Abstract Submitted
for the GEC11 Meeting of
The American Physical Society

Electron impact total cross sections for H_2S and PH_3 for a wide energy range[1] CHETAN LIMBACHIYA, P.S. Science College, MINAXI VINODKUMAR, V.P. & R.P.T.P. Science College, NIGEL MASON, Department of Physics & Astronomy, Open University, Milton Keynes, MK7 6AA, UK — In this paper we have computed total cross sections for H_2S and PH_3 using two different molecular codes, Quantemol N for low energy calculations and Spherical Complex Optical Potential for intermediate and high energies. We present rotationally elastic total cross sections for electron scattering from H2S and PH3, to demonstrate the possibility of producing robust cross sections from 0.01 eV to 2 keV using two different theoretical formalisms[1]. We use the commercial Quantemol-N formalism[2] for calculating total cross sections up to threshold of the target and the Spherical Optical Complex Potential (SCOP) method for calculating total sections beyond threshold up to 2 keV [3].

[1] C. G. Limbachiya, M. Vinodkumar, N. J. Mason, Phys. Rev. A (in press)
[2] J.Tennyson *et al* 2007 *J. Phys.Conf. Series* **86,** 012001
[3] M. Vinodkumar *et al* 2010 *International Journal of Mass Spectrometry* **294,** 54

[1]CGL thanks UGC & MVK thanks DST for the Major research project.

Chetan Limbachiya
P.S. Science College

Date submitted: 21 Jul 2011 Electronic form version 1.4