CROSS SECTIONS FOR ELECTRON-SIMPLE HYDROCARBONS COLLISIONS

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Electron-hydrocarbons scattering data are relevant for fusion plasma modeling. They also play important role to electron-initiated mechanisms present in the combustion of several commonly used materials, and to the chemistry of interstellar clouds and planetary and cometary's atmospheres[1]. Hydrocarbons are also important part of the building blocks that constitute living matter and are a source of carbon atoms for chemical vapour deposition reactions and plasma processing in industries[2]. Motivated by this relevance our group has recently engaged on developing systematic studies on electron-hydrocarbon interactions in the intermediate energy region where there is lack of cross sections values.

In this work we report experimental cross sections for e^--simple hydrocarbon scattering in the intermediate energy region. In Fig. 1, we show total cross sections (TCS) for the electron – C_2H_6 and C_4H_{10} collisions in the energy range of 200 to 1000 eV. (TCS) were measured in a linear transmission instrument[3]. More results and discussion will be presented during the Symposium.

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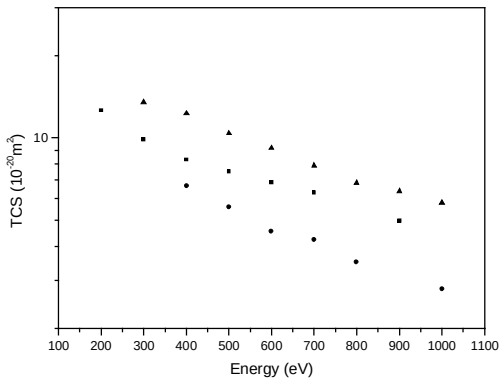

Figure 1 TCS for e^- - hydrocarbon scattering. Circles, C_2H_6 and triangles C_4H_{10}.

References

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3. B. Bederson and L. J. Kieffer, Rev. Mod. Phys. **43**, 601 (1973).