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Titolo	Thermal biophysics of membranes // Thomas Heimburg
Pubbl/distr/stampa	Weinheim, : Wiley-VCH Verlag, c2007
ISBN	1-281-23919-4 9786611239190 3-527-61159-2 3-527-61160-6
Descrizione fisica	1 online resource (381 p.)
Collana	Tutorials in biophysics
Disciplina	571.6/4
Soggetti	Membranes (Biology) - Thermal properties
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 (p. 339-351) and index.
Nota di contenuto	Membranes-an introduction -- Membrane structure -- The composition of biological membranes -- Introduction into thermodynamics -- Water -- Lipid melting -- Phase diagrams -- Statistical models for lipid melting -- Lipid-protein interactions -- Diffusion -- Electrostatics -- Adsorption, binding, and insertion of proteins -- Elasticity and curvature -- Thermodynamics of the elastic constants -- Structural transitions -- Relaxation processes in membranes -- Permeability -- Nerve pulse propagation -- Anesthesia.
Sommario/riassunto	An overview of recent experimental and theoretical developments in the field of the physics of membranes, including new insights from the past decade. The author uses classical thermal physics and physical chemistry to explain our current understanding of the membrane. He looks at domain and 'raft' formation, and discusses it in the context of thermal fluctuations that express themselves in heat capacity and elastic constants. Further topics are lipid-protein interactions, protein binding, and the effect of sterols and anesthetics. Many seemingly unrelated properties of membranes are shown