

Ultra-Low NO_x Combustion Technology of Liquid Fuel Burner

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Abstract : A new concept of in-furnace partial oxidation combustion is successfully applied in this research. The burner is designed such that liquid fuel is prevaporized in the furnace then injected into a fuel rich combustion zone so that a partial oxidation reaction occurs. The effects of equivalence ratio, thermal load, injection distance and fuel distribution ratio on the NO_x and CO are experimentally investigated. This newly developed burner showed very low NO_x emission level, about 15 ppm when light oil is used as a fuel.

Keywords : burner, low NO_x, liquid fuel, partial oxidation

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