

Supporting Information

Fluffy-ball-shaped Carbon Nanotube-TiO₂ Nanorod Nanocomposites for Photocatalytic Degradation of Methylene Blue

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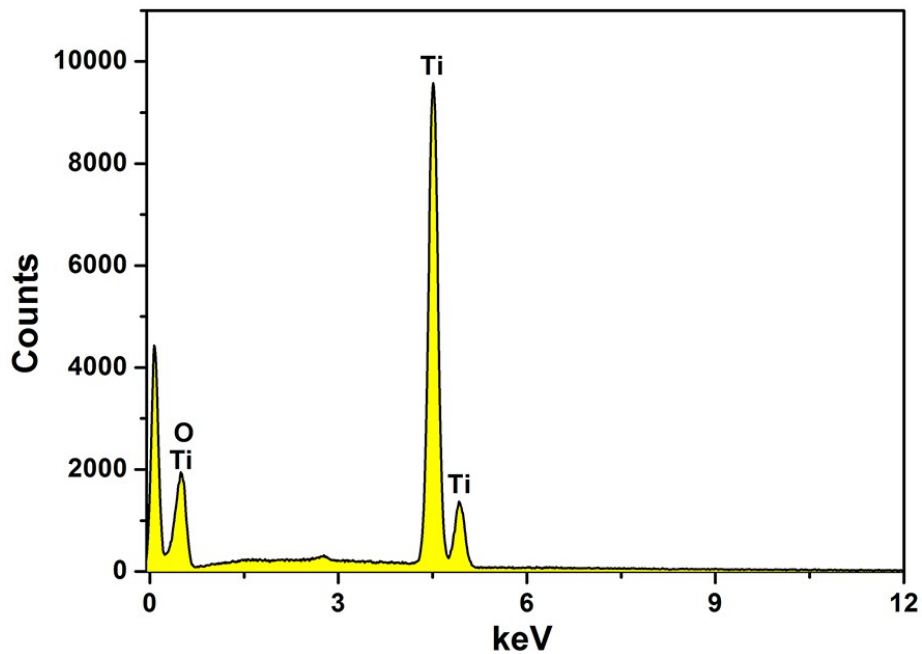


Figure S1. EDS of the TiO_2 microspheres.

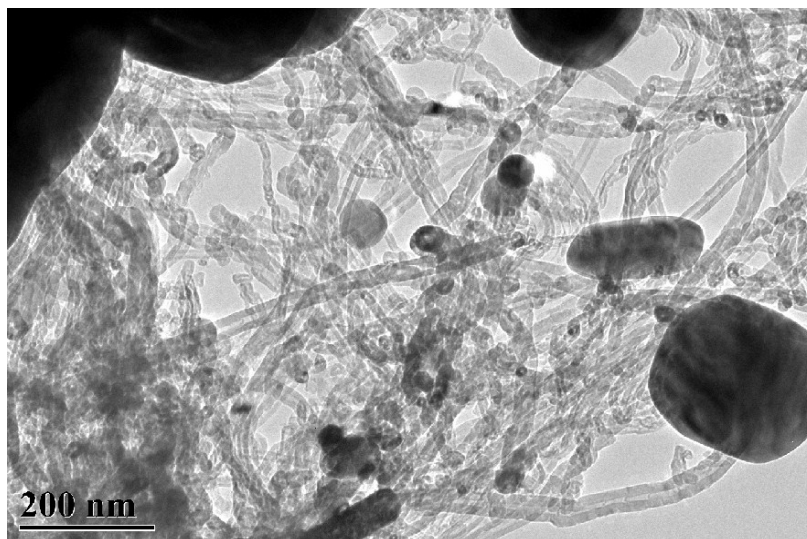


Figure S2. TEM image of MWCNTs in the CNT- TiO_2 nanorod composites.

After long time irradiation with the high energy electron beam of TEM, the TiO_2 nanorods were melted. MWCNTs embedded in the nanocomposites can be clearly seen in the TEM image.

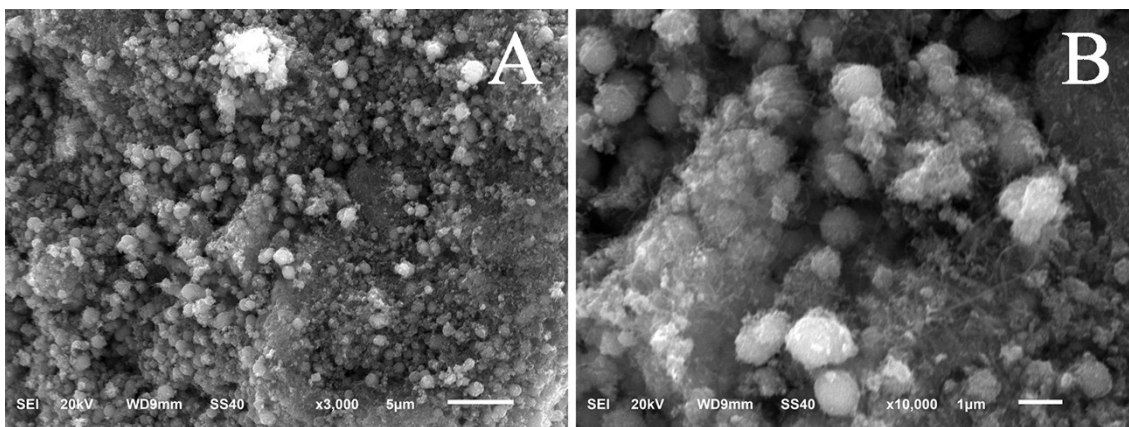


Figure S3. SEM images of TiO_2 -CNT nanocomposites. The reaction system consists of 10 mL of water, 7.0 mg CNT, 1 mL of 37 wt.% HCl and 500 μL titanium tetrachloride.

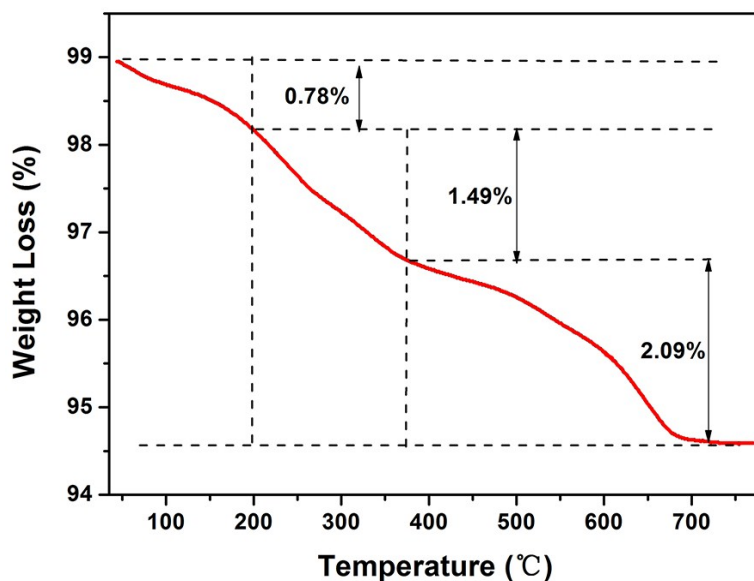


Figure S4. TGA curve of the CNT- TiO_2 nanorod composites.

The first decline ends at about 200°C, causing by the evaporation of occluded water. The second reduction from 200 to 380°C mainly attributes to the decomposition of organic molecules. The decomposition of CNT leads to the third weight loss of 2.09%.

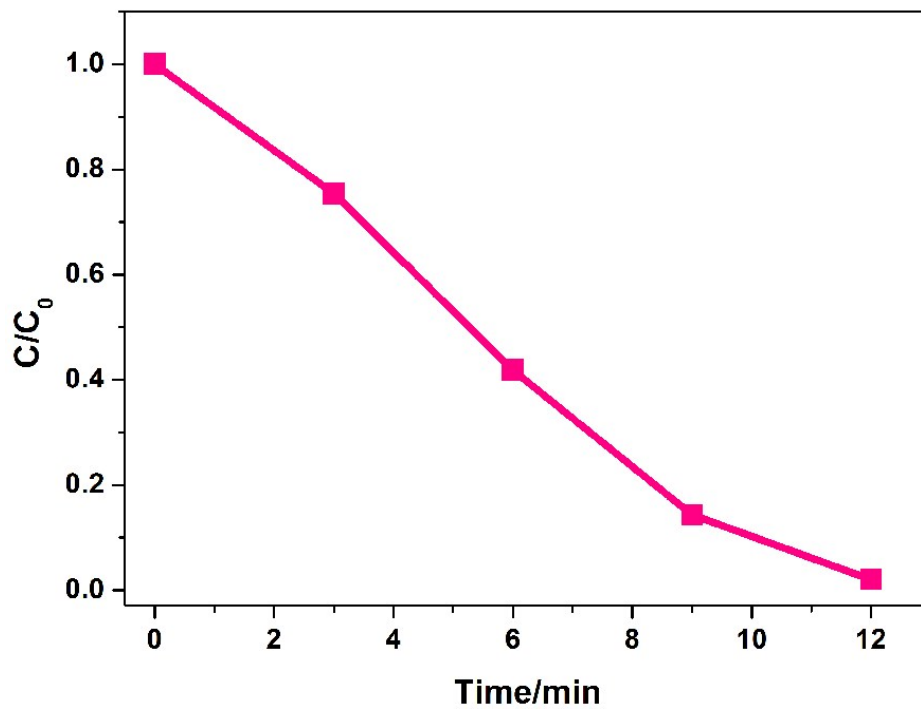


Figure S5. Photocatalytic degradation capability of P25 with MB as a model pollutant.

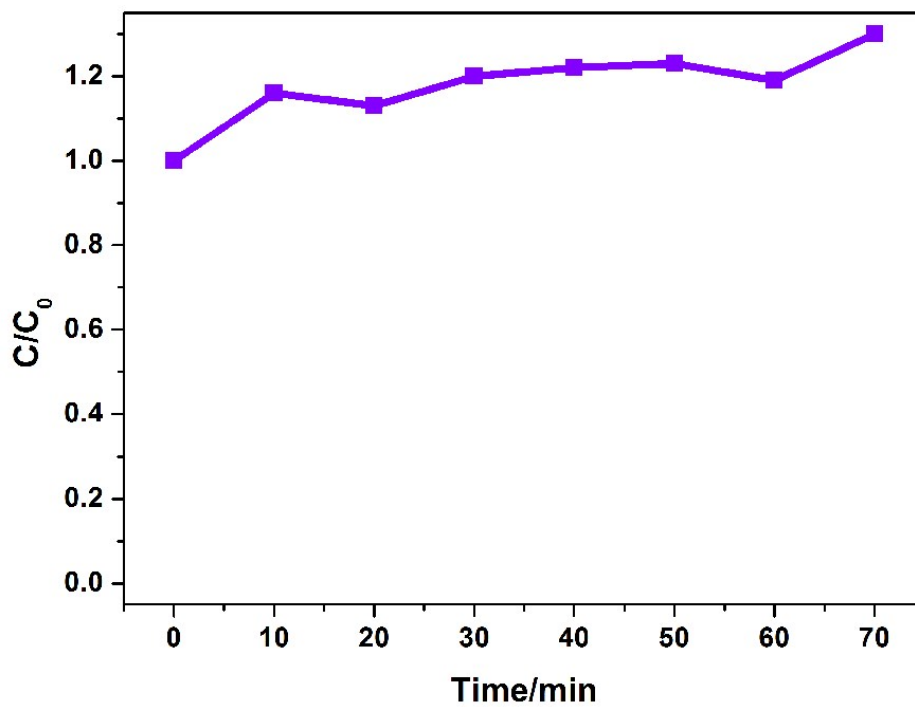


Figure S6. MB degradation capability of MWCNTs in dark.

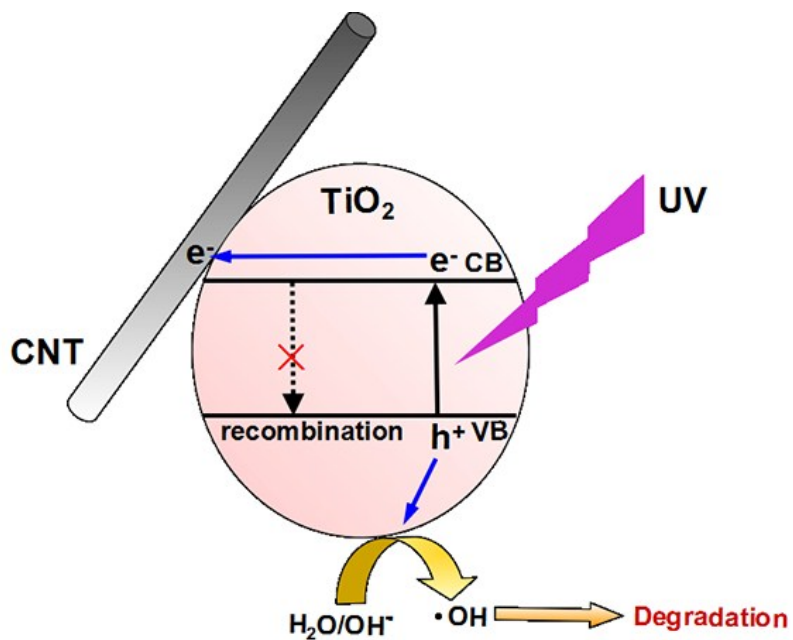


Figure S7. Mechanism of the CNT-mediated enhancement of photocatalysis.

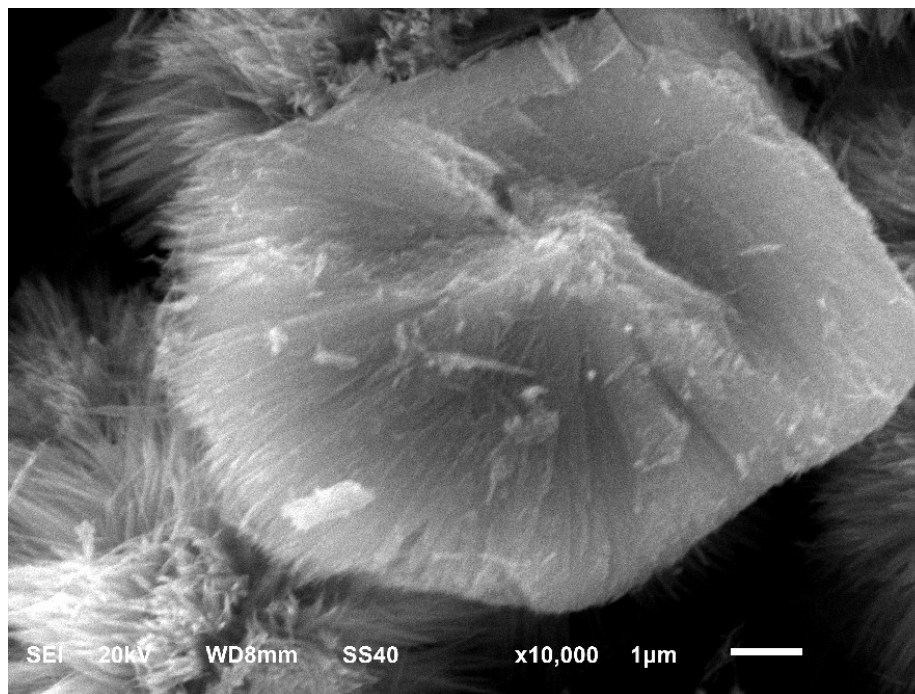


Figure S8. SEM section image of the CNT-TiO₂ microspheres.

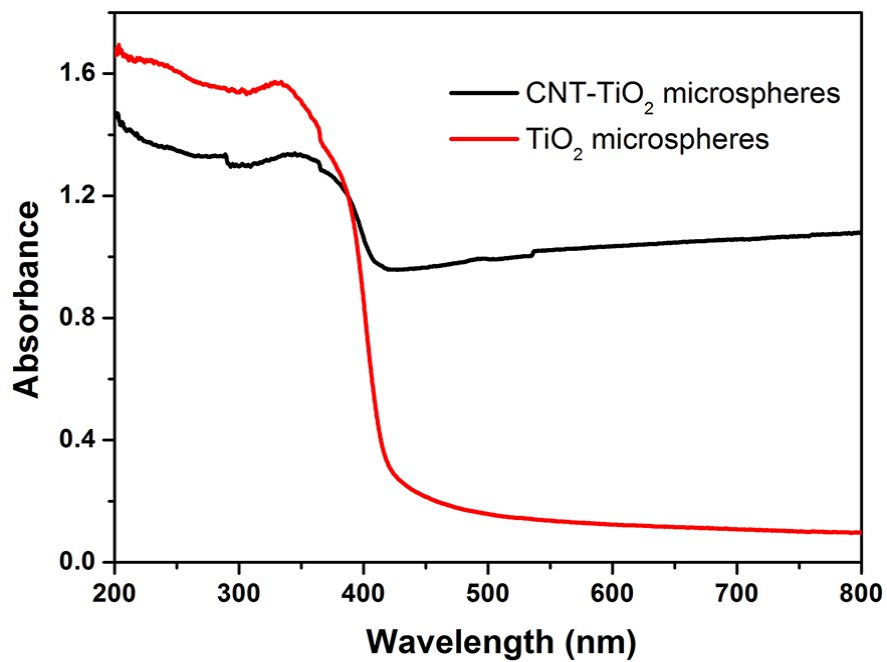


Figure S9. UV-Vis diffuse reflectance spectra of the CNT-TiO₂ microspheres and the TiO₂ microspheres.