

<<生物工程导论INTRODUCTION>>

图书基本信息

书名：<<生物工程导论INTRODUCTION TO BIOENGINEERING>>

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内容概要

Bioengineering is attracting many high quality students. This invaluable book has been written for beginning students of bioengineering, and is aimed at instilling a sense of engineering in them. Engineering is invention and designing things that do not exist in nature for the benefit of humanity. Invention can be taught by making inventive thinking a conscious part of our daily life. This is the approach taken by the authors of this book. Each author discusses an ongoing project, and gives a sample of a professional publication. Students are asked to work through a sequence of assignments and write a report. Almost everybody soon realizes that more scientific knowledge is needed, and a strong motivation for the study of science is generated. The teaching of inventive thinking is a new trend in engineering education. Bioengineering is a good field with which to begin this revolution in engineering education, because it is a youthful, developing interdisciplinary field. --This text refers to the Hardcover edition. 作者简介： Y. C. Fung works on solid mechanics, and has helped to establish the fields of aeroelasticity and biomechanics. He received his BS and MS from the National Central University in China and PhD from the California Institute of Technology. He received the United States Presidential National Medal of Science in the year 2000, and the Founders Award of the US National Academy of Engineering in 1998. He was elected a member of the US National Academy of Science in 1992, the US Institute of Medicine in 1991, the US National Academy of Engineering in 1979, the Academy of Science of China in 1994, and the Academia Sinica in 1966. He is Distinguished Alumnus of Caltech, Honorary Member of ASME, and winner of the von Karman Medal (ASCE), Timoshenko Medal (ASME), Poiseuille Medal (ISB), Borelli Medal (ASB), Landis Award (AMS), and Alza Award (BMES).

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2. Perspectives of Biomechanics Yuan Cheng Fung Paper: Fung, Y. C. Pressure, flow, stress, and remodeling in the pulmonary vasculature. In: *The Pulmonary Circulation and Gas Exchange*, edited by W. W. Wagner and E. K. Weir. Futura Pub. Co., pp. 343-364, 1994, by permission.
3. The Implantable Glucose Sensor: An Example of Bioengineering Design David A. Gough Paper: Gough, D. A., J. Y. Lucisano and P. H. S. Tse. Two-dimensional enzyme electrode sensor for glucose. *Analytical Chemistry*, 57: 2351-2357, 1985, by permission.
4. Design and Development of Artificial Blood Marcos Intalietta Paper: Tsai, A. G., B. Friesenecker, M. C. Mazzoni, H. Kerger, D. G. Buerk, P. C. Johnson and M. Intaglietta. Microvascular and tissue oxygen gradients in the rat mesentery. *Proc. Natl. Acad. Sci. USA.* 95: 6590-6595, 1998, by permission.
5. Analysis of Coronary Circulation: A Bioengineering Approach Ghassan S. Kassab Paper: Kassab, G. S., J. Berkley and Y. C. Fung. Analysis of pig's coronary arterial blood flow with detailed anatomical data. *Ann. Biomed. Eng.* 25: 204-217, 1997, by permission.
6. What Lies Beyond Bioinformatics? Bernhard Palsson Paper: Schilling, C. H., J. S. Edwards and B. O. Palsson. Toward metabolic phenomics: Analysis of genomic data using flux balances. *Biotechnol. Prog.* 15: 288-295, 1999, by permission. Paper: Edwards, J. S. and B. O. Palsson. The *Escherichia coli* MG1655 in silico metabolic genotype: Its definition, characteristics, and capabilities. *PNAS* 97: 5528-5533, 2000, by permission.
7. Tissue Engineering of Articular Cartilage Robert L. Sah Paper: Reindel, E. S., A. M. Ayroso, A. C. Chen, D. M. Chun, R. M. Schinagl and R. L. Sah. Integrative repair of articular in vitro: Adhesive strength of the interface region. *J. Orth. Res.* 13: 751-760, 1995, by permission.
8. Cell Activation in the Circulation Geert W. Schmid-Schonbein Paper: Mazonic, M. C. and C. W. Schmid-SchSnbein. Mechanisms and consequences of cell activation in the microcirculation. *Cardiovas. Res.* 32: 709-719, 1996, by permission. Paper: Mitsuoka, H., E. B. Kistler and G. W. Schmid-SchSnbein. Generation of in vivo activating factors in the ischemic intestine by pancreatic enzymes. *PNAS* 97: 1772-1777, 2000, by permission.
9. Molecular Basis of Cell Membrane Mechanics Lanping Amy Sung Paper: Sung, L. A., S. Chien, L. S. Chang, K. Lambert, S. A. Bliss, E. E. Bonhassion, R. L. Nagel, R. S. Schwartz and A. C. Rybicki. Molecular cloning of human protein 4.2: A major component of the erythrocyte membrane. *Proc. Natl. Acad. Sci.* 87: 955-959, 1990, by permission.
10. Biomechanics of Injury and Healing Pin Tong and Yuan Cheng Fung Paper: An Editorial Article by Savio L.-Y. Woo: The importance of biomechanics for the new millennium. *J. Orth. Sc.* 5: 89-91, 2000, by permission. Paper: Yen, R. T., Y. C. Fung, H. H. Ho and G. Butterman. Speed of stress wave propagation in Lung. *J. Appl. Physiol.* 61: 701-705, 1986, by permission. Paper: Fung, Y. C., R. T. Yen, Z. L. Tao and S. Q. Liu. A hypothesis on the mechanism of trauma of lung tissue subjected to impact load. *J. Biomech. Eng.* 110: 50-56, 1988, by permission.
11. Pulsatile Blood Flow in the Lung Studied as an Engineering System Michael R. T. Yen and Wei Huang Paper: Huang, W., Y. Tian, J. Gao and R. To Yen. Comparison of theory and experiment in pulsatile flow in cat lung. *Ann. Biomed. Eng.* 26: 812-820, 1998, by permission.

Appendixes A. About the Authors B. About the Department of Bioengineering at the University of California, San Diego
Farewell to Students

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