

ABSTRACT

PREPARATION AND CHARACTERIZATION OF BIODEGRADABLE PLASTIC CONSISTING CHITOSAN AND POLYPROPYLENE USING EXTRUSION TECHNIQUE

By

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In this study, preparation of biodegradable plastics consisting of chitosan (CHI) and polypropylene (PP) had been conducted by extrusion technique using Thermo Scientific HAAKE Rheomex OS. In this project plastics were made into long-film sheets with different compositions which are: 5%, 10% and 20% of chitosan in 40 grams total sample. The usage of glycerol (GLY) varied concentrations 5% and 10 %, is also considered. Using Differential Scanning Calorimetry (DSC) for characterization thermal properties of biodegradable plastics. Showed that, several physical properties such us: melting temperature and decomposed temperature of samples shifted to the lower number compared to the original PP. However percent decomposition which characterized by Thermogravimetry Analyser (TGA) gave different tendency toward addition of 5% and 10% glycerol respectively using 5% glycerol, percent decomposition rise steadily on the enhancement of chitosan concentrations. While in 10% glycerol gave optimum percent decomposition on the sample mixture using 5% chitosan.

Keywords: Polypropylene (PP), Chitosan (CHI), Extruder, Glycerol.