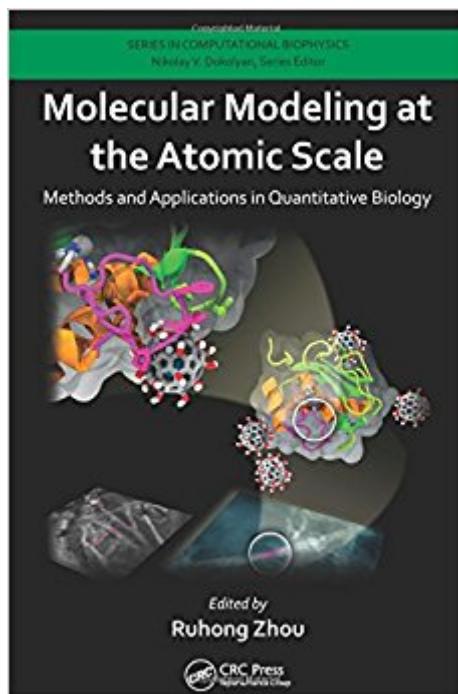


The book was found

# Molecular Modeling At The Atomic Scale: Methods And Applications In Quantitative Biology (Series In Computational Biophysics)



## Synopsis

Although molecular modeling has been around for a while, the groundbreaking advancement of massively parallel supercomputers and novel algorithms for parallelization is shaping this field into an exciting new area. Developments in molecular modeling from experimental and computational techniques have enabled a wide range of biological applications. Responding to this renaissance, *Molecular Modeling at the Atomic Scale: Methods and Applications in Quantitative Biology* includes discussions of advanced techniques of molecular modeling and the latest research advancements in biomolecular applications from leading experts. The book begins with a brief introduction of major methods and applications, then covers the development of cutting-edge methods/algorithms, new polarizable force fields, and massively parallel computing techniques, followed by descriptions of how these novel techniques can be applied in various research areas in molecular biology. It also examines the self-assembly of biomacromolecules, including protein folding, RNA folding, amyloid peptide aggregation, and membrane lipid bilayer formation. Additional topics highlight biomolecular interactions, including protein interactions with DNA/RNA, membrane, ligands, and nanoparticles. Discussion of emerging topics in biomolecular modeling such as DNA sequencing with solid-state nanopores and biological water under nanoconfinement round out the coverage. This timely summary contains the perspectives of leading experts on this transformation in molecular biology and includes state-of-the-art examples of how molecular modeling approaches are being applied to critical questions in modern quantitative biology. It pulls together the latest research and applications of molecular modeling and real-world expertise that can boost your research and development of applications in this rapidly changing field.

## Book Information

Series: Series in Computational Biophysics

Hardcover: 388 pages

Publisher: CRC Press; 1 edition (August 21, 2014)

Language: English

ISBN-10: 1466562951

ISBN-13: 978-1466562950

Product Dimensions: 6 x 1 x 9.2 inches

Shipping Weight: 1.5 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,176,452 in Books (See Top 100 in Books) #49 in Books > Science & Math

> Mathematics > Applied > Biomathematics #87 in Books > Science & Math > Chemistry >

Molecular Chemistry #227 in Books > Science & Math > Biological Sciences > Biophysics

[Download to continue reading...](#)

Molecular Modeling at the Atomic Scale: Methods and Applications in Quantitative Biology (Series in Computational Biophysics) Biology: The Ultimate Self Teaching Guide - Introduction to the Wonderful World of Biology - 3rd Edition (Biology, Biology Guide, Biology For Beginners, Biology For Dummies, Biology Books) High Throughput Screening: Methods and Protocols (Methods in Molecular Biology) (Methods in Molecular Biology, 190) In Silico Medicinal Chemistry: Computational Methods to Support Drug Design (Theoretical and Computational Chemistry Series) Molecular Cell Biology (Lodish, Molecular Cell Biology) Quantitative Health Risk Analysis Methods: Modeling the Human Health Impacts of Antibiotics Used in Food Animals (International Series in Operations Research & Management Science) HPLC of Peptides and Proteins: Methods and Protocols (Methods in Molecular Biology) Biophysics of Electron Transfer and Molecular Bioelectronics (Electronics and Biotechnology Advanced (Elba) Forum Series) Antibody Phage Display: Methods and Protocols (Methods in Molecular Biology) Patch-Clamp Methods and Protocols (Methods in Molecular Biology) Vaccine Technologies for Veterinary Viral Diseases: Methods and Protocols (Methods in Molecular Biology) Computational Fluid Mechanics and Heat Transfer, Third Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences) Computational Methods in Photochemistry (Molecular and Supramolecular Photochemistry) Metamaterials and Plasmonics: Fundamentals, Modelling, Applications (NATO Science for Peace and Security Series B: Physics and Biophysics) Understanding Molecular Simulation, Second Edition: From Algorithms to Applications (Computational Science) Computational Photochemistry, Volume 16 (Theoretical and Computational Chemistry) Quantitative Biomedical Optics: Theory, Methods, and Applications (Cambridge Texts in Biomedical Engineering) Hierarchical Linear Models: Applications and Data Analysis Methods (Advanced Quantitative Techniques in the Social Sciences) Crystallographic and Modeling Methods in Molecular Design Electron Spectrometry of Atoms using Synchrotron Radiation (Cambridge Monographs on Atomic, Molecular and Chemical Physics)

[Dmca](#)