



polymers



Special Issue Reprint

Advances in Sustainable Polymeric Materials

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"Advances in Sustainable Polymeric Materials" is a compilation of 22 articles highlighting the recent progress in the research and development of polymeric materials, with an emphasis on sustainability. Some papers focus on developing biodegradable plastics obtained from renewable sources such as starch and biomass waste. Other articles discuss modification techniques to improve the mechanical properties of biopolymers such as PLA and PHAs. The use of recycled polymeric materials in the construction industry is highlighted as a low-cost and environmentally friendly solution.

Other studies include investigations on polymer-modified bitumen, a novel sound-absorbing material made from used palm-oil-based polyurethane foam and water hyacinth fibre composite, bio-based epoxy-lignin coatings, TiO₂ nanocomposites, the photocatalytic activity of different polymeric composites, sustainable elastomers, interactions between vanillyl-alcohol-based epoxy and cross-linkers, polyvinyl chloride sorbent for rare earth elements, lignin-based thermoplastic, the chemical foaming process of polylactic acid, microencapsulation strategies for essential oils, electrochemical sensors for glucose determination, and an intelligent drug delivery system based on pH-sensitive polymeric formulations.

It is important to recognize that the field of sustainable polymeric materials is vast and rapidly evolving, and while a single volume cannot entirely capture all the developments occurring in this field, this collection provides readers with a valuable introduction and overview of the topic.



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