

Abstract Submitted
for the GEC13 Meeting of
The American Physical Society

Electron impact total cross sections for Furan, Tetrahydrofuran and 2, 5-Dimethylefuran (0.1 eV – 5000 eV)¹ CHETAN LIMBACHIYA, P.S. Science & H.D. Patel Arts College, KADI, MINAXI VINODKUMAR, V.P. & R.P.T.P. Science College, Vallabh Vidyanagar, MOHIT SWADIA, P.S. Science & H.D. Patel Arts College, KADI — Furan may serve as a prototype of a furanose-form building unit of biomolecules [1]. Electron interactions with tetrahydrofuran (THF), that links the phosphate groups in the DNA backbone, have been studied by both experimental and computational methods [2]. We have calculated various total cross sections for electron interactions with Furan, Tetrahydrofuran and an industrially relevant molecule 2, 5 – Dimethylefuran. We have used R-matrix code [3] below 15 eV and Spherical Complex optical Potential (SCOP) and Complex Scattering Potential – ionization contribution (CSP-ic) formalisms [4] beyond 15 eV.

[1] Szmytkowski et al. PHYSICAL REVIEW A **82**, 032701 (2010)

[2] Khakoo et al. PHYSICAL REVIEW A **85**, 052717 (2012)

[3] Bouchiha et al, J. Phys. B: At. Mol. Opt. Phys. **40**, 1259 (2007)

[4] Chetan Limbachiya et al, Phys. Rev. A, **83**, 042708(2011)

¹CGL thanks UGC (F.No.40-429/2011 (SR)) and MVK thanks DST, New Delhi for Major Research Project Grant No: SR/S2/LOP-26/2008

Chetan Limbachiya
P.S. Science & H.D. Patel Arts College, KADI

Date submitted: 20 Jun 2013

Electronic form version 1.4