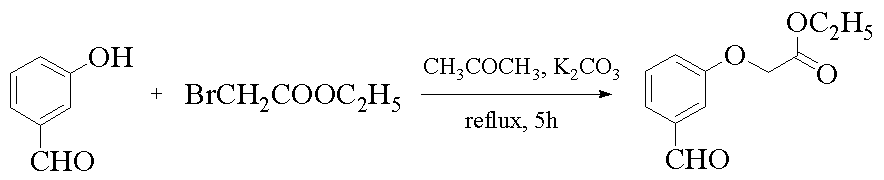
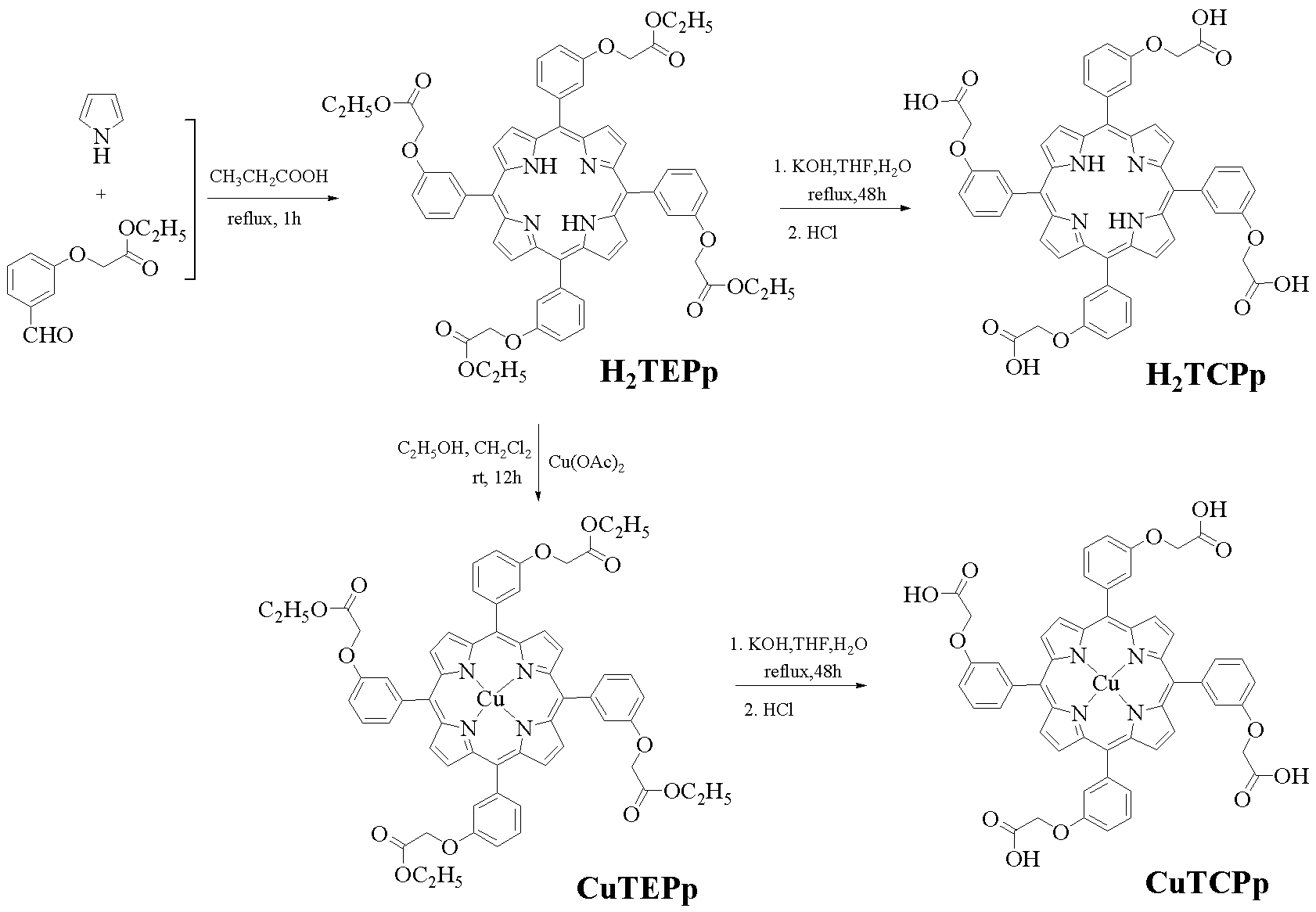
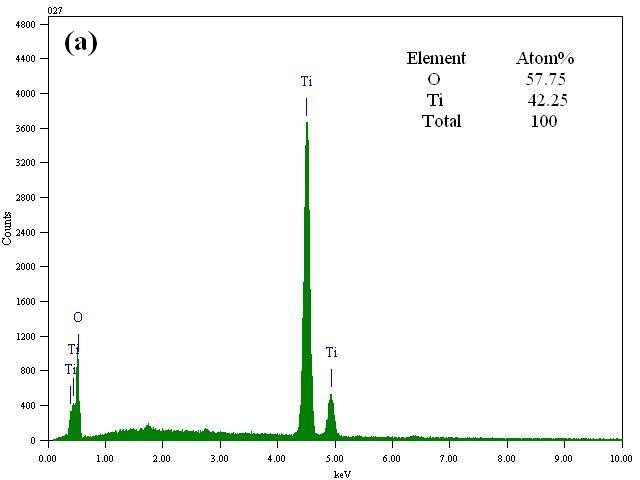
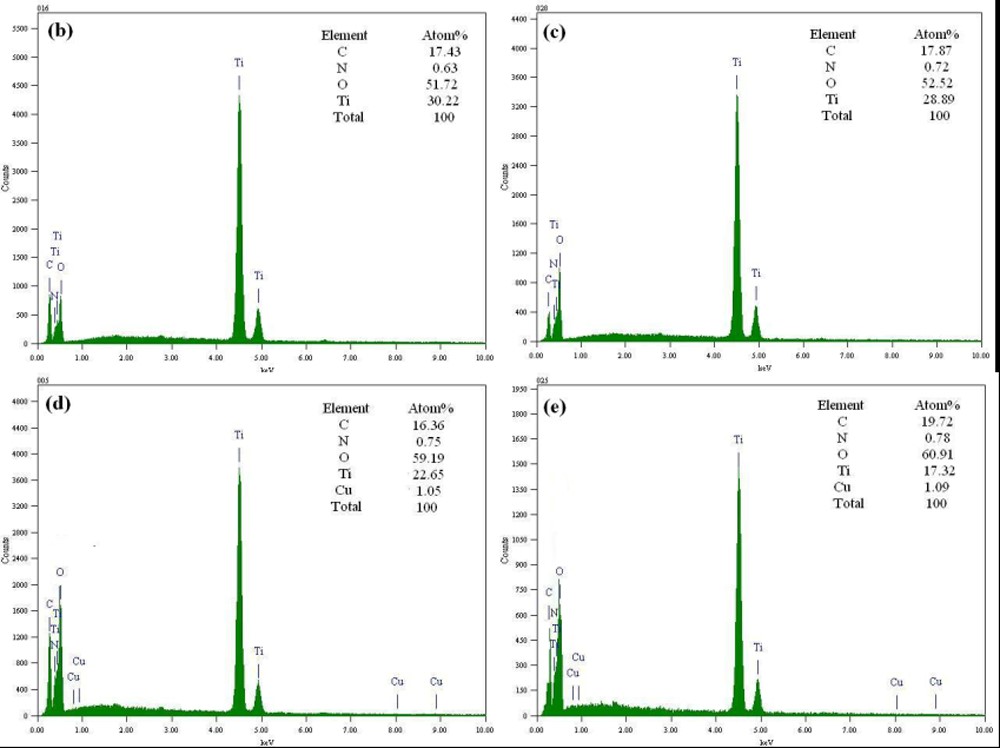
**Supplementary information**

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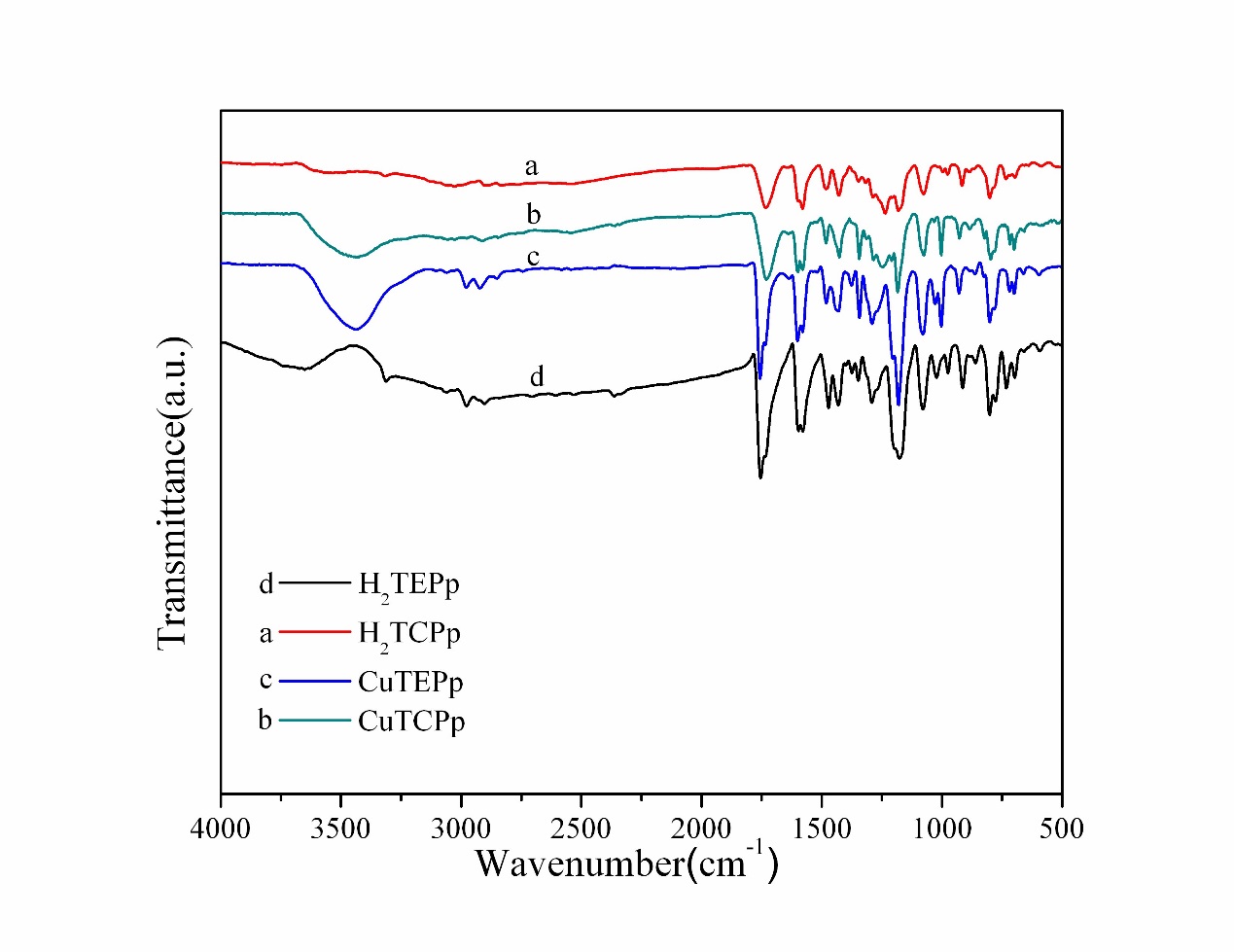
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**Scheme S1** The synthesis routes of porphyrins.

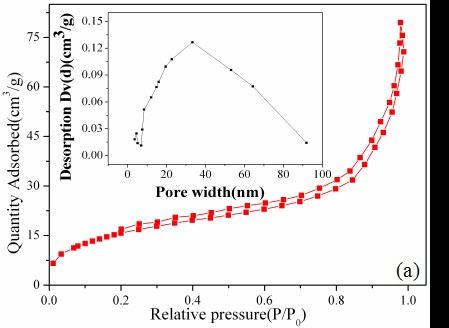




**Fig. S2** EDS images of bare TiO2(a), H2TEP/TiO2 (b), H2TCPp/TiO2 (c), CuTEPp/TiO2 (d) and CuTCPp/TiO2 (e) composites.

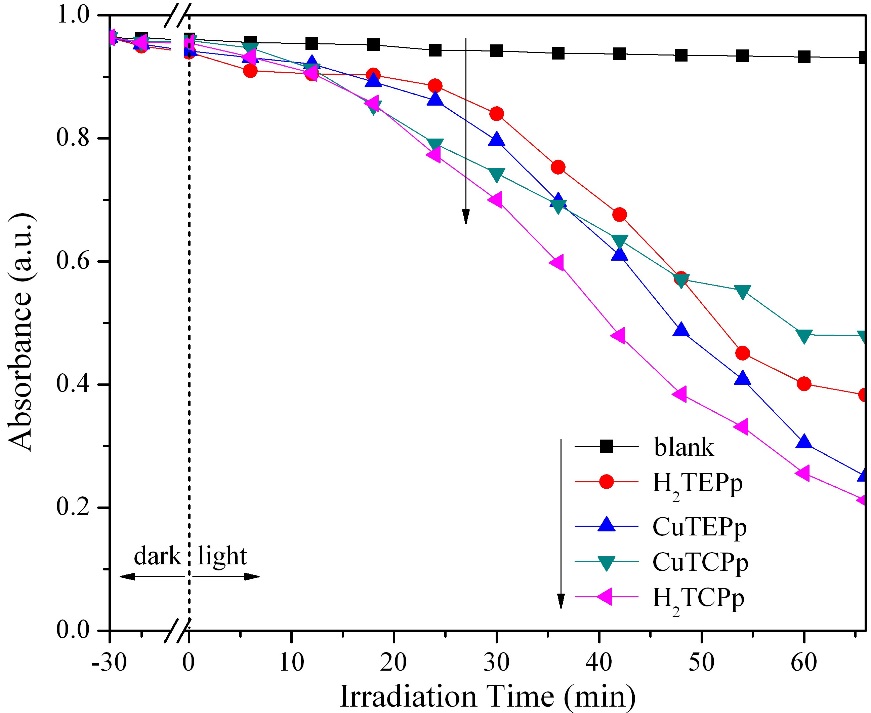


**Fig. S3** FT-IR spectra of synthesized porphyrins.

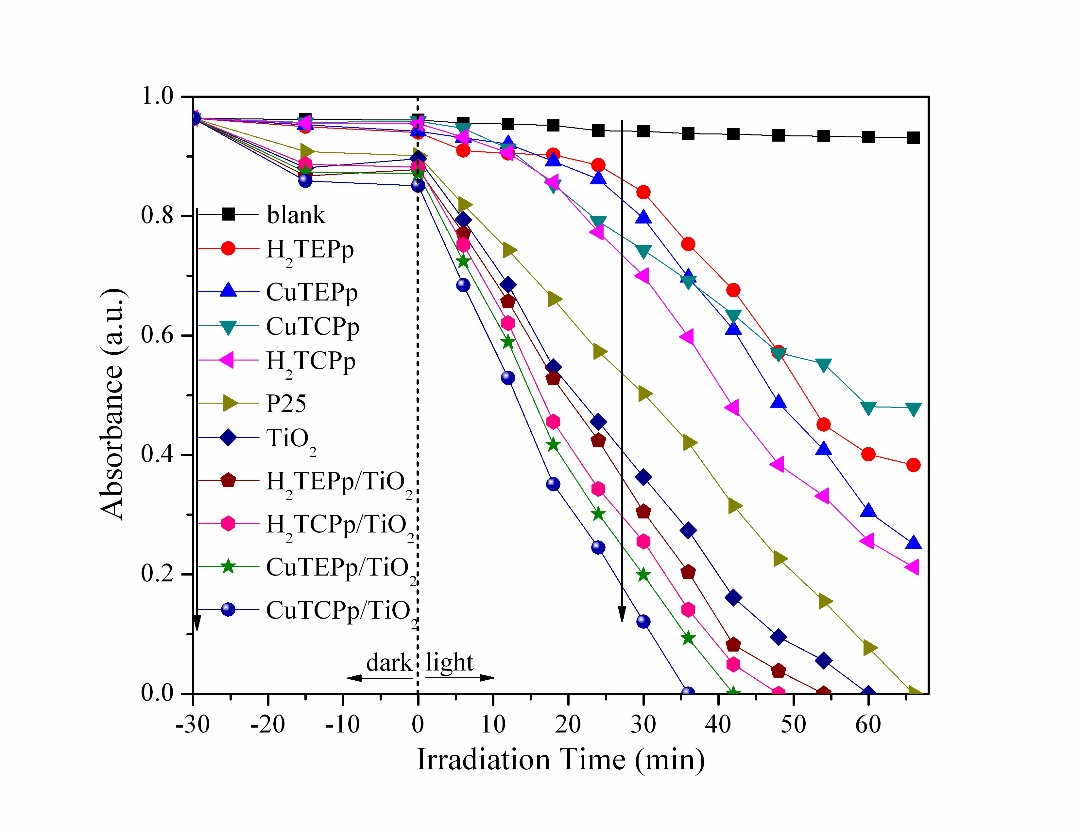


图片1

**Fig. S4** N2 adsorption-desorption isotherms and pore pore size distribution curve of bare TiO2(a), H2TEPp/TiO2(b), H2TCPp/TiO2(c), CuTEPp/TiO2(d)and CuTCPp/TiO2(e)composites.



**(a)**



**(b)**

**Fig. S5.** The photocatalytic activities of porphyrins and Cu(II)porphyrins for the 4-NP degradation (a) and all samples (b) for comparison.