

Electrospinning preparation of H₄SiW₁₂O₄₀/Polycaprolactam composite nanofibrous membrane and its greatly enhanced photocatalytic activity and mechanism

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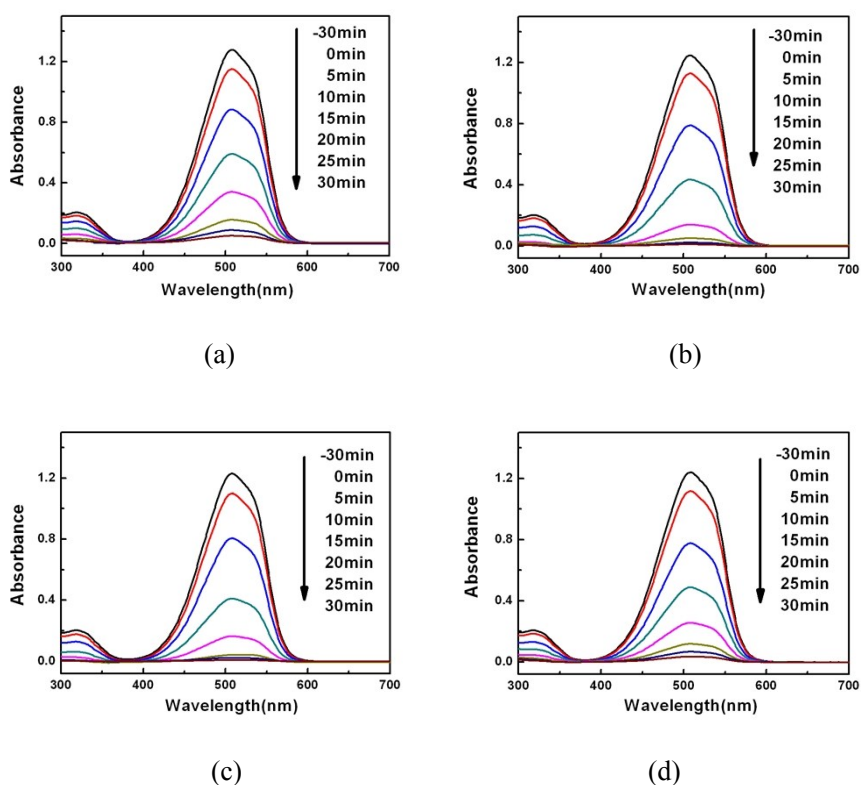


Fig. S1 UV-vis spectra of MO vs. photoreaction time catalyzed by the composite nanofibrous membrane with different mass ratio of H₄SiW₁₂O₄₀ to PA6 (a) 0.25:2.0, (b) 0.5:2.0, (c) 0.75:2.0, (d) 1.0:2.0.

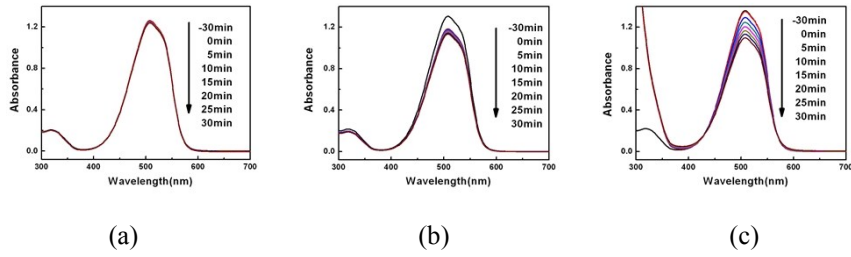


Fig. S2 Photodegradation of MO over (a) only UV irradiation, (b) PA6 nanofibrous membrane and (c) SiW_{12} against irradiation time.

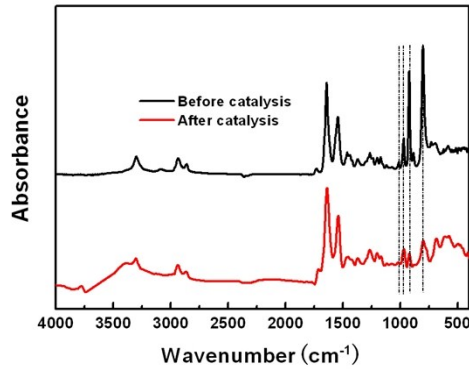


Fig. S3 FT-IR spectra of $\text{H}_4\text{SiW}_{12}\text{O}_{40}$ /PA6 composite nanofibrous membrane before and after catalysis.

Fig. S3 shows the FT-IR spectra of $\text{H}_4\text{SiW}_{12}\text{O}_{40}$ /PA6 composite nanofibrous membrane before and after a three-cycle photocatalytic experiment. It is obvious that the composite sample after catalysis displays four discernible peaks between 790 cm^{-1} and 1100 cm^{-1} , agreeing with Keggin unit well, which indicates that the Keggin structure of $\text{H}_4\text{SiW}_{12}\text{O}_{40}$ remains intact in the membrane after the water has been flowed through the system.