Pyrolysis and Gasification Kinetics of Sawdust, Sewage Sludge and Pre-treated RDF in a TGA and Thermobalance Reactor

노선아*, 윤진한, 민태진
한국기계연구원 그린환경기계연구본부
(sos@kimm.re.kr*)

Pyrolysis kinetics of sawdust, sewage sludge and pre-treated RDF has been determined in TGA. Combustion and steam gasification kinetics were also determined in a thermobalance reactor (0.055 m i.d. 1.0 m high). RDF has used after pre-treatment with superheated steam. The effects of combustion and gasification temperature (650oC - 900oC) and partial pressure of O2 and H2O (0.2 - 0.8atm) on combustion and gasification reaction rate have been determined in a thermobalance reactor. From the Arrhenius plot, the activation energy and the pre-exponential factor of chars are determined based on the various models.