

Synthesis of Highly Valuable Fuel Fractions from Waste Date Seeds Oil

Authors : Farrukh Jamil, Ala'A H. Al-Muhtaseb, Lamyia Al-Haj, Mohab A. Al-Hinai

Abstract : Environmental problems and the security of energy supply have motivated the attention in the expansion of alternatives for fossil based fuels. Biomass has been recognized as a capable resource because it is plentifully available and in principle carbon dioxide neutral. Present study focuses on utilization date seeds oil for synthesizing high value fuels formulations such as green diesel and jet fuel. The hydrodeoxygenation of date seeds oil occurred to be highly efficient at following operating conditions temperature 300°C pressure 10bar with continuous stirring at 500 rpm. Products characterization revealed the efficiency of hydrodeoxygenation by formation of linear hydrocarbons (paraffin) in larger fraction. Based on the type of components in product oil it was calculated that maximum fraction lies within the range of green diesel 72.78 % then jet fuel 28.25 % by using Pt/C catalyst. It can be concluded that waste date seeds oil has potential to be used for obtaining high value products.

Keywords : date seeds, hydrodeoxygenation, paraffin, deoxygenation

Conference Title : ICCE 2016 : International Conference on Chemical Engineering

Conference Location : Singapore, Singapore

Conference Dates : November 21-22, 2016