1. Record Nr. UNINA9910140739603321

Autore	Ohshima Hiroyuki <1944->
Titolo	Biophysical chemistry of biointerfaces / / Hiroyuki Ohshima
Pubbl/distr/stampa	Hoboken, : Wiley, c2010
ISBN	9786612707735 9781118057858 1118057856 9781282707733 1282707736 9780470630631 0470630639 9780470630624 0470630620
Edizione	[1st ed.]
Descrizione fisica	1 online resource (565 p.)
Disciplina	612/.01583
Soggetti	Biological interfaces Physical biochemistry Surface chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	BIOPHYSICALCHEMISTRY OFBIOINTERFACES; CONTENTS; PREFACE; LIST OF SYMBOLS; PART I Potential and Charge at Interfaces; 1 Potential and Charge of a Hard Particle; 2 Potential Distribution Around a Nonuniformly Charged Surface and Discrete Charge Effects; 3 Modified Poisson-Boltzmann Equation; 4 Potential and Charge of a Soft Particle; 5 Free Energy of a Charged Surface; 6 Potential Distribution Around a Charged Particle in a Salt-Free Medium; PART II Interaction Between Surfaces; 7 Electrostatic Interaction of Point Charges in an Inhomogeneous Medium 8 Force and Potential Energy of the Double-Layer Interaction Between Two Charged Colloidal Particles9 Double-Layer Interaction Between Two Parallel Similar Plates; 10 Electrostatic Interaction Between Two Parallel Dissimilar Plates; 11 Linear Superposition Approximation for

the Double-Layer Interaction of Particles at Large Separations; 12 Derjaguin's Approximation at Small Separations; 13 Donnan Potential-Regulated Interaction Between Porous Particles; 14 Series Expansion Representations for the Double-Layer Interaction Between Two Particles 15 Electrostatic Interaction Between Soft Particles16 Electrostatic Interaction Between Nonuniformly Charged Membranes; 17 Electrostatic Repulsion Between Two Parallel Soft Plates After Their Contact; 18 Electrostatic Interaction Between Ion-Penetrable Membranes in a Salt-Free Medium; 19 van der Waals Interaction Between Two Particles; 20 DLVO Theory of Colloid Stability; PART III Electrokinetic Phenomena at Interfaces; 21 Electrophoretic Mobility of Soft Particles; 22 Electrophoretic Mobility of Concentrated Soft Particles; 23 Electrical Conductivity of a Suspension of Soft Particles
24 Sedimentation Potential and Velocity in a Suspension of Soft Particles25 Dynamic Electrophoretic Mobility of a Soft Particle; 26 Colloid Vibration Potential in a Suspension of Soft Particles; 27 Effective Viscosity of a Suspension of Soft Particles; PART IV Other Topics; 28 Membrane Potential and Donnan Potential; INDEX

Sommario/riassunto

The first book on the innovative study of biointerfaces using biophysical chemistry The biophysical phenomena that occur on biointerfaces, or biological surfaces, hold a prominent place in the study of biology and medicine, and are crucial for research relating to implants, biosensors, drug delivery, proteomics, and many other important areas. Biophysical Chemistry of Biointerfaces takes the unique approach of studying biological systems in terms of the principles and methods of physics and chemistry, drawing its knowledge and experimental techniques from a wide variety of disc