

Abstract Submitted  
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**Measurements of Nitric Oxide in a Plasma Generated by a Variable-Width, Constant Energy Discharge** DAVID BURNETTE, IGOR ADAMOVICH, WALTER LEMPERT, The Ohio State University, NON-EQUILIBRIUM THERMODYNAMICS LABORATORY TEAM — A diffuse plasma filament within a low pressure sphere gap was generated using a high voltage, solid state switch. For a constant pressure and overvoltage, the peak current and voltage drop were altered by a change in the ballast resistor while a simultaneous adjustment to the variable pulse width was used to maintain a constant pulse energy. The discharge parameters were chosen to result in a quasi-steady state discharge with near constant current and very little change in size and uniformity for each condition studied. The absolute density and temporal evolution of nitric oxide (NO) was measured via laser-induced fluorescence for each condition. The effect of the pulse characteristics and estimated E/N on the formation of NO are discussed.

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