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Theoretical and experimental study of electron impact ionization (e,2e) of para-benzoquinone for an intermediate incident electron energy ESAM ALI, Missouri Univ of Sci Tech, DARRYL JONES, School of Chemical and Physical Sciences, Flinders University, GPO Box 2100, Adelaide SA 5001, Australia, ODDUR INGLFSSON, Science Institute and Department of Chemistry, University of Iceland, Dunhagi 3, 107 Reykjavik, Iceland, CHUANGANG NING, Department of Physics and State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing 100084, China, JAMES COLGAN, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA, MICHAEL BRUNGER, School of Chemical and Physical Sciences, Flinders University, GPO Box 2100, Adelaide SA 5001, Australia, DON MADISON, Missouri Univ of Sci Tech
— We will present a theoretical and experimental study of electron impact single ionization of para-benzoquinone [1]. Experimental data were taken for the unresolved combination of the 4 highest occupied molecular orbitals (4b3g, 5b2u, 1b1g, and 2b3u) of para-benzoquinone. The theoretical results are compared with experimental data measured in an asymmetric coplanar geometry for a 250 eV incident electron energy, an ejected electron energy of 20 eV, and for four fixed scattered electron angles of 7.5°, 10°, 12.5°, and 15°. Theoretical M3DW (molecular 3-body distorted wave) results summed over the four unresolved states will be compared to the experimental data. As the experimental TDCS measurements for each scattering angle are cross normalized, we fully assess the ability of the theoretical model to reproduce the experimental data in terms of angular distribution and intensity. [1] Jones *et al.,* J. Chem. Phys. **145**, 164306 (2016).

Esam Ali
Missouri Univ of Sci
Tech

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