ABSTRACT

BIODIESEL PRODUCTION FROM WASTE COOKING OIL IN THE PRESENCE OF HETEROGENEOUS CATALYSTS

The biodiesel production (from waste cooking oil with methanol) was carried out in the presence of a basic resin (Amberlite IRA96) as catalyst, at 60ºC. Different reaction parameters, such as catalyst loading, temperature, nature of alcohol, molar ratio of WCO to methanol and amount of initial free fatty acid were studied. The catalyst was reused and recycled with negligible loss in the activity.

Sulfonic acid groups supported on chitosan was used as catalyst in the esterification of palmitic acid with methanol, at 60ºC. The catalytic activity increased with the amount of sulfonic acid groups presents in chitosan. However, at high amount of sulfonic acid groups, a decrease of the catalytic activity was observed. The catalyst CT3 can be reused with negligible loss in the activity. A good catalytic activity of CT3 for the esterification of oleic and stearic acids with methanol was observed.