Presents the synthesis, technology and processing details of a large range of polymers derived from renewable resources

It has been a long-term desire to replace polymers from fossil fuels with the more environmentally friendly polymers generated from renewable resources. Now, with the recent advancements in synthesis technologies and the finding of new functional monomers, research in this field has shown strong potential in generating better property polymers from renewable resources. A text describing these advances in synthesis, processing, and technology of such polymers not only provides the state-of-the-art information to researchers, but also acts to stimulate research in this direction. The contents are based on a wide range of functional monomers and the contributions are written by eminent researchers.

Specifically Renewable Polymers:

- Demonstrates the design, synthesis, properties and applications of plant oil-based polymers

- Presents an elaborate review of acid mediated polymerization techniques for the generation of green polymers
Details the production of polyhydroxyalkanoates (PHA) from olive oil based wastewater

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Describes the use of atom transfer radical polymerization (ATRP) techniques

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Reviews the renewable polymers derived from transgenic crop plants

•

Provides an overview of a range of biomass-based polymers

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Concludes with the recent efforts and approaches exploiting the natural materials in developing drug delivery systems.

ABOUT THE AUTHOR

Vikas Mittal is an Assistant Professor at the Chemical Engineering Department of The Petroleum Institute, Abu Dhabi. He obtained his PhD in 2006 in Polymer and Materials Engineering from the Swiss Federal Institute of Technology in Zurich. He then worked as a materials scientist in Active and Intelligent Coatings section of SunChemical in London, UK and as a polymer engineer at BASF Polymer Research in Ludwigshafen, Germany. His research interests include polymer nanocomposites, novel filler surface modifications, thermal stability enhancements, and polymer latexes with functionalized surfaces.

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