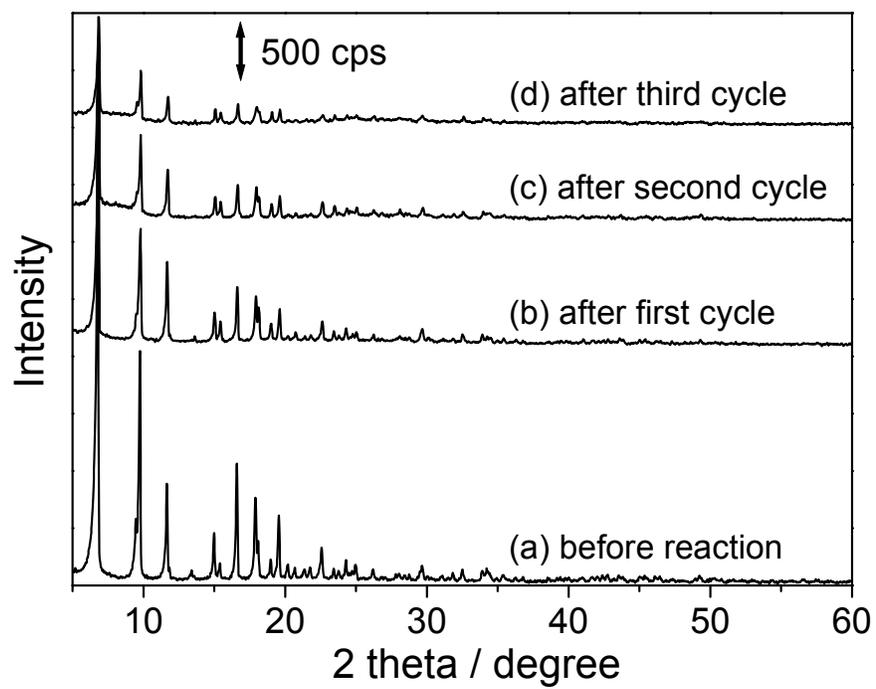


## Supporting Information

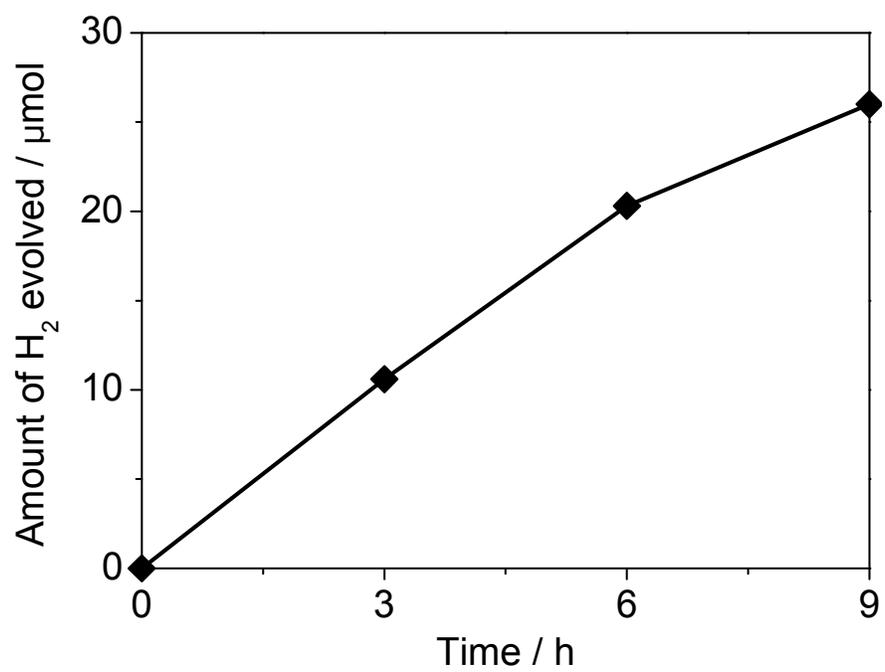
# Visible-Light-Promoted Photocatalytic Hydrogen Production by Using an Amino-Functionalized Ti(IV) Metal–Organic Framework

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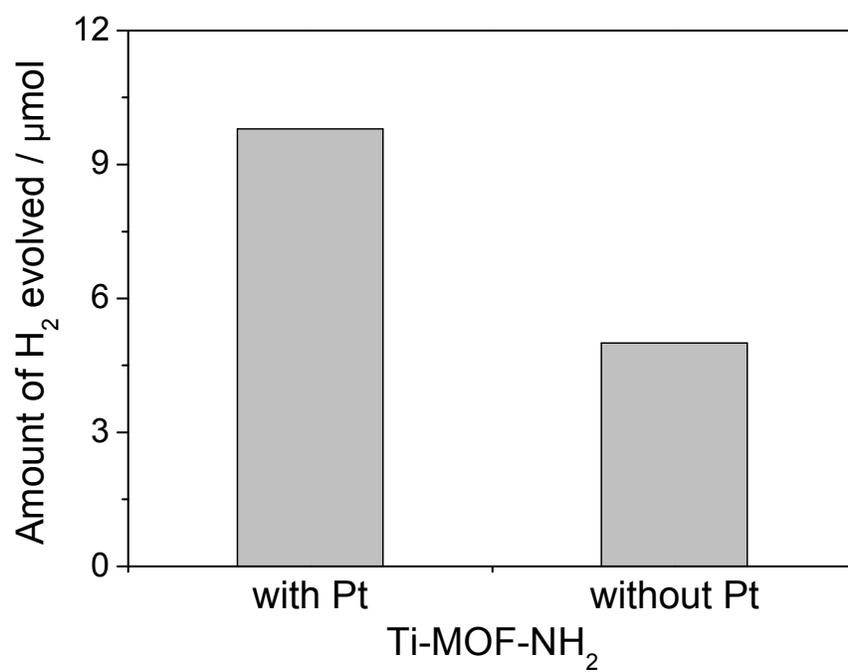
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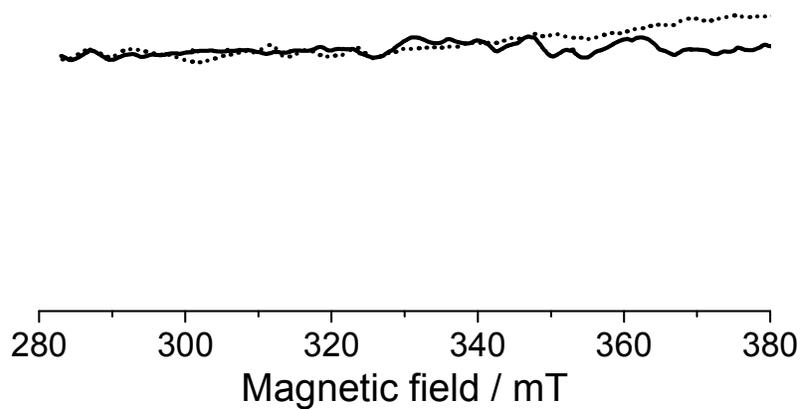
**Figure S1.** XRD patterns of Pt/Ti-MOF-NH<sub>2</sub> before (a) and after (b–d) photocatalytic hydrogen production ((b) first cycle, (c) second cycle, and (d) third cycle).



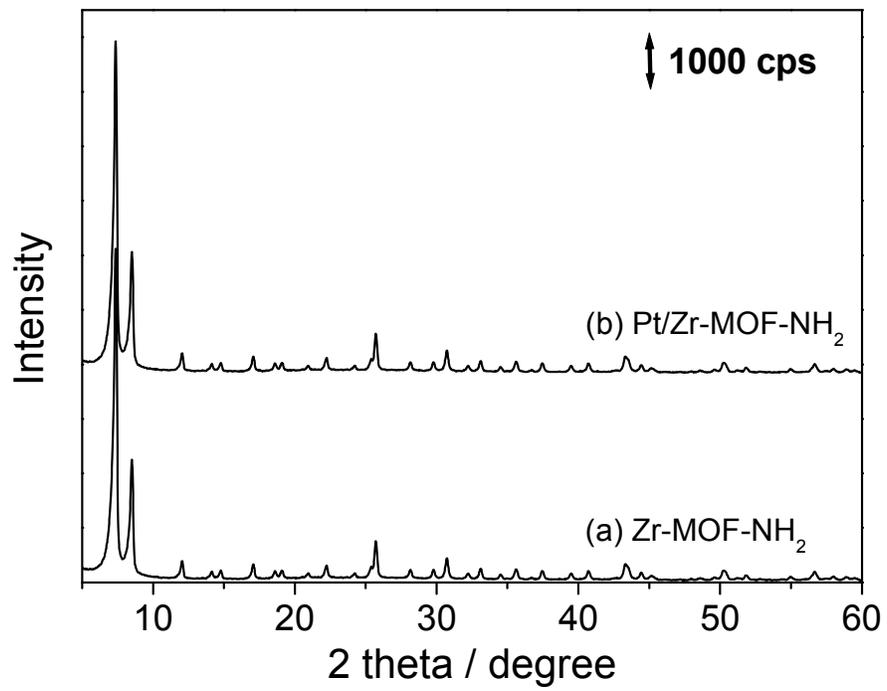
**Figure S2.** The time course of photocatalytic hydrogen production under visible-light irradiation ( $\lambda > 420$  nm) for 9 h over Pt/Ti-MOF-NH<sub>2</sub>.



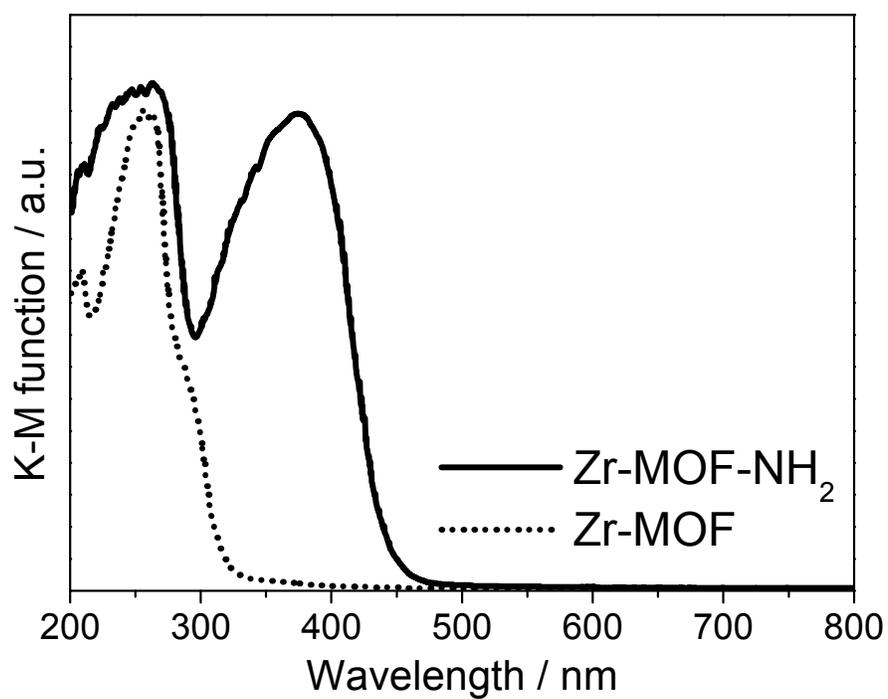
**Figure S3.** Photocatalytic hydrogen production under visible-light irradiation ( $\lambda > 420$  nm) for 3 h over Pt/Ti-MOF-NH<sub>2</sub> and Ti-MOF-NH<sub>2</sub>.



**Figure S4.** ESR spectra observed at 77 K for Ti-MOF immersed in aqueous 0.01 M TEOA solution before (dotted line) and after (solid line) visible-light irradiation ( $\lambda > 420$  nm). The suspension was degassed under vacuum and irradiated with visible-light for 3 h at room temperature, followed by spectrum acquisition at 77 K.



**Figure S5.** XRD patterns of (a) Zr-MOF-NH<sub>2</sub> and (b) Pt/Zr-MOF-NH<sub>2</sub>.



**Figure S6.** DRUV-vis spectra of Zr-MOF-NH<sub>2</sub> and Zr-MOF. Zr-MOF-NH<sub>2</sub> is constructed from zirconium-oxo clusters and BDC-NH<sub>2</sub> units, and Zr-MOF is constructed from zirconium-oxo clusters and BDC units.