

Abstract Submitted
for the SES17 Meeting of
The American Physical Society

Absolute cross section measurements using relative pressure in a gas cell for 1.0 – 5.0 keV argon. STEVEN BROMLEY, DANIEL FOX, CHAD SOSOLIK, JIM HARRISS, JOAN MARLER, Clemson Univ — As a benchmark for theoretical studies on charge exchange interactions, we measured the charge exchange cross sections of interactions between fast ions and neutrals. A Bayard-Alpert gauge in the high vacuum regime provides relative pressure measurement of the injected target gas. Utilizing the beam attenuation method in the gas cell, we present absolute charge exchange cross sections for the interaction $\text{Ar}^+ + \text{Ar}$ in the energy range 1.0- 5.0 keV consistent with other published work. Future experiments will use the gas cell for measuring singly and highly charged ion-neutral cross sections and producing high energy neutral beams with particle flux between $18 - 85 \times 10^9 \text{ s}^{-1}$.

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Date submitted: 06 Oct 2017

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