

Electron energy loss spectra of cyclopentadiene

Reference: Knut R. Asmis, Dunja M. Frey and Michael Allan, Université de Fribourg (unpublished).

Knut R. Asmis, Ph.D. thesis, Fribourg 1996

Dunja M. Frey, diploma thesis, Fribourg 1994

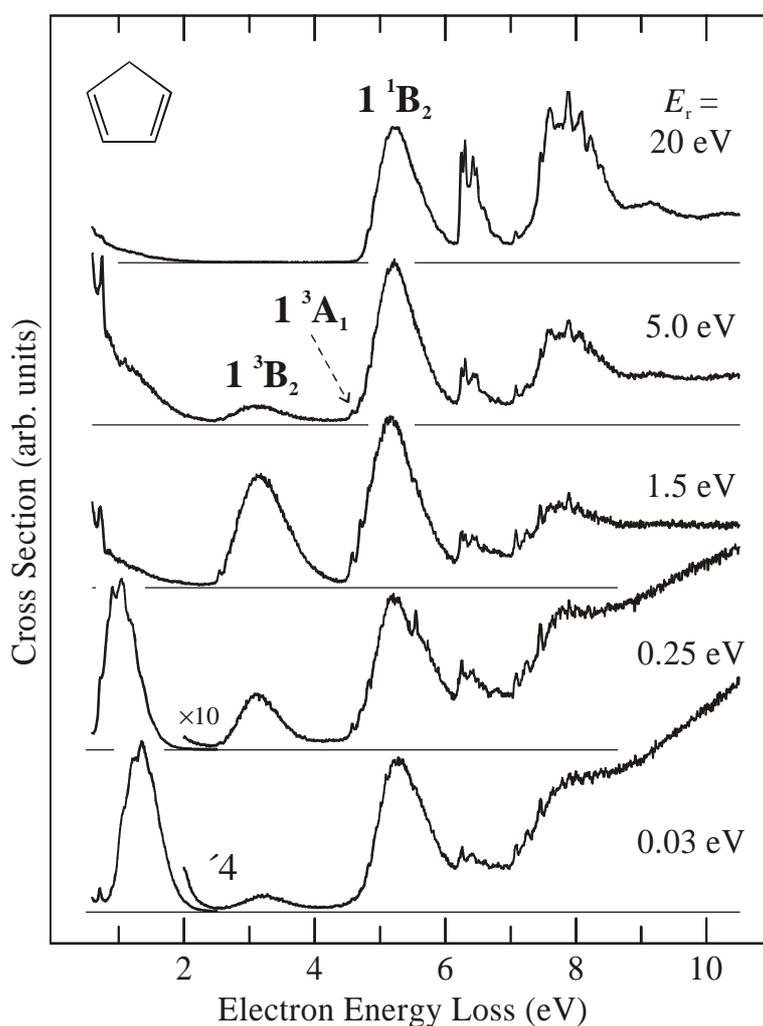


Fig. 1 Survey EEL spectra of cyclopentadiene. The first band at 5.22 eV in the $E_r = 20$ eV spectrum is due to the excitation into the 1^1B_2 valence state. The sharp peaks above an energy-loss of 6 eV are mainly due to Rydberg excitations. At lower residual energy the spin-forbidden transition into the lowest triplet state (1^3B_2) becomes apparent through a partly vibrationally structured band. The peak at 2.55 eV is assigned to the 0-0 transition. For $E_r \leq 0.25$ eV the most intense signal stems from resonant vibrational excitation, at energies below 2 eV.

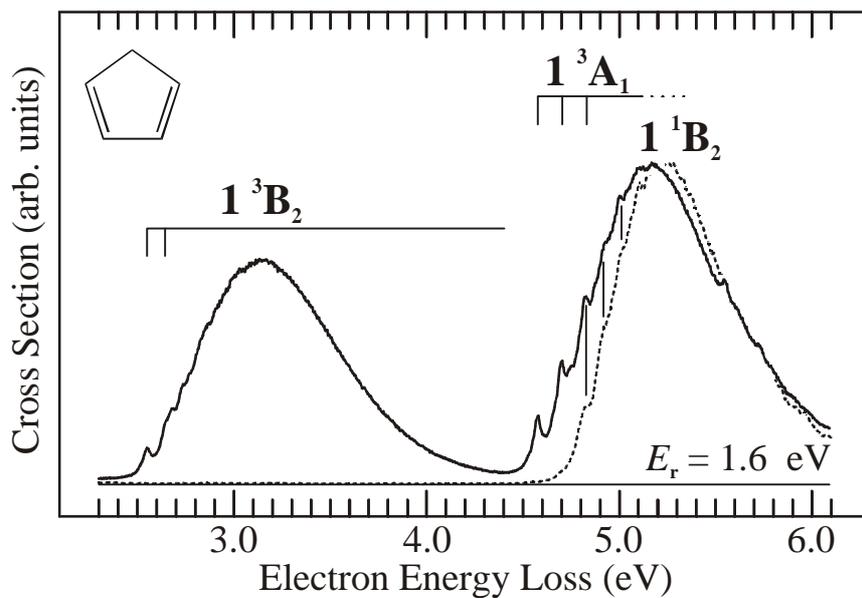


Fig. 2 EEL spectra of cyclopentadiene measured at $E_r = 1.6$ eV (solid line) and $E_r = 20$ eV (broken line). The structure observed on the low energy tail of the 1^1B_2 band is assigned to the second triplet state 1^3A_1 .

