AUTOIGNITION OF METHANE–AIR MIXTURE UNDER INTERMITTENT OPERATION OF A HOLLOW CYLINDRICAL Ni–Al RADIANT BURNER

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Abstract: An intermittent operation of burners with a hollow cylindrical emitter made from an intermetallic Ni–Al alloy has been investigated experimentally. It has been established that autoignition of the methane–air mixture of stoichiometric composition is possible only at temperatures of the porous emitter above 780–800 °C. It is shown that the porous structure of the cylindrical emitter has a critical influence on the possibility of establishing an internal combustion mode after the autoignition of the mixture. An example of burner operation with the cyclic feed of the fuel mixture is provided.

Keywords: radiant burner; infrared burner; porous burner; autoignition

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