

## Supplementary Information

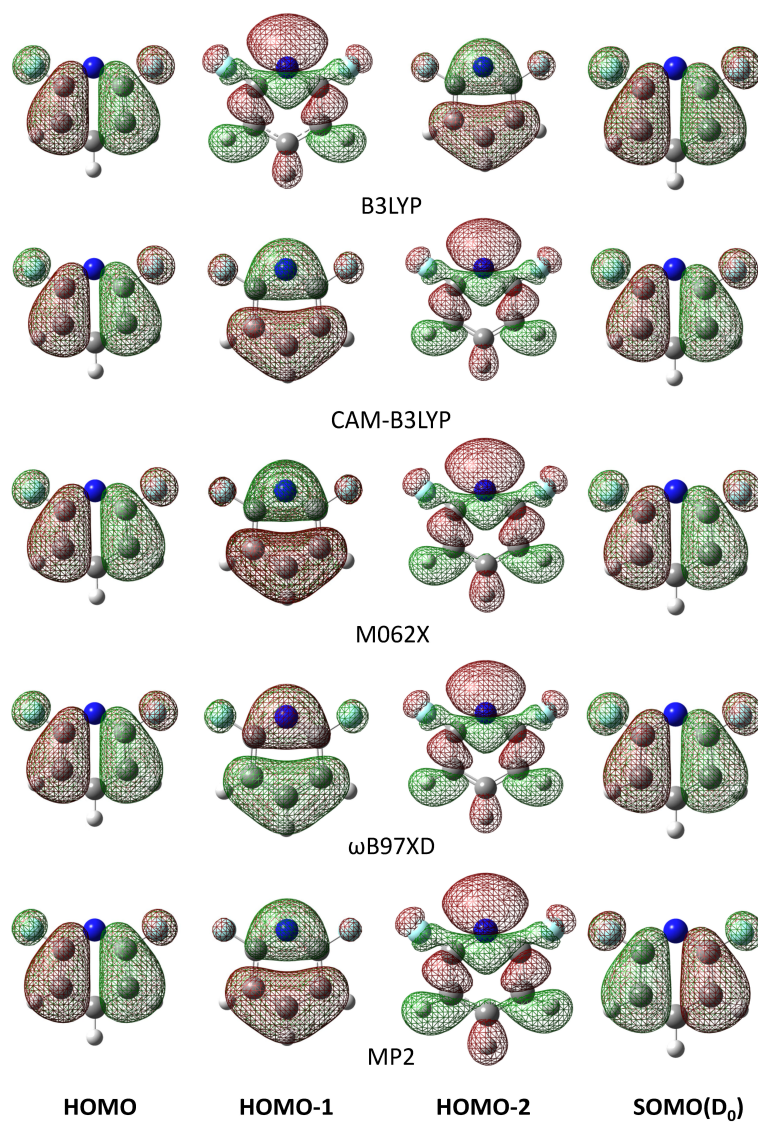
# Investigating Valence Orbitals and Cationic Structure of 2,6-Difluoropyridine via High-Resolution VUV-MATI Spectroscopy and Franck-Condon Simulations

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**Figure S1** HOMOs and SOMOs of 2,6-DFP in the  $S_0$  and  $D_0$  states optimised at the B3LYP, CAM-B3LYP, M062X,  $\omega$ B97XD, and MP2 levels of theory using the cc-pVTZ basis set. All HOMOs and SOMOs were analysed through the NBO calculations at each DFT level. The images on the left and right in each column show the top and side views of the molecular orbitals, respectively.