Abstract Submitted
for the GEC13 Meeting of
The American Physical Society

Vapor trapping of evaporated liquids during injection into low pressure plasma[1] JOHN POULOSE, CAROLINE LIU, The University of Texas at Dallas, DAISUKE OGAWA, Chubu University, MATTHEW GOECKNER, LAWRENCE OVERZET, The University of Texas at Dallas — Liquid injection into low pressure plasma creates a transient change in the gas pressure and plasma properties. Controlling the pressure transient created by evaporation of injected liquids can help reduce unwanted changes in the plasma parameters. We are using an orifice downstream of the liquid injection point to separate the liquid droplets and the evaporated gas from those droplets. Modifying the orifice area to allow droplets to pass through but substantially reduce the conductance of vapor is being tested. The upper chamber, between the injector and main chamber, is utilized to remove the vapor which initially evaporates off the injected droplets through a rough pump. Additionally, controlling the direction of the droplet injection will assist in targeting the liquid directly into the plasma. To this end, a bellows and injector holder/positioner has been attached to a flange providing approximately fifteen degrees of polar rotation. This is will allow the liquid to reach the plasma, with a reduced pressure transient so that the plasma parameters are maintained. In this poster, we will describe the background of the problem, experimental setup, and results.

[1]This work was supported in part by the Department of Energy under grant No. DE-SC0001355.

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Date submitted: 14 Jun 2013 Electronic form version 1.4