

Towards Second Generation Bio-fuels by Biomass/Fossil Sources Co-processing in FCC Units.

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Bio-liquids (or bio-oils) derived from the fast pyrolysis of biomass are complex mixtures of a wide range of oxygenated compounds that could serve as a renewable feedstock for bio-fuels production. After adequate upgrading, these bio-oils could be co-fed in adapted large-scale refinery units (i.e. FCC) to obtain automotive fuels via bio-oils/petrol fractions co-processing. The co-feeding of hydrocarbons (*iso*-octane) and oxygenated (acetone, acetic acid, guaiacol, etc.) compounds mixtures is studied in a fixed-bed catalytic reactor simulating the FCC reaction conditions (450-530°C) using pure zeolites (Y, ZSM-5 and Beta) and equilibrated FCC formulations as catalysts. A comparison of data obtained for hydrocarbon catalytic cracking with and without oxygenated molecules allows identifying the type of compounds to be eliminated from the bio-oils before FCC unit admission.

Keywords: Bio-liquids, Biomass Co-processing, Bio-refinery