ABSTRACT

The parameters that affect burner performance are air flow rate, fuel flow rate, mixing of air-fuel and burning reaction period. This research will investigate the effect of swirler as air flow direction in combustion process to the amount of soot.

The experiment will use counter rotating double axial swirler and co-rotating double axial swirler, the air flow rate and fuel flow rate will be varied to get flame stability. LPG as fuel passes in single hole nozzle at gas flame burner with 40 cm diameter of combustor. To get the data of soot using gas analyser (Opacimeter).

By using counter rotating double axial swirler, getting the amount of soot less than use co-rotating double axial swirler. Increasing excess air, make air entrainment increase too. Increasing air entrainment resists soot formation in combustion process.

Key word: Excess Air, Flow Rate of LPG, Double axial swirler, Soot, Air Entrainment.