

# Supporting Information for: The hole mass in Car-Parrinello molecular dynamics: insights into the dynamics of excitation

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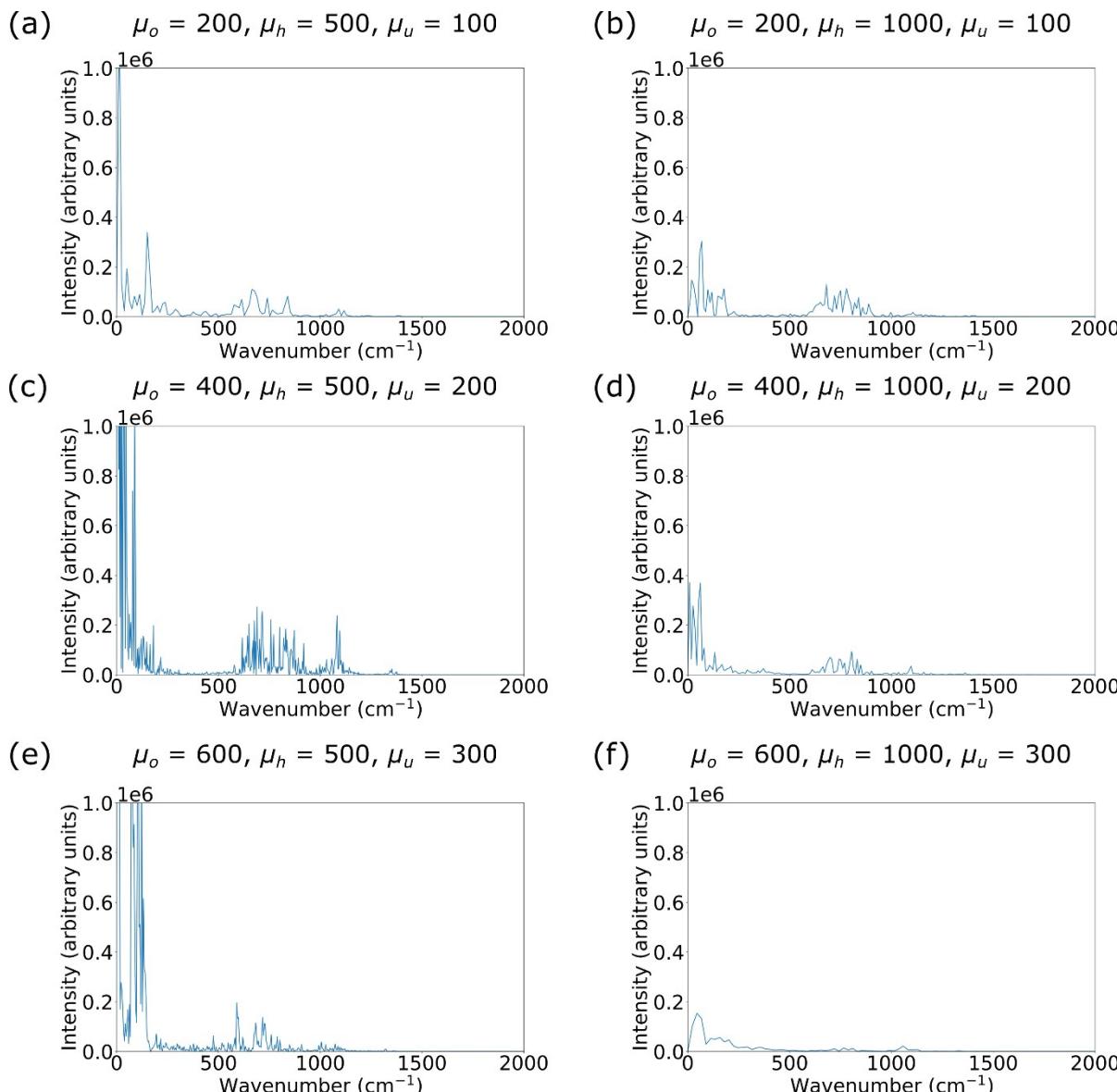


Figure S1: Cyclobutene ring-opening simulations: The Fourier transform of the C3-C4 bond length ( $\text{\AA}$ ,  $d_{\text{C3-C4}}$ ) for the six mass values in Table 1: (a)  $\mu_A$ , (b)  $\mu_B$ , (c)  $\mu_C$ , (d)  $\mu_D$ , (e)  $\mu_E$ , and (f)  $\mu_F$ .

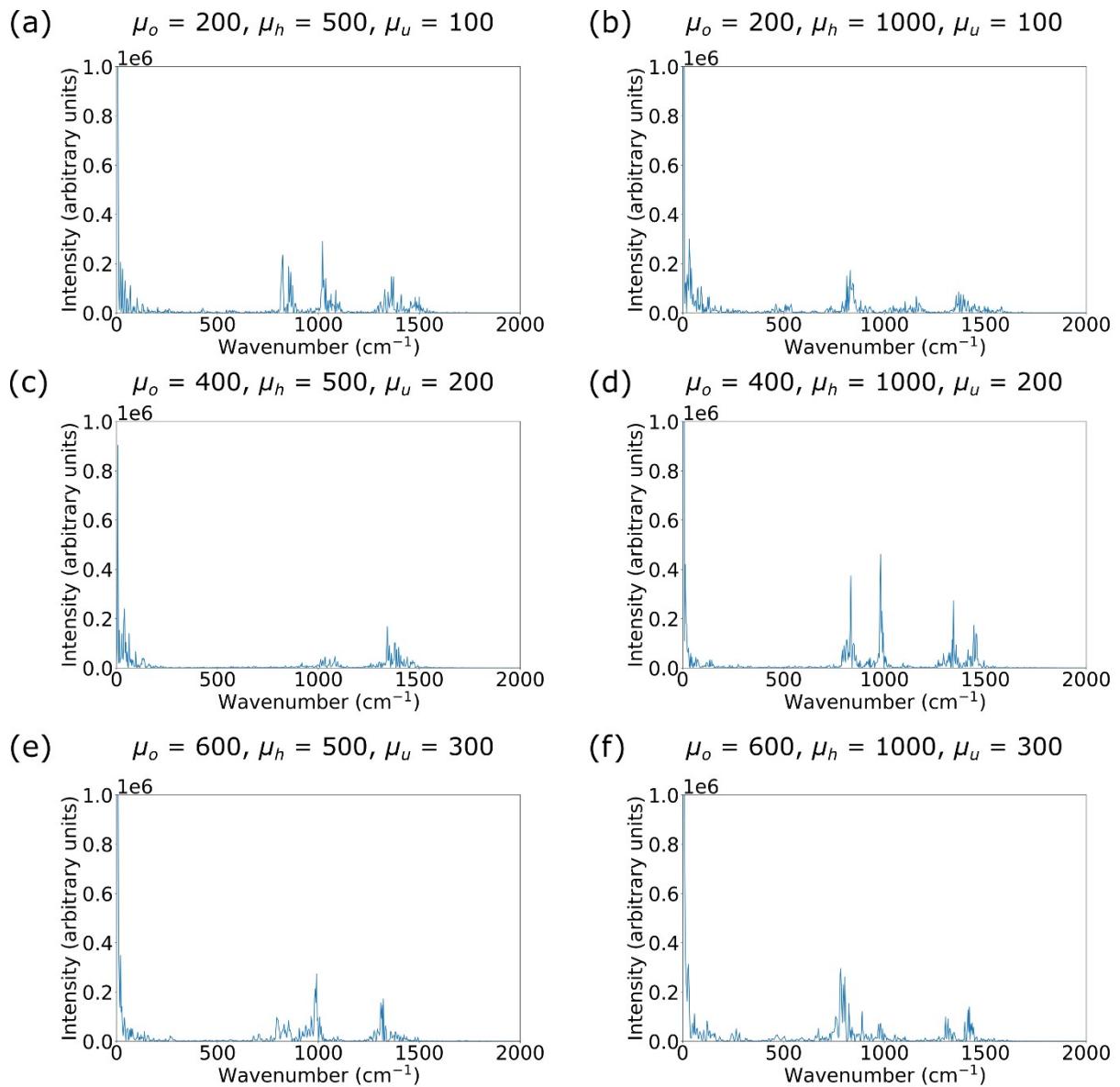


Figure S2: Cyclobutene ring-opening simulations: The Fourier transform of the C1-C2 bond length ( $\text{\AA}$ ,  $d_{\text{C1-C2}}$ ) for the six mass values in Table 1: (a)  $\mu_A$ , (b)  $\mu_B$ , (c)  $\mu_C$ , (d)  $\mu_D$ , (e)  $\mu_E$ , and (f)  $\mu_F$ .