

Electrical Double Layers in Biology

Edited by
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[PDF] Electrical Double Layers In Biology

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Electrical Double Layers in Biology-Konrad Bach 2012-12-06 A number of apparently unrelated phenomena in biological systems (e.g., biopolymer aggregation, cell-cell interactions, ion transport across membranes) arise from the special properties of charged surfaces. A symposium entitled "Electrical Double Layers in Biology", which took place at the Toronto meeting of the Electrochemical Society, 12-17 May 1985, focused on the common features of these phenomena. The papers presented at that symposium are collected here and they illustrate ways in which an understanding of electrical double layers can elucidate a problem in Biology. An example of this approach can be seen from the paper I presented on ion transport and excitation, where the "unusual" ion flows during nerve excitation are actually expected if one includes the effects of electrical double layers at membrane surfaces. Furthermore, the selectivity of the ion channels in these membranes can be better understood on this basis. Other presentations account for such observations as the changes in spacing between muscle proteins during contraction, the interactions of red cells to form rouleaux, the electrical properties of algal cell membranes, electrokinetic potentials during blood flow in arteries, etc. I trust that these papers will indicate the value of electrochemistry in the study of biological systems, an area of research usually called Bioelectrochemistry, and will encourage biologists to use these ideas when approaching related problems.

Biorheology- 1987

Nanoelectromechanics in Engineering and

Biology-Michael Pycraft Hughes 2018-10-03 The success, growth, and virtually limitless applications of nanotechnology depend upon our ability to manipulate nanoscale objects, which in turn depends upon developing new insights into the interactions of electric fields, nanoparticles, and the molecules that surround them. In the first book to unite and directly address particle electrokinetics and nanotechnology, *Nanoelectromechanics in Engineering and Biology* provides a thorough grounding in the phenomena associated with nanoscale particle manipulation. The author delivers a wealth of application and background knowledge, from using electric fields for particle sorting in lab-on-a-chip devices to electrode fabrication, electric field simulation, and computer analysis. It also explores how electromechanics can be applied to sorting DNA molecules, examining viruses, constructing electronic devices with carbon nanotubes, and actuating nanoscale electric motors. The field of nanotechnology is inherently multidisciplinary-in its principles, in its techniques, and in its applications-and meeting its current and future challenges will require the kind of approach reflected in this book. Unmatched in its scope, *Nanoelectromechanics in Engineering and Biology* offers an outstanding opportunity for people in all areas of research and technology to explore the use and precise manipulation of nanoscale structures.

Liquid Interfaces in Chemistry and Biology-Alexander G. Volkov 1998 This text is intended for use as an introduction to both the theory of surface science and its applications in modern biology and chemistry. The book attempts to explain the physical and chemical fundamentals of interfacial phenomena, and readers will find virtually all definitions and concepts needed to understand the role of interfaces in chemistry and biology.

The Encyclopedia of Soil Science: Physics, chemistry, biology, fertility, and technology- Rhodes Whitmore Fairbridge 1979 "This volume gives a comprehensive, alphabetical treatment of basic soil science ... useful reference volume that summarized basic facts and concepts."--Pref. Includes references to the literature. Indexed.

Bioscience reports- 1987

Physical Chemistry in Biology and Medicine- Jesse Francis McClendon 1925

Electrochemistry in Industrial Processing & Biology- 1982

Colloids in Biology and Medicine-Heinrich Bechhold 1919

Frontiers of Biology- 1967

Electrokinetic Phenomena and Their Application to Biology and Medicine-Harold Alexander Abramson 1934

Canadiana- 1988-05

Methods in Membrane Biology-Edward D. Korn 1974

Methods in Membrane Biology- 1975

Foundations of Space Biology and Medicine. Volume 2, Book 2: Ecological and Physiological Bases of Space Biology and Medicine- 1975

Foundations of space biology and medicine v. 2 pt. 2, 1975- 1975

Modern Trends of Colloid Science in Chemistry and Biology-EICKE 1985

Light-induced Charge Separation in Biology and Chemistry-Heinz Gerischer 1979

Images of the Twenty-first Century-IEEE Engineering in Medicine and Biology Society. Conference 1989

The Molecular Biology of Cell Membranes-Peter J. Quinn 1976 The purpose of this book is to give students and teachers a contemporary guide to the development in the structure and function of cell membranes.

Government Reports Announcements & Index- 1989-12

Encyclopedia of Human Biology-Renato Dulbecco 1991 Encyclopedia intended for a wide audience, i.e., from general readers to researchers and scientists. Entries give outline of the subject content covered, glossary, and bibliography. Articles were written by recognized specialists. Vol. 8 gives a list of contributors, subject index, and index of related titles.

Nonlinearity in Biology and Medicine-Center for Nonlinear Studies (Los Alamos National Laboratory). International Conference 1988

Pamphlets on Biology-

Encyclopedia of Human Biology: Con-Fe- Renato Dulbecco 1997

Directory of Published Proceedings- 1988

Aquatic Biology Abstracts- 1971

The Australian Journal of Experimental Biology and Medical Science- 1963

Government Reports Annual Index- 1988

International Series of Monographs on Pure and Applied Biology- 1964

Biology & Quantum Mechanics-Aleksandr Sergeevich Davydov 1982 Biophysical questions are presented in a language comprehensive both to physicists who do not know biology, and to biologists who do not have a complete up-to-date mathematical knowledge for quantum mechanics. An elementary description of the interaction of atoms of molecules and their interaction with water precedes an account of basic biological phenomena. The author also describes in detail the molecular mechanism of muscle contraction in animals based on his hypothesis of the role of solutions in the conversion of chemical energy into mechanical movement

Colloid Chemistry: Theory and methods. Biology and medicine [new materials-Jerome Alexander 1944

Outlines of Modern Biology-Charles Robert Plunkett 1938

Foundations of Space Biology and Medicine: Ecological and physiological bases of space biology and medicine- 1975

Progress in Biophysics and Molecular Biology- 1957

Investigative Microtechniques in Medicine and Biology-Joseph Chayen 1984

Contaminants and Sediments: Analysis, chemistry, biology-Robert Andrew Baker 1980

Annual review of plant physiology and plant molecular biology-Annual Reviews, inc 1990-12

Proceedings of the ... Annual Conference on Engineering in Medicine and Biology- 1984

Nature: New Biology- 1973