

ENHANCEMENT AND CONTROL OF BURNING PROCESSES IN EXTERNAL ELECTRIC FIELDS

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ABSTRACT

An apparatus, consisting of a Seitan 20 gas burner with a fuel flow rate 20 m³N/h, supplied with a system of Kanthal electrodes and an adjustable source of a high voltage, was investigated on the experimental bench of Bucharest Metallurgic Research Institute. An increase of voltage up to 12 kV, and current up to 32 μ A, respectively, results in the evident improvement of the burning process: increasing of flame temperature from 1100 up to 1190 °C, decreasing of CO percentage from 1.2 up to 0.012 %, reducing of the fuel consumption about 5%. Annual savings resulted from the using of such apparatus is around 292 USD.

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