REVIEW STUDY ON FACTORS AFFECTING PLASTIC PYROLYSIS

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ABSTRACT

Plastic waste has posed a major hazard to health, economy and environment, cially marine life. Pyrolysis has been chosen as a promising technique to combat l tic pollution. The purpose of this review is determine the effect of various factors f plastic pyrolysis such as temperature, type of plastic, catalyst and reactor types on the yield's composition. 61 journals and thesis were evaluated and compared. The temperature used in these studies are between 300 °C - 670 °C. Plastic types are differed between 6 types, HDPE, LDPE, PP, PS, PVC and PS. Various catalyst are used such as zeolites and ZSM-5. 4 main reactor types were studied such as batch reactor and spouted bed reactor. The liquid, gas and solid fraction of pyrolysis and the carbon chain length from pyrolysis were determined. It was noted that as temperature escalate, the product favour gaseous yield over liquid and solid. LDPE produces 35.38% gas, 62.78% liquid, HDPE 47% gas, 50% liquid. PVC 3% gas, 84% liquid. PP 15.8% gas, 84.2% liquid, with PS 15% gas, 80% liquid and PETE produces 59% gas, 34% liquid. The presence of catalyst reduced the liquid fraction and increased the gaseous fraction. In term of yield; fluidized bed reactor > moving-bed reactor > Batch reactor > conical spouted bed reactor

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