

## **ELECTRIC FIELD CONTROL OF NO<sub>x</sub> FORMATION IN A FLAME FLOW**

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### **ABSTRACT**

The present studies are performed with the aim to obtain the clean fuel combustion and get detailed information about processes determining the field effect on NO<sub>x</sub> formation in the flame channel flows. The experimental studies demonstrate that the interaction between the radial electric field and flame initiates the field-forced drift motion of positive radical ions in a field direction. The energy exchange between ions and gas particles produces the interrelated heat and mass transfer processes to the negatively biased channel walls. Hence, by varying the applied voltage, the field-enhanced lowering of a flame temperature is obtained, thereby lowering thermal NO<sub>x</sub> formation in a channel flow up to 30-60% and increasing a heat generation up to 6-8%.