Principles of Tissue Engineering (Tissue Engineering Intelligence Unit)

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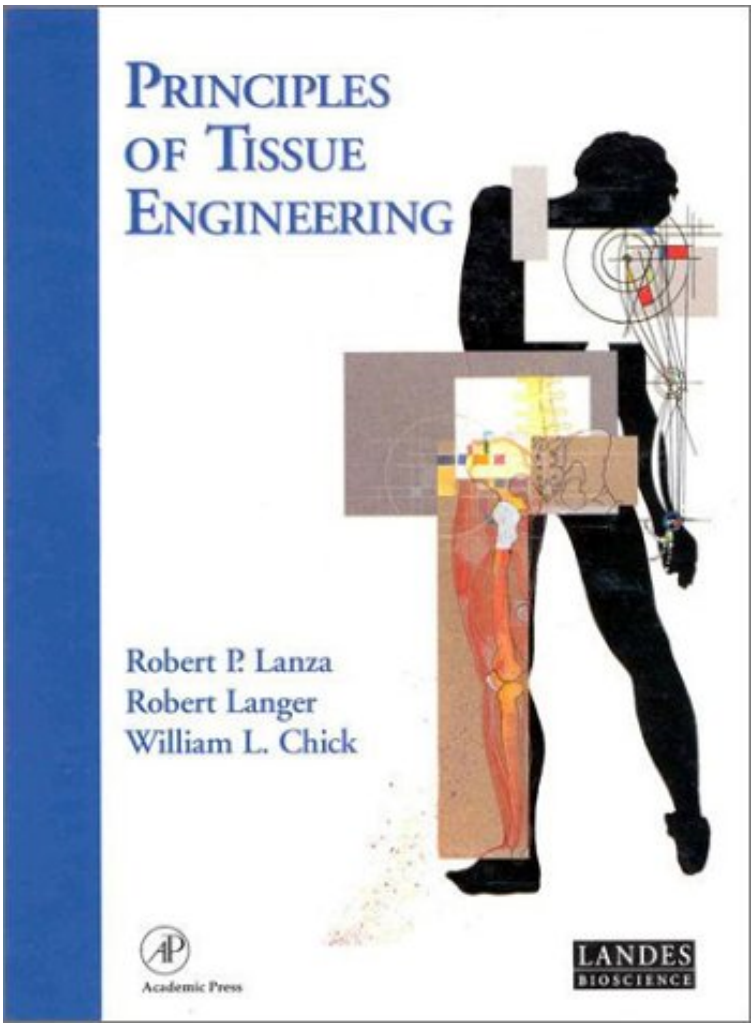

#5070985 in Books 1996-12-23Original language:EnglishPDF # 1 1.99 x 8.79 x 11.24l, #File Name: 0124366252808 pages | File size: 33.Mb

From Academic Press : Principles of Tissue Engineering (Tissue Engineering Intelligence Unit) before purchasing it in order to gage whether or not it would be worth my time, and all praised Principles of Tissue Engineering (Tissue Engineering Intelligence Unit):

5 of 5 people found the following review helpful. Covering the whole bodyBy Peter BernsteinThis is a great book, covering most details of its field. It describes the physicians (and their patients) dream of substituting organs and cells and it also shows, how mankind could not solve problems up to now. History of artificial organs lacking the full function is one point, but the focus is on cells and their ability to build complete organs and therefore the book looks on the pathway for the future of organ substitution.The introduction covers some main ideas of tissue engineering what

do we want what are we able to do what do we still have to get knowledge of. After a short review of the history, the essentials of cell biology (Growth, Differentiation) are being introduced. The reader should have an idea of developmental biology to be able to follow topics like induction and morphogenesis. The authors emphasize the importance of the extracellular matrix as one of organ-prosthesis main building blocks (ECM = scaffold; cells = function; cell signalling = integration and physiology).The second part describes technical aspects of in-vitro organ synthesis: tissue culture and ECM, tissue culture und growth factors, bioreactors and vascularization. The third part continues with in-vivo techniques of organ reparation, exemplified by methods for substitution of the ECM of skin, peripheral nerves and meniscus.Parts 4 6 develop models for the substitution of the ECM (Collagen, BioPolymers), their implantation in the receiving organism and the resulting immunologic problems (emphasized).Parts 7 20 are concerned with the organs themselves. After few words about stem cells and gene therapy the book explains reconstruction and substitution methods for breast, heart and blood vessels, Cornea, endocrine glands, liver (very good), kidney and haematopoietic system. Biomechanical problems are outlined in the part about the musculoskeletal system. On this place tissue engineering celebrates its oldest success (cartilage substitution). Today innervation processes are being focused.The book continues with substitutes for the senses (ear and eye), nerve cells, nerve regeneration and neural stem cells. Dents and skin could be all to make an ill patient healthy by substitutes, one might think. But no, western medicine also knows something about substitutes for womb and placentaOn me the book made a good impression. The only point is: its quite too much text and too few pictures. It addresses medicals after their exams, practicing physicians and biologists. Chapters focus on the basic principles. There is a large number of links to more detailed publications.3 of 3 people found the following review helpful. Excellent referenceBy A CustomerA few too many equations, but clearly the most comprehensive text in the field. Contributors list reads like a 'Who's Who' of tissue engineering.5 of 9 people found the following review helpful. One sidedBy A CustomerThe book is mistitled as 'Principles' since it does not really do justice to the foundations of the field. It is more of a compilations of the research work of a 'few' investigators in the field.

Tissue engineering is a rapidly growing area of biomedical research with obvious commercial applications. This is a comprehensive, definitive text-reference which will become the benchmark in this area. Principles in Tissue Engineering strikes a balance among the diversity of subjects that are related to tissue engineering, including biology, chemistry, material science, engineering, immunology, and transplantation, while emphasizing those research areas that are likely to be of the most value to medicine in the future.This book represents the combined intellect of almost 100 scholars and clinicians who's pioneering work has been instrumental to ushering in this fascinating and important field. Key Features* Coverage is comprehensive yet succinct* Emphasizes research areas that are likely to be of the most value to medicine in the future* Topics covered include biology, chemistry, material science, engineering, immunology, and transplantation aspects of tissue engineering

"[the book] is vast, detailed, and beautifully presented...one cannot but be impressed...."--NATURE"This new treatise on the principles of tissue engineering is essential for anyone working in the field. It is a vast, detailed and beautifully presented analysis of the cellular principles, in vitro and in vivo