

Abstract for an Invited Paper  
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### Low Energy Elastic Scattering of Electrons from Polyatomic Molecules<sup>1</sup>

MURTADHA A. KHAKOO, Physics Department, California State University, Fullerton, CA 92834

Measurements and calculations of the elastic scattering of electrons from “large” polyatomic molecules, e.g. alcohols, CH<sub>3</sub>OH and C<sub>2</sub>H<sub>5</sub>OH are presented. These measurements are made possible by using a modified form of the relative flow method which uses a thin aperture source of target gas, instead of the conventional tube sources used in the past. The aperture source provides an angular distribution of gas which is independent of the pressure behind the source, provided the gas mean-free path does not exceed the aperture thickness. This property has been tested using C<sub>2</sub>H<sub>2</sub>, N<sub>2</sub> and He [1]. The experimental data were taken at incident energies of 2eV, 5eV, 10eV, 15eV, 20eV, 30eV, 50eV and 100eV. The theory uses the variational multi-channel Schwinger method with polarization effects [2], and very good agreement between experiment and theory is observed in general. The talk will focus on the experimental implementation of the modified relative flow method and its validity.

[1] M. A. Khakoo, K. Keane, C. Campbell, N. Guzman and K. Hazlett, *Low Energy Elastic Electron Scattering from Ethylene*, submitted to J. Phys. B. June-2007.

[2] C. Winstead and V. McKoy, *Adv. At. Mol. Opt. Phys.* **36**, 183 (1996).

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