Keeping in mind the advantages of bio-based materials, this book focuses on the potential efficacy of different biocomposites procured from diverse natural resources and the preparation and processing of the biocomposites to be used for a variety of applications. Each chapter gives an overview on a particular biocomposite material and its processing and successful utilization for selected applications. The chapters summarize recently developed research on such topics as:

- spider silk biocomposites
- biogenic hydroxyapatite based implant biocomposites
- liquid crystals and cellulose derivatives biocomposites
- bio-based epoxy resins
- bio-based polyphenols and lignocellulosic fibers
- wood-based biocomposites
- flame retardant biocomposites
- biocomposites for industrial noise control
- cellulose-based bionanocomposites

Each individual chapter also focuses on the knowledge and understanding of the interfaces manifested in these biocomposites systems and the optimization of different parameters for novel properties. In addition to this, the book also summarizes the recent developments made in the area of injection molding of biocomposites, chemical functionalization of natural fibers, processing of biocomposites, and their applications in the automotive and biomedical industries. A number of critical issues and suggestions for future work are discussed, underscoring the roles of researchers for the efficient development of biocomposite materials through value addition to enhance their use.

Brent Tisserat, Louis Reifschneider, David Grewell, Brent Tisserat, Louis Reifschneider, David Grewell

Chapter 14: The Multifunctional Chemical Tunability of Wood-Based Polymers for Advanced Biomaterials Applications

Teresa Cristina Fonseca Silva, Deusanilde Silva, and Norma-Aurea Rangel-Vazquez


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Chapter 16: Nano-Cellulose Reinforced Chitosan Nanocomposites for Packaging and Biomedical Applications

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Chapter 17: Bionanocomposites: A Greener Alternative for Future Generation

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