

Experimental Investigation on Waste Fuel Combustion using Microgravity Technique

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Abstract

Experiments have been carried out to throw light on some basic features of solid waste fuels in an atmosphere of high temperature and low oxygen concentration under microgravity. The microgravity environment makes it possible to examine fundamental combustion characteristics of waste fuels by realizing spherical symmetry and by distinguishing radiation dominated processes from convection dominated ones. The range of ambient temperature and oxygen concentration in the electric furnace are 600°C to 1000°C and 7% to 21% by volume, respectively. The mechanism on ignition and flame development has been analyzed in detail against ambient temperature and oxygen concentration