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Production of oil and wax blends from fast pyrolysis of plastic wastes using a fluidized bed reactor

Hanseul Kim[1, 2]

[1]University of Science and Technology, Korea

[2]Korea Institute of Industrial and Technology, Korea

The use of plastics is increasing, and the disposal of plastic waste is becoming a serious problem. Plastic wastes are not only poorly decomposable but also cause various pollution problems. Therefore, effective treatment of waste plastics is needed. In case of waste plastics whose constituents are not uniform, it is best to make hydrocarbons using pyrolysis reactions. In this paper, the pyrolysis characteristics of waste plastics were investigated using a fluidized bed pyrolysis reactor. First, thermal decomposition characteristics and trends of the waste plastics were analyzed through TGA, elemental analysis, proximity analysis of samples and XRF (X-ray fluorescence) analysis of ash. In the pyrolysis fluidized bed reactor, the effects of various reaction parameters, like reaction temperature, feed rate of waste plastics, and residence time after reaction was investigated. And the complexed organic compounds between the product oils on the different experiment parameters and a detailed analysis of the oils were also investigated.

Biography

Hanseul Kim has completed his Bachelor's degree in Chemical Engineering at the Kwangwoon University in Seoul, Korea. He has worked for Lead frame manufacture company for 6 months. He has completed his Master's degree from University of Science and Technology (UST). Currently, he is working for Korea Institute of Industrial Technology (KITECH) as a Researcher.

kimhs88@kitech.re.kr

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