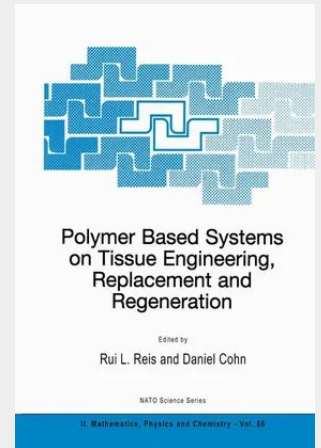


Polymer Based Systems on Tissue Engineering, Replacement and Regeneration

Biodegradable, polymer-based systems are playing an increasingly pivotal role in tissue engineering replacement and regeneration. This type of biology-driven materials science is slated to be one of the key research areas of the 21 century. The following aspects are crucial: the development of adequate human cell culture to produce the tissues in adequate polymer scaffold materials; the development of culture technology with which human tissues can be grown ex-vivo in 3D polymer matrices; the development of material technology for producing the degradable, 3D matrices, having mechanical properties similar to natural tissue. In addressing these and similar problems, the book contains chapters on biodegradable polymers, polymeric biomaterials, surface modification for controlling cell-material interactions, scaffold design and processing, biomimetic coatings, biocompatibility evaluation, tissue engineering constructs, cell isolation, characterisation and culture, and controlled release of bioactive agents.

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