

Kinetika Sintesis Biodiesel menggunakan Biokatalis Novozyme 435

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Abstrak

Synthetic biodiesel using biocatalyst is an emerging and attracting alternative process to replace the conventional process. However, biocatalyst is easy to be deactivated by alcohol, which is a reactant in biodiesel synthesis reaction. Therefore, it is needed to develop new method to maintain the activity and stability of the biocatalyst during reaction. New method to be developed is by changing the reaction route which is using alcohol to the reaction route which is not using alcohol. Route reaction of non alcohol can be done by changing the alkyl alcohol with alkyl acetate. Both have the same function as alkyl supply during the reaction. In this paper, the research results of the synthesis biodiesel via route of non alcohol using biocatalyst Novozym 435 are presented In this reaction, methyl acetate is reacted with triglyceride from used fried oil in batch reactor. The reactants and products were analyzed using HPLC. The Results showed that Novozym 435 can convert trioleat up to 93.24% under the condition of 4% wt substrate of the biocatalyst concentration, oil/alkyl mole ratio equal to 1/12 in 50 hour reaction. Stability test indicate that the activity of the immobilized biocatalyst still remain after three reaction cycles.