

Abstract Submitted
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Elastic Differential Cross Sections for XF_4 ($\text{X} = \text{C}, \text{Si}, \text{Ge}$) by Intermediate Energy Electron Impact MASAKI HORIE, TAKUYA MITSUMURA, HIDETOSHI KATO, MASAMITSU HOSHINO, GUSTAVO GARCIA, PAULO LIMA-VIEIRA, HIROSHI TANAKA, SOPHIA UNIVERSITY TEAM, UNIVERSIDADE NOVA DE LISBOA COLLABORATION, CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS COLLABORATION — We reported on the absolute differential cross sections (DCSs) for elastic electron scattering with XF_4 ($\text{X} = \text{C}, \text{Si}, \text{Ge}$) molecules of tetrahedral symmetry in the energy range of 50-200eV. Electron scattering cross section data for the molecules is relevant to model the electronic state spectroscopy of these molecules in the chemistry of low temperature plasmas manufacturing of semiconductors and other industrial processes. The crossed-beam method was used in conjunction with the relative flow technique to obtain absolute values for the DCS. In these measurements the experimental DCS are compared with results from theoretical calculations based on the independent atom model (IAM) approximation, performed without any empirical parameter-fittings, i.e., in an *ab initio* nature by employing a corrected form of the IAM, known as the Screening Corrected Additivity Rule. The calculated values are in excellent agreement with the experimental results. Detailed discussion on these results will be presented at the conference.

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