

Green Energy and Technology

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Green Biocomposites

Manufacturing and Properties

 Springer

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*To
Dr. Mohammad Jawaid
lovely
daughter
“Ayesha Jawaid”*

Preface

The terms **green composites**, **biocomposites**, **ecocomposites** all broadly refer to materials that fabricate or developed by using natural fibres with synthetic matrix, natural fibres in biopolymers, synthetic fibres with biopolymers, etc. Green biocomposites attracted academicians, researchers and industries to develop green and sustainable products due to environmental awareness and strict government regulations. Green composites are eco-friendly and economical materials that can serve as an alternative to synthetic fibre reinforced polymer composites or plastic materials available in markets for different applications. Currently, green biocomposites are already available in markets for various applications such as automotive, construction, and buildings components.

The present book will cover the manufacturing and characterization technique of green biocomposites which will help researchers, scientists, and industries to understand the need of green biocomposites for utilization in development of different biodegradable and eco-friendly products. This book deals about the following topics: expert material selection for manufacturing of green biocomposites; challenges, potential, and barrier for development of sustainable biocomposites; lignin as additive for manufacturing of biocomposites; recent progress on rubber-based biocomposites; manufacturing of natural fibre/agrowaste-based biocomposites; tribological characteristics of green biocomposites; wood and non-wood particle-based green composites; woven natural fibre fabric reinforced biodegradable composites; kenaf biocomposites; impact of fibrillization on mechanical and thermal properties of doum fibre reinforced polymer composites; oil palm empty fruit bunch fibres and biopolymer composites; rattan fibre/natural rubber biocomposites, and natural fibre/synthetic fibre reinforced polymer hybrid composites.

We are highly thankful to all authors who contributed book chapters and provided their valuable ideas and knowledge in this edited book. We attempt to gather all the scattered information of authors from diverse fields around the world

(Malaysia, Jordan, USA, Turkey, Italy, UK, Singapore, Oman, India, Morocco, Eritrea, Korea, and Pakistan) in the areas of green composites and biocomposites and finally complete this venture in a fruitful way. We greatly appreciate contributor's commitment for their support to compile our ideas in reality.

We are highly thankful to Springer UK team for their generous cooperation at every stage of the book production.

Serdang, Malaysia
Serdang, Malaysia
Riyadh, Saudi Arabia

Mohammad Jawaid
Salit Mohd Sapuan
Othman Y. Alothman

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