

## Characteristics of Ozone Generated from Dielectric Barrier Discharge Plasma Actuators

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**Abstract :** Dielectric barrier discharge plasma actuators (DBD-PAs) have been developed for active flow control devices. However, it is necessary to reduce ozone produced by DBD toward practical applications using DBD-PAs. In this study, variations of ozone concentration, flow velocity, power consumption were investigated by changing exposed electrodes of DBD-PAs. Two exposed electrode prototypes were prepared: span-type with exposed electrode width of 0.1 mm, and normal-type with width of 5 mm. It was found that span-type shows lower power consumption and higher flow velocity than that of normal-type at  $V_{p-p} = 4.0-6.0$  kV. Ozone concentration of span-type higher than normal-type at  $V_{p-p} = 4.0-8.0$  kV. In addition, it was confirmed that catalyst located in downstream from the exposed electrode can reduce ozone concentration between 18 and 42% without affecting the induced flow.

**Keywords :** dielectric barrier discharge plasma actuators, ozone diffusion, PIV measurement, power consumption

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