



NO Removal Using Dielectric Barrier Discharges in a Multi-rod Reactor Stressed by AC and Pulsed High Voltages

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Abstract:

This paper is aimed at investigating the nitric oxide (NO) removal using dielectric barrier discharges (DBD) in a multi-rod reactor stressed by ac and pulse high voltages. The effects of various parameters (the voltage amplitude, frequency, gas flow rate, use of the α -alumina pellets and the voltage type) on the discharge power and NO removal rate have been studied experimentally in the multi-rod DBD reactor. When the reactor was filled with α -alumina pellets, improvement in NO removal rate was observed. The pulse voltage gives higher NO removal rate in comparison with ac voltage at the same energy density. Records of the discharge photograph and the emission intensity have been made at varying voltage amplitude, frequency, and gas flow rate. The records confirm the dependency of the discharge power on these parameters.

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