

Fly-ash 흡착기법을 이용한 열분해유 정제

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Pyrolysis oil refining by Fly-ash absorption

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Plastic product is increasing by the growth of its demand and most of refused plastics are incinerated or reclaimed. However, the refused plastic is not easily decomposed and has the environmental problem with its various toxic gas in case of incineration. Therefore, many countries such as USA, Japan, Germany and other developed industrial countries as well as Korea are interested in studying the recyclable resource of refused plastic. The macromolecular waste pyrolysis has the advantage of collecting of raw materials in high price and can at least get fuel gas or oil with high heat capacity. It also discharges low waste gas and low toxic gas including SO_x, NO_x and HCl heavy metals. However, pyrolyzed oil includes enough excess unsaturated hydrocarbons to form tar, which can cause the nozzle of engines to plug when pyrolyzed oil is used as fuel. Activated carbon was proven to have prominent adsorption capability among the other adsorbents that were mainly composed of carbon. This study examined the possibility of application in activated charcoal of its solid formation by analysing the feature of pyrolysis which is one of the chemical recycling methods and getting chemical analysis of the product and activated energy. Analyze the element of the oil produced by pyrolysis using GC-MS. The experiment of tar adsorption using fly-ash showed that fly-ash improved the optical intensity of pyrolyzed oil and decreased oxygen compounds in the pyrolyzed oil.

Key words : Pyrolysis-oil(열분해유), Fly-ash(플라이-애쉬), absorption(흡착), GC-MS

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