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Time-resolved Schlieren imaging of electrohydrodynamic interaction induced by a dielectric barrier discharge[1] SIROUS NOURGOSTAR, NOAH HERSHKOWITZ, University of Wisconsin-Madison — Commercially available transparent conducting electrodes provide an inexpensive way to investigate different configurations of dielectric barrier discharges (DBD), including so called plasma actuators. Although operation of atmospheric DBDs in a diffuse mode has been reported, they ares limited to very restricted range of operational parameters including the gas flow rate. In addition to diffuse and filamentary modes, there exists a patterned mode which like the diffuse one, is also severely limited by operational constraints. In the experiment, spatial and temporal evolution of both flow and plasma fields in parallel, tilted plate and asymmetric plasma actuator geometries are analyzed by the Schlieren method, and using gated intensified CCD.

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