

Abstract Submitted
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Electron Impact Ionization of Atoms and Ions B.C. SAHA, Department of Physics, Florida A&M University, A.K. BASAK, Department of Physics, University of Rajshahi, Rajshahi, Bangladesh — Electron impact ionization cross sections are at the heart of many active fields ranging from astro- to medical- physics. These applications require cross sections for a wide range of species as a function of projectile energies. This demand, however, is very hard to fulfill neither by experiments nor *ab initio* calculations. Various analytical and semi-classical models are commonly used to generate such a vast ionization cross sections. We recently applied a modified version [1] of the Bell et. al. equations [2] including both the ionic and relativistic corrections. We will show in this presentation how to generalize the much-needed MBELL parameters for treating the orbital quantum numbers nl dependency; comparing our results with experimental findings tests the accuracy of this procedure; very good agreements are obtained even in relativistic energies. Details will be presented at the meeting.

[1] A. K. F. Haque, M. A. Uddin, A. K. Basak, K. R. Karim and B. C. Saha, Phys. Rev. A73, 052703 (2006).

[2] K. L. Bell, H. B. Gilbody, J. G. Hughes, A. E. Kingston, and F. J. Smith, J. Phys. Chem. Ref. Data 12, 891 (1983).

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