, and irreversible thermodynamics, this book covers cutting-edge research of the structure and function of biomaterials at a molecular level. In addition, it examines for the first time studies performed at the nano- and microscale. With innovative technologies and methodologies aiming to clarify the molecular mechanism and macroscopic relationship, Nano/Micro Science and Technology in Biorheology thoroughly covers the basic principles of these studies, with helpful step-by-step explanations of methodologies and insight into medical applications. Written by pioneering researchers, the book is a valuable resource for academics and industry scientists, as well as graduate students, working or studying in bio-related fields.