Integrated Green Chemistry and Sustainable Engineering

Biobased biodegradable polymers for ecological applications: A move towards manufacturing sustainable biodegradable plastic products

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Abstract:
In recent years, the emerging environmental concern for traditional plastic materials has posed a challenge to academia and industries to come up with an alternative eco-friendly material. This is because the post-consumer plastic items are non-biodegradable when disposed in natural environments such as landfill and marine sites. However, these plastics accumulate in these natural environments and create serious pollution that persists to cause environmental damage for decades. In order to address these issues, an innovative global circular economic concept in manufacturing new sustainable green products is currently underway to develop sustainable bioplastic products that will have economic, environment and social benefits. In this chapter the development of biopolymers directly extracted from biomass, monomer production from fermentation and microbial synthesis of biopolymer and their current.