Aim and Scope

Sustainability is currently the primary requirement for the development of materials, product development, and applications. The book *"Sustainable Bio-Based Materials: Biomedical and Engineering Applications"* provides diverse knowledge related to bio-based materials, including origin, synthesis, and properties. Bio-based polymer synthesis, properties, and applications are included in the book. This book is focused on prime bio-based materials, such as cellulose, chitosan, silks, and related manufacturing techniques and applications. In addition, the text displays the engineering and biomedical applications of bio-based materials thoroughly and lucidly, which will open up the minds of readers to discover and transform newly reported technologies into products and services.

This book will be helpful and useful for advanced material-based research for undergraduate and graduate students, engineers, technologists, doctors, and researchers working on bio-based materials. Updated information related to bio-based materials is comprehensively included in Chapters 1–6. Biomedical applications, such as orthopedic, drug delivery, tissue engineering, resorbable suture, and sensor are described in Chapters 7–11. Advanced applications of bio-based materials, such as fuel cells, energy storage, and packaging are precisely depicted in corroboration with recent works in Chapters 12–14. In addition to this importance and applications of bio-based materials as a precursor for bio refinery, bio-lubricants, membranes, and adsorbents are discussed in Chapters 14–16. The importance of suitable mathematical modeling and simulation in bio-based material-based research is addressed by the text. It consists of details about advanced biomaterials and their manufacturing techniques. It provides in-depth knowledge to readers for easier, fast, efficient, and reliable way for understanding orthopedic, dental implants, wound healing, antimicrobial, biocompatibility problems with the help of advanced materials and manufacturing techniques, presently implemented in research labs and industries.

This book is suitable for a wide readership, including academics, practitioners, postgraduate students, and researchers working in the biomedical fields.

Editors
Dr. Arbind Prasad
Dr. Gourhari Chakraborty
Prof. (Dr.) J. Paulo Davim

https://doi.org/10.1515/9783111321530-201