

Abstract Submitted
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Characterization of plasma properties in a hollow cathode discharge¹ NATHANIEL WIRGAU, JOHN FOSTER, Univ of Michigan - Ann Arbor — An important life limiter in conventional gridded ion and Hall thrusters is lifetime of the hollow cathode assembly. The cathodes lifetime is a function of the barium supply within the insert. While barium can be lost from the cathode via gas phase diffusion, models predict that significant barium recirculation within the insert actually occurs. The recirculation and transport of barium is dependent on plasma conditions prevailing in the hollow cathode. Presented here are plasma measurements made within the hollow cathode under conditions of spot and plume mode operation. Ion acoustic wave spectra is also examined in an attempt to assess recirculating barium concentration within the insert region using krypton as a propellant.

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