폐촉매를 이용한 바이오오일의 개질

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Biomass has received considerable attention both as a source of energy and as an organic chemical feedstock. The energy potential of biomass has increasingly become recognized as a means to help meet world energy demand. The utilization of biomass and other alternative fuel sources, rather than existing fossil fuels, would offer more environmentally acceptable processes for energy production and will aid in conserving the limited supplies of fossil fuels. Pyrolysis of biomass is one of the most promising tools to provide alternative energy sources. However, pyrolytic oils are not always completely volatile and contain high levels of oxygen, this being the major factor responsible for the high viscosity and corrosiveness. The upgrading of pyrolitic oils is a necessary process and involves the removal of oxygen by catalyst such as ZSM-5, Y zeolite. In this, study, waste catalyst have been tested as catalysts for the in situ upgrading of biomass pyrolysis vapors. Catalytic pyrolysis of woody biomass was carried out using fluidized bed reactor. The products contained a liquid fraction, char and gas. The results indicated that more stable oil was produced by transforming oxygen over zeolite into H2O, CO and CO2.