

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Low-Impurity, Electrode-less Plasma Source for Fusion Applications¹ JAMES PRAGER, TIMOTHY ZIEMBA, KENNETH MILLER, Eagle Harbor Technologies, ROBERT WINGLEE, University of Washington — Eagle Harbor Technologies, in collaboration with the University of Washington, has developed a low-impurity, electrode-less plasma source (EPS) for start-up and source plasma injection for fusion science applications. In order to not interfere with the experiment, a pre-ionizer/plasma source must meet a few critical criteria including low impurity production, low electromagnetic interference (EMI), and minimal disruption to the magnetic geometry of the experiment. Two versions of the EPS have been created: a high particle flux device and a low magnetic flux device. Both versions were designed to be bakable and UHV compatible. Here we show the results from the Phase I program, including device construction and integration, plasma properties, and preliminary impurity studies. In addition, we discuss the Phase II work plan, which includes more extensive impurity studies.

¹This work has been supported by the DOE SBIR/STTR Program.

James Prager
Eagle Harbor Technologies

Date submitted: 14 Jul 2011

Electronic form version 1.4