Supporting Information

Enhancement of visible-light-driven CO₂ reduction performance using amine-functionalized zirconium metal-organic framework

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Fig. S1 The TG curve of as-synthesized Zr-SDCA-NH$_2$. 
Fig. S2 The IR spectrum of as-synthesized Zr-SDCA-NH$_2$. 
Fig. S3 The isosteric heat ($Q_{st}$) of CO$_2$ adsorption for Zr-SDCA-NH$_2$ calculated from the CO$_2$ adsorption isotherms at 273 and 298 K, employing the Clausius-Clapeyron equation.
Fig. S4 The UV–vis spectra of H₂SDCA ligand in the solid state.
Fig. S5 The Tauc plot of H$_2$SDCA-NH$_2$ ligand.
Fig. S6 Mott-Schottky plots of H₂SDCA-NH₂ ligand in 0.2 M Na₂SO₄ aqueous solution.
Fig. S7 The PXRD pattern of Zr-SDCA-NH$_2$ after the photocatalytic experiment.
Fig. S8 The recycling of Zr-SDCA-NH$_2$ for CO$_2$ photoreduction under 6 h visible light irradiation.
Table S1 The visible-light-driven photocatalytic performances of amine-functionlized Zr-MOFs for CO₂ reduction to produce formate

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<td>H₂N-UIO-66(Zr)</td>
<td>46.3</td>
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<td>Zr₆O₄(OH)₄(L₁)₆</td>
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<td>200 600</td>
<td>Zr₂O₄(OH)₄(L₁)₆</td>
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*H₂L₁ = 2-aminoterephthalic acid, H₂L₂ = 2,5-diaminoterephthalic acid, H₂L₂ = 2,2’-diamino-4,4’-stilbenedicarboxylic acid.

References
