

BIOMEDICAL & NANOMEDICAL TECHNOLOGIES
CONCISE MONOGRAPH SERIES

Biopolymers Based Micro- and Nano- Materials

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Series Editors' Preface

Biomedical and Nanomedical Technologies (B&NT)

This **concise** monograph series focuses on the implementation of various engineering principles in the conception, design, development, analysis and operation of biomedical, biotechnological and nanotechnology systems and applications. The primary objective of the series is to compile the latest research topics in biomedical and nanomedical technologies, specifically devices and materials.

Each volume comprises a collection of invited manuscripts, written in an accessible manner and of a concise and manageable length. These timely collections will provide an invaluable resource for initial enquiries about technologies, encapsulating the latest developments and applications with reference sources for further detailed information. The content and format have been specifically designed to stimulate further advances and applications of these technologies by reaching out to the non-specialist across a broad audience.

Contributions to *Biomedical and Nanomedical Technologies* will inspire interest in further research and development using these technologies and encourage other potential applications. This will foster the advancement of biomedical and nanomedical applications, ultimately improving healthcare delivery.

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Abstract

Nowadays biopolymers such as agar, agarose, alginate, carrageenan, cellulose, chitin, chitosan, collagen, hyaluronic acid, gelatin, glucan, starch, DNA, RNA and protein have been produced from laboratory to industrial scale. The physico-chemical properties of these biopolymers such as chemical compositions, solubility, molecular weight and viscosity are of major importance on the preparation of micro- and nano-materials such as powder, solution, hydrogel, micro- and nano-sized pores in membrane, micro- and nano-fiber, macro- and micro-beads, nano-particles, and micro- and nano-structured scaffold. These micro- and nano-materials have been used in various sectors such as agriculture, food, medicine, etc. This monograph will address the source and production methods of biopolymers, properties of biopolymers, preparation of micro- and nano-materials using biopolymers, characterization of micro- and nano-biomaterials and application of micro- and nano-biomaterials.

