THE MASS EFFECT OF SODIUM CARBONATE AS HETEROGENEOUS CATALYST AGAINTS PRODUCT OF METHYL ESTER ON TRANSESTERIFICATION REACTION OF WASTE COOKING OIL ASSISTED COSOLVENT ACETONE

ABSTRACT

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Research on the mass effect of sodium carbonate as heterogeneous catalyst assisted by acetone on transesterification reaction of waste cooking oil has been done. Research was conducted to obtain an information about the optimum mass usage of heterogeneous catalyst on transesterification reaction of waste cooking oil. The heterogeneous catalyst used in this research was sodium carbonate with variation of 1 grams, 3 grams and 5 grams. This research used methanol by mole comparison 1:12 waste cooking oil to methanol and acetone as cosolvent by mole comparison 1:4 acetone to methanol. The transesterification reaction process carried out for 2 hours using stirrer. The resultant oil obtained analyzed by GC-MS instrument. Based on the result of this research, it is known that the optimum ratio of heterogeneous catalyst is addition by mass comparison 1:6.67 sodium carbonate to methanol with total methyl ester of 95.71%, including methyl palmitate and methyl oleate. The result of this research indicate that the process of transesterification reaction of waste cooking oil can be done by using sodium carbonate as a heterogeneous catalyst.

Keywords: waste cooking oil, transesterification reaction, heterogeneous catalyst, sodium carbonate.