Supplementary Information

Atomic layer deposition with rotary reactor for uniform heterojunction photocatalyst, g-C$_3$N$_4$@TiO$_2$ core-shell structures

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SUPPORTING INFORMATION CONTAINS:

Fig. S1-S2
Figure S1. (a,c) SEM images of GTC with EDS point analysis on (b) TiO$_2$ agglomerates and (d) g-C$_3$N$_4$ sheet-like particles.
Figure S2. (a) UV-Vis diffuse reflectance spectra and (b) the band gap energies of GCN, GTs, GTC, and pure TiO$_2$ (P25). The following equation was used to calculate the band gap energies of each sample:

\[
\frac{1}{2} \chi \nu = A (\nu - E_g),
\]

where $A$, $\hbar$, $\nu$, and $E_g$ are the absorption coefficient, Planck constant, light frequency, and band gap energy, respectively. The y-axis value of $(\alpha \hbar \nu)^{1/2}$ is plotted as a function of $\hbar \nu$, and the band gap energy was approximated by tangent intercept with the x-axis. As a result, the band gap energies of GCN and GTs are similar (~2.75 eV) and the band gap energy of bare TiO$_2$ (P25) is ~3.21 eV.