

tion, structure, and function of the cell. It discusses information about the nucleus, cytoplasm, and other organelles. Part IV focuses on cell regulation and the cell cycle. The concluding chapters discuss cell death, cell renewal, and cancer and introduce the consequences of defects in basic cell regulation mechanisms.

The book is concise, and the text is succinct. It is accompanied by a website that provides multi-media resources that enable the reader to review the material of each chapter in an interactive way. Also, the end of each chapter includes a set of questions and a summary that enables the reader to think further about the science presented. A key experiment illustrated at the end of each chapter enhances the reader's appreciation of the application of science in a clinical context.

This book is very successful in providing a basic understanding of the structure and function of a cell. The book is a good read for students just beginning to study the complexities of biology, as well as a good review for intermediate students who already have an understanding of the subject.

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Molecular Modeling for the Design of Novel Performance Chemicals and Materials. By Beena Rai, editor. Boca Raton, FL: CRC Press, Taylor and Francis Group, LLC; 2012. 382 p. US \$113.51 (Hardcover). ISBN: 978-1439840788.

The primary purpose of *Molecular Modeling for the Design of Novel Performance Chemicals and Materials* is to introduce molecular modeling (MM) and provide the reader with applications of MM in chemical, drug, and materials design. After a few chapters that present basic MM concepts, the editor draws on the expertise of various academic researchers for current examples of MM rational design and application. The chapter progression through the text is clear and logical, though there are jumps in the subject matter, a result of having different

authors for each chapter. Each individual chapter is well structured in finely delineated sections and subsections, conveniently annotated with a table of contents at the beginning of each. This feature provides facile access to specific topics and makes the book a convenient resource for MM researchers. The book contains many color figures and clearly rendered equations, though the derivations for equations are typically not included. The conclusions of each chapter provide extensive lists of original research articles cited, demonstrating the expertise and scholarship of the authors and providing a valuable reference for readers.

The primary audience for this book would likely be advanced graduate students or postdocs with some background in chemistry, physics, and/or engineering. It could also be a useful resource for faculty with a broad range of expertise in computational modeling. In order to test or otherwise put into practice concepts presented in the text, the reader is presumed to have already developed computational skills necessary to write code, scripts, or utilize tools. The current, specialized applications, together with the expected knowledge of reader, may make this text challenging to use in a traditional classroom setting. Further, the text does not contain problem sets at the end of chapters or online resources for instructors and/or students that are common in larger, more general subject undergraduate textbooks.

While the text clearly conveys the advantages of MM approaches, there are relatively few instances where caveats or weaknesses of MM for a given application are discussed. The text could have been strengthened by including more information regarding the experimental testing and validation of the MM topics presented in each chapter. Discussion of these topics, for example, could address assumptions intrinsic to computational design and modeling. Further, including descriptions of (non-computational) experimental tests would also potentially broaden the readership.

The most impressive feature of the text is that it includes current, "real world" applications of MM from researchers across the globe. Overall, this textbook could serve

as an excellent resource, but students and researchers considering the book should examine the text first, if possible, to ensure it is presented at a suitable level.

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