

Abstract Submitted  
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**Ion Molecule Collisions at Low Energies**<sup>1</sup> DWAYNE JOSEPH, Department of Physics, Florida A&M University, ROBERT BUENKER, Fachbereich C-Mathematik und Naturwissen-Schaften, Bergische Universitat Wuppertal, D-42097, Wuppertal, Germany, BIDHAN SAHA, Department of Physics, Florida A&M University, Florida-32307. — Charge transfer is a fundamental phenomenon in nature, playing a crucial role in many chemical and biological processes. The capture of electron (also known as charge transfer or charge exchange) is well known to be an important collision process in nearly all types of plasma environments from terrestrial laboratories [1] to solar system atmospheres [2] to astrophysical sources. Ion-molecule collisions have received less attention both theoretically and experimentally than its atomic counterpart due to extra degree of freedom. Using *ab initio* calculations we report the potential surfaces and coupling matrix elements. Our results will be compared with other theoretical and experimental results, if available. [1] R. K. Janev, in “Atomic and Molecular Processes in Fusion Edge Plasmas” (Plenum Press, NY, 1995), p1. [2] T. E. Cravens, Science 296, 1042 (2002).

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