

Tuning the Supramolecular Structures of Metal-Free Porphyrin via Surfactant Assisted Self-Assembly to Enhance Photocatalytic Performance

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1. Dynamic light scattering (DLS) characterization

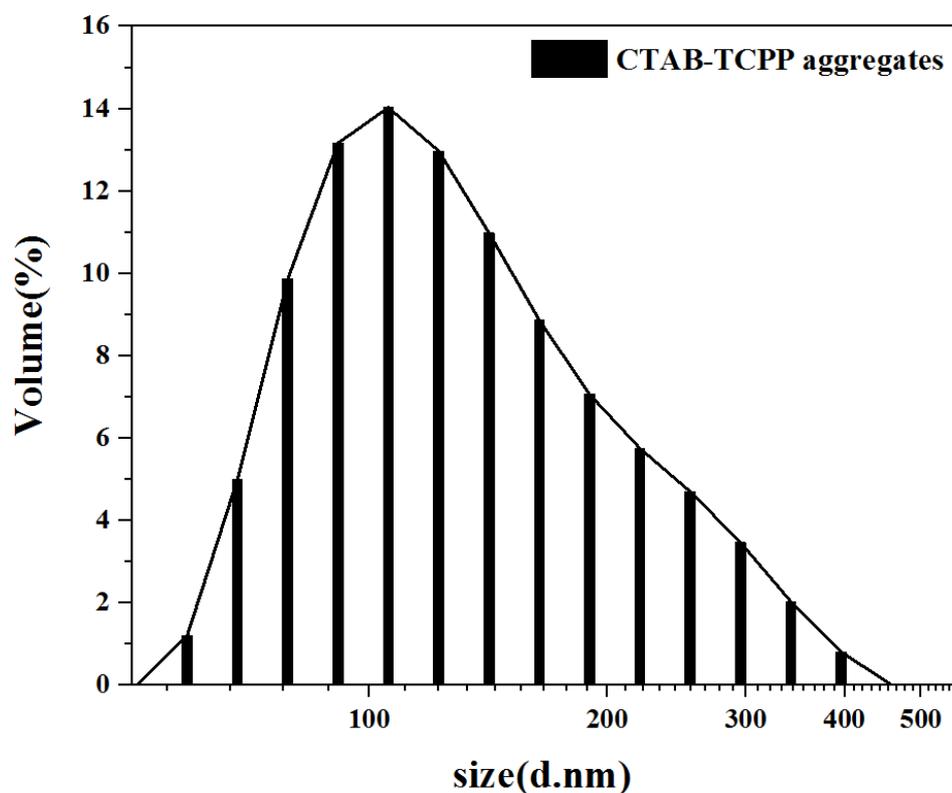


Figure S1. Dynamic light scattering (DLS) of the CTAB-TCPP aggregates.

2. The average of decay time of CTAB-TCPP aggregates

Table s1. Time resolved fluorescence fitting results of commercial TCPP、CTAB-TCPP

Sample	$\tau_1(\text{ns})$	$\tau_2(\text{ns})$	B1	B2	Average $\tau(\text{ns})$
Commercial TCPP	773.14	2993.67	1133.602	465.384	2136.201
CTAB-TCPP	722.56	2610.284	1135.783	648.01	1993.604

3. The HPLC data of phenol during the photodegradation

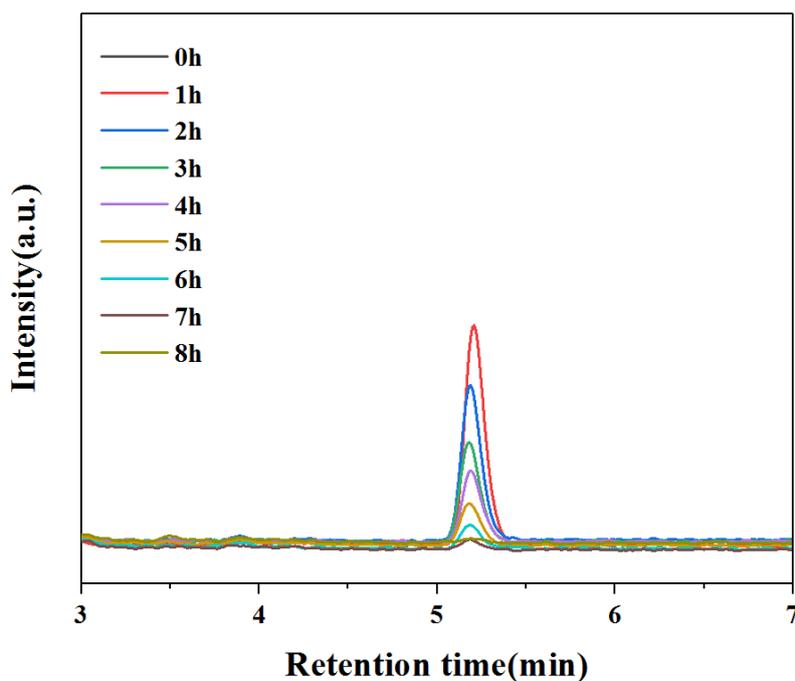


Figure S2. High performance liquid chromatography of phenol peak during degradation by CTAB-TCPP.

4. The three-dimensional chromatograms of phenol peak

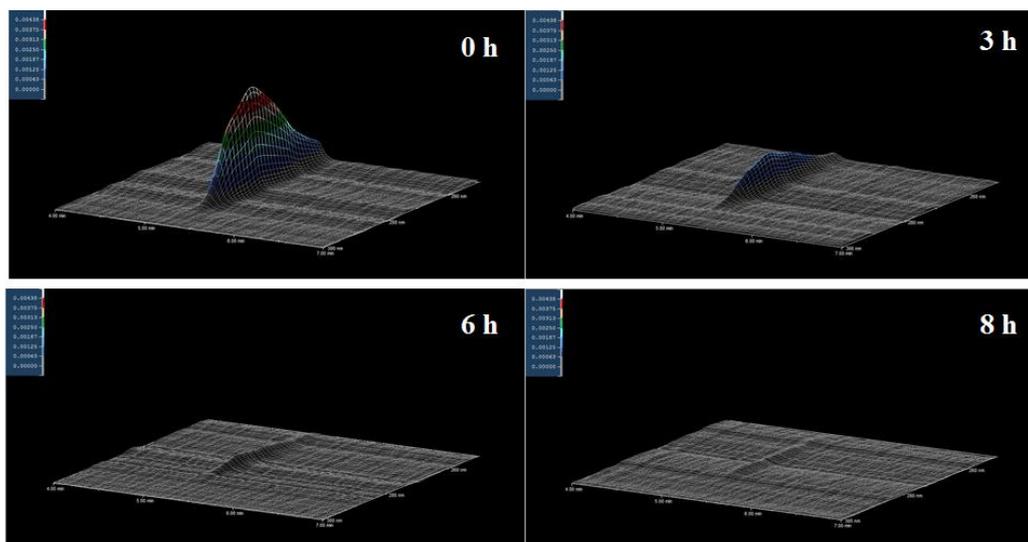


Figure S3. The three-dimensional chromatograms of phenol peak at 0, 3, 6 and 8 h.

5. The Mott-Schottky plots of CTAB-TCPP aggregates and EG-TCPP aggregates

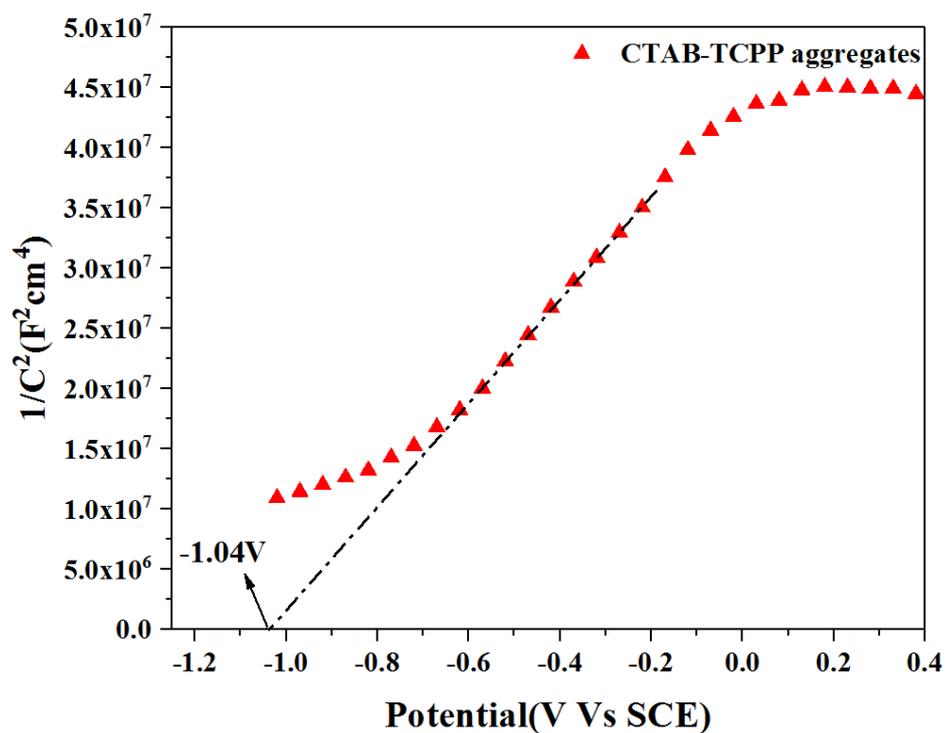


Figure S4. The Mott-Schottky plots of CTAB-TCPP aggregates. The frequency of 1000 Hz was used to detect the flat band position.

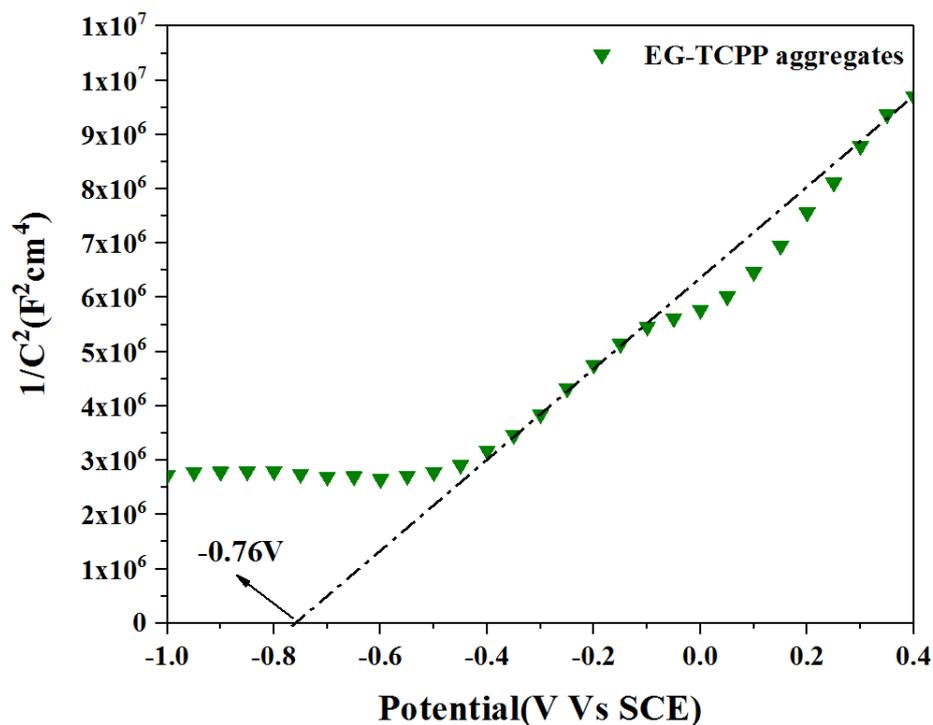


Figure S5. The Mott-Schottky plots of EG-TCPP aggregates. The frequency of 1000 Hz was used to detect the flat band position.

- The detection of produced H_2O_2 and $\bullet OH$ with titanium (IV) oxysulfate and coumarin characterized with UV-vis adsorption spectra and PL.

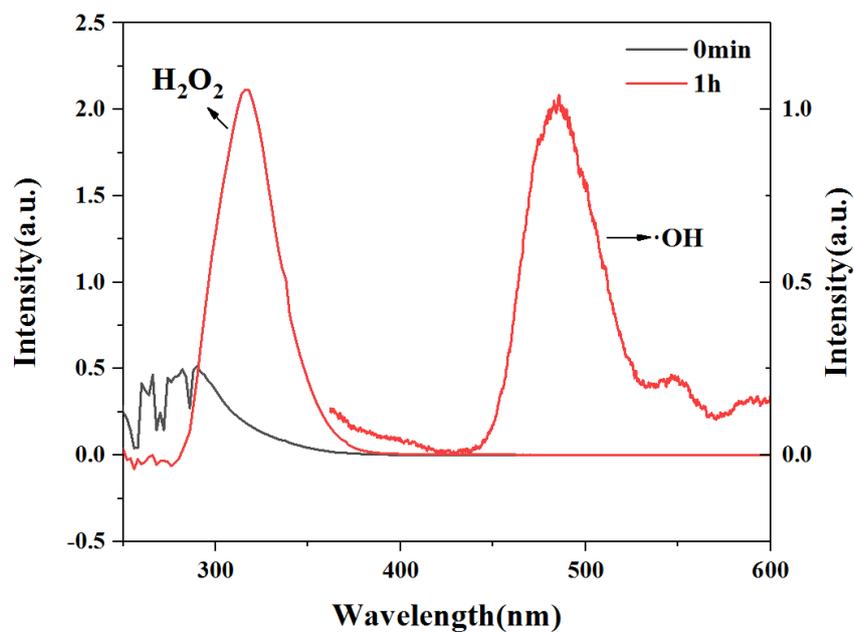


Figure S6. the UV-vis adsorption spectra and PL spectra of titanium (IV) oxysulfate and coumarin for detection of H_2O_2 and $\bullet OH$.