## **Supplementary Information**

## **Tunable Ferromagnetic Ordering in MoS<sub>2</sub> nanosheets with Fluorine Adsorption**

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Figure S1: Primitive M-H curves for the F-MoS<sub>2</sub> nanosheets.

Figure S2:The magnetic hysteresis loops measured in the low field range for the F-MoS<sub>2</sub> nanosheets.

Figure S3: M-H curves for the precursor of NH<sub>4</sub>F and MoS<sub>2</sub> powder.

Figure S4. Magnetization curves (M-H) of the fluorination-MoS2 nanosheets measured at different temperatures (350~950 K).

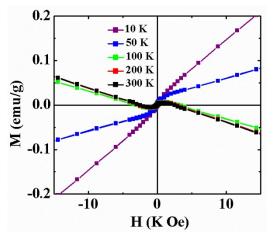


Figure S1: Primitive M-H curves for the  $F-MoS_2$  nanosheets. Results indicate there are ferromagnetism, paramagnetism and diamagnetism co-existent in the sample. Besides the ferromagnetism signal, the paramagnetism dominate at the low temperature while the diamagnetism dominate at the high temperature.

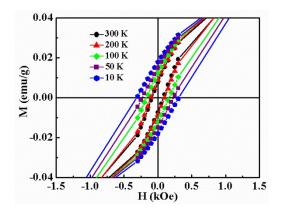


Figure S2:The magnetic hysteresis loops measured in the low field range for the  $F-MoS_2$  nanosheets.

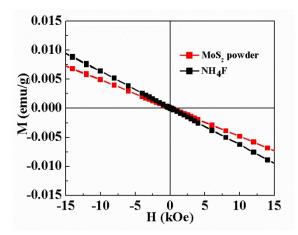


Figure S3: M-H curves for the precursor of NH<sub>4</sub>F and MoS<sub>2</sub> powder.

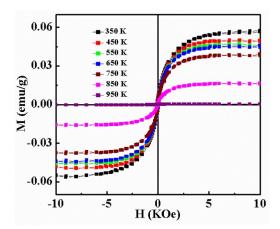


Figure S4. Magnetization curves (M-H) of the fluorination-MoS2 nanosheets measured at different temperatures (350~950 K), where the diamagnetic background have been subtracted.