

## **Supplementary Information**

**For**

**Manuscript ID: RA-ART-06-2014-005724**

**“Synthesis of three-dimensional WO<sub>3</sub>octahedra: Characterization,  
optical and efficient photocatalytic properties”**

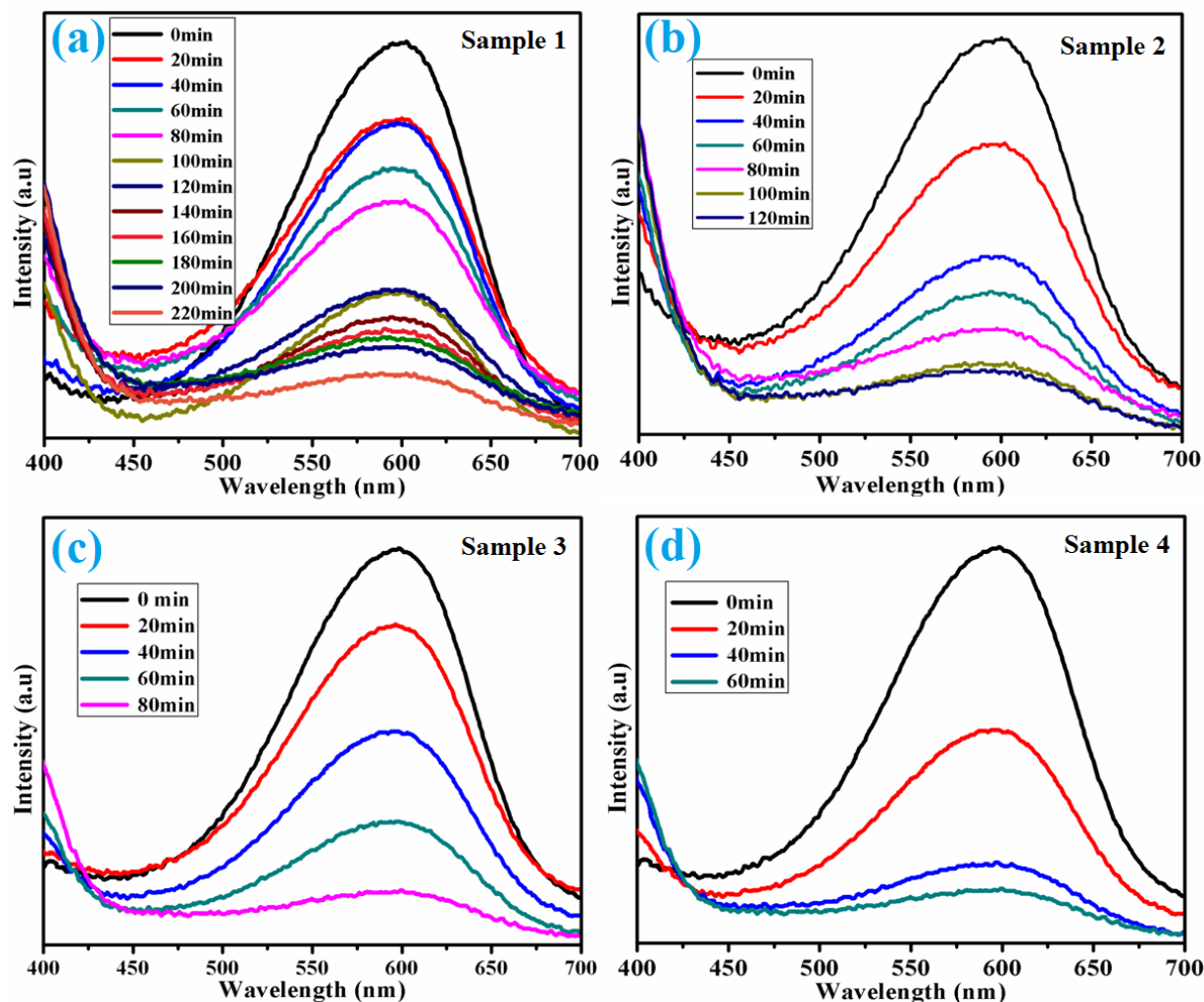


Figure S1 (a) Photodegradation of MB with bulk material (sample 1), (b-d) photodegradation of MB in the presence of different concentrations (20 mg, 30 mg and 100 mg) of the WO<sub>3</sub> octahedra.

Fig. S1 shows the absorption spectra of the aqueous solution of MB in the presence of different concentrations (20 mg, 30 mg and 100 mg) of the as-synthesized WO<sub>3</sub> octahedra under visible light irradiation at room temperature. Fig. S1 (a) reveals the photodegradation plot of MB in the presence of bulk material (sample 1, 100 mg). It takes a very long time to degrade the dye and it degraded 90 % of MB after 220 min with a rate constant of 0.00611 min<sup>-1</sup>. Fig. S1 (b-d) shows the degradation of MB in the presence of different concentrations of the obtained morphology under visible light. The sample 2 (20 mg) and sample 3 (30 mg) also successfully degraded 92 %

and 93 % of the dye within 120 and 80 minutes respectively. The reaction rate constants for sample 2 and sample 3 are  $0.01496 \text{ min}^{-1}$  and  $0.01668 \text{ min}^{-1}$  respectively which are higher than that of the bulk. The highest photocatalytic efficiency was achieved by sample 4 (*i.e.*, 100 mg) of  $\text{WO}_3$ octahedra with a high rate constant  $0.03254 \text{ min}^{-1}$  and it degraded 95 % of the dye in 60 minutes as cleared from Fig. S1(d).The characteristic peak of MB at  $\lambda = 603 \text{ nm}$  was gradually decreased by increasing the irradiation time. The absorption peak was totally disappeared after 60 min that indicates the efficient photocatalytic activity of  $\text{WO}_3$ octahedra.