

**PRODUCTION OF BIODIESEL FROM RUBBER SEED OIL BY
TRANSESTERIFICATION METHOD USING ALUMINA-SUPPORTED
POTASSIUM IODIDE CATALYST**

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ABSTRACT

THE PRODUCTION OF BIODIESEL FROM RUBBER SEED OIL BY TRANSESTERIFICATION METHOD USING ALUMINA-SUPPORTED POTASSIUM IODIDE CATALYST

Nowadays, biodiesel has been identified as a good complement and possible substitution of fossil diesel because of the encouraging similar characteristic to fossil diesel in addition to its good lubricity, biodegradability, non-toxicity and environmentally when used in diesel engines. The main objective of this research is to build non hazardous environmentally process for the production of biodiesel. The transesterification reaction is one of the method to produce the biodiesel. In this research, alumina supported potassium iodide (KI / Al₂O₃) was act as catalyst and rubber seed oil is used as a sample to produce the biodiesel using the method of transesterification. The experimental result shows the heterogenous catalyst that calcined at 773K showed better catalytic activity in the transesterification of rubber seed oil which provided the maximum yield of 31.8% at molar ratio of methanol to oil 15:1, amount of catalyst is 2 g at temperature 60°C in reaction time of 8 hours. The result for GC-MS analysis for the confirmation compound that obtained were the fatty acid methyl ester (FAME) only contains in the sample ratio 15:1 that is stearic acid and palmitic acid. For FTIR result, the peak approximately 3428.65 cm⁻¹ have the intensive broad vibration bands in the region 3400-3480 cm⁻¹ in both samples are attributed to OH-groups directly attached to the alumina and the peak bending mode of δOH group at around 1618.72 cm⁻¹.

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