

Supplementary Information

A facile template-free synthesis of pH-responsive polyelectrolyte/ amorphous TiO₂ composite hollow microcapsules for photocatalysis

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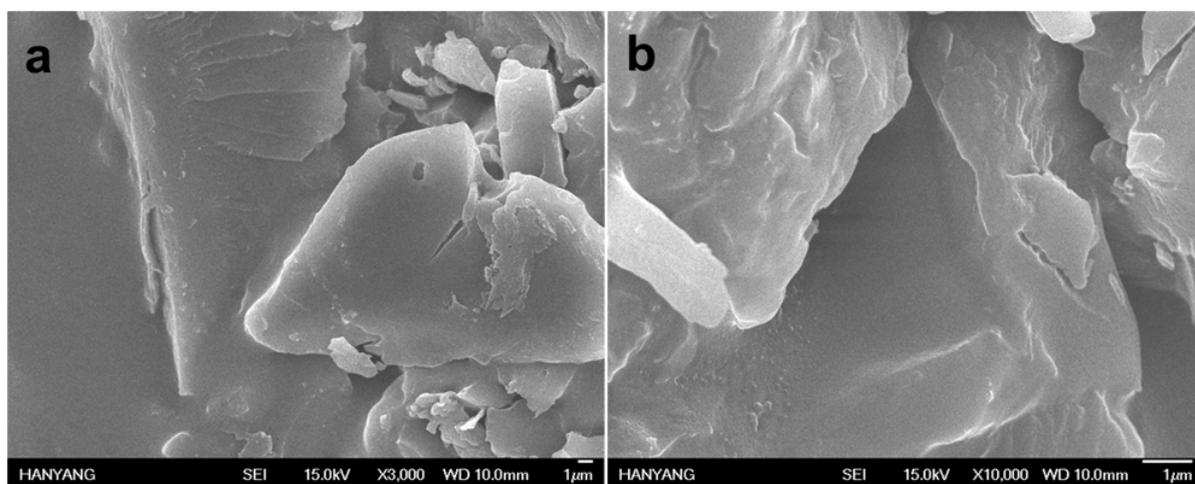


Figure S1. (a) SEM images of the poly(MAA/EGDMA) microspheres (pME) at two different magnifications: (a) low (X 3000) and (b) high (X 10000) magnifications.

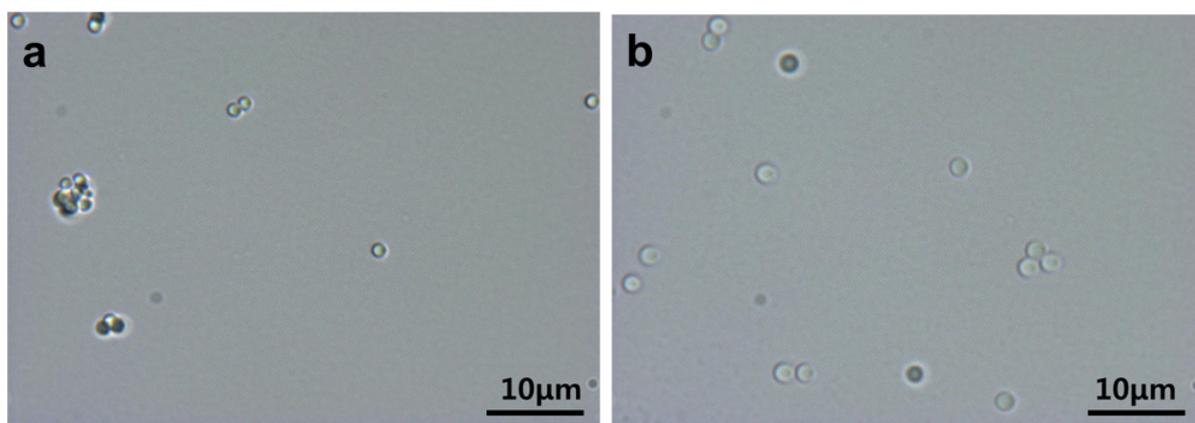


Figure S2. OM images of the pMET microspheres dispersed in (a) 2-propanol and (b) water.

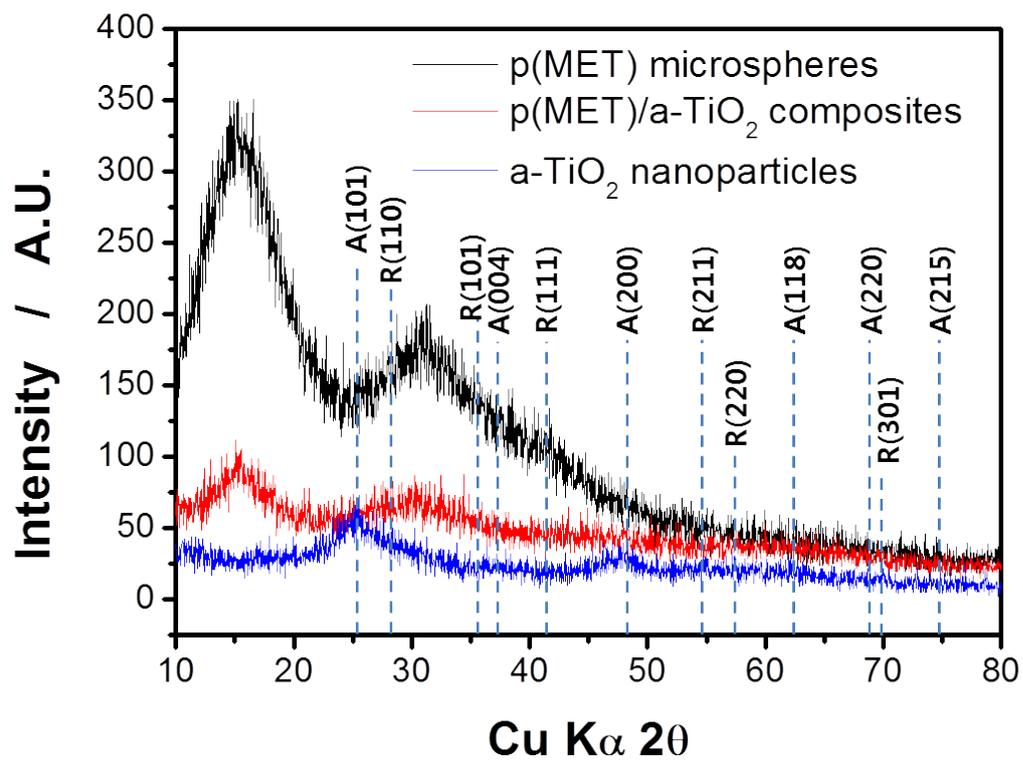


Figure S3. XRD patterns of the hollow pMET/a-TiO₂ composite microcapsules, pMET microspheres and a-TiO₂ nanoparticles.

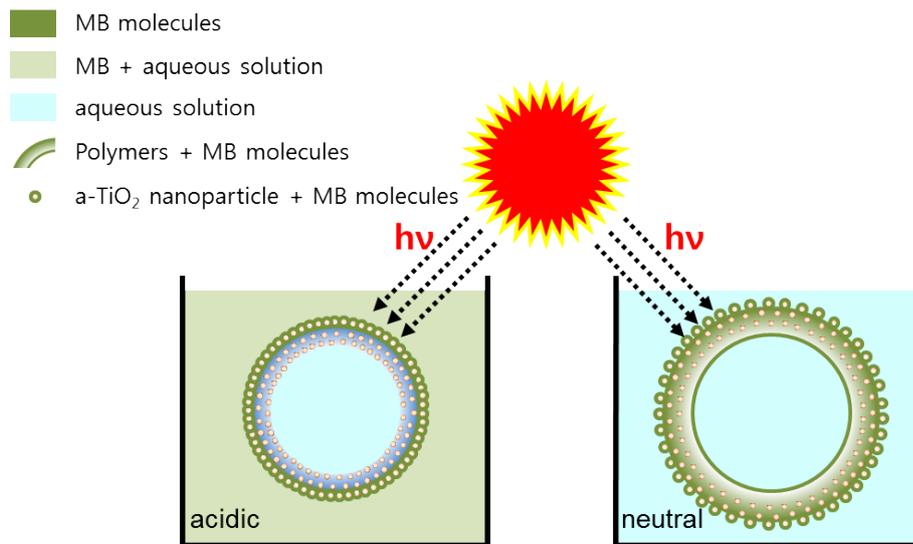


Figure S4. Schematic illustration of MB decontamination using UV irradiation under different pH conditions of aqueous solution containing the hollow pMET/a-TiO₂ composite microcapsules.

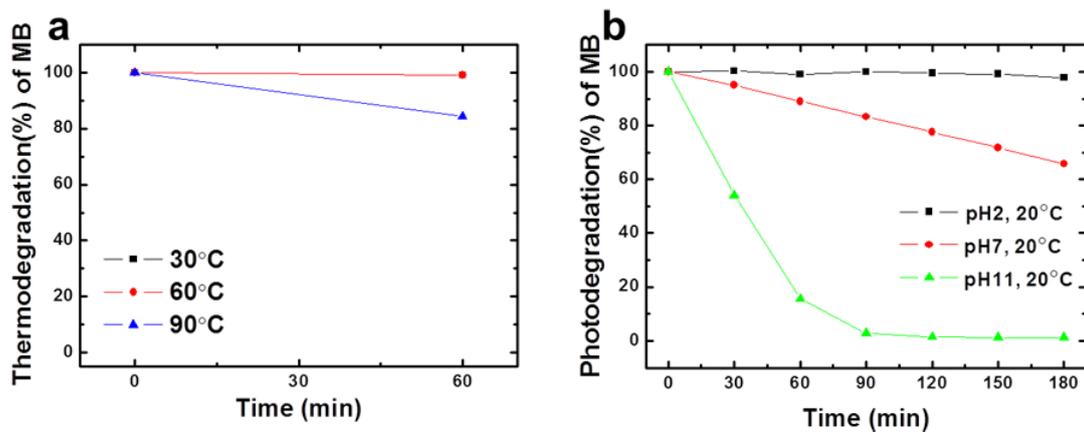


Figure S5. (a) Thermodegradation of methylene blue (MB) dye in aqueous solution without photocatalysts at three different temperatures (30, 60 and 90 °C) for 60 min, and (b) photodegradation of MB molecules without photocatalysts in aqueous solution with different pHs (2, 7 and 11) at 20 °C for 180 min.

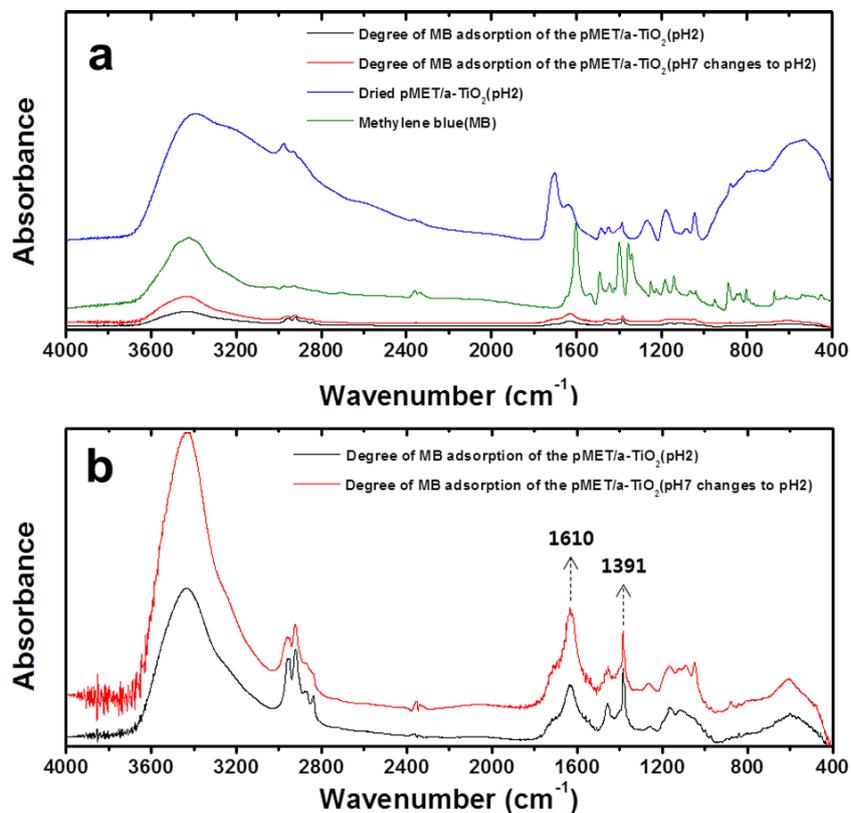


Figure S6. (a) Plot of FT-IR spectra vs. degree of MB adsorption under two different pHs for the hollow pMET/a-TiO₂ microspheres: [black line, pH 2] and [red line, pH 7 changes to pH 2], and FT-IR spectra of the (blue line) pure hollow pMET/a-TiO₂ composite microcapsules and (green) MB powder.; (b) The enlarged FT-IR spectra of two samples (pH 2 and pH 7 changes to pH 2).