

## Electronic Supporting Information (ESI)

### **Facile ethanol/water solvothermal synthesis of {001} facets exposed WO<sub>3</sub> architectures with superior simulated sunlight photocatalytic activities**

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Table S1 BET surface area and pore size data of series WO<sub>3</sub> samples

| Samples               | BET Surface<br>Area (m <sup>2</sup> g <sup>-1</sup> ) | maximum adsorption<br>quantity (m <sup>3</sup> g <sup>-1</sup> ) | average pore<br>size(nm) | cumulative pore<br>volume (m <sup>3</sup> g <sup>-1</sup> ) |
|-----------------------|-------------------------------------------------------|------------------------------------------------------------------|--------------------------|-------------------------------------------------------------|
| WO <sub>3</sub> -0mL  | 41.40                                                 | 96.21                                                            | 5.40                     | 0.0524                                                      |
| WO <sub>3</sub> -2mL  | 33.54                                                 | 60.14                                                            | 4.91                     | 0.0393                                                      |
| WO <sub>3</sub> -5mL  | 52.31                                                 | 102.66                                                           | 12.11                    | 0.0758                                                      |
| WO <sub>3</sub> -8mL  | 49.80                                                 | 35.36                                                            | 3.76                     | 0.0510                                                      |
| WO <sub>3</sub> -11ml | 6.21                                                  | 4.79                                                             | --                       | 0.0052                                                      |

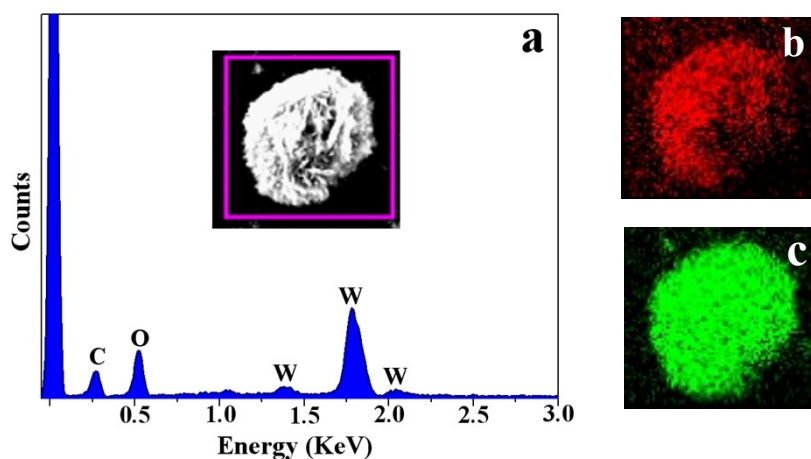


Fig. S1 (a) Energy disperse X-ray spectroscopy (EDX) detected from the  $\text{WO}_3$ -5mL flower in inset, and (b-c) corresponding O and W elements distribution in the SEM mapping image.

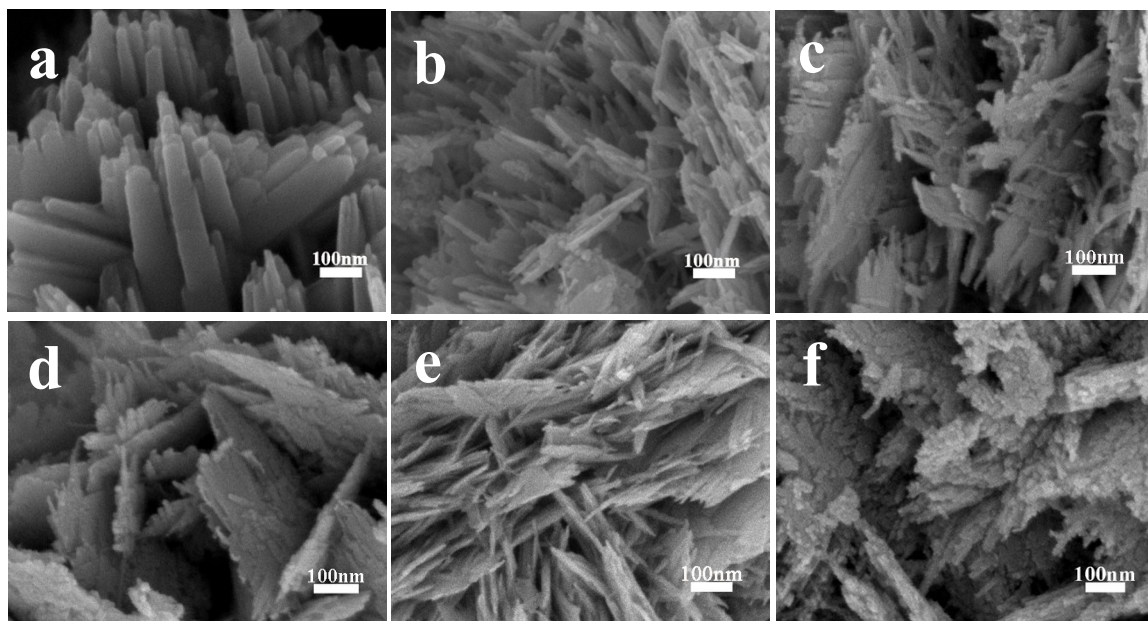


Fig. S2 High magnified SEM images of series  $\text{WO}_3$  products obtained with ethanol volume of (a) 0 mL, (b) 2.0 mL, (c) 3.0 mL, (d) 4.0 mL, (e) 5.0 mL and (f) 6.0 mL.

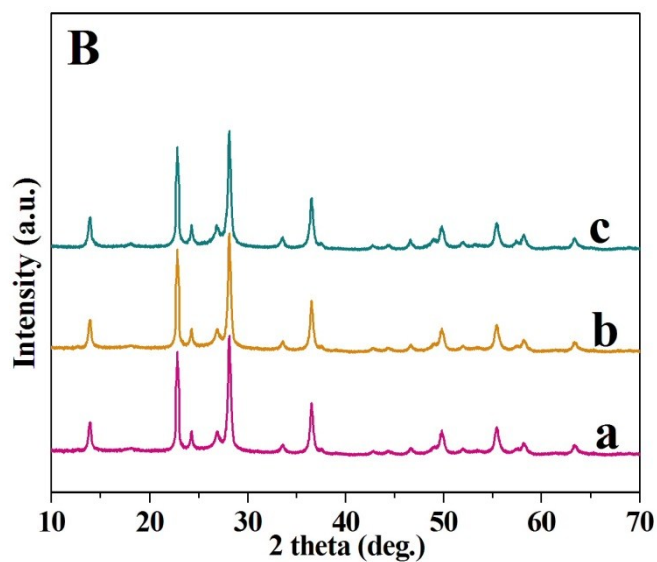
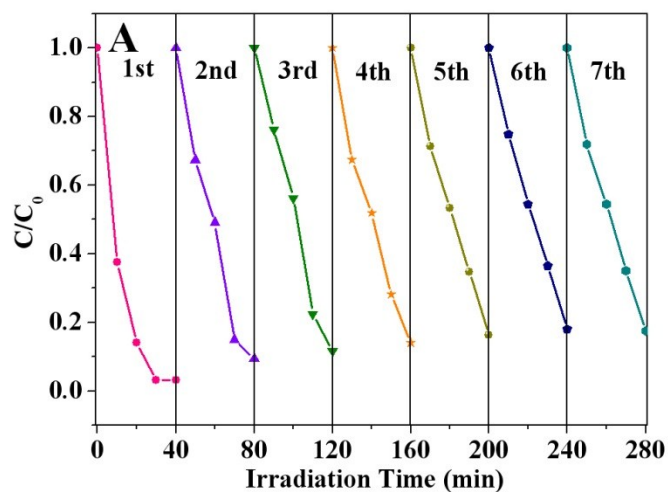


Fig. S3. (A) Cyclic photocatalytic degradation experiments of MO by WO<sub>3</sub>-5.0ml under UV-vis light irradiation, (B) XRD patterns of the WO<sub>3</sub>-5.0ml samples: (a) fresh, (b, c) after 4 and 7cycles, respectively.

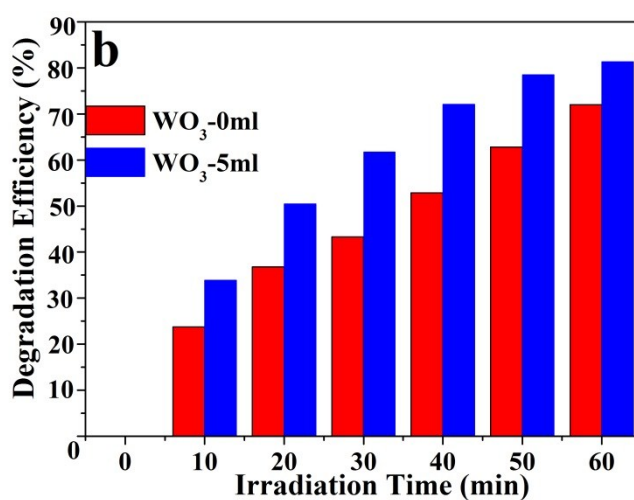
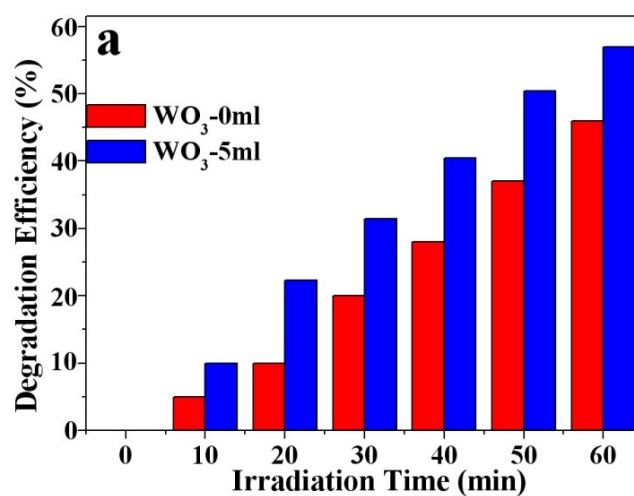


Fig. S4. Comparison of photodegradation behavior for degradation of (a) acid ponceau, and (b) Orange I of WO<sub>3</sub>-0mL and WO<sub>3</sub>-5.0mL, respectively.

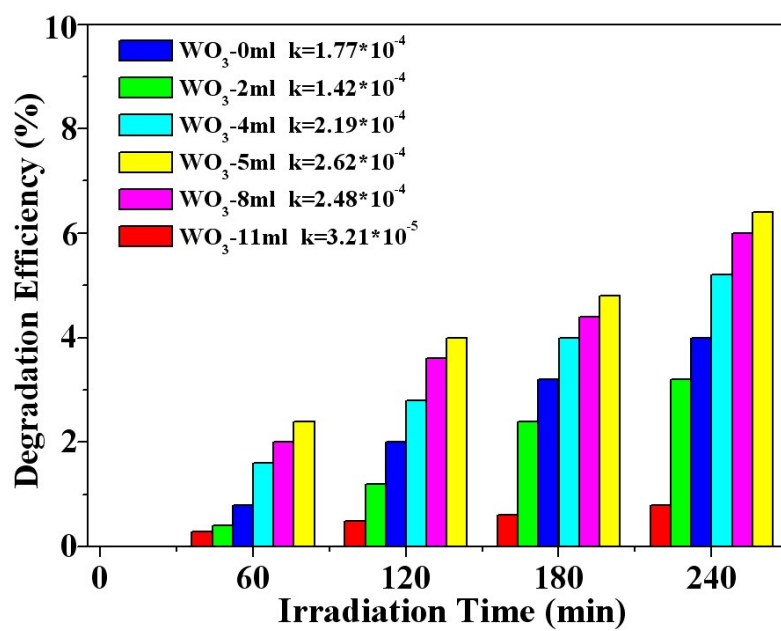


Fig. S5. Photodegradation efficiency of colorless phenol (10 ppm) over series WO<sub>3</sub> samples.