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Synthesis of heterogeneous catalyst for biodiesel production from cooking oil

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Biodiesel, a promising alternative diesel fuel produced by a catalytic transesterification of vegetable oils, has become more attractive nowadays, because of its environmental concerns and the fact that it is made from renewable resources. In this work, the transesterification of soybean oil with methanol has been studied in a heterogeneous system, using Zn, Mn, K and Ce supported by a mixture of porcelain, cinder and ceramic. 0.5 and 1 mm of Zn, Mn, K and Ce in 7 g of support were loaded, followed by calcinations at 600°C for 4h. Fresh and used catalyst were characterized by means of various spectroscopic techniques such as scanning electron microscopy (SEM) and TG conversion was checked by HPLC. It has been observed that 1M ZnCO₃ loaded in the support gives 93% TG conversion



Recent Publications

- 1. Sadia Nasreen, Muhammad Nafees, Mohammad Musaanb Jaffar, Liaqat Ali Qurashi, Shamas Tabraiz, et al. (2017) Comparison and effect of Cinder supported with Manganese and Lanthanum oxide for biodiesel production. International journal of Hydrogen Energy 42 (29):18389–18396.
- 2. Sadia Nasreen, Liu Hui, Liaqat Ali Qureshi, Zakarea Sissou, Lukic I, et al. (2016) Cerium-manganese oxide as catalyst for transesterification of soybean oil with subcritical methanol. Fuel Processing Technology 148:76–84.
- 3. Sadia Nasreen, Hui Liu, Liaqat Ali Qureshi, Zakari Sissou, Ivana Lukic, et al. (2016) Heterogeneous kinetic of soybean oil transesterification with rare earth metal catalysts. Chemical Industry and Chemical Engineering Quarterly 22(4):419–429.

Biography

Sadia Nasreen did her Doctorate in Environmental Engineering from China in 2015 with Professor Liu Hui. She specializes in catalysis of biofuel. Besides catalysis, her research interests include waste water treatment. Currently, she is working as an Assistant Professor at the University of Engineering and Technology, Taxila Pakistan.

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