Title : Biodiesel Production from Waste Cooking Oil Using Commercial CaO Catalyst in Stirred Reactor with Magnetic Bar

Author(s) :
1. Ms. Patcharin Moonklang **Student ID :** 650510082
2. Ms. Lapatlada Pleekhant **Student ID :** 650510097

Major : Industrial Chemistry

Advisor(s) :
1. Assistant Professor Dr. Nongnuch Rueangjitt
2. -
3. -

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- ☐ **Oral Presentation**
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ABSTRACT

This research project investigated the biodiesel production via transesterification from Waste Cooking Oil (WCO) using a commercial CaO heterogeneous catalyst. The uncalcined and calcined CaO commercial catalysts were prepared and characterized by SEM-EDS, BET surface area and pore analyzer, and Laser particle size analyzer. For biodiesel production, the effects of molar ratio of methanol to WCO (5:1, 10:1, and 15:1) and amount of catalyst (0.25, 0.5, and 1.0 wt.%) were investigated. The reaction was carried out under a control condition at a temperature of 65 °C and a reaction time of 3 hour. The obtained biodiesel product from transesterification reaction was analyzed for methyl ester (ME) content using a Gas Chromatograph (GC). The experimental results showed the optimum methanol-to-WCO molar ratio and catalyst amount were 5:1 and 0.5 wt.%, respectively. This operating condition gave the best biodiesel production from WCO with an average methyl ester content of 86.50%.