

Abstract Submitted
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Electronic excitation of furan molecules by low energy electron impact GABRIELA SERNA, LEIGH HARGREAVES, MURTADHA A. KHAKOO, California State University Fullerton, Physics Department, CA, 92834, MARIA CHRISTINA 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 — Absolute differential and integral cross sections are presented for electron impact excitation of the 3B_2 and 3A_1 states of furan. The energy range of the present data set was 5-15eV. The measurements were normalized relative to the elastic cross section data of [1] and are compared to new calculations employing a multi-state Schwinger Multichannel approach with pseudopotentials [2]. The differential cross sections are peaked in the backwards direction, which is characteristic for optically forbidden transitions. Agreement between experiment and theory is good in some cases, although discrepancies remain, particularly above the ionization threshold. These differences are currently being investigated. The influence of polarization and multichannel coupling effects is also examined.

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

[2] M. H. F. Bettega, L. G. Ferreira, and M. A. P. Lima, Phys. Rev. A **47**, 1111 (1993)

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