

THE EFFECT OF OIL RATIO: METHANOL IN BIODIESEL CONVERSION USING CORAL REEFS WASTE CATALYST

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ABSTRACT

Research about utilization of coral reef waste as a catalyst to optimize the production of biodiesel based on soybean oil. Coral reefs that are still dirty are cleaned and then calcined at 900 °C for 4 hours to remove impurities and facilitate smoothing. The catalyst was then characterized using XRD (*X-Ray Diffraction*) instrumentation, SEM (*Scanning Electron Microscope*) and FTIR (*Fourier Transform Infra Red*), it aims to identify and prove the presence of calcium oxide on coral reef catalysts. In this experiment, we also studied the effect of oil: methanol ratio with a variation of 1: 3; 1: 5 and 1: 7 oil to methanol. This research uses reflux method because it is more efficient for making biodiesel and heat resistant material properties. The result of research prove that the CaO catalyst can accelerate the transesterification reaction of biodiesel formation. From the conversion of biodiesel, it can be concluded that the more amount of methanol in biodiesel conversion is 1: 7 with 10 mL of oil and 70 mL of methanol produces the largest percent yield of 96.5%.

Keywords: biodiesel, catalyst, transesterification, methanol