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NEW TECHNOLOGY OF POLLUTANTS REMOVAL BY APPLICATION OF AN ELECTRIC FIELD UNDER THE FLAME

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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, ROMANIA. It was found that an increase of voltage up to 12 kV, and current up to 32 μA, 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.

Keywords: flame, enhancement and control of burning process, gas burner, electrodes, electric field, economical and ecological efficiency

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