

عنوان مقاله:

Ultrasound Assisted in Situ Esterification of Rubber Seeds Oil for Biodiesel Production

محل انتشار:

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خلاصه مقاله:

Since the conventional esterification method requires long processing time and gives low yield, the intensification of this process is still an interesting subject to be investigated. To reduce the oil extraction cost from seeds which accounts for almost 70% of total processing cost, in situ esterification has been recently introduced. The objective of this study was to produce biodiesel from rubber seeds oil through in situ esterification, assisted by ultrasound irradiation at 42 kHz for 30 min. The experiment was carried out in two stages of catalyst additions: H₂SO₄ (varied from 0.1-1% v/v) and NaOH (0.1%) and the esterification was conducted at 60 oC for 30 min under ultrasound frequency of 42 kHz. The results showed that the optimum yield of fatty acid methyl ester (FAME) was 35% which correspond to yield of biodiesel of 92.5% under conditions of rubber seed ratio to methanol 1:1.75 (w/v), catalyst H₂SO₄ loading of 1% and catalyst KOH loading of 0.1%.

کلمات کلیدی:

Biodiesel, Rubber Seeds, In Situ, (Trans)Esterification, Fatty Acid Methyl Ester, Ultrasonic

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