



# Biodegradable and Biobased Polymers for Environmental and Biomedical Applications

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## DESCRIPTION

This volume incorporates 13 contributions from renowned experts from the relevant research fields that are related biodegradable and biobased polymers and their environmental and biomedical applications.

Specifically, the book highlights:

- Developments in polyhydroxyalkanoates applications in agriculture, biodegradable packaging material and biomedical field like drug delivery systems, implants, tissue engineering and scaffolds
- The synthesis and elaboration of cellulose microfibrils from sisal fibres for high performance engineering applications in various sectors such as the automotive and aerospace industries, or for building and construction
- The different classes and chemical modifications of tannins
- Electro-activity and applications of Jatropha latex and seed
- The synthesis, properties and applications of poly(lactic acid)
- The synthesis, processing and properties of poly(butylene succinate), its copolymers, composites and nanocomposites

- The different routes for preparation polymers from vegetable oil and the effects of reinforcement and nano-reinforcement on the physical properties of such biobased polymers
  - The different types of modified drug delivery systems together with the concept of the drug delivery matrix for controlled release of drugs and for antitumor drugs
  - The use of nanocellulose as sustainable adsorbents for the removal of water pollutants mainly heavy metal ions, organic molecules, dyes, oil and CO<sub>2</sub>
  - The main extraction techniques, structure, properties and different chemical modifications of lignins
  - Proteins and nucleic acids based biopolymers
  - The role of tamarind seed polysaccharide-based multiple-unit systems in sustained drug release
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## ABOUT THE AUTHOR

**Susheel Kalia** is an associate professor in the Department of Chemistry at Bahra University, Solan, India. He has around 65 research papers in international journals along with 80 publications in national and international conferences and many book chapters. He has edited a number of books including *Biopolymers: Biomedical and Environmental Applications* (Wiley-Scrivener, 2011).

**Luc Avérous** is a Group Leader, Head of Polymer Research Department in an institute (ICPEES-UMR CNRS 7515) at University of Strasbourg (France), and former Lab Director. In 2003, he became a Full Professor at ECPM (University of Strasbourg), where he teaches polymer science and engineering. During the last two decades, his major research projects have dealt with biobased and/or biodegradable polymers for environmental & biomedical applications.

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