Abstract Submitted
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Development and characterization of hollow cathode plasma source for LIF-dip spectroscopy[1] JENNY SMITH, CHRISTOPHER DUROT, JOHN FOSTER, University of Michigan — A pulsed plasma hollow cathode source has been developed for the purpose of producing excited states for validation of a laser-induced fluorescence (LIF) dip spectroscopy diagnostic. Time variation in plasma conditions as well as plasma repeatability was characterized using optical emission spectroscopy and a triple Langmuir probe. Experiments were carried out in air, in argon and in nitrogen. The time decay constant for density and temperature was measured. The decay constant of excited states of interest are also characterized as a function of time. Of particular interest is the flow of excited species into the actual test cell. A biased grid is used to minimize the flow of plasma species into the test cell. The effectiveness of this biased grid approach is also assessed.

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