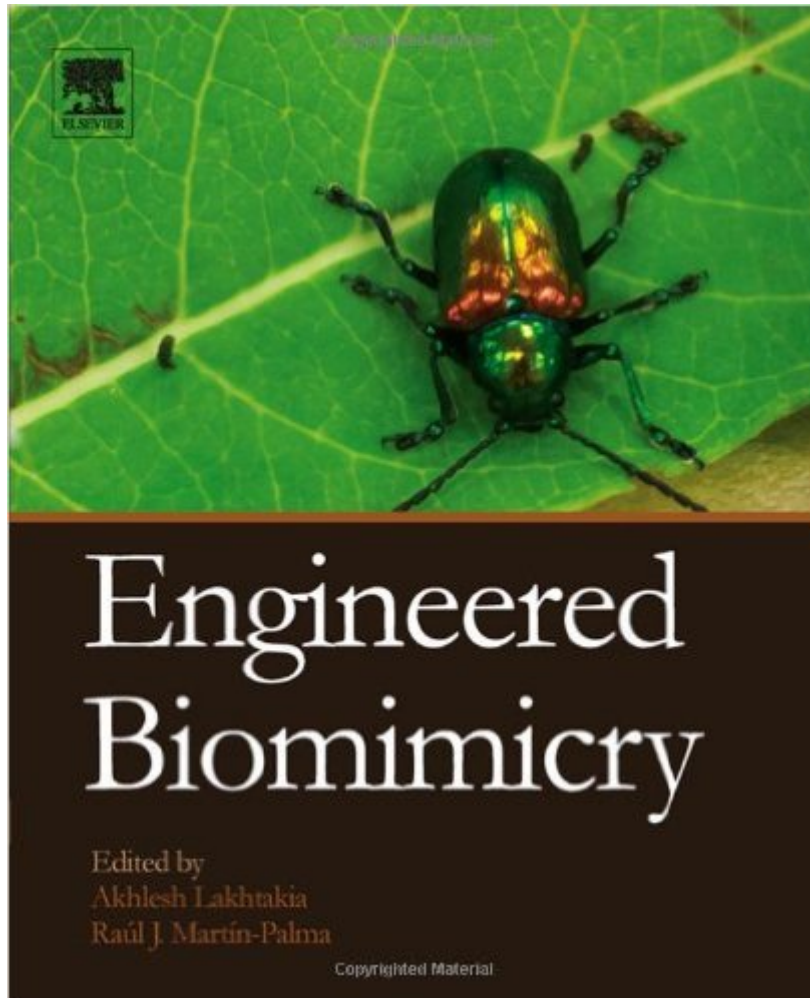


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Engineered Biomimicry



Synopsis

Engineered Biomimicry covers a broad range of research topics in the emerging discipline of biomimicry. Biologically inspired science and technology, using the principles of math and physics, has led to the development of products as ubiquitous as Velcro® (modeled after the spiny hooks on plant seeds and fruits). Readers will learn to take ideas and concepts like this from nature, implement them in research, and understand and explain diverse phenomena and their related functions. From bioinspired computing and medical products to biomimetic applications like artificial muscles, MEMS, textiles and vision sensors, Engineered Biomimicry explores a wide range of technologies informed by living natural systems. Engineered Biomimicry helps physicists, engineers and material scientists seek solutions in nature to the most pressing technical problems of our times, while providing a solid understanding of the important role of biophysics. Some physical applications include adhesion superhydrophobicity and self-cleaning, structural coloration, photonic devices, biomaterials and composite materials, sensor systems, robotics and locomotion, and ultra-lightweight structures. Explores biomimicry, a fast-growing, cross-disciplinary field in which researchers study biological activities in nature to make critical advancements in science and engineering. Introduces bioinspiration, biomimetics, and bioreplication, and provides biological background and practical applications for each. Cutting-edge topics include bio-inspired robotics, microflyers, surface modification and more.

Book Information

Hardcover: 496 pages

Publisher: Elsevier; 1 edition (June 19, 2013)

Language: English

ISBN-10: 0124159958

ISBN-13: 978-0124159952

Product Dimensions: 1.2 x 8 x 9.8 inches

Shipping Weight: 2.6 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars [See all reviews](#) (2 customer reviews)

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Customer Reviews

This book is an excellent text on biomimicry, but keep in mind it is aimed at a 300 level or higher, and it assumes the reader is familiar with a sophistication in math that includes series, calculus, and differential equations. Assumes a solid grounding in basic physics too. Excellent for advanced biology, engineering, and physics students, but not for the beginner.

The most detailed, and therefore best, book presently available on the subject. A fine review of the current state of the art.

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