

## SUPPLEMENT INFORMATION

For

# Vacancy-induced Magnetism in Fluorographene: The effect of midgap state

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### 1. The band structures and DOS of fluorographene and V<sub>dCF</sub>-fluorographene

The DOS and PDOS for fluorographene and V<sub>dCF</sub>-fluorographene are shown in Fig S1, in fluorographene, the valence band maximum (VBM) is mainly contributed by  $p_x$  by  $p_y$ , and conduction band minimum (CBM) is mainly contributed by  $p_z$  orbitals. It is found that fluorographene has no spin splitting and show nonmagnetic properties, which is consistent with the previous report[1], and so is V<sub>dCF</sub>-fluorographene.



