Supporting Information

Synthesis of Co/Ni-MOF-74@PDI Z-scheme photocatalyst as a highly efficient photo-assisted Fenton-like catalyst for removal of chlortetracycline hydrochloride

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Supplemental figures:

1. Adsorption-desorption isotherm and pore size distribution

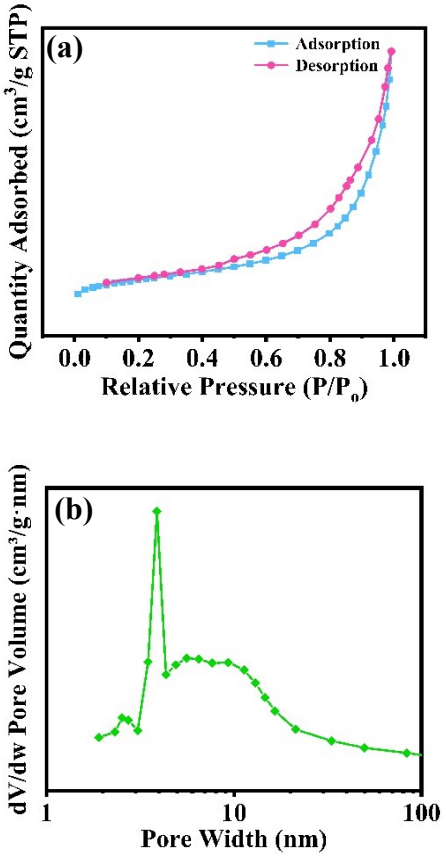

Fig. S1 N_2 adsorption-desorption isotherms (a) and pore size distribution of CNPDI-2 (b).

2. Total organic carbon (TOC) results

$$\text{TOC removal} = \frac{\text{TOC}_i - \text{TOC}_f}{\text{TOC}_f} \times 100\% \quad \text{(S1)}$$

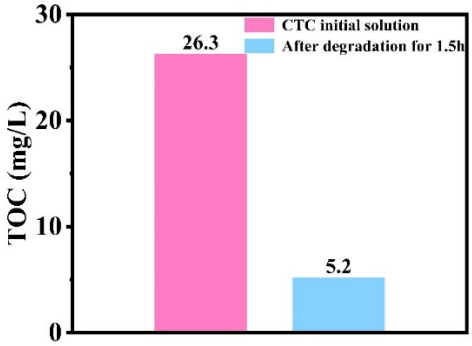

Fig. S2 The total organic carbon (TOC) content of pure CTC solution and

CNPDI-2/H_2O_2/Vis solution after degradation for 90 min.

3. Effect of different ions on photodegradation

Reaction formula of CTC degradation in CNPDI-2/H_2O_2/Vis system after adding different ions:

$NO_3^- + \bullet OH \rightarrow NO_3\bullet + OH^-$ (S2)

$NO_3^- + h^+ \rightarrow NO_3\bullet$ (S3)

$SO_4^{2-} + \bullet OH \rightarrow SO_4^{\bullet-} + OH^-$ (S4)

$SO_4^{2-} + h^+ \rightarrow SO_4^{\bullet-}$ (S5)

$H_2PO_4^- + \bullet OH \rightarrow H_2PO_4\bullet + OH^-$ (S6)

$H_2PO_4^- + h+ \rightarrow H_2PO_4\bullet$ (S7)

$CO_3^{2-} + \bullet OH \rightarrow CO_3^{\bullet-} + OH^-$ (S8)

$HCO_3^- + \bullet OH \rightarrow CO_3\bullet + H_2O$ (S9)

4. UPLC–MS

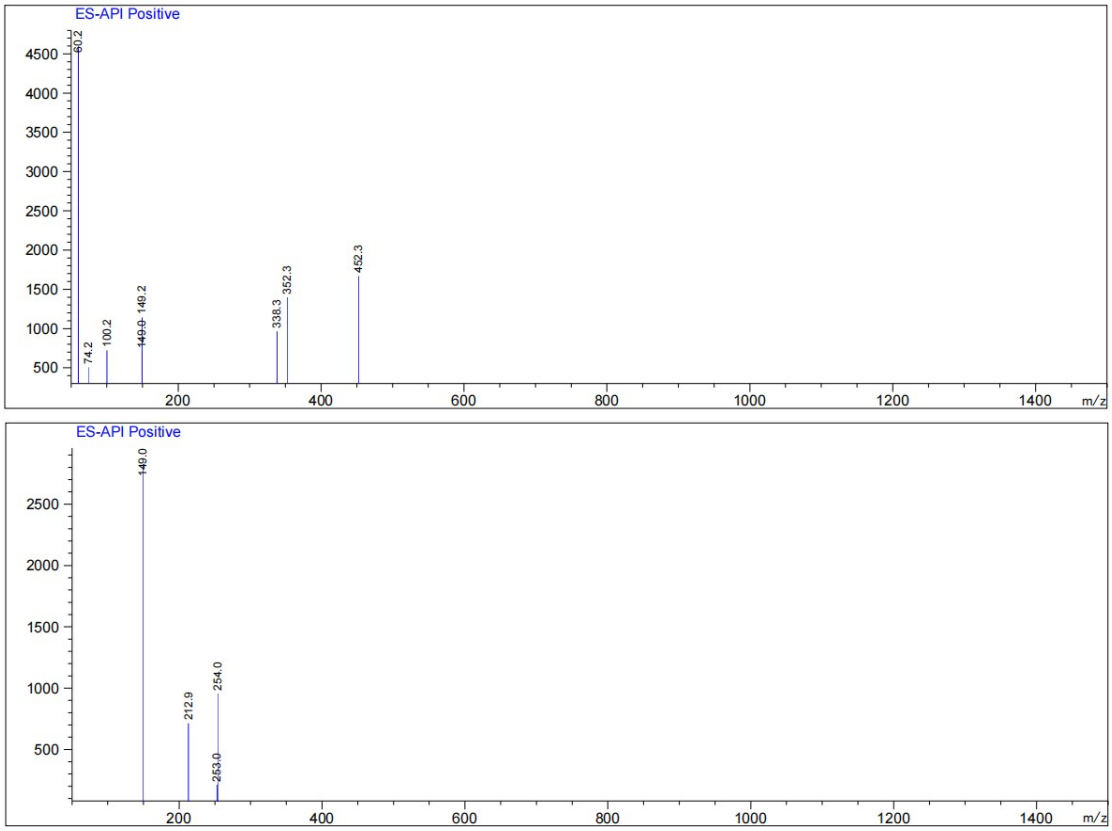

Fig. S3 UPLC–MS results of doxycycline hydrochloride degradation products [CNPDI-2: 50 mg; H_2O_2: 19.6 mM; CTC: 40 mg/L].