

Excitation and dissociation of the molecules by electron impact.

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The electron induced fluorescence experiment at the Comenius University is one of few crossed beams experiments designed to study emission of the photons (fluorescence) after excitation of molecules by electrons in single collision regime. The experiment cover UV/VIS range (200-800 nm). Apart from high resolution emission spectra we are able to determine excitation-emission cross sections for the molecules including determination of threshold energies for individual processes such as excitation, dissociative excitation or photon emission from ions. In recent period we have carry out studies to several molecular species, including, H₂, D₂, CH₄, C₂H₂ and H₂O. The laboratory data can be used to for diagnostic and computer simulations in different fields of sciences such as plasma physics, astrophysics, or radiation chemistry.