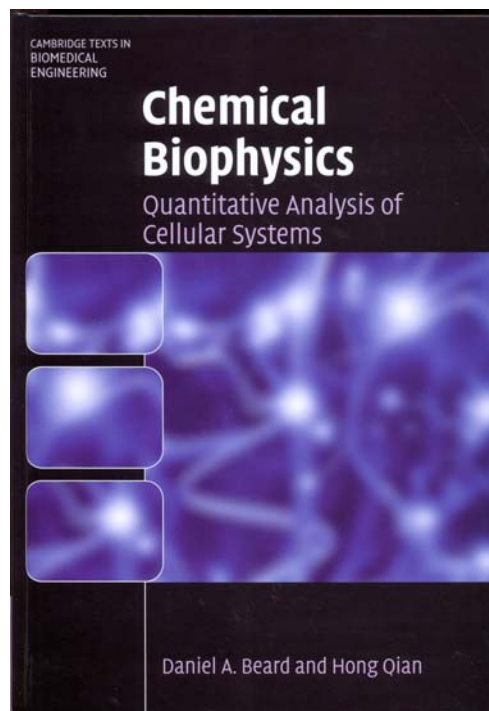


DANIEL A. BEARD, HONG QIAN  
CHEMICAL BIOPHYSICS  
QUANTITATIVE ANALYSIS OF CELLULAR SYSTEMS  
SERIES: CAMBRIDGE TEXTS IN BIOMEDICAL  
ENGINEERING



Chemical Biophysics provides an engineering-based approach to biochemical system analysis for graduate level courses on systems biology, computational bioengineering and molecular biophysics. It is the first textbook to apply rigorous physical chemistry principles to mathematical and computational modeling of biochemical systems for an interdisciplinary audience. The book is structured to show the student the basic biophysical concepts before applying this theory to computational modeling and analysis, building up to advanced topics and current research. End-of-chapter exercises range from confidence-building calculations to computational simulation projects.

The section *Background Material* introduces kinetics and thermodynamics of biochemical networks, providing a strong foundation to understand biological systems and applications to well-conceived biochemical models.

Topics covered in section *Analysis and Modeling of Biochemical Systems* include enzyme-mediated reactions, metabolic networks, signaling systems, biological transport processes, and electrophysiological systems.

The section *Special Topics* explores spatially distributed systems, constraint-based analysis for large-scale networks, protein-protein interaction, and stochastic phenomena in biochemical networks.

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