

ABSTRACT

Availability of petroleum fuel progressively limited day. Nowadays, Indonesia well known as of country petroleum fuel exporter is supposed to import petroleum the next ten years, because the production is unable market demand that is increasing inhabitant and industry. In Indonesia, the sources of vegetable oil plentiful. The total rubber plantation reaches more than 3 million hectare, the wide the world. Rubber contained oil is excited to be proceed become new energy that economic value and so far none who profit it yet. The objective of this research is know the taking rubber seed oil, composition of decrease iodine grade, influence time, concentration and kinds catalyst at conversion and the model reaction rate temperature 70°C.

There are some variables to be studied in this research, i.e influence of catalyst the same condition, time and calorific value. For this research the feed molar ratio rubber seed oil to ethanol is 1 : 6, concentration catalyst (NaOH and KOH) is 10%, the reaction temperature is 70°C. The observation time is 120 minutes. The taking rubber seed oil carried out by mechanical pressing. The transesterification process rubber seed oil using batch reactor.

The result found that the rubber seed oil by using mechanical pressing is 2 The conversion transesterification process of rubber seed oil with NaOH catalyst 50,37%. The calories value of product is 15.839,6 kJ/Kg. The equation of reverse reaction is $dC_a/dt = k_1 C_a C_b + k_2 C_c C_d$ and reaction rate constant in temperature 70°C 0,0068 l/mol.men (k_1) and 0,0072 l/mol.men (k_2), while the value of equilibrium constanta (K) is 1,0 142.

Key words: rubber seed oil, the energy source, transesterification