Bio-oils and diesel fuel derived from alkaline treated empty fruit bunch (EFB)

Abstract

In this work, EFB was chemically pretreated with dierent sodium hydroxide (NaOH) concentration. Pyrolysis was conducted in the presence of HZSM-5 after the pretreatment step to assess the eects of pretreatment process on bio-oil production. Conversions of EFB were reported to be 61 wt%, 47 wt% and 42 wt%, after pretreatment with 5 wt%, 15 wt% and 25 wt%, NaOH concentrations, respectively. Furthermore, the pretreatment has eectively improved the bio-oil quality by reducing or even eliminating undesired products. Besides, biomass structure was dissembled and converted to valuable compounds after upgrading the bio-oil with improved quality.