

# Supporting Information

## Efficient Charge Separation and Transport in Fullerene-CuPcOC<sub>8</sub> Donor-Acceptor Nanorod Enhancing Photocatalytic Hydrogen Generation

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*Dedicated to Professor Chunli Bai on the occasion of his 70th birthday*

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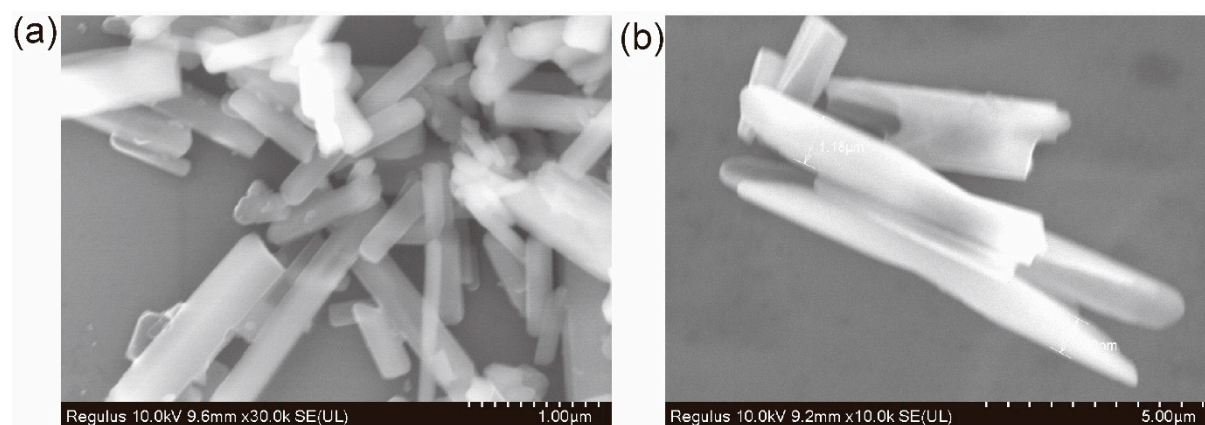


Figure S1. SEM for (a) C<sub>60</sub> and (b) CuPcOC<sub>8</sub>.

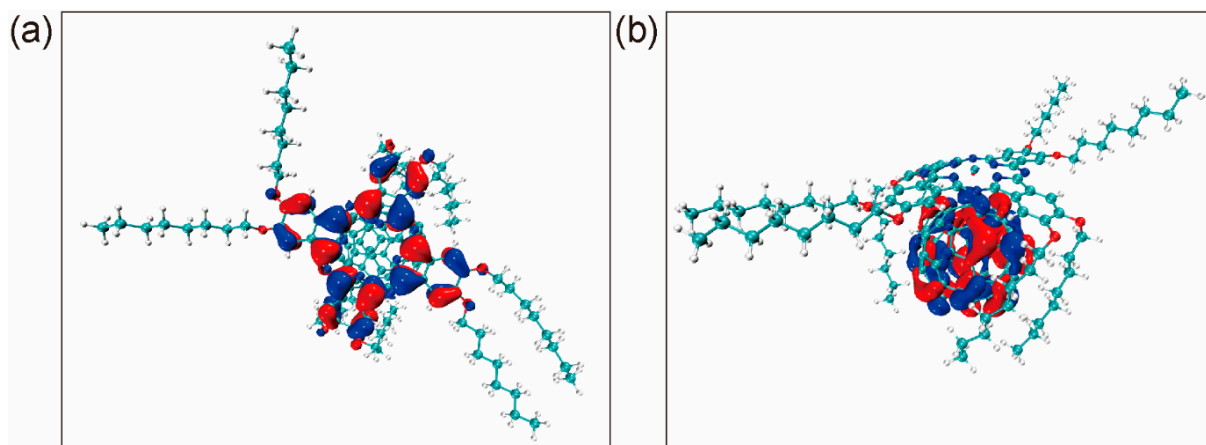


Figure S2. (a) LUMO and (b) HOMO of  $C_{60}$ -CuPcOC<sub>8</sub>.

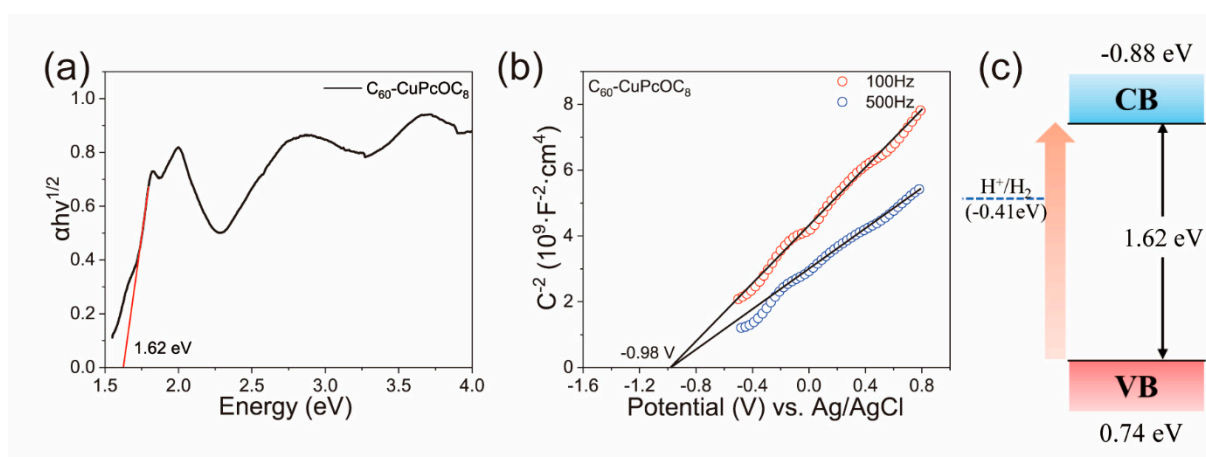


Figure S3. (a) Tauc-plots of  $C_{60}$ -CuPcOC<sub>8</sub>, (b) Mott-Schottky plots of  $C_{60}$ -CuPcOC<sub>8</sub>, (c) schematic representation of the redox potential of  $C_{60}$ -CuPcOC<sub>8</sub>.

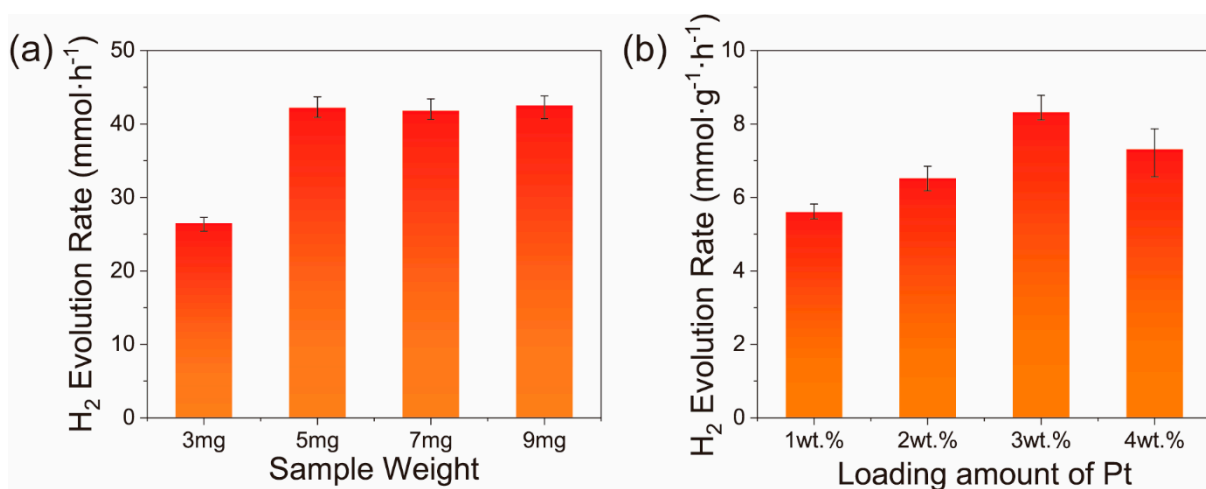


Figure S4. Photocatalytic H<sub>2</sub> evolution rate of  $C_{60}$ -CuPcOC<sub>8</sub> with varied (a) weight and

(b) loading amount of Pt under full-spectrum light.

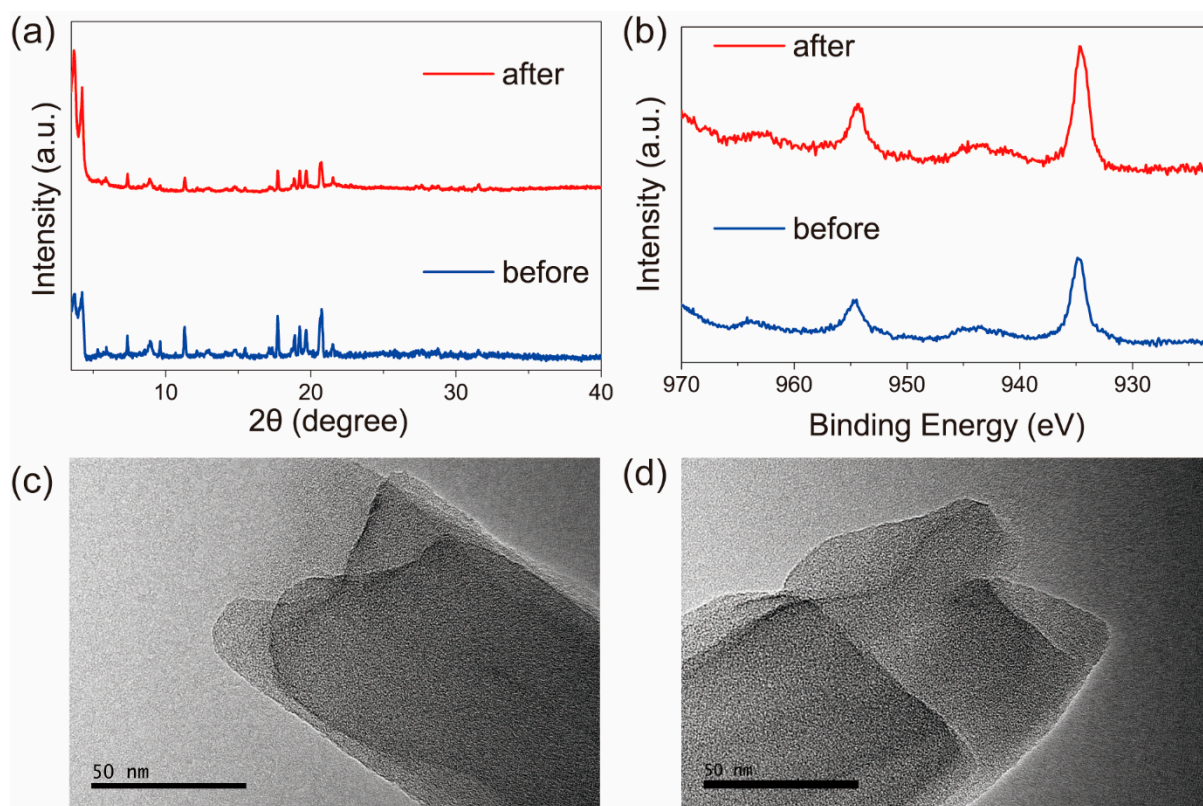


Figure S5 (a) PXRD of  $C_{60}$ -CuPcOC<sub>8</sub> before and after photocatalytic hydrogen generation; (b) Cu elemental XPS of  $C_{60}$ -CuPcOC<sub>8</sub> before and after photocatalytic hydrogen generation; HRTEM of  $C_{60}$ -CuPcOC<sub>8</sub> (c) before and (d) after photocatalytic hydrogen generation.

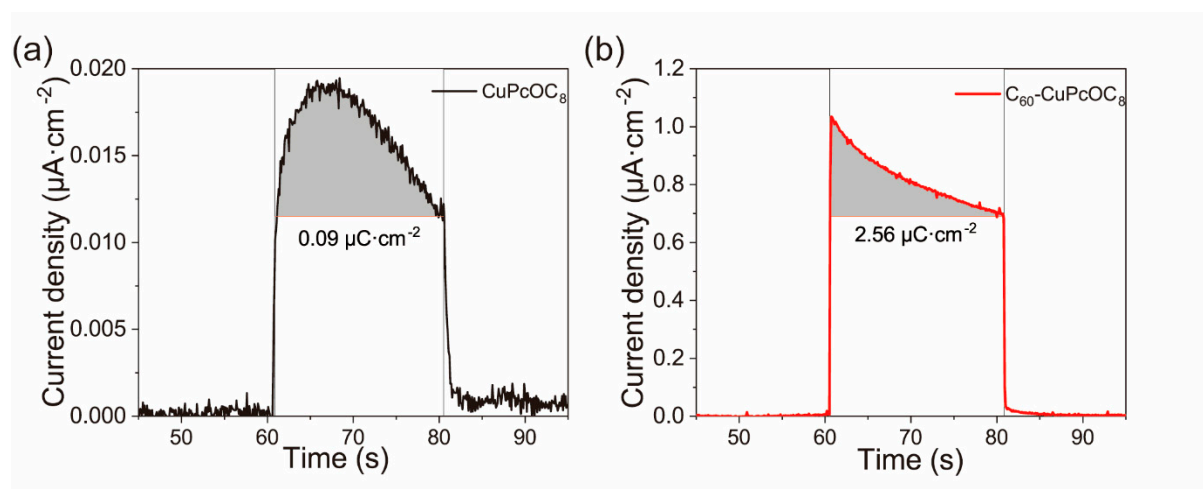


Figure S6. Surface charge density of (a) CuPcOC<sub>8</sub> and (b)  $C_{60}$ -CuPcOC<sub>8</sub>.

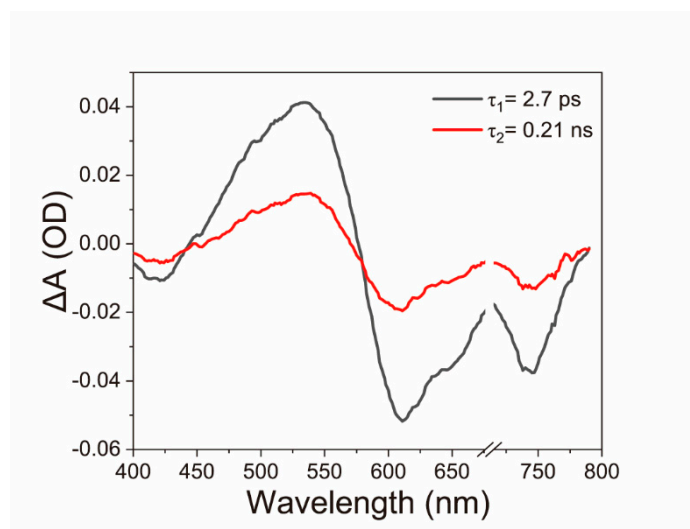


Figure S7. Evolution associated spectra (EAS) of CuPcOC<sub>8</sub> at 380 nm ( $1 \times 10^{-5}$  M, aqueous dispersion).