

**PEMANFAATAN MINYAK JELANTAH PADA PEMBUATAN BIODIESEL MELALUI PROSES  
TRANSESTERIFIKASI DENGAN KATALIS  $K_2CO_3$  SEBAGAI BAHAN BAKAR MESIN  
DIESEL YANG TERBAHARUKAN**

**( Exploiting of Wasted Cooking Oil at Making Biodiesel Through Transesterification  
Process With Applies  $K_2CO_3$  Catalyst  
as Fuel Diesel of Renewable )**

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**ABSTRACT**

This research aim is to know the influence from various usage of  $K_2CO_3$  catalyst and methanol solvent to biodiesel from wasted cooking oil. The making of biodiesel from waste cooking oil as raw material this before all was done by using esterification process with purpose to reduce %FFA >5% become < 5% with some help of the same solvent that is methanol and  $K_2CO_3$  catalyst, then is continued to phase herein after is processing transesterification. The transesterification process if wasted cooking oil in methanol to yield biodiesel applies alkaline catalyst. Sighting of %  $K_2CO_3$  and methanol volume to product biodiesel need to be done to get product biodiesel fulfilling standart. Process transesterification of wasted cooking oil using alkaline catalyst ( $K_2CO_3$ ) and methanol solvent is done with various %  $K_2CO_3$  that 0,1%, 1.0%, 1.5% and methanol equal to 15 ml, 20 ml , 25 ml. This research done by the way of mixing wasted cooking oil , methanol and  $K_2CO_3$  in neck gourd four with operating condition 70 °C during 1 hour and result of his it's dissociated in separatory funnel then is hushed during 24 hour. From the research was received by the optimum condition in the use  $K_2CO_3$  with concentration 0.5% wt and the volume of methanol 1250 ml. Result of the analysis of physical characteristics and chemistry biodiesel that was received % rendemen 56,07%, density 0,852 gr/ml, pH 7,1, acid number 0,53 of mgKOH, flashpoint 168 oC, % water content 0.03%, viscosity 3.09 cSt and calories value 6374.54 cal/gr. The biodiesel product that have got has been fulfill the Indonesian standard biodiesel quality.

Keywords : Wasted cooking oil, Esterification, transesterification, Biodiesel,  $K_2CO_3$  Catalyst