ABSTRACT

PREPARATION AND CHARACTERIZATION OF BIODEGRADABLE PLASTIC FROM THE MIXTURE OF CHITOSAN AND POLYETHYLENE (PE) USING EXTRUDER

By

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Biodegradable plastic from the mixture of chitosan and polyethylene (PE) had been made by using extruder. Plastics are made in the form of pellets using multiple strand dies. To obtain biocompatible mixture of polyethylene and chitosan by addition of PVA as a plasticizer in the composition variation of chitosan as a fixed variable and otherwise. The best results from the composition are characterization using Differential Scanning Calorimetry (DSC) for characterization thermal properties of biodegradable plastics. Showed that, addition of PVA causing change in physical properties of plastics such us: melting temperature and decomposed temperature. Characterized by Thermogravimetry Analyser (TGA) showed that degradation temperature of samples shifted to the lower number compared to the original polyethylene. The results of FTIR analysis showed that the sample had been mixed and the interaction is characterized by a shift in wave numbers.

Keywords: Polyethylene (PE), Chitosan (CHI), Extruder, PVA.