

A study of producing bio-oil through pyrolysis of waste sawdust

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The scarcity of fossil fuel in the world has produced a great deal of interest in studying renewable energy resources. Active research about renewable energy is underway in Korea because of the government's policy and instability of oil prices. One of Renewable energy, bio-oil is only to replace fossil fuels with transportable fuels. Producing bio-oil has several method, but pyrolysis is characterized by its simple process, short reaction time and producing a lot of bio-oil. In this study, pyrolysis was conducted by using sawdust which can be easily viewed from a around. Sawdust was dried at 75°C in the oven for one day until constant weight. The remaining of used sawdust in the furniture factory were undergoing by chemical treatment process. So obtaining pure bio-oil is limited. The pyrolysis experiment was operated under different temperature, 400, 450, 500 and 550°C by using non-chemical treated sawdust. The sweep gas flow rate was kept N<sub>2</sub> 150cc/min. The product especially liquid was compared under different temperature. The quantitative analysis for bio-oil components was conducted by gas chromatography used FID detector under different temperature.