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Bilayers; 1.4.1 Polyelectrolyte Multilayers on Planar Surfaces; 1.4.2 Polyelectrolyte Multilayers on Curved Surfaces; 1.5 Conclusions and Perspectives; References
2: Layer-by-Layer Assembly of Biomimetic Microcapsules2.1 Introduction; 2.2 Layer-by-layer Assembly of Polyelectrolyte Multilayer Microcapsules; 2.2.1 General Aspects; 2.2.2 Permeation and Mechanical Properties of LbL Microcapsules; 2.3 Biointerfacing Polyelectrolyte Microcapsules-A Multifunctional Cargo System; 2.3.1 Lipid Bilayer-Modified Polyelectrolyte Microcapsules; 2.3.2 Formation of Asymmetric Lipid Bilayers on the Surface of LbL-Assembled Capsules; 2.3.3 Assembly of Lipid Bilayers on Covalently LbL-Assembled Protein Capsules; 2.4 Application of Biomimetic Microcapsules
2.4.1 Integrating Specific Biofunctionality for Targeting2.4.2 Adsorption of Antibodies on the Surface of Biomimetic Microcapsules; 2.5 Conclusions and Perspectives; References; 3: FoF1-ATP Synthase-Based Active Biomimetic Systems; 3.1 Introduction; 3.2 FoF1-ATPase-A Rotary Molecular Motor; 3.2.1 Structure of H+FoF1-ATPase; 3.2.2 Direct Observation of the Rotation of Single ATPase Molecules; 3.3 Reconstitution of FoF1-ATPase in Cellular Mimic Structures; 3.3.1 FoF1-ATPase-incorporated Liposome-A Classical Biomembrane Mimic; 3.3.1.1 Bacteriorhodopsin uses Light to Pump Protons
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4.3 Active Biomimetic Systems Based on the Kinesin-Microtubule Complex

Sommario/riassunto

This handy reference details state-of-the-art preparation of molecular assemblies of biotechnologically relevant biomimetic systems (artificial proteins, peptides, molecular motors, photosensitive systems) with an emphasis on biomimetic membranes, capsules, and interfaces. Medical applications such as drug release, gene therapy, and tissue engineering as well as biosensing, biocatalysis, and energy storage are highlighted.