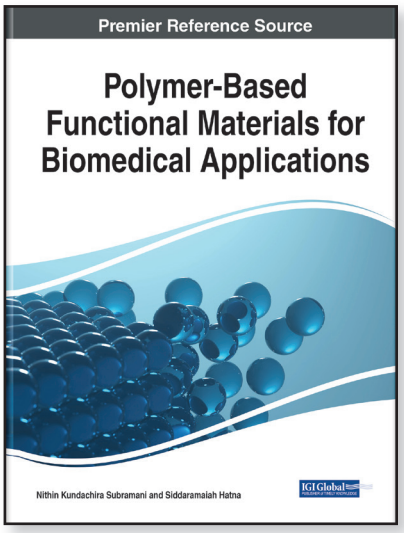
Polymer-Based Functional Materials for Biomedical Applications



Part of the Advances in Bioinformatics and Biomedical Engineering Book Series

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Description:

Polymers represent the largest and most versatile class of biomaterials that are being extensively explored in numerous biomedical applications. The relative ease of processing; ability of polymers to be designed and developed with numerous interesting physical, chemical, and biological functionalities; and dopant dependent material properties exhibited by their composite analogues have all enabled their widespread applicability in drug delivery systems, tissue engineering, organ-on-a-chip, and so forth. Also, in recent decades, the advent of nanotechnology and advancements in polymer and/or composite and/or blend synthesis and characterization tools have all further allowed the efficient synthesis and biomedical performance evaluation of a wide variety of special polymer-based biomaterials.

Polymer-Based Functional Materials for Biomedical Applications offers an overview of major classes of special polymers and polymer-based composites and/or nanocomposites and/or blends for biomedical applications. In addition, recent advancements are critically explored, with special focus on functional polymer-based complex structures such as composites and/or nanocomposites, biocompatible blends, scaffolds, and hydrogels. This book is ideal for researchers, scientists, biomedical and materials engineers, students, and academicians who wish to further understand and utilize various combinations of versatile propertied polymer-based biomaterials to address various challenges in the biomedical domain while also helping innovators, business owners, and entrepreneurs towards possible conversion of research-based knowledge into value-added cutting-edge biomedical innovations.

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Topics Covered:

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- Biomedical Applications
- Composites and Nanocomposites
- Drug Delivery
- Functional Hydrogels
- Functional Polymer-Based Complex Structures
- Natural Fiber-Based Bio-Polymers
- Pharmaceutical Conventional Dosage Forms
- Polymer/Graphene-Based Nanocomposite
- Polymer-Based Functional Materials
- Polymers in Medicine
- Scaffolds

Subject: Science and Engineering

Classification: Edited Reference

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Research Suitable for: Advanced Undergraduate Students; Graduate Students; Researchers; Academicians; Professionals; Practitioners

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