

Synthesis of Biodegradable Polymers Using Enzymatic Catalysis

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Abstract. This research focuses on the synthesis of biodegradable polymers through enzymatic catalysis. We have developed a novel process that utilizes lipase enzymes to catalyze the polymerization of renewable monomers. The resulting polymers exhibit excellent biodegradability and mechanical properties, making them suitable for various applications such as packaging and medical devices. This approach offers a sustainable alternative to conventional polymer production, aligning with global environmental goals.

Keywords: Biodegradable, Polymers, Enzymatic, Lipase, Sustainable

Introduction

The increasing environmental concerns associated with traditional synthetic polymers have driven the search for sustainable alternatives. Biodegradable polymers synthesized from renewable resources offer a promising solution. In this study, we present a novel method for producing biodegradable polymers using lipase-catalyzed polymerization. Lipases, a class of enzymes that catalyze the hydrolysis of fats, have been employed to facilitate the polymerization of renewable monomers derived from natural sources. Our findings indicate that the polymers produced not only retain desirable mechanical properties but also degrade efficiently under environmental conditions, thus minimizing ecological impact.

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References

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