

Abstract Submitted
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Spatial and time resolved optical emission spectroscopy of Ar/NH₃ dielectric barrier discharge PETR KLOC, DAVID TRUNEC, Masaryk University, HANS-ERICH WAGNER, Erns-Moritz-Arndt University, ZDENEK NAVRATIL, Masaryk University, GLEB FEDOSEEV, Moscow State University — Dielectric barrier discharges (BD) at atmospheric pressure have great potential mainly for material surface treatment. The two distinctive forms of BD exist. One is characterized by large number of distinctive spatially bounded microdischarges. The other requires special conditions to operate and is characterized by spatially homogeneous discharge. Such discharge can be observed in the mixture of argon and ammonia. This work presents study of BDs in argon with different ammonia additions (0-10 vol%). The discharges were investigated by the Cross Correlation Spectroscopy (CCS). The observed propagation of streamer in discharge is presented. When compared to discharge in pure argon the streamer velocity is decreased for 0.1 vol% ammonia admixture. With increasing ammonia concentration the streamer velocity increases again. The behaviour of impurity spectra in the discharge was also investigated.

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