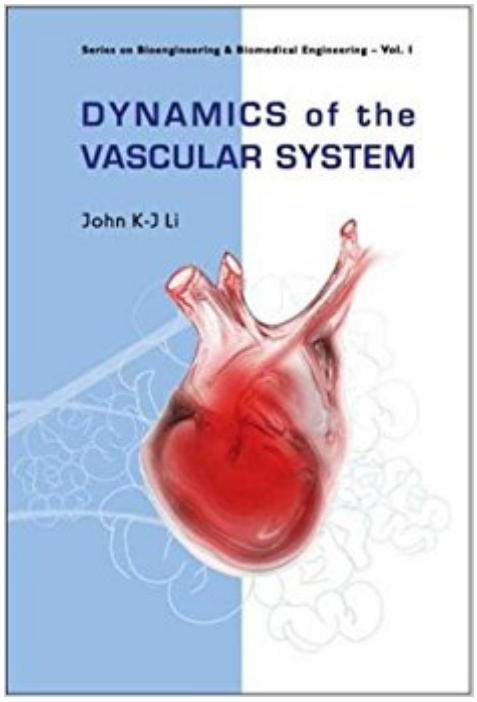
Dynamics Of The Vascular System (Series On Bioengineering & Biomedical Engineering - Vol. 1)



Synopsis

Recent advances in vascular biology and vascular engineering have led to the understanding and integration of the two fields. A feature that is fundamental to both is the dynamic aspects of the vascular system. Although the basic principles governing blood flow and the circulatory function are known, new approaches to examining the interaction of different parts of the vascular system have emerged. These include measurement techniques and quantitative methods with greater use of modern technology and computer modeling. An obvious need therefore exists for a book that deals specifically with the dynamics of the vascular system.This book begins with the historical discoveries of the features of the vascular system and its importance in the overall circulatory function. Modern aspects of vascular biology in terms of structure and function are then described, followed by the introduction of physical principles and basic fluid mechanics for quantitative analysis. The hemodynamics of large arteries, the optimal structure of vascular branching and the pulsatile energy transmission and modeling aspects are elaborated. These are extended to analyze the function of the venous system and the microcirculation. Finally, the integrated vascular system and its response and adaptation to diseased conditions, such as aging, stenosis, hypertension, myocardial ischemia, atheroslerosis and stroke are explained. The overall emphasis is on the dynamic nature of the vascular system.

Book Information

Series: Series on Bioengineering & Biomedical Engineering (Book 1)
Hardcover: 272 pages
Publisher: World Scientific Publishing Company (July 1, 2004)
Language: English
ISBN-10: 9810249071
ISBN-13: 978-9810249076
Product Dimensions: 6.2 x 0.8 x 9.3 inches
Shipping Weight: 1.1 pounds (View shipping rates and policies)
Average Customer Review: 4.0 out of 5 stars 1 customer review
Best Sellers Rank: #681,528 in Books (See Top 100 in Books) #27 inÃ Â Books > Medical Books > Medicine > Prosthesis #30 inÃ Â Books > Textbooks > Medicine & Health Sciences > Medicine > Clinical > Surgery > Vascular #91 inÃ Â Books > Medical Books > Medicine > Surgery > Thoracic & Vascular

Customer Reviews

.," a new book by one of the world's greatest experts on bioengineering aspects of hemodynamics."

John K-J Li has been awarded the International Union of Physiological Sciences (IUPS) Award for Paper Presentation at the Australian IUPS Congress and several IEEE Recognition Certificates from 1985-1991 in recognition of valued services and contributions as Chapter Chairman of Engineering in Medicine and Biology Society. He has a number of patents to his name, with products ranging from Antihypertension Drugs to New Rate-Responsive Cardiac Pacemakers.

Li's book provides a very good description of the fundamentals and characteristics of the vascular system structure and fluid dynamics. This is a convergence topic and he addressed both science issues in good stead.The description of the heart's pulsatile pressure waveform extending beyond the arterioles and into the microvascular system was very enlightening. He could have stressed the significance of this topic, as is marks a departure from the past 3 decades of thought by transplant surgeons and perfusionists.Li did not follow the "big text book" format. He simply conveys the nuts and bolts of the topics in a straightforward "Dragnet" style without adding a lot extraneous fluff. All in all, he answered my preset questions and gave me food for thought for further research and reading.I hope this helps.Bob

Surgery (Rutherford)(2 Vol.)) Introduction to Vascular Scanning: A Guide for the Complete Beginner, 4th ed. (INTRODUCTIONS TO VASCULAR TECHNOLOGY) Vascular Technology Review: A Q&A Review for the ARDMS Vascular Technology Exam Introduction to Vascular Ultrasonography: Expert Consult - Online and Print, 6e (Zwiebel, Introduction of Vascular Ultrasonography) Introduction to Vascular Ultrasonography E-Book (Zwiebel, Introduction of Vascular Ultrasonography) Introduction to Vascular Scanning: A Guide for the Complete Beginner (Introductions to Vascular Technology)(3rd Edition) Teaching Atlas of Vascular and Non-vascular Interventional Radiology Biosignalling in Cardiac and Vascular Systems: Proceedings of the International Symposium on Biosignalling in Cardiac and Vascular Systems, 5-7 Septe