Electronic Supporting Information

Monolithic Organic/Inorganic Ternary Nanohybrids toward Electron Transfer Cascade for Enhanced Visible-Light Photocatalysis

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$$O_2 + 2H_2O + 4e^- \longrightarrow 4OH^-$$

$$Zn^{2+} + 2OH^- \longrightarrow Zn(OH)_2$$

$$Zn(OH)_2 \longrightarrow ZnO + H_2O$$

Fig. S1. The growing mechanism of ZnO NRs on CNF surface.

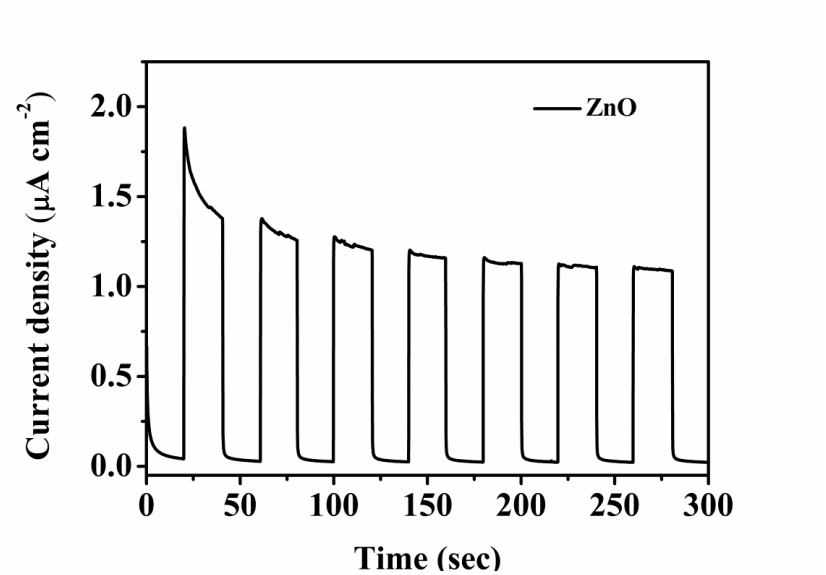

Fig. S2. Photoresponse curves of ZnO NRs.

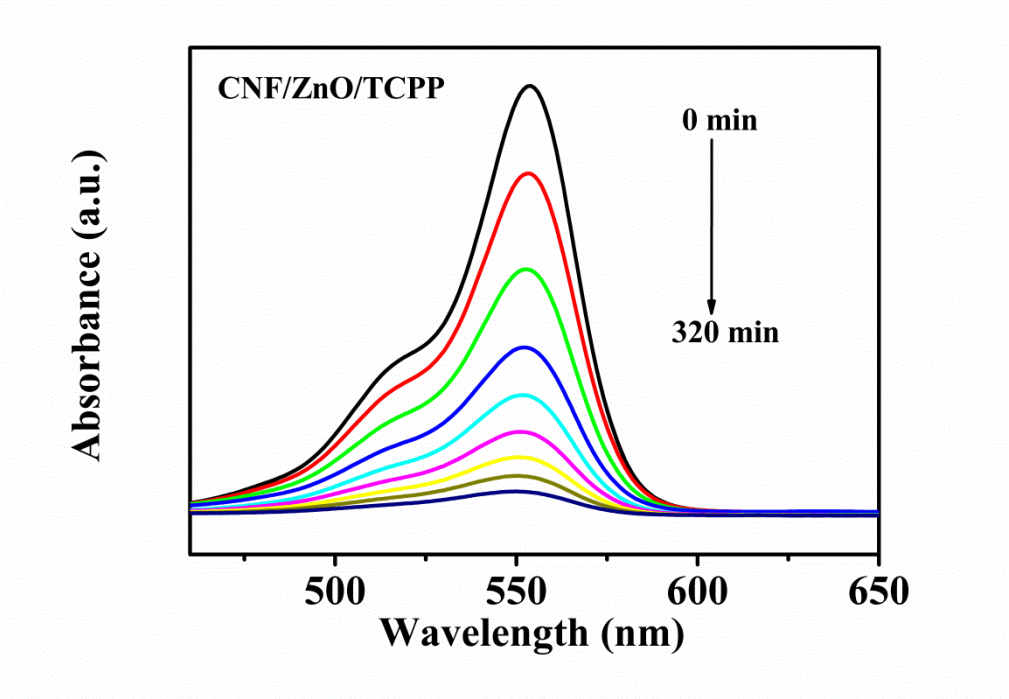

Fig. S3. UV-Vis absorption spectra of RhB vs. photoreaction time over CNF/ZnO/TCPP hybrid catalysts ($\lambda_{irradiation}$>400 nm).

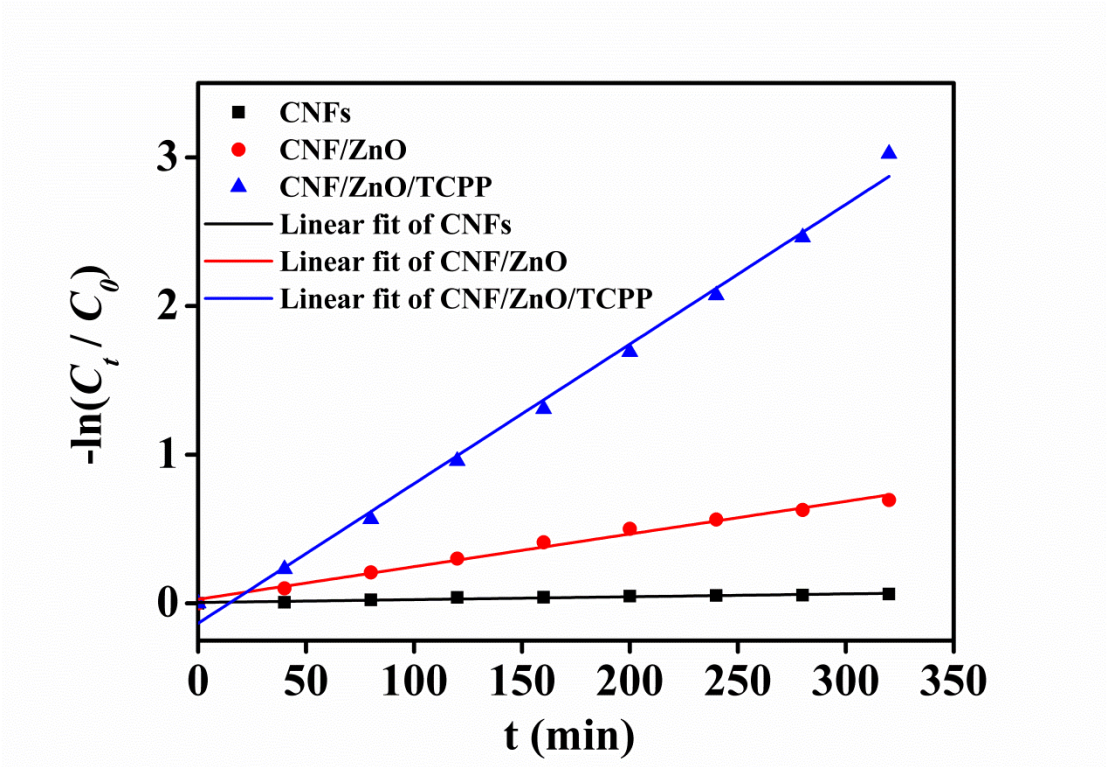

Fig. S4 Fitting results of photodegrading RhB according to the Langmuir–Hinshelwood model ($\lambda_{irradiation}$>400 nm), where C_t is the concentration of RhB at the irradiation time t and C_0 is the concentration of RhB in the absorption equilibrium before irradiation.

Table S1. Rate constant (k), the degradation rate (r), and the photonic efficiency (η) of RhB in different monolithic systems.

System	k^a(*10^3 min^{-1})	r^b(*10^8 mol l^{-1} min^{-1})	η^c(*10^4)
CNF	0.193	0.2	0.03
CNF/ZnO	2.2	2.29	0.38
CNF/ZnO/TCPP	9.39	9.78	1.63

[a] The slope of the pseudo-first-order linear line in Fig. S3.

[b] ± 10%.

[c] $\eta = r/I_0$, where I_0 is the incident photon flux, here $I_0 \approx 6*10^{-4}$ Einstein l^{-1} min^{-1}.