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Comparative study of Bio-diesel produced from waste and virgin cooking oil using Sonication

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Biodiesel, other than being environment friendly based on combustion emission profile, is essentially bio degradable and non-toxic and thus has emerged as a sustainable alternative to petroleum origin diesel. The comparative study is based on the analysis of bio diesel produced from waste cooking oil and virgin cooking oil. Conventional way of biodiesel production is mechanical stirring which is time consuming for both preparation and separation of biodiesel. Hence, literature suggests the use of ultrasound cavitation technology which covers limitations faced by mechanical stirring. In the present experimental study, waste cooking oil and virgin cooking oil has been used for production of biodiesel using ultrasound cavitation. Sonication was done using microprocessor based and programmable ultrasonic processor with a frequency of 20kHz. Homogeneous catalyst (KOH) is used for the comparative study of the biodiesel keeping alcohol/oil ratio constant. Figure 1 shows a schematic diagram of sonicator set-up that was used for production of the Bio-diesel.

Biography

Rahulkumar Kotadiya is pursuing his Bachelor Degree at the age of 20 years from Pandit Deendayal Petroleum University. He has presented a poster in CHEMCON-2015 at IIT Guwahati. He is also working on simulation of the process Methanol to olefin Technology (MTO) by using Aspen Plus.

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