Electronic Supplementary Material (ESI) for Materials Chemistry Frontiers.

Facial synthesis of two-dimensional $In_2S_3/Ti_3C_2T_x$ heterostructures with boosted photoactivity for the hydrogenation of nitroaromatic compounds

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Contents list

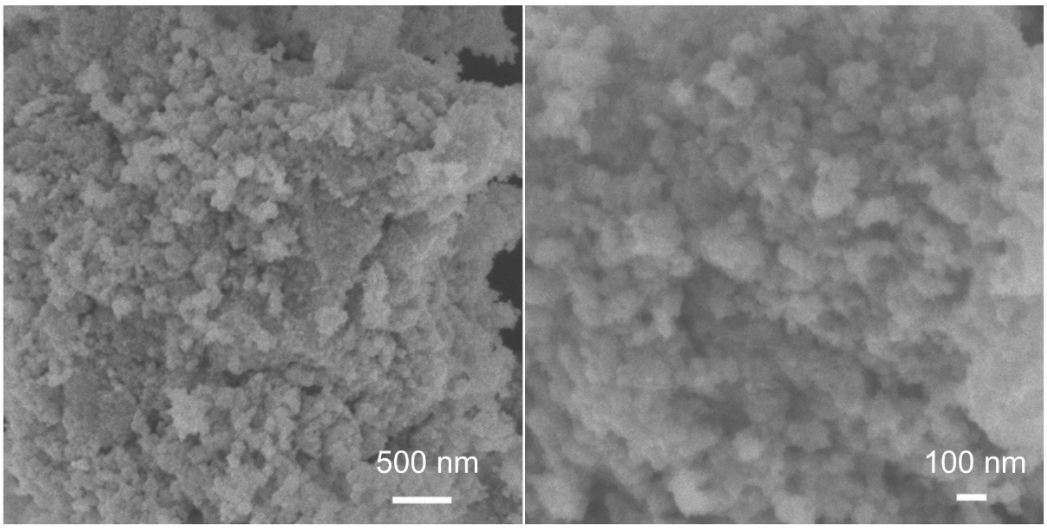

Fig.S1. SEM images of bare In_2S_3.

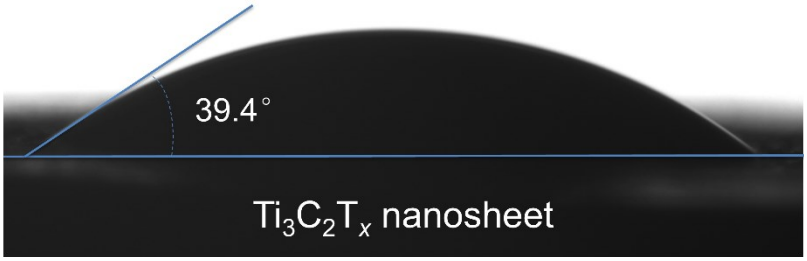

Fig.S2. Contact angle of $Ti_3C_2T_x$ nanosheets.

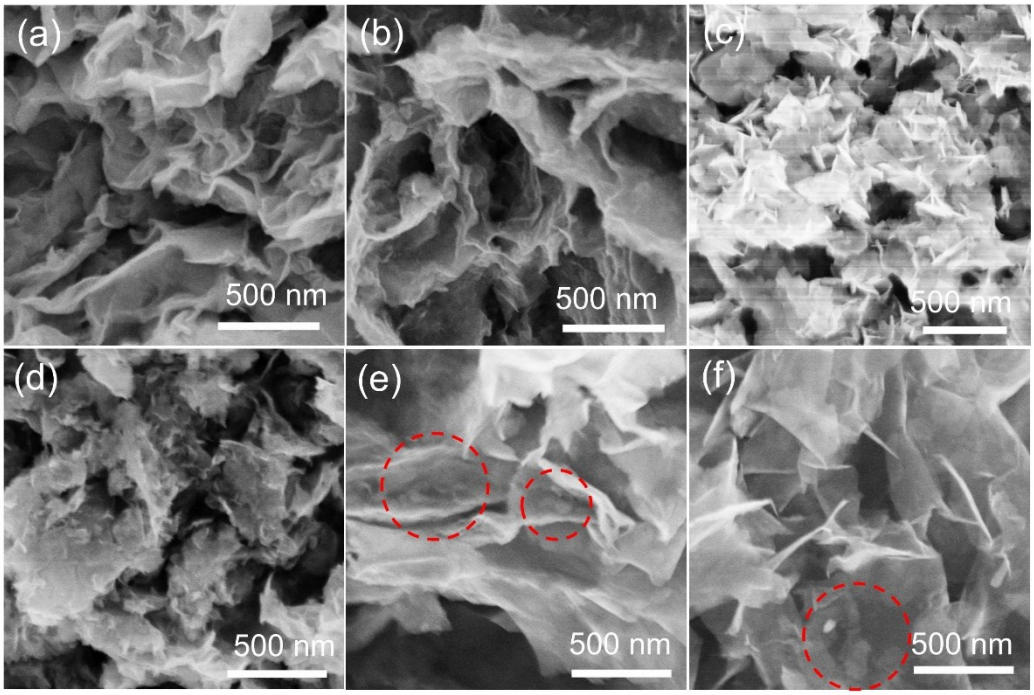

Fig.S3. SEM images of $In_2S_3/Ti_3C_2T_x$-1% at 95 °C for different refluxing time: (a) 0.5 h; (b) 4 h; (c) 5 h and different content $Ti_3C_2T_x$: (d) 5%, (e) 20%, (f) 30%.

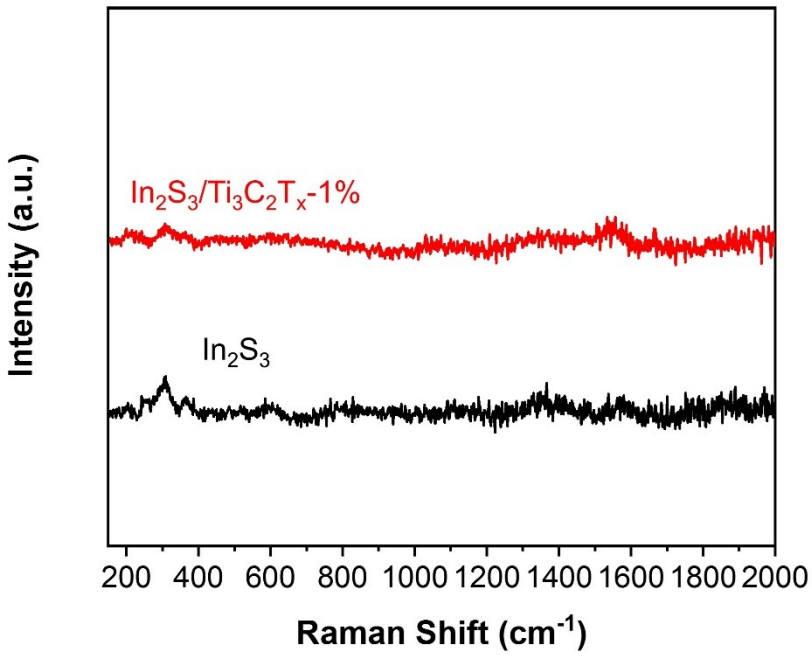

Fig. S4. Raman spectra of bare In_2S_3 and $In_2S_3/Ti_3C_2T_x$-1%.

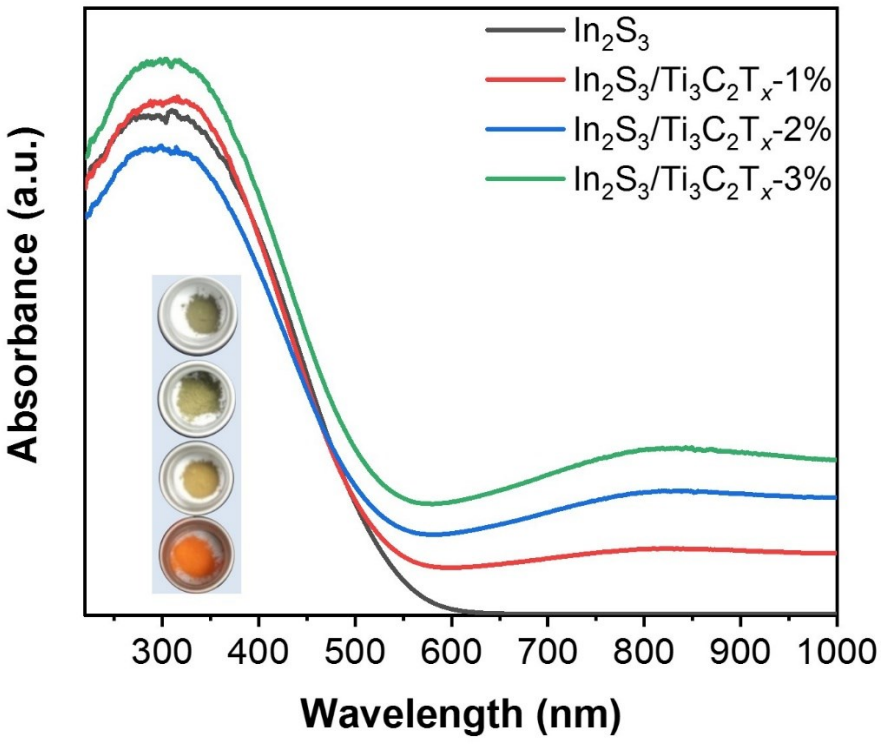

Fig. S5. UV–vis DRS of as-obtained samples (the inset: photographs of each sample).

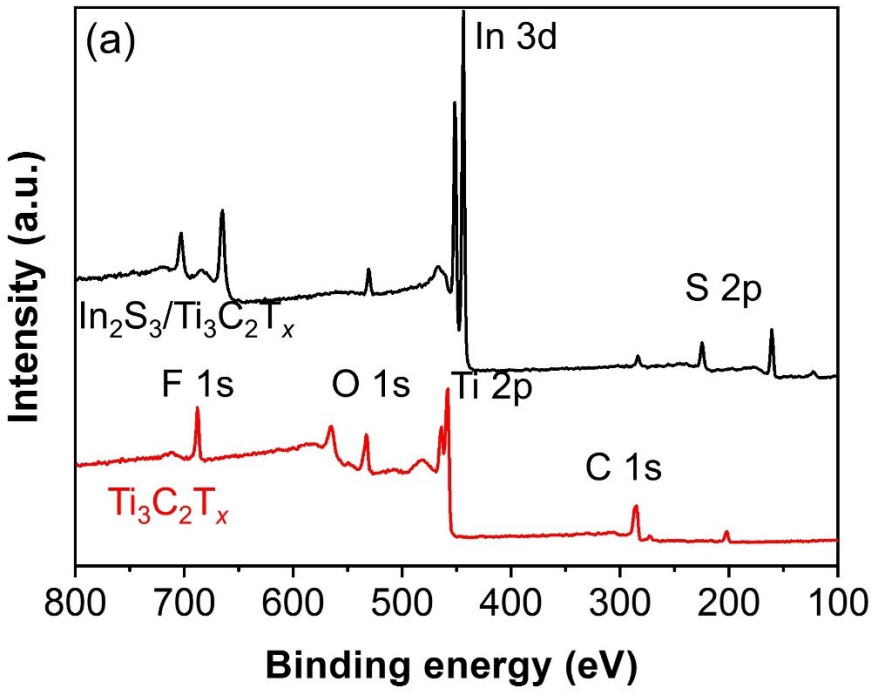

Fig. S6. XPS spectra of $Ti_3C_2T_x$ and $In_2S_3/Ti_3C_2T_x$-1%.

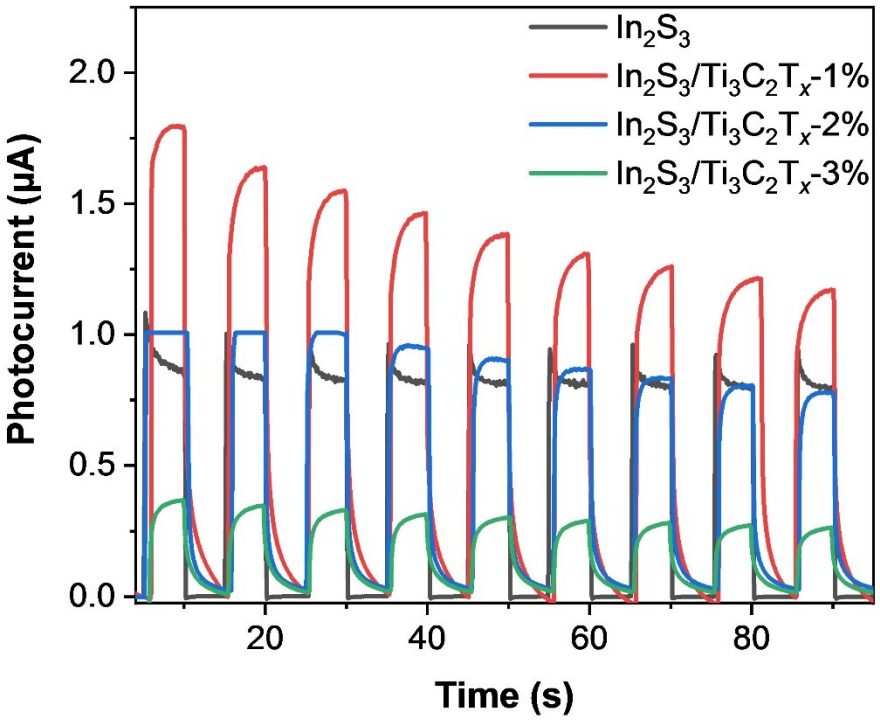

Fig.S7. Transient photocurrent spectra of as as-obtained samples.

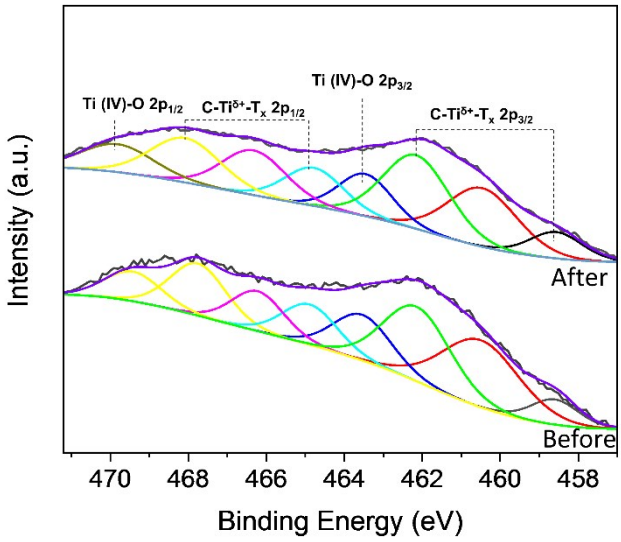

Fig. S8. The XPS spectra of $In_2S_3/Ti_3C_2T_x$-1% before and after photocatalysis.

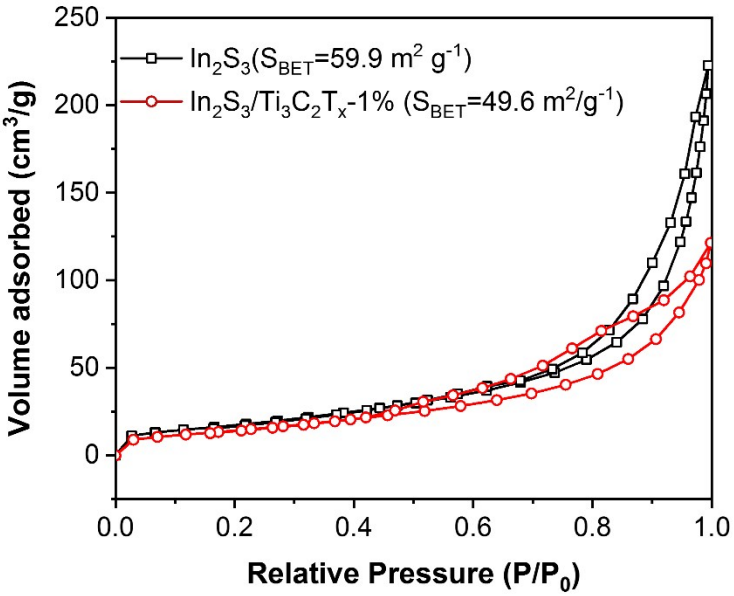

Fig. S9. Nitrogen (N_2) adsorption-desorption isotherms of bare In_2S_3 and $In_2S_3/Ti_3C_2T_x$-1%.

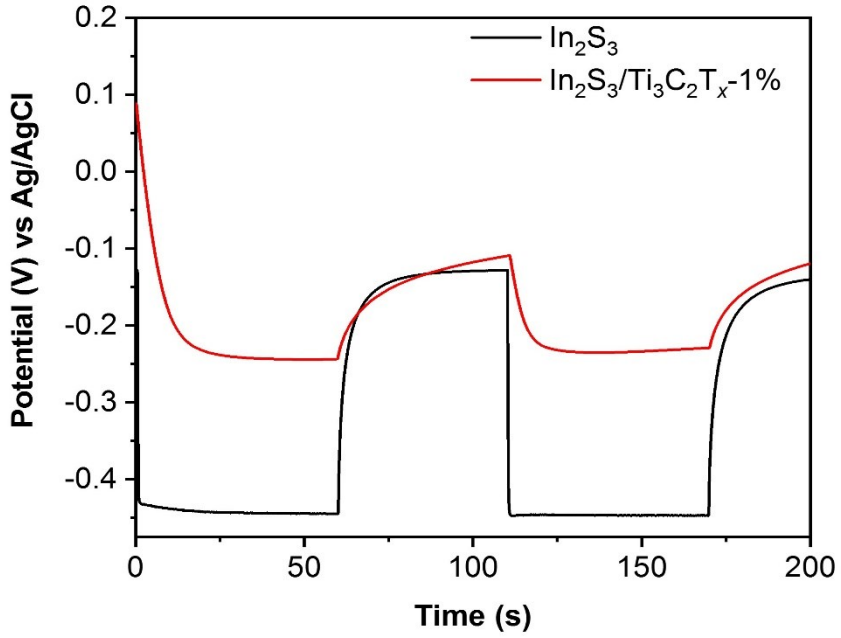

Fig. S10. Decay curves of photovoltage of In_2S_3 and $In_2S_3/Ti_3C_2T_x$-1%.

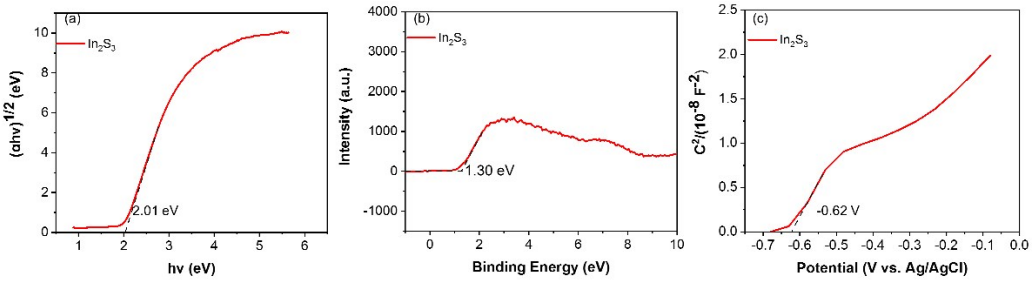

Fig. S11. The estimated band gap energy (a) of In_2S_3 based on the Kubelka-Munk function plot transformed from the absorbance; VB-XPS spectra (b) and Mott-Schottky curves (c) of In_2S_3.