Supplementary Information

Fabrication of high-efficiency CdS@TiO$_2$@C/Ti$_3$C$_2$ composites photocatalyst for the degradation of TC-HCl under visible light

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Fig. S1 Band gaps of C@T@CT-2 and CdS samples.

Fig. S2 Mott-Schottky curves of TiO$_2$@C/Ti$_3$C$_2$ and CdS samples.
Fig. S3 Transient photocurrent responses (a) and EIS curves (b) of TiO$_2$@C/Ti$_2$C$_2$ and C@T@CT-2 samples.

Fig. S4 Principal by-products of TC-HCl degradation detected by LC-MS.
Fig. 55 The proposed photodegradation pathways of TC-HCl by CdS@TiO$_2$@C/Ti$_3$C$_2$.

The possible degradation pathway of TC-HCl was as follows: m/z = 445 $\rightarrow$ m/z=405 (by loss of -CONH$_2$) $\rightarrow$ m/z=362 (by loss of -N(CH$_3$)$_2$) $\rightarrow$ m/z=318 (by loss of -CH$_2$C(OH)) $\rightarrow$ m/z=274 (then by loss of -COCH$_3$).