

Abstract Submitted
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Characterization of Ar/H₂/Air Supersonic Flowing Microwave Discharges¹ D.J. DRAKE, S. POPOVIC, L. VUSKOVIC, Old Dominion University
— We performed a detailed characterization of a microwave cavity discharge in the supersonic flow of Ar/H₂/Air mixtures. The supersonic flow was generated using a convergent-divergent nozzle upstream of the discharge region. Gases were premixed in the stagnation chamber at room temperature by adding up to 10% hydrogen and up to 45% air to pure argon. A cylindrical cavity was used to sustain a discharge in the mixtures in the pressure range of 100-600 Pa. Optical emission spectroscopy was used to observe the effects of hydrogen and air admixtures to plasma parameters and populations of excited species.

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