

Effect of Papain on the Biodegradability of Polyethylene Modified by Chitosan

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Abstract

The objective of this research was to impart biodegradability to polyethylene. Chitin and Chitosan were main additives extracted from the fishery waste. Chitosan, a natural polymer, was one prospective contender for imparting biodegradability to Polyethylene. Papain a natural enzyme was used in addition to enhance biodegradability. The biodegradability of Polyethylene blend was studied using low molecular weight chitosan in the presence and absence of papain. The soil degradation test was performed to evaluate degree of biodegradability. Results obtained showed that specimens buried in the soil were degraded by almost 60% after six months when papain was added and the test sample was completely disintegrated after one year. The combinations of chitosan, papain and polyethylene showed the appreciable biodegradable properties of Low Density Polyethylene products after industrial and domestic applications.