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(19) **United States**(12) **Patent Application Publication****Vaddi et al.**(10) **Pub. No.: US 2024/0215142 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **DIELECTRIC BARRIER DISCHARGE  
PLASMA ACTUATORS**(71) Applicant: **UNIVERSITY OF WASHINGTON,**  
Seattle, WA (US)(72) Inventors: **Ravi Sankar Vaddi**, Seattle, WA (US);  
**Igor V. Novosselov**, Seattle, WA (US);  
**Alexander V. Mamishev**, Seattle, WA  
(US)(73) Assignee: **UNIVERSITY OF WASHINGTON,**  
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**ABSTRACT**

Dielectric barrier discharge plasma actuators are described. In one embodiment, a fluid flow actuator includes: a dielectric sheet; and a first electrode of a dielectric barrier discharge-direct current augmented (DBD-DCA) actuator disposed on a first face of the dielectric sheet. The first electrode is exposed to a surrounding fluid. The fluid actuator also includes a second electrode of the DBD-DCA actuator disposed on a second face of the dielectric sheet. The second face of the dielectric sheet is opposite from the first face of the dielectric sheet. The first electrode and the second electrode are configured for receiving an alternating current (AC) voltage configured to locally ionize the fluid and to generate ions. A third electrode located downstream from the first electrode and the second electrode. The third electrode is configured for receiving a direct current (DC) voltage configured to accelerate the ions.

