

Abstract Submitted
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Multiple surface DBD electrode system for efficient and controlled generation of ozone¹ VACLAV PRUKNER, PETR HOFFER, MILAN SIMEK, Institute of Plasma Physics of the CAS Prague — Electrical characteristics and ozone production measurements were performed to evaluate the efficiency of ozone generation using an amplitude-modulated AC Surface Dielectric Barrier Discharge (SDBD) in dry synthetic air and pure oxygen at atmospheric pressure. To increase the concentration and production of ozone we used the multiple SDBD electrode system consisting of several identical elements in parallel configuration. Each SDBD element is made of a thin alumina plate (10cm x 10 cm x 0,065cm) with metallic strips deposited on the upper side as a HV electrode and full square or strips on the opposite side as a ground electrode. An influence of a photocatalyst on ozone production was studied as well by inserting thin alumina plates coated with titanium dioxide thin films between SDBD electrodes. Alternatively, the SDBD electrodes directly coated with titanium dioxide were tested either. Dependence of ozone production on the discharge duty cycle and gas flow rate of 0,8 slm – 10 slm were evaluated.

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