

**HETEROGENEOUS SUPPORTED KI/Al<sub>2</sub>O<sub>3</sub> CATALYST FOR BIODIESEL  
PRODUCTION FROM WASTE COOKING OIL**

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**Final Year Project Report Submitted in Partial Fulfilment of the Requirements  
for the Degree of Bachelor of Science (Hons.) Chemistry in the Faculty of  
Applied Sciences University Technology MARA**

**JANUARY 2016**

## ACKNOWLEDGEMENT

Bismillahirrahmanirrahim, in the name of Allah, most Gracious, most merciful, I'm very thankful to my parents, for their unconditional love and encouraging me to continue my journey of learning. They have though me that no matter how hard life has become, determination and hard research will steer me towards my destination.

My special thank to my wonderful supervisor, miss Shahida Hanum bt Kamarullah, who has inspired me for the opportunity to investigate a practical problems in the biodiesel production process. I sincerely appreciate her moral support, guidance and abundant help throughout my graduate final year project.

I am also thankful to my ex-supervisor, Madam Siti Nor Hafiza bt Mohd Khazaai, who help me a lot with my project and guided my steps towards my goals. I am forever indebted to all my friends, lab assistance for their patience and unlimited understanding. They was helped me every possible way to make my life easier and been there for me not only as my partner life but also as my guiding spirit.

I am thankful to my group member Zuraidah bt Mohd Shukeri for their help and guidance. I am thankful to UITM give me opportunity to create my undergraduated project as well.

Siti Nor Safiah Seliaman

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## ABSTRACT

### **HETEROGENEOUS SUPPORTED KI/Al<sub>2</sub>O<sub>3</sub> CATALYST FOR BIODIESEL PRODUCTION FROM WASTE COOKING OIL**

Nowadays, the consumer demand related with biodiesel has seen a quantum jump. This is because of their benefits associated with its ability to mitigate greenhouse gases (GHG). The transesterification is one of the methods to produce the biodiesel. In this research, alumina oxide supported potassium iodide (KI / Al<sub>2</sub>O<sub>3</sub>) will act as catalyst and waste cooking oil are chosen as a sample to produce the biodiesel using the method of transesterification. The parameters that used in this research are molar to ratio 15:1, reaction temperature at 65°C, reaction time for 8 hours and amount of catalyst that used. These parameters are affecting the yield of the biodiesel. The experimental result shows the heterogeneous catalyst that calcined at 773K exhibit good catalytic activity in the transesterification of waste cooking oil which is provided the maximum yield 80% at 4 g of catalyst loading, molar ratio 15:1 methanol to oil at temperature 65 °C in reaction time of 8 hours. The catalyst of KI /Al<sub>2</sub>O<sub>3</sub> was analyze using the FTIR to know KI is supported or not with Al<sub>2</sub>O<sub>3</sub>. From the result that obtains from the FTIR, it shows that KI is supported with Al<sub>2</sub>O<sub>3</sub>.