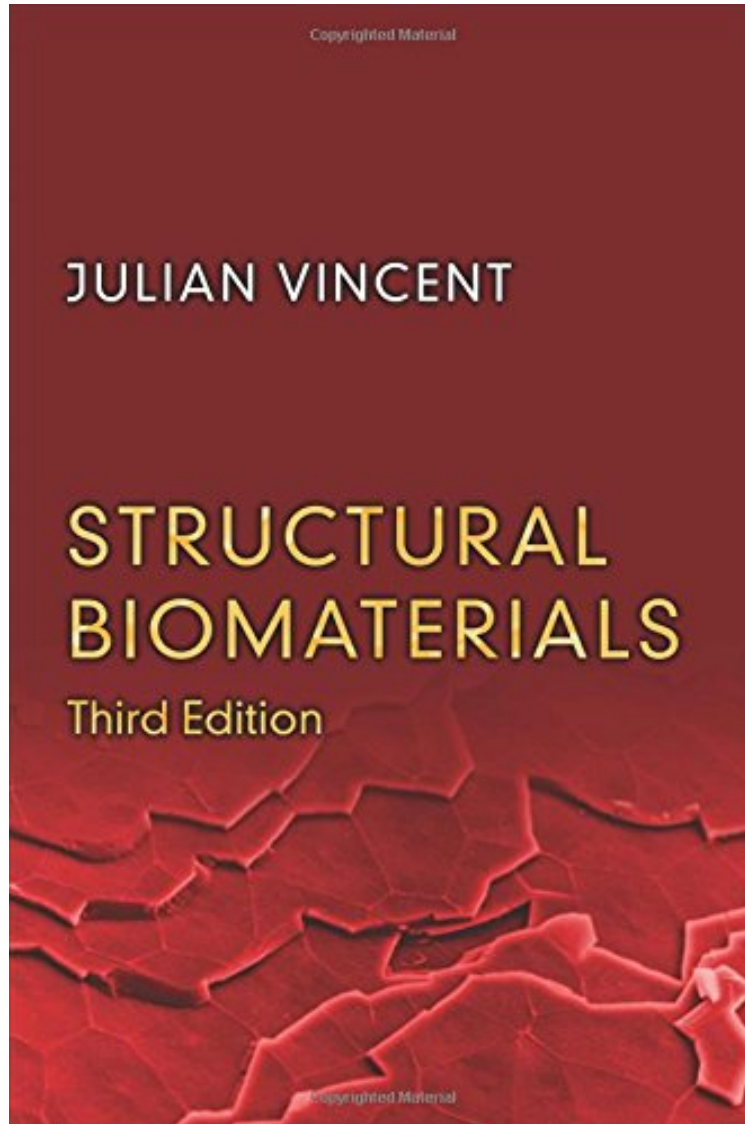


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## Structural Biomaterials: Third Edition

*Julian Vincent*

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**Julian Vincent : Structural Biomaterials: Third Edition** before purchasing it in order to gage whether or not it would be worth my time, and all praised Structural Biomaterials: Third Edition:

This is a thoroughly revised, updated, and expanded edition of a classic illustrated introduction to the structural materials in natural organisms and what we can learn from them to improve man-made technology--from nanotechnology to textiles to architecture. Julian Vincent's book has long been recognized as a standard work on the

engineering design of biomaterials and is used by undergraduates, graduates, researchers, and professionals studying biology, zoology, engineering, and biologically inspired design. This third edition incorporates new developments in the field, the most important of which have been at the molecular level. All of the illustrations have been redrawn, the references have been updated, and a new chapter on biomimetic design has been added. Vincent emphasizes the mechanical properties of structural biomaterials, their contribution to the lives of organisms, and how these materials differ from man-made ones. He shows how the properties of biomaterials are derived from their chemistry and interactions, and how to measure them. Starting with proteins and polysaccharides, he shows how skin and hair function, how materials self-assemble, and how ceramics such as bone and mother-of-pearl can be so stiff and tough, despite being made in water in benign ambient conditions. Finally, he combines these topics with an analysis of how the design of biomaterials can be adapted in technology, and presents a series of guidelines for designers. An accessible illustrated introduction with minimal technical jargon Suitable for undergraduates and more advanced readers Integrates chemistry, mechanics, and biology Includes descriptions of all biological materials Simple exposition of mechanical analysis of materials

"Structural Biomaterials bridges an important gap between mechanical behavior and biology. . . . Dispersed throughout the text are numerous humorous examples or anecdotes, which lighten the reading."--Choice  
Praise for the first edition: "[A]n excellent introduction to the field.... The easy style and the lighthearted references to such things as the 'fracture of table jelly' and 'half-boiled notions' about egg shells will help biological readers to cope with the many complex physical concepts introduced."--John M. Gosline, American Scientist  
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From the Back Cover "With this revision, this book should continue its thirty-year role as a unique resource. No other so squarely faces the mechanical interrelationships between structure and the functions of the materials of which we--and all other life--are made. The new edition adds a much-enriched set of references and an uncommonly sensible chapter on biomimetics."--Steven Vogel, professor emeritus, Duke University  
About the Author Julian Vincent, a biologist with a long-standing interest in engineering, is Honorary Professor of Biomimetics in the Department of Mechanical Engineering at Bath University and Special Professor in the Faculty of the Built Environment at Nottingham University.