

SYNTHESIS OF ALKYD RESIN FROM OIL PALM TRUNK

AHMAD SUFIAN BIN MOHD ZAKI

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ABSTRACT

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Elaeis guineensis is a scientific name for oil palm tree. One of the major crops in Malaysia is oil palm tree. Malaysia is the world's largest producer and exporter of palm oil produce large amount of biomass waste. Plant waste which comes from oil palm industries was determined as new renewable source for synthesis of polymer such as polyol and alkyd resin. In this study, the oil palm trunk was chosen to be investigated for synthesis of alkyd resin. Soxhlet extraction technique was used to extract cellulose by using ethanol and toluene as solvent and then mix with sulphuric acid. The cellulose undergoes glycolysis to obtain glycoside. Glycosides were reacted with refined palm oil by alcoholysis reactions with lithium hydroxide as catalyst to produced polyol. Esterification process was done to produce alkyd resin as the polyol react with phthalic anhydride. The structural confirmation of the prepared resins was determined by Fourier transform infrared. From the spectra, cellulose was not obtained because of the use of concentrated solution, 72% sulphuric acid during the extraction of oil palm trunk cellulose. As the cellulose is not obtained, all the glycoside, polyol and alkyd resin is not obtained.

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