

membranes



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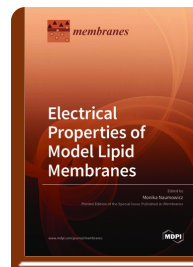
Electrical Properties of Model Lipid Membranes

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Biological membranes are essential components of the living systems and processes occurring with their participation are related mainly to electric phenomena, such as signal transduction, the existence of membrane potentials, and transport through the membrane. It is well known that the universal model of the cell membrane structure is the lipid bilayer, which constitutes the environment for integral and surface membrane proteins. Thus, much attention has been given to the study of the organization and properties of these structures concerning both experimental and theoretical aspects. As systematic examinations are impeded by the complexity of the natural membranes, the best approach to conducting detailed physical and chemical studies of biological membranes is to use simplified well-defined model lipid membranes. Among the most commonly used are liposomes, planar lipid membranes, membranes on solid substrates, and lipid monolayers on the free surface. Studies of the electrical properties of model lipid membranes have been carried out for many years. However, there are still many issues that have not been verified experimentally and for which the existing results are incomplete or inconsistent. Therefore, the main objective of this book was to collect recent scientific and review articles on the electrical properties of model lipid membranes. This objective has been successfully achieved, for which I express heartfelt appreciation to all authors and reviewers for their excellent contributions.



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