Supporting Information

## Template Free Synthesis of 3D Nb<sub>3</sub>O<sub>7</sub>F Hierarchical Nanostructures and Enhanced Photocatalytic Activities

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## **Additional Results**

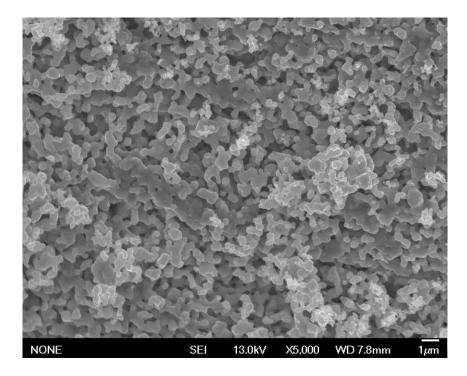
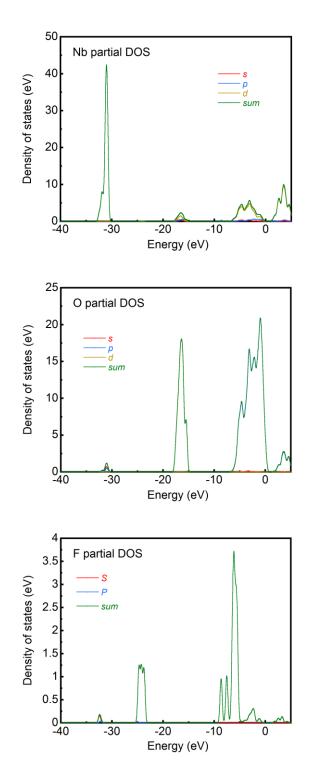
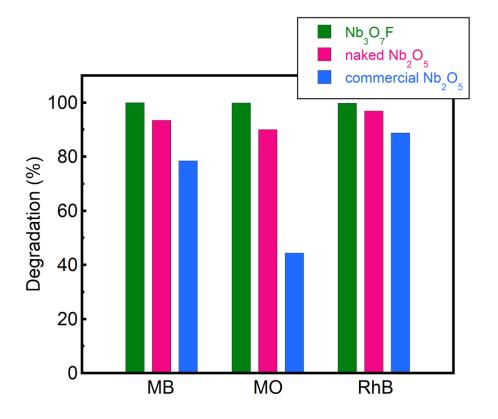


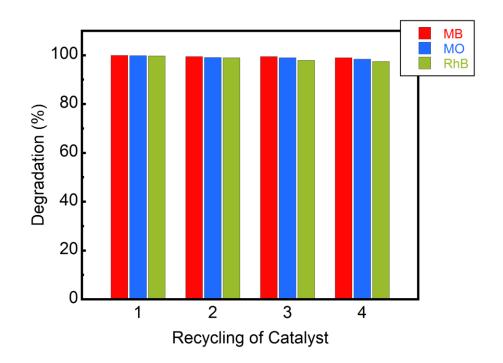
Fig. S1. SEM image of Nb powders.



**Fig. S2.** Calculated total and partial density of states of Nb, O and F in Nb<sub>3</sub>O<sub>7</sub>F architectures.



**Fig. S3.** Comparison of photocatalytic degradation of MB, MO and RhB over Nb<sub>3</sub>O<sub>7</sub>F, naked Nb<sub>2</sub>O<sub>5</sub> and commercial Nb<sub>2</sub>O<sub>5</sub> after 2 hours light irradiation.



**Fig. S4.** Cycling runs in MB, MO, and RhB degradation with Nb<sub>3</sub>O<sub>7</sub>F architectures as photocatalyst.