

Thermochemical Conversion: Jatropha Curcus in Fixed Bed Reactor Using Slow Pyrolysis

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Abstract : Thermo-chemical conversion of non-edible biomass offers an efficient and economically process to provide valuable fuels and prepare chemicals derived from biomass in the context of developing countries. Pyrolysis has advantages over other thermochemical conversion techniques because it can convert biomass directly into solid, liquid and gaseous products by thermal decomposition of biomass in the absence of oxygen. The present paper aims to focus on the slow thermochemical conversion processes for non-edible Jatropha curcus seed cake. The present discussion focuses on the effect of nitrogen gas flow rate on products composition (wt %). In addition, comparative analysis has been performed for different mesh size for product composition. Result shows that, slow pyrolysis experiments of Jatropha curcus seed cake in fixed bed reactor yield the bio-oil 18.42 wt % at a pyrolysis temperature of 500°C, particle size of -6+8 mesh number and nitrogen gas flow rate of 150 ml/min.

Keywords : Jatropha curcus, thermo-chemical, pyrolysis, product composition, yield

Conference Title : ICEBWEM 2014 : International Conference on Energy, Biomass, Waste and Environmental Management

Conference Location : Paris, France

Conference Dates : December 30-31, 2014