

Abstract

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Characteristics of biomass in flameless combustion: A review

The demands of energy & pollutant emissions reduction have motivated the combustion researchers to work on combustion improvement. Flameless combustion high temperature air combustion has many features such as flame stability, low pollutant emission & uniform profiles of temperature compared to the other modes of combustion. Combustion of solid fuels like biomass & wastes in flameless combustion conditions has not been investigated as comprehensive as combustion of gaseous fuels. The aim of using biomass in combustion is to reduce the pollutant emissions & to decrease the rate of fossil fuel consumption. In this review, combustion characteristics of biomass in flameless combustion are explained. The paper summarizes the research on the mass loss, ignition time, & NO_x emissions during biomass flameless combustion. These summaries show that biomass under flameless combustion gives low pollutant emissions, low mass loss & it decreases the ignition time.