Electronic Supplementary Information

Hybrid of g-C3N4 and porphyrin-based covalent organic frameworks via liquid-assisted grinding for enhanced visible-light-driven photoactivity

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Physical measurements

Fourier transform infrared (FT-IR) spectra were performed as KBr pellets using a Bruker Tensor 37 spectrometer with 2 cm^{-1} resolution. Powder X-ray diffraction (PXRD) data were collected on a Bruker D8 Advance XRD diffractometer using Cu-Ka radiation (I = 1.54060 Å) at room temperature. Transmission electron microscopy (TEM) images were measured on a JEOL JEM-2100 electron microscope operated at 200 kV. Scanning electron microscopy (SEM) images were obtained using a JEOL JEM-6510A scanning electron microscopy. For TEM imaging, a drop of freshly prepared sample solution was cast onto a carbon copper grid. For SEM imaging, a drop of freshly prepared sample solution was cast onto a silicon slice, and then Au (1-2 nm) was sputtered onto the grids to prevent charging effects and to improve the image clarity. X-ray photoelectron spectroscopy (XPS) was carried out on PHI 5300 ESCA System (Perkin-Elmer, USA). The excitation source is Al Kα radiation.

Photoelectrochemical characterization.

The photocurrent measurement were performed on three-electrode system using an electrochemical workstation. The cleaned ITO glass deposited with samples, Pt and Ag/AgCl electrode were used as working electrode, counter electrode, and reference electrode, respectively. The light source was a 300 W Xe lamp equipped with an ultraviolet cutoff filter (> 400 nm) and 0.05 M Na_2SO_4 aqueous solution acted as the electrolyte.

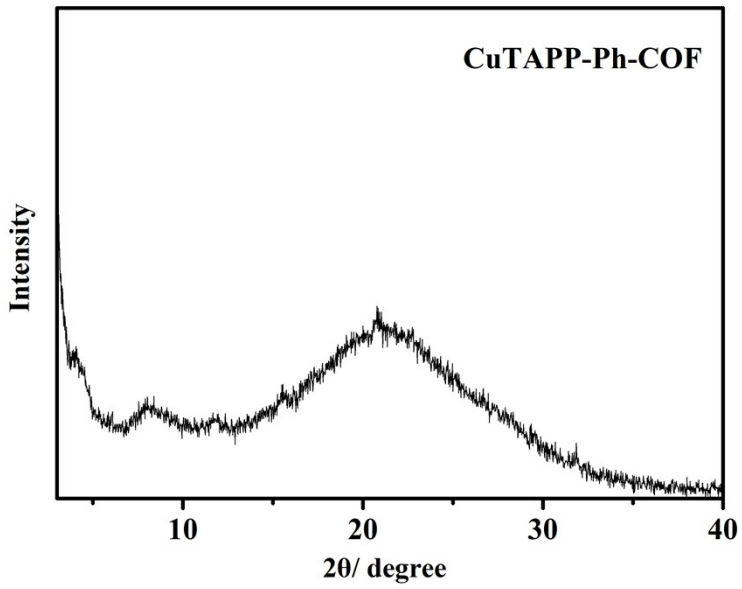

Fig. S1 Experimental PXRD patterns of CuPor-Ph-COF prepared by LAG.

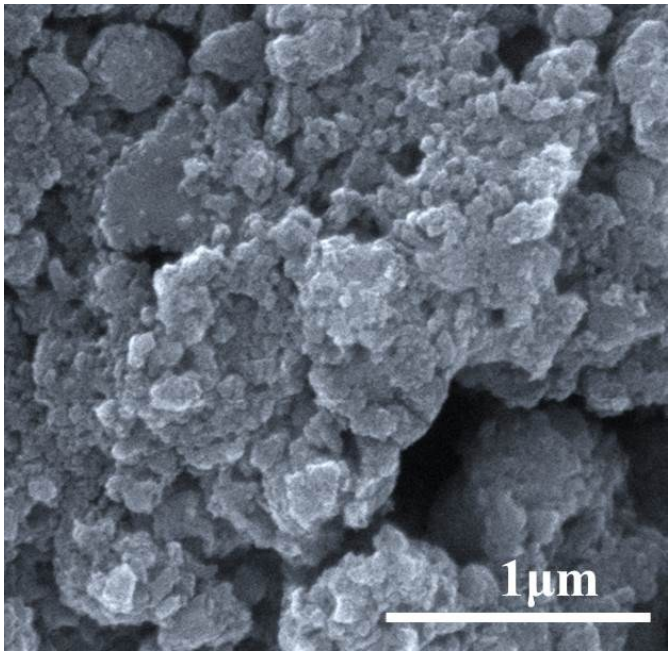

Fig. S2 SEM images of CuPor-Ph-COF

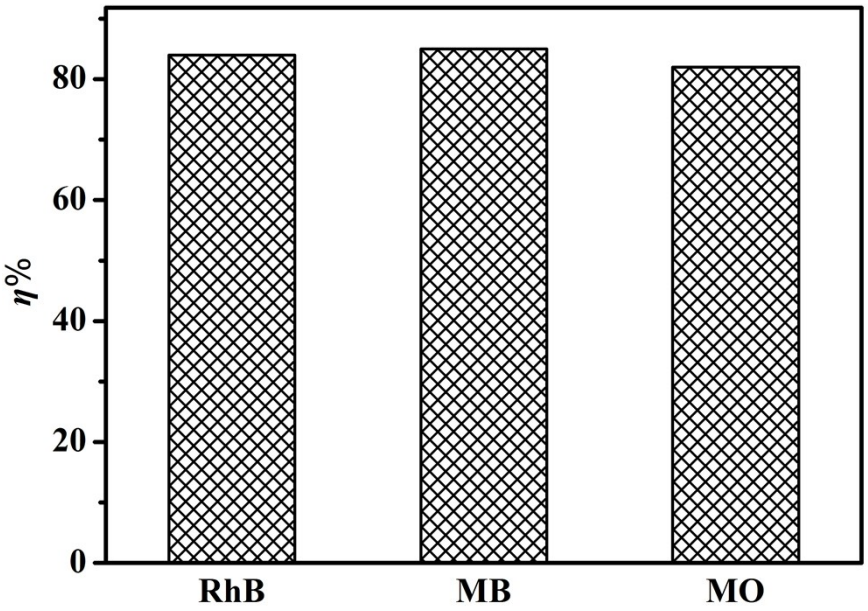

Fig. S3 Photocatalytic degradation of RhB, methylene blun (MB), and methyl orange (MO) in the presence of CuPor-Ph-COF/g-C_3N_4 composites under visible-light irradiation.

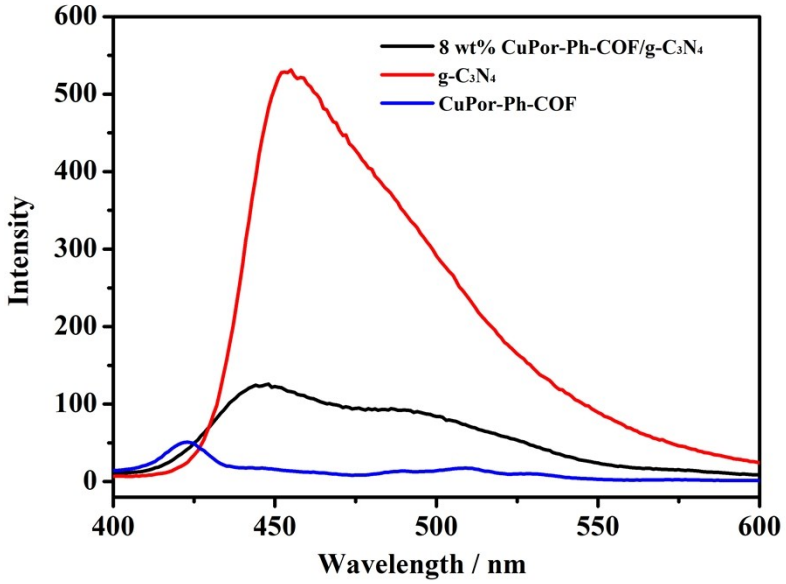

Fig. S4 Photoluminescence spectra of CuPor-Ph-COF/g-C_3N_4, CuPor-Ph-COF and g-C_3N_4.