Supporting information

Enhancing visible-light photocatalytic activity of g-C$_3$N$_4$ by doping phosphorus and coupling with CeO$_2$ for the degradation of methyl orange under visible light irradiation

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Fig. S1. The elemental mapping image of CeO$_2$(13.8%)/P-C$_3$N$_4$.

Fig. S2. The elemental mapping image of CeO$_2$(13.8%)/g-C$_3$N$_4$. 
Fig. S3. The EDS of P-C$_3$N$_4$ (a) and CeO$_2$(13.8%)/P-C$_3$N$_4$ (b).
Fig. S4. Photocatalytic activities (a) and first-order kinetics plot (b) of 

$\text{CeO}_2(13.8\%)/\text{P-C}_3\text{N}_4$ and $\text{CeO}_2(13.8\%)/\text{g-C}_3\text{N}_4$ for the photodegradation of MO in aqueous solution under visible light irradiation.
Fig. S5. UV-vis DRS (a) and plots of $(\alpha h\nu)^{1/2}$ vs. photon energy (b) of CeO$_2$(13.8%)/P-C$_3$N$_4$ and CeO$_2$(13.8%)/g-C$_3$N$_4$.

Fig. S6. PL spectra (a) of CeO$_2$(13.8%)/P-C$_3$N$_4$ and CeO$_2$(13.8%)/g-C$_3$N$_4$. 