



polymers



Special Issue Reprint

Polymers from Renewable Resources

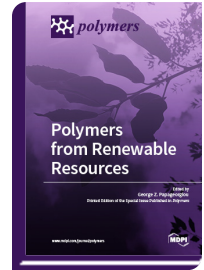
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The use of polymeric materials from renewable resources dates back in history. Even though synthetic polymers dominated the market for years, there is now a need for the development of sustainable, safe, and environmentally benign plastics from renewable resources.

Green polymers from renewable resources can be isolated from biomass, obtained through the chemical modification of natural polymers, or synthesized through a two-step process from biomass involving monomer synthesis and then polymerization. Finally, polymer synthesis can be achieved in plants through photosynthesis using carbon dioxide or in microorganisms (e.g. synthesis of poly(hydroxy-alkanoate)s).

In this issue, the developments in sustainable polymers including PLA, PHB, and furan-based materials are presented together with those concerning bionanocomposites of lignocellulosic mater or starch, and blends of bioplastics. The use of biomass-based plasticizers, fillers, and additives for the improvement of polymers' properties and the applications of biopolymers such as hyaluronic acid, carrageenans, chitosan, and polysaccharides in medicine and pharmaceuticals are discussed.



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