Abstract Submitted
for the SES10 Meeting of
The American Physical Society

Charge exchange in slow collisions of Si3+ with H[1] D.C. JOSEPH, B.C. SAHA, Department of Physics, Florida A&M University, Tallahassee, FL-32307 — Low energy electron capture from atomic hydrogen by multi-charged ions continues to be of interest and has wide applications including both magnetically confinedfusion and astrophysical plasmas. The charge exchange process reported here, $Si^{3+} + H$ – $Si^{2+} + H^{+}$ is an important destruction mechanism of Si^{3+} in photo-ionized gas. The soft X-ray emission from comets has been explained by charge transfer of solar wind ions, among them Si^{3+}, with neutrals in the cometary gas vapor. The state selective cross sections are evaluated using the semi-classical molecular orbital close coupling (MOCC) [1] methods. Adiabatic potentials and wave functions for a number of low-lying singlet and triplet states are calculated using the MRD-CI package [2]. Details will be presented at the conference.\ [1] M. Kimura and N. F. Lane, At. Mol. Opt. Phys **26**, 79 (1990). [3] R. J. Buenker, "Current Aspects of Quantum Chemistry" 1981, Vol **21**, edited by R. Carbo (Elsevier, Amsterdam) p 17.

[1]Work supported by NSF CREST project.

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Date submitted: 13 Aug 2010 Electronic form version 1.4