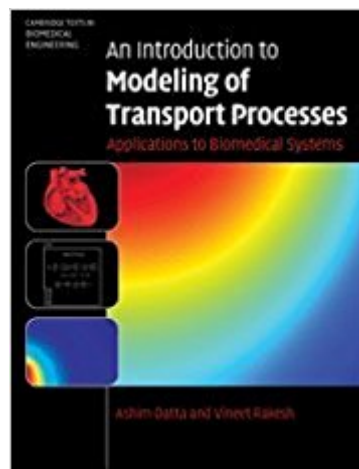




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An Introduction To Modeling Of Transport Processes: Applications To Biomedical Systems (Cambridge Texts In Biomedical Engineering)



Synopsis

Organized around problem solving, this book gently introduces the reader to computational simulation of biomedical transport processes, bridging fundamental theory with real-world applications. Using this book the reader will gain a complete foundation to the subject, starting with problem simplification, implementing it in software, through to interpreting the results, validation, and optimization. Ten case studies, focusing on emerging areas such as thermal therapy and drug delivery, with easy to follow step-by-step instructions, provide ready-to-use templates for further applications. Solution process using the commonly used tool COMSOL Multiphysics is described in detail; useful biomedical property data and correlations are included; and background theory information is given at the end of the book for easy reference. A mixture of short and extended exercises make this book a complete course package for undergraduate and beginning graduate students in biomedical and biochemical engineering curricula, as well as a self-study guide.

Book Information

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Customer Reviews

Organised around problem solving, this book introduces the reader to computational simulation of biomedical transport processes, bridging fundamental theory with real-world applications. Step-by-step instructions enable a newcomer to get started immediately and the inclusion of property data and case studies provide usable models that can be applied further afield.

Ashim Datta is a Professor in the Department of Biological and Environmental Engineering at Cornell University, where he has developed and taught modeling of biomedical processes as a course since 1996. He is recipient of the Michael Tien '72 Excellence in Teaching Award from the College of Engineering, and he has authored and co-authored over 85 technical papers and book chapters, authored a textbook and also co-edited three books on biological heat and mass transfer. Vineet Rakesh is a Research Scientist in the Computational Medicine and Biology Division of a biomedical research company. He received his Ph.D. in Biological Engineering from Cornell University. He has also worked as a teaching assistant for the biomedical process modeling course at Cornell for three years and has been presented with the Outstanding Teaching Assistant award. His research has included modeling of airflow in the upper airway and drug transport in cancer therapy.

It arrived earlier than expected. Very satisfied!!!

not bulky, and has good step by step examples. some of the examples could be updated as the programs are changing, but it all applies and translates well.

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