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Kinetic analysis of the various biomass / coal blends for co-gasification purpose

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Abstract :

Abstract. The paper reports on kinetic analysis of various biomass / coal blends at different mixing ratios for determination of kinetic parameters (activation energy (E_a) and pre-exponential factor (A)) of best mixture for co-gasification purpose. Biomass materials (chicken litter, corn stover, pine wood, eucalyptus wood and cow dung), and coal (sub-bituminous) were used in the study. Thermogravimetric analysis (TGA) was conducted to investigate the kinetic parameters and thermal stability for various biomass/coal blends. A mixture of 90% corn stover and 10% coal resulted in the highest thermal stability compared to others with the activation energy value and pre-exponential factor of 3.7728×10^{-3} J/mol and 1.4979×10^{-4} min⁻¹ respectively. The thermal analyses obtained for the different blends will be presented and discussed in detail in the paper. Keywords: Biomass, coal, TGA, Activation energy and pre-exponential factor

Award :

Yes

Level :

M.Sc

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Paper :

No

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