

Research on the Flame Characteristics of the Oil Burner

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Abstract: Oil burner has been widely applied for the cabin material and powerplant fire testing. Currently new technology sonic burner has been developed and approved for use in interior and fuselage testing. In order to make better understanding of the new sonic burner, we researched the effect of fuel and air on the flame shape, temperature and heat flux. The flame temperature at the different distances from the burner cone was measured and the relation between the distance and the temperature field contours was investigated. With the technology development, sonic burner was supplemented in the aircraft material fire test handbook and some standards to replace the traditional oil burners. Comparison study was done between Carlin burner and sonic burner to understand the burner outputs. Furthermore, the control system and acquisition system of nexgen burner were modified to achieve more convenient control and data acquisition.