SYNTHESIS OF POLYURETHANE FROM OIL PALM FROND

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ABSTRACT

This study reports the synthesis of polyurethane from the cellulosic waste with the purpose to recycle these residues into new alternative raw material in coating area and will help the palm oil industry to overcome the biomass waste issue and turn them into valuable product. In addition, it is more eco-friendly and required low cost for processing. Extraction of cellulose from oil palm frond sawdust has been carried out through reaction of alcohol-toluene with ratio 1:2 (v/v) by using soxhlet apparatus for about five hours. Then, free extractive sawdust was dried in the oven for overnight. The process was proceeding with reaction of ethylene glycol to produce α-glycoside and β-glycoside. These glycosides were used for the synthesis of polyols. Next, polyols that were obtained from previous step are used for the synthesis of polyurethane. After that, polyurethane was chemical characterized by using FTIR spectrometer.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES