Supplementary Materials

Sn(IV) Porphyrin-Based Ionic Self-Assembled Nanostructures and Their Application in Visible Light Photo-Degradation of Malachite Green

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Figure S19. ESI-MS spectrum (positive ion mode) of the reaction mixture of MG with the photocatalyst generated from **2** and H_3PO_4 after 30 min of visible light irradiation.

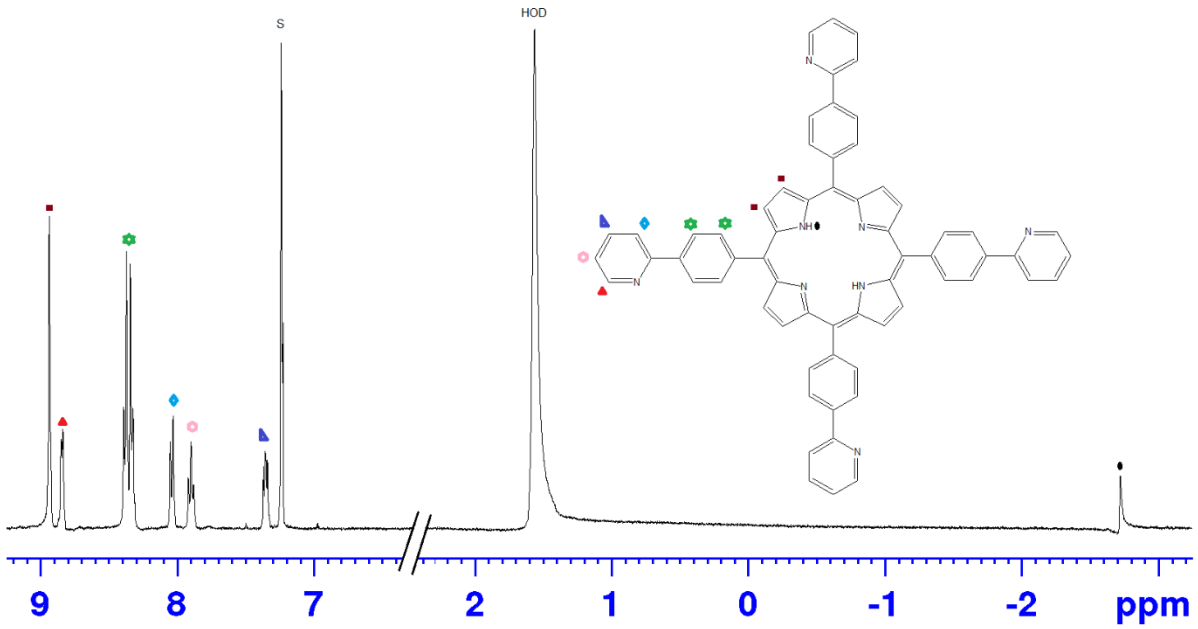


Figure S1. ^{1}H NMR spectrum of 5,10,15,20-tetrakis[4-(2-pyridyl)phenyl]porphyrin **1** in $CDCl_3$.

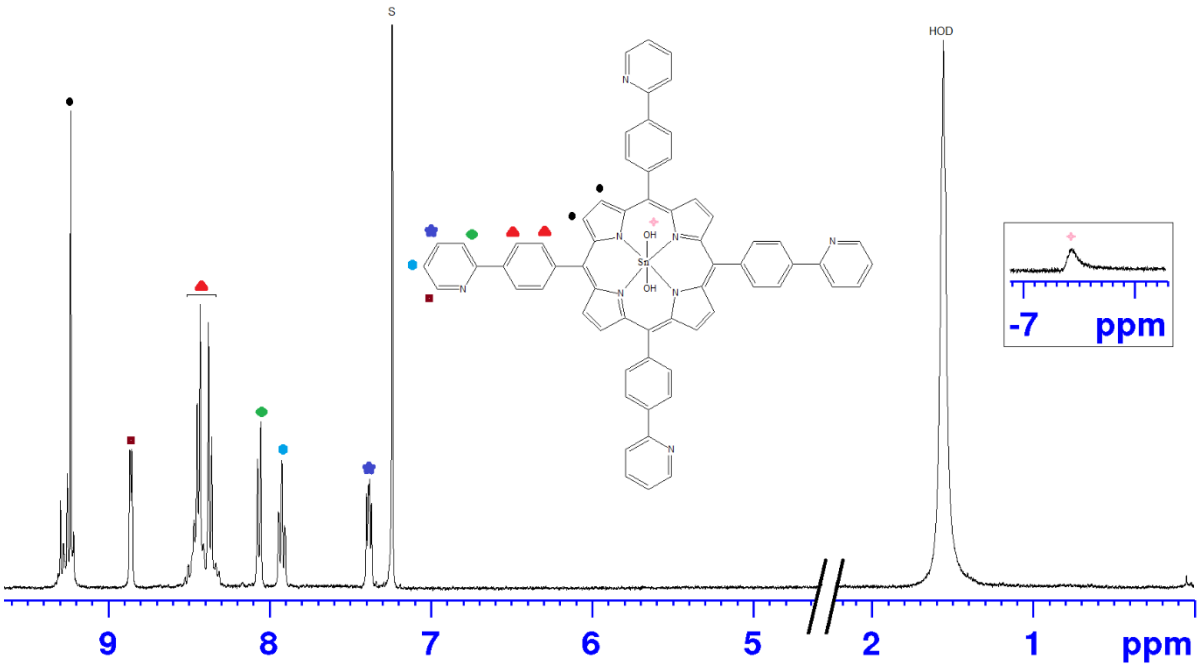


Figure S2. ^{1}H NMR spectrum of *trans*-dihydroxo[5,10,15,20-tetrakis(4-(2-pyridyl)phenyl)porphyrinato]tin(IV) **2** in $CDCl_3$.

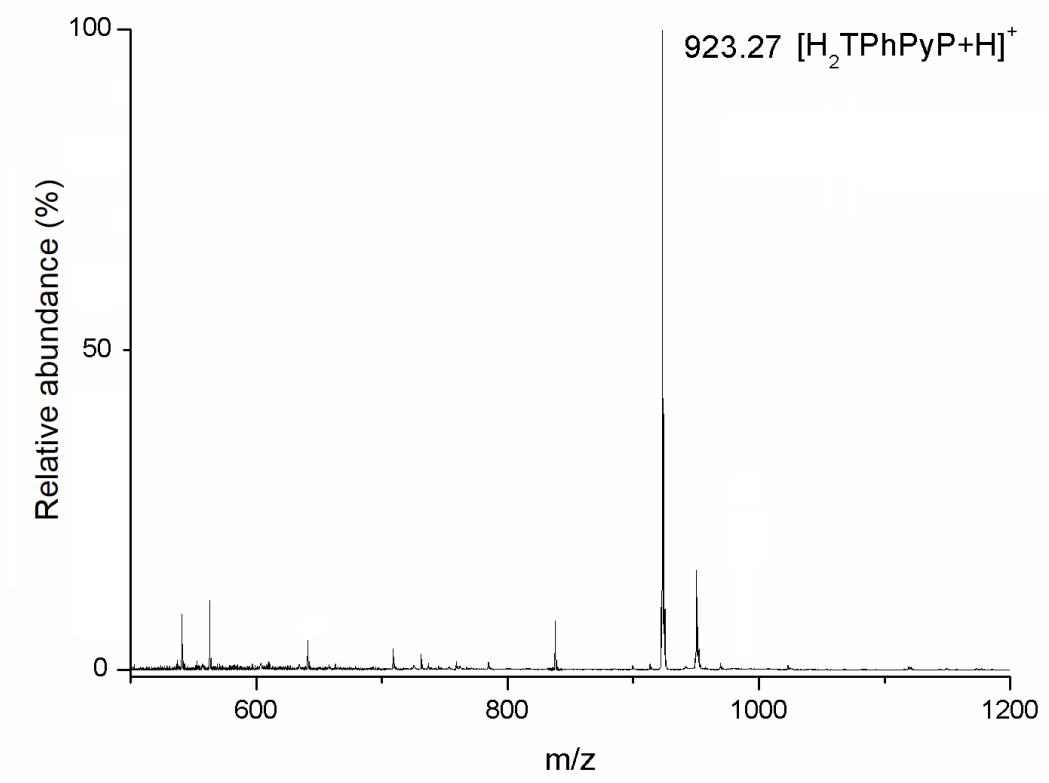


Figure S3. ESI-MS spectrum of **1**.

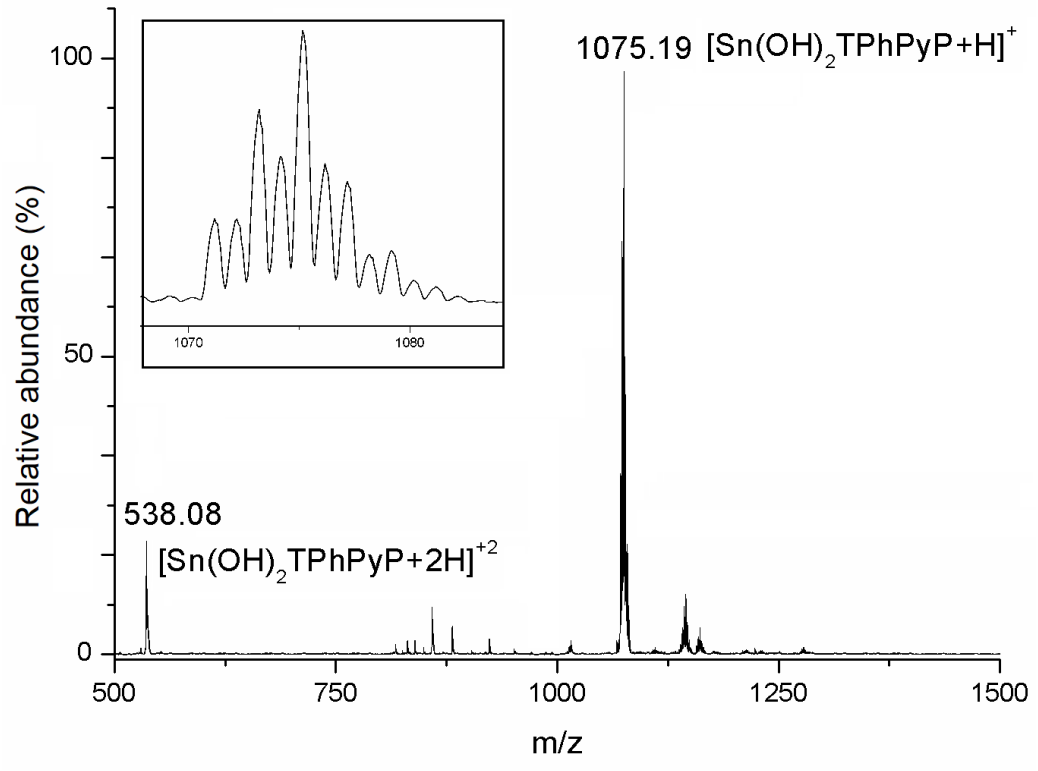


Figure S4. ESI-MS spectrum of **2**.

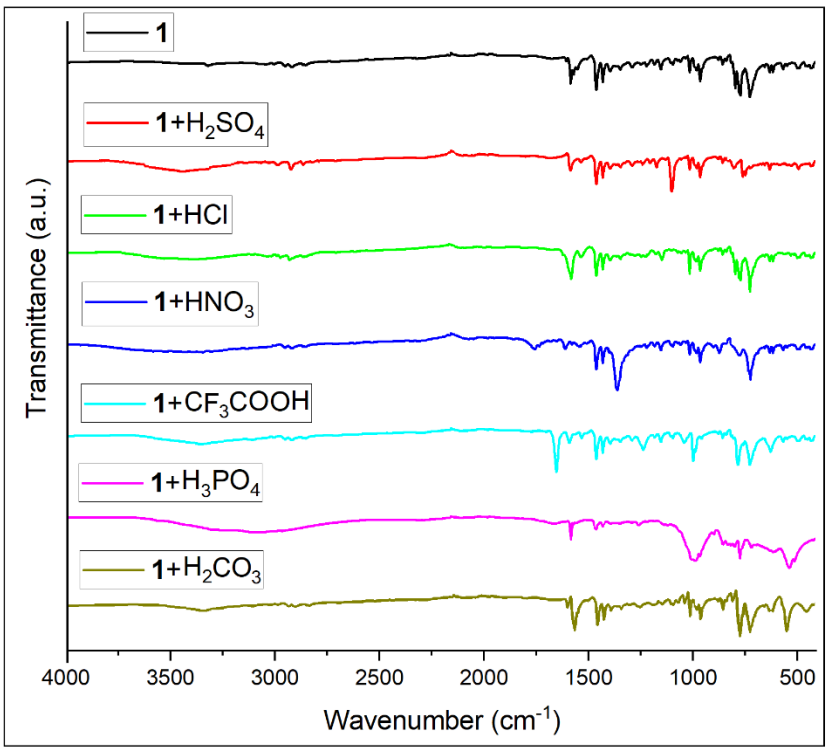


Figure S5. FT-IR spectra of **1** and its ionic complexes in KBr.

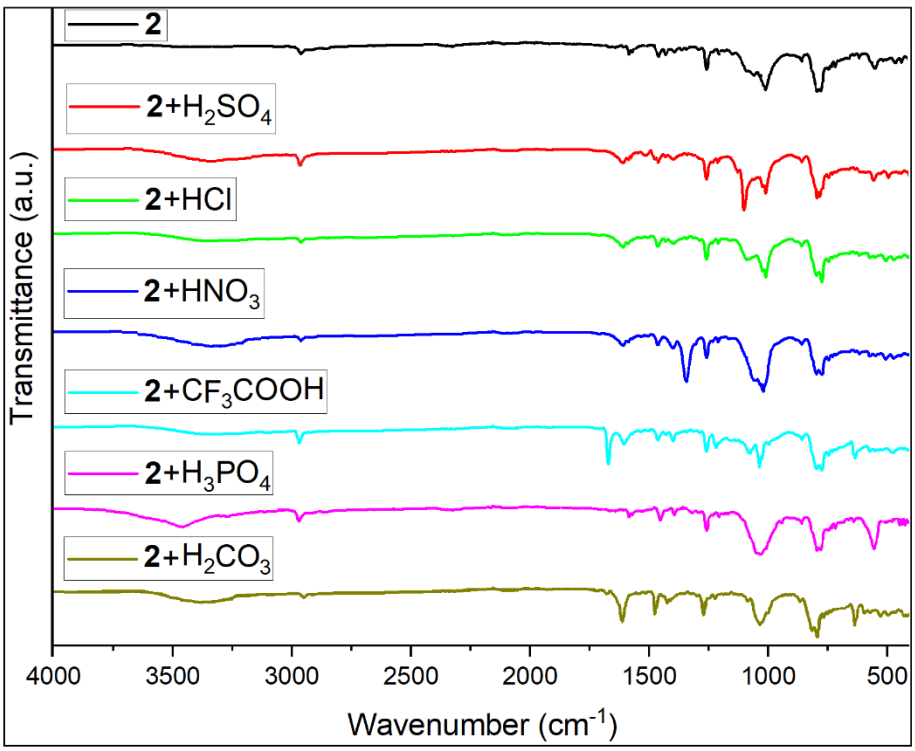


Figure S6. FT-IR spectra of **2** and its ionic complexes in KBr.

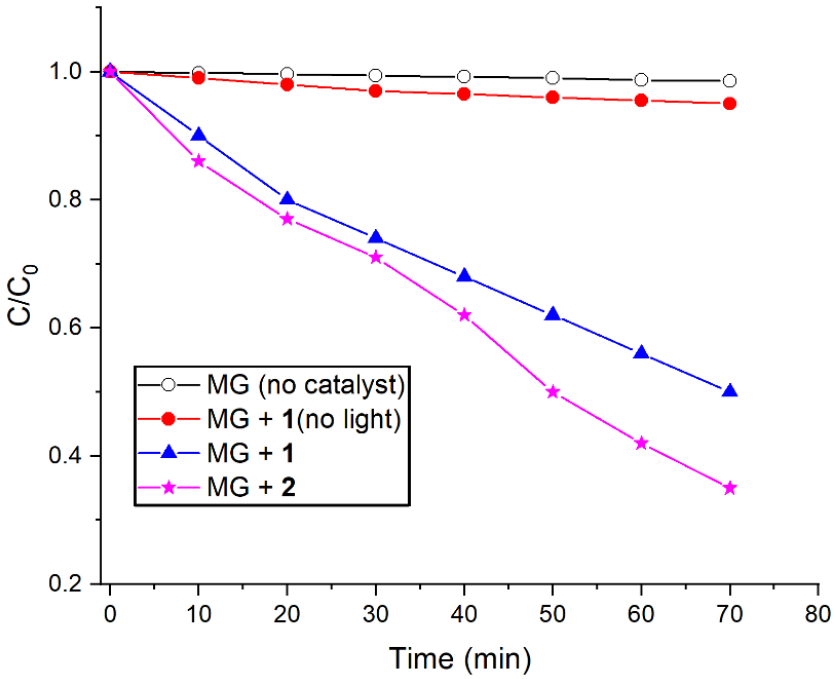


Figure S7. UV-vis spectroscopic observation of the photocatalytic degradation of MG dye in aqueous solution under visible light irradiation by the photocatalyst **1** and **2**.

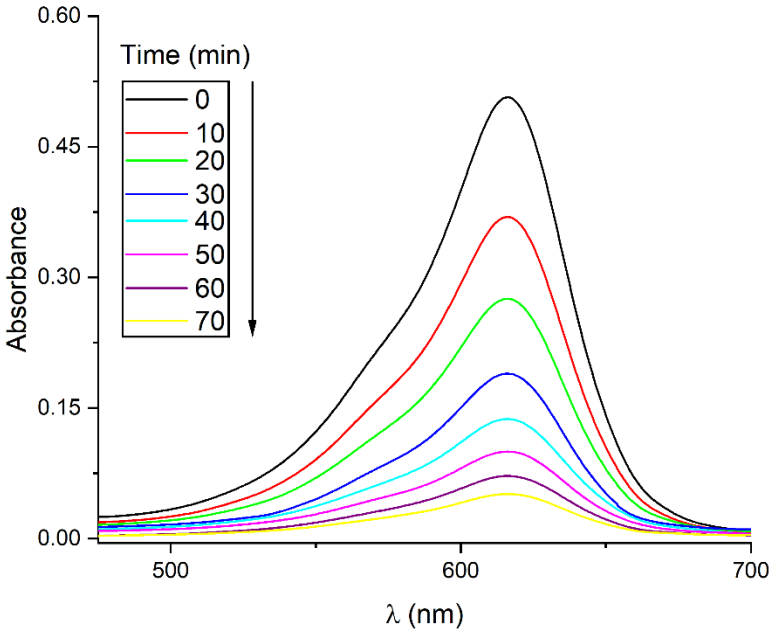


Figure S8. Absorption spectral change of MG dye for the photocatalytic degradation by photocatalyst generated from **2** and H_3PO_4 in aqueous solution under visible light irradiation.

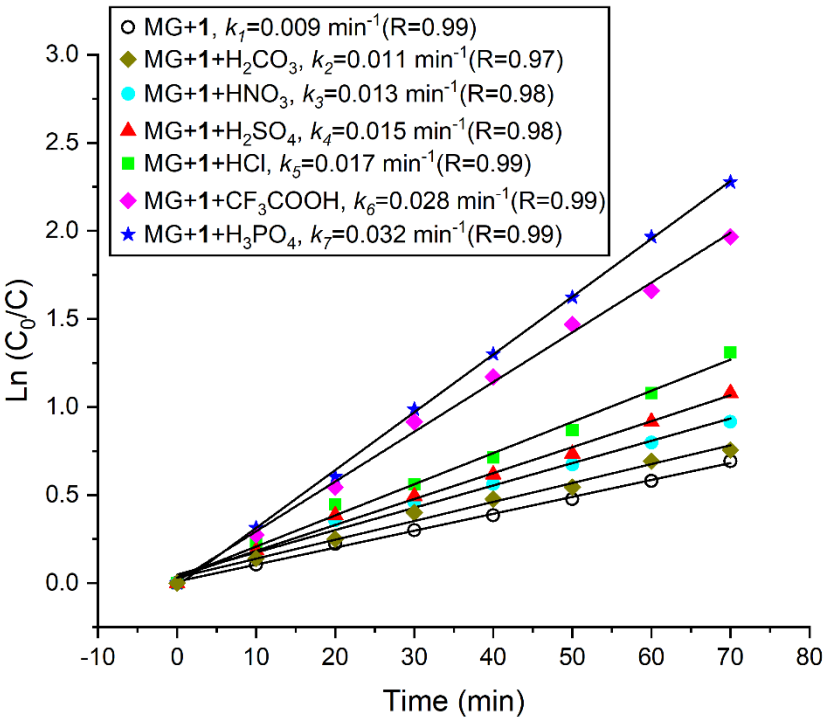


Figure S9. Kinetics for the photocatalytic degradation of MG under visible light irradiation by photocatalyst generated from **1** and various acids.

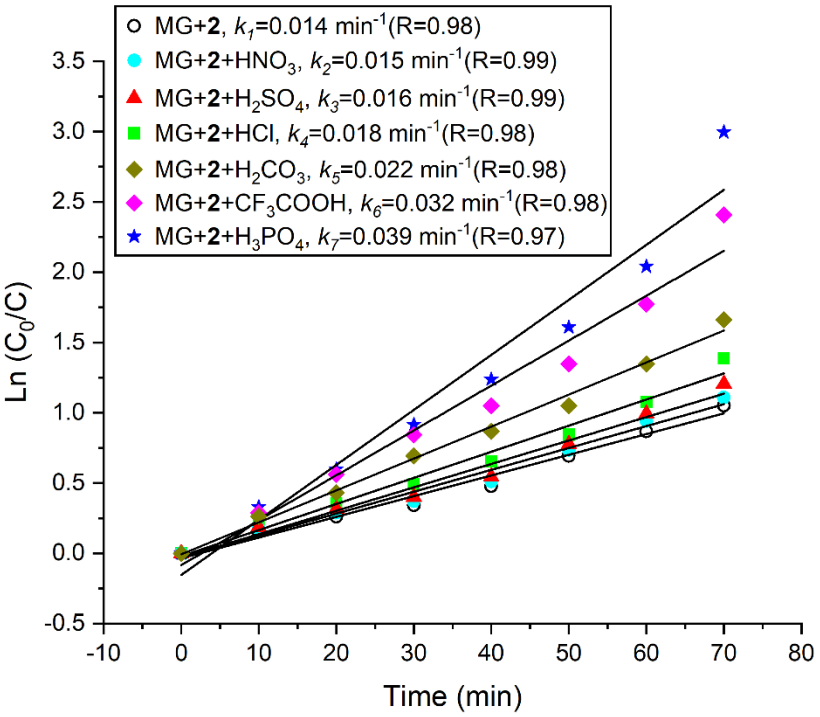


Figure S10. Kinetics for the photocatalytic degradation of MG under visible light irradiation by photocatalyst generated from **2** and various acids.

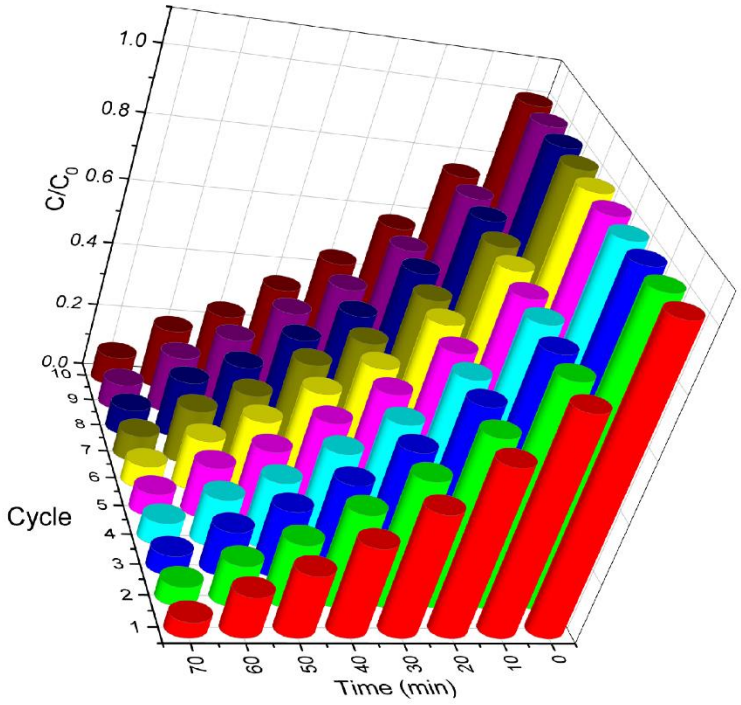


Figure S11. Recyclability of the photocatalyst generated from **2** and H_3PO_4 towards the degradation of MG dye. Up to 10 cycle.

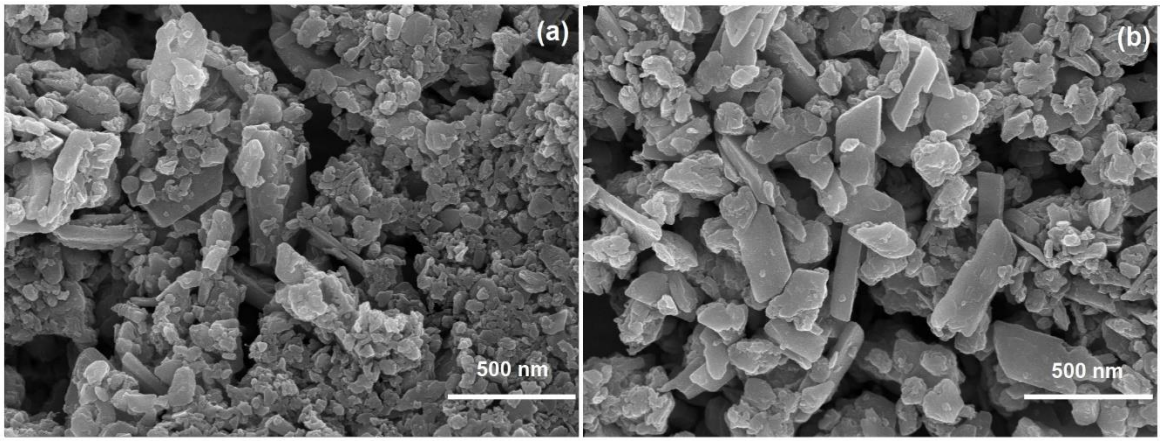


Figure S12. FE-SEM images of photocatalyst generated from **2** and H_3PO_4 (after and before the degradation of MG dye.

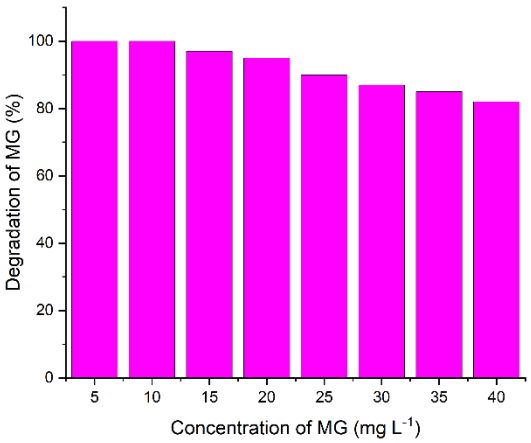


Figure S13. Effect of initial concentration of MG on the degradation by the photocatalyst (5 mg) generated from **2** and H_3PO_4.

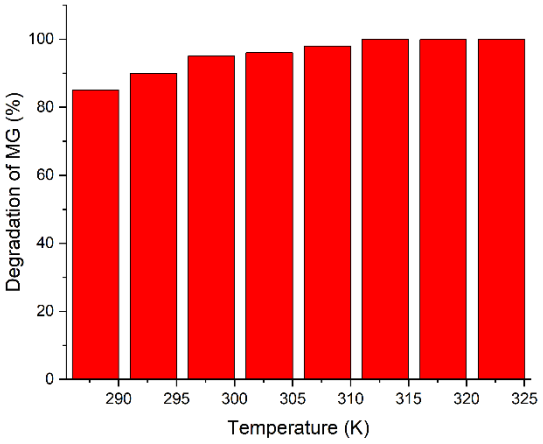


Figure S14. Effect of temperature on the MG degradation by the photocatalyst generated from **2** and H_3PO_4.

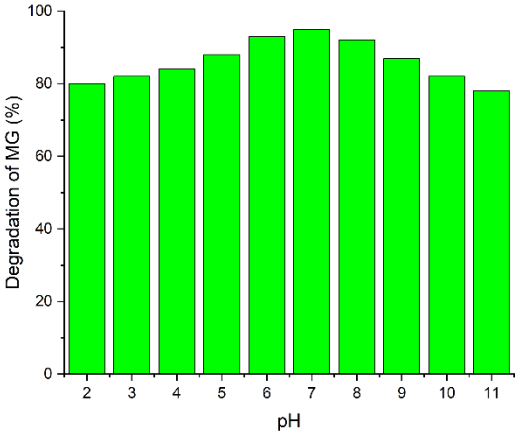
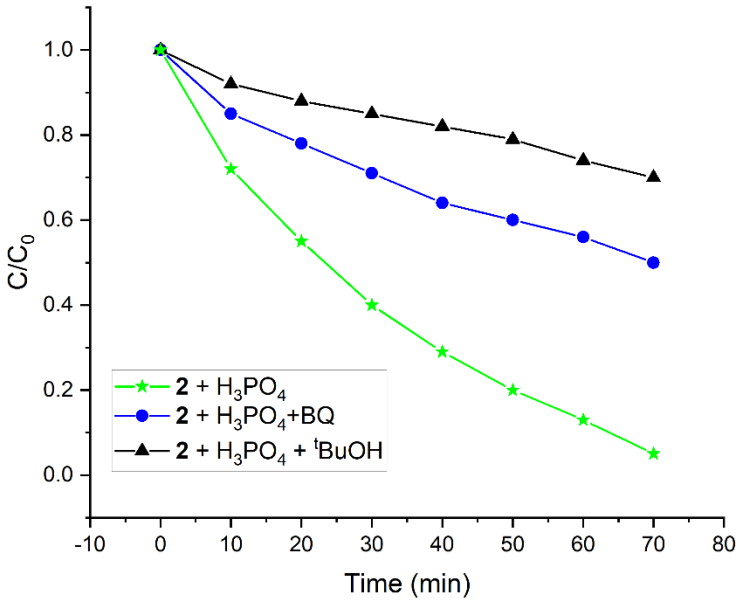


Figure S15. Effect of pH of the solution on the MG degradation by the photocatalyst generated from **2** and H_3PO_4.



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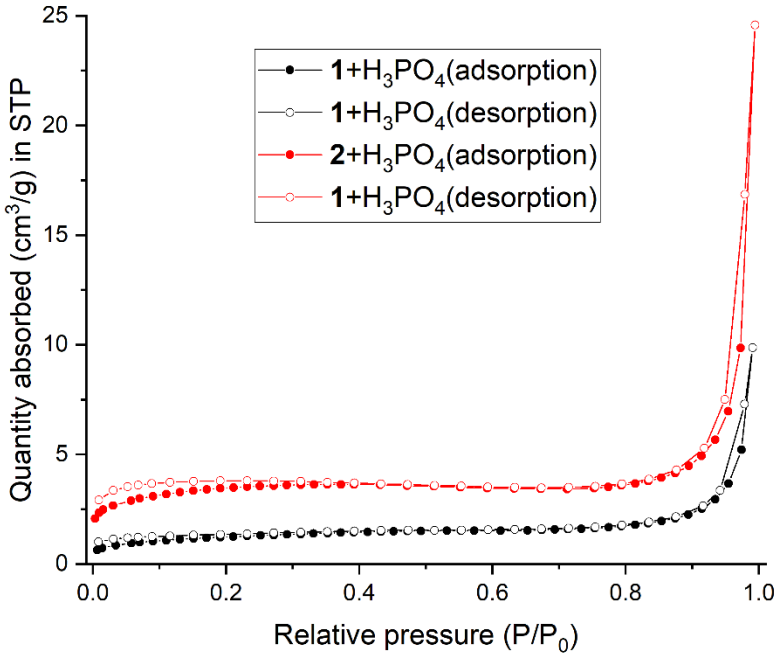

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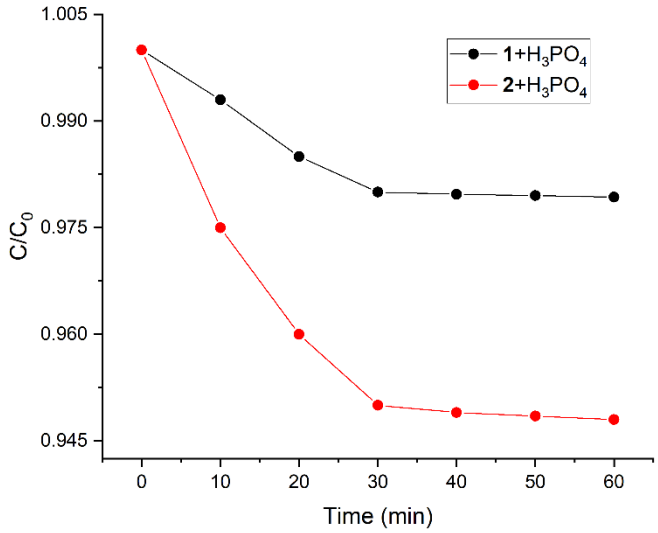

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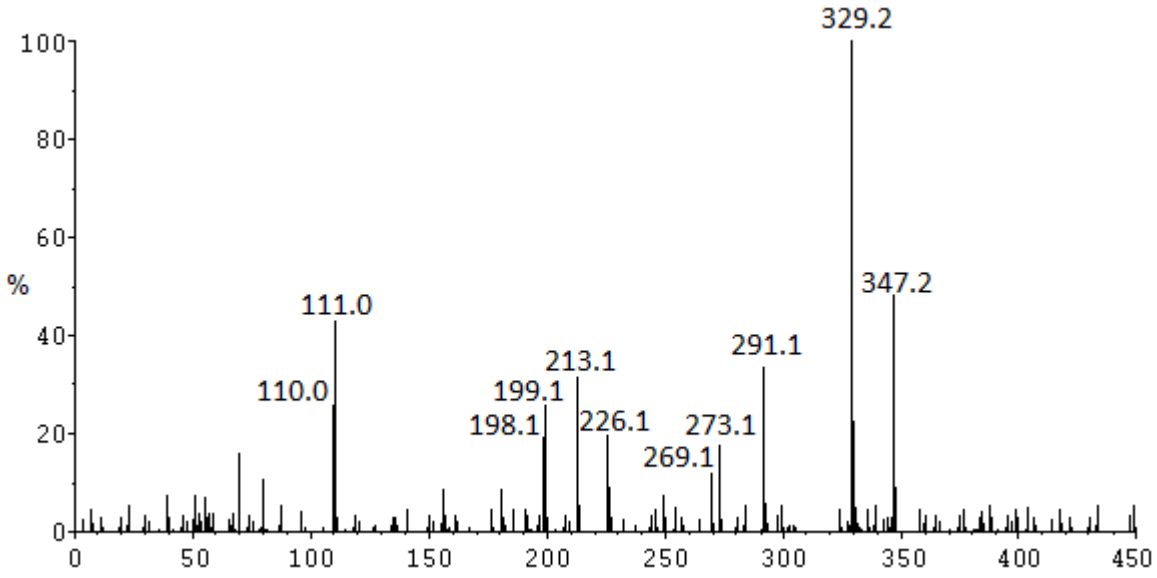

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