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Characterization of DBD Plasma Jet JOHN FOSTER, University of Michigan — DBD plasma jet operation underwater was characterized. In this case, the entire discharge operated as a jet submerged underwater. The jet was operated on dry air, nitrogen, argon, and steam. Current-voltage profiles for each gas was obtained. Plasma jet gas temperature dependence on gas type and dissipated discharge power was also characterized. Self-organization of the plasma jet at high argon flow rates was observed. The effect such self organization on observed emission spectra, gas temperature, and water chemistry was investigated using thermocouple, pH, and peroxide measurements. The dependence of gas species type on water chemistry was assessed using an oxidation-reduction dye.

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