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Production of Biodiesel from Waste Cooking Oil

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Abstract: *Because of the high cost of raw materials, the cost of biodiesel generated from virgin vegetable oil by transesterification is greater than that of fossil fuel. Waste cooking oil has recently been utilised as a feedstock to reduce biofuel costs. Acids, bases, and lipase are commonly utilised as catalysts in this process. Lipase's use in biodiesel synthesis is limited due to the high cost of lipase catalysts. Because of its inexpensive cost and rapid reaction rate, NaOH is commonly utilised as an alkaline catalyst. In waste cooking oil with a high proportion of free fatty acid, the alkaline catalyst combines with the free fattyAcid and generates soap through the saponification reaction. It also cuts down on biodiesel conversions. Waste cooking oil is processed with acid catalyst to undergo esterification reaction, which also needs high operating conditions, in order to minimise the quantity of fatty acid concentration. Various aspects impacting the biofuel manufacturing process have been detailed in this review study, including reaction rate, catalyst concentration, temperature, stirrer speed, catalyst type, alcohol utilised, alcohol to oil ratio, free fatty acid content, and water content..*

Keywords: Production of Biodiesel from waste cooking oil.

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