

Abstract Submitted
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Low Pressure High Density Plasma Development on a Small Helicon Plasma Experiment (HPX)* R.W. JAMES, L.A. ALLEN, R.N. PAOLINO, N. THAYER, B. ROMANO, B.S. STUTZMAN, C. WELICKA, U.S. Coast Guard Academy, COAST GUARD PLASMA LAB TEAM — Small helicon plasmas have been employed in various capacities from industry to spacecraft propulsion. At the Coast Guard Academy Plasma Lab (CGAPL), a small Helicon Plasma Experiment (HPX) is being developed to utilize the reputed high densities (10^{13} cm⁻³ and higher) at low pressure (.01 T) [1], in high temperature and density diagnostic development for future laboratory investigations. HPX is designed to operate at these high densities and pressure to create repeatedly stable Capacitively Coupled Plasma (CCP) and Inductively Coupled Plasma (ICP) plasmas induced by an RF frequency in the 10 to 70 MHz range. Progress on the development of the RF coupling system, and qualitative observations from the optical and electric diagnostics are to be reported.
[1] K. Toki, *et al.*, *Thin Solid Films* **506-507** (2005)

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