

Nanocellulose and nanohydrogel matrices [biotechnological and biomedical applications /

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Wiley-VCH, 2017

Monografía

This first book on nanocellulose and nanohydrogels for biomedical applications is unique in discussing recent advancements in the field, resulting in a comprehensive, well-structured overview of nanocellulose and nanohydrogel materials based nanocomposites. The book covers different types of nanocellulose materials and their recent developments in the drug delivery and nanomedicine sector, along with synthesis, characterization, as well as applications in the biotechnological and biomedical fields. The book also covers the current status and future perspectives of bacterial cellulose and polyester hydrogel matrices, their preparation, characterization, and tissue engineering applications of water soluble hydrogel matrices obtained from biodegradable sources. In addition, the chitosan-based hydrogel and nanogel matrices, their involvement in the current biofabrication technologies, and influencing factors towards the biomedical sector of biosensors, biopharmaceuticals, tissue engineering appliances, implant materials, diagnostic probes and surgical aids are very well documented. Further, the history of cellulose-based and conducting polymer-based nanohydrogels, their classification, synthesis methods and applicability to different sectors, the challenges associated with their use, recent advances on the inhibitors of apoptosis proteins are also included. The recent developments and applications in the drug delivery sector gives an overview of facts about the nanofibrillated cellulose and copoly (amino acid) hydrogel matrices in the biotechnology and biomedicine field. This book serves as an essential reference for researchers and academics in chemistry, pharmacy, microbiology, materials science and biomedical engineering

Título: Nanocellulose and nanohydrogel matrices Recurso electrónico] :] biotechnological and biomedical applications edited by Mohamad Jawaid and Faruq Mohammad

Editorial: Weinheim, Germany Wiley-VCH 2017

Descripción física: 1 recurso electrónico

Mención de serie: Wiley ebooks

Bibliografía: Incluye referencias bibliográficas e índice

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Detalles del sistema: Forma de acceso: World Wide Web

ISBN: 9783527803835 electronic bk. ; oBook) 3527803831 electronic bk. ; oBook) 9783527803859 3527803858 9783527341726 print) 3527341722 9783527803842 Mobi ISBN) 9783527803828 ePDF)

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