

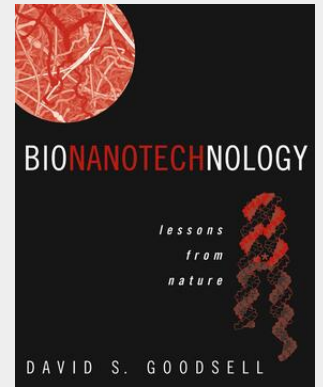
Goodsell

Bionanotechnology

Lessons from Nature

Discussions of the basic structural, nanotechnology, and system engineering principles, as well as an introductory overview of essential concepts and methods in biotechnology, will be included. Text is presented side-by-side with extensive use of high-quality illustrations prepared using cutting edge computer graphics techniques. Includes numerous examples, such applications in genetic engineering. Represents the only available introduction and overview of this interdisciplinary field, merging the physical and biological sciences. Concludes with the authors' expert assessment of the future promise of nanotechnology, from molecular "tinkertoys" to nanomedicine. David Goodsell is author of two trade books, Machinery of Life and Our Molecular Nature, and Arthur Olson is the world's leader in molecular graphics and nano-scale representation.

Biological molecules are themselves the premier, proven examples of the feasibility and utility of nanotechnology-in effect, "lessons from nature" informing the design of nanoscale machines. Bionanotechnology encompasses the study, creation, and illumination of the connections between structural molecular biology and molecular nanotechnology. The very first resource to address this discipline comprehensively and exclusively, Bionanotechnology: Lessons from Nature delivers an accessible overview that features a stunning set of original watercolor illustrations by the author. Bionanotechnology: Lessons from Nature shows both students and practitioners how the lessons that may be learned from biology can be applied to nanotechnology today. The first part of the book explores the properties of nanomachines that are available in cells. The second looks to the structure and function of natural nanomachines for guidance in building nanomachinery. The book then concludes with chapters on applications, surveying some of the exciting bionanotechnological tools and techniques that are currently in development, and speculating on those that may prove feasible in the not-too-distant future. Features of this one-of-a-kind reference include: * High-quality illustrations produced by cutting-edge design programs * Discussions of basic structural, nanotechnological, and system engineering principles * Numerous real-world examples, such as applications in genetic engineering Undergraduates, graduate students, practicing researchers, and policymakers will find David Goodsell's Bionanotechnology an accessible, visually compelling introduction to this exciting field.



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