

Thesis Title Biodiesel Production from Used Vegetable Oil in a Partial Packing
 Tubular Reactor

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Degree Master of Engineering

Programme Chemical Engineering

Year 2006

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ABSTRACT

This thesis proposes a study conditions for biodiesel production from used vegetable oil and methanol by transesterification reaction in a 14.8 litres tubular reactor. Sodium hydroxide was used as the catalyst. There was a partial packing installed inside the reactor in order to enhance the mixing between used vegetable oil and methanol. The experimental conditions were oil and methanol molar ratio at 1:6 and 1:4.5, flow rate were 30, 60 and 120 L/hr, catalyst concentration at 0.5% by weight of oil, temperature at 50 and 60^oC and length of partial packing were 1, 5, 10 and 15 metres, respectively. It was found that catalyst concentration at 0.5% by weight of oil, flow rate 120 L/hr, temperature at 60^oC and length of partial packing was 15 metres. Methyl ester yield was 97.4% by weight.