

Abstract Submitted
for the GEC11 Meeting of
The American Physical Society

Electronic Excitation of Furan by Low Energy Electrons¹ LEIGH R. HARGREAVES, MURTADHA A. KHAKOO, California State University Fullerton, Physics Department, CA, 92834, MARIA CRISTINA A. LOPES, Federal University of Juiz de Fora MG, Brazil, ROMARLY DA COSTA, Federal University ABC, Sao Paulo, Brazil, MARCIO H.F. BETTEGA, Federal University of Parana, Curitiba, Brazil, MARCO A.P. LIMA, State University of Campinas, Unicamp, Brazil — We present absolute differential cross section (DCS) measurements and calculations of electron impact excitation of the lowest lying triplet 3B_2 and 3A_1 electronic states of furan. The incident electron energy range of the present study was 5-15eV. The experimental data were normalized to the elastic DCS data of [1]. The cross sections were determined by unfolding electron energy loss spectra, using an open source data analysis package and the spectroscopic assignments of [2]. The calculations employ a Multichannel Schwinger method with a 9-state closed coupling CI configuration including polarized pseudo-potentials. The preliminary theoretical results show reasonable agreement with experiment below 10eV, but differ at higher energies.

[1] M. A. Khakoo et al., Phys. Rev. A, 81, 062716 (2010)

[2] A. Guiliani and M.-J. Hubin-Franskin, Int. J. Mass Spec., 205, 163 (2001)

¹Funded by the US NSF and the Brazilian funding agencies CNPq, CAPES and FAPESP.

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Date submitted: 18 Jul 2011

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