Supporting Information:

Construction of $CuO/In_2S_3/ZnO$ heterostructure arrays for enhanced photocatalytic efficiency

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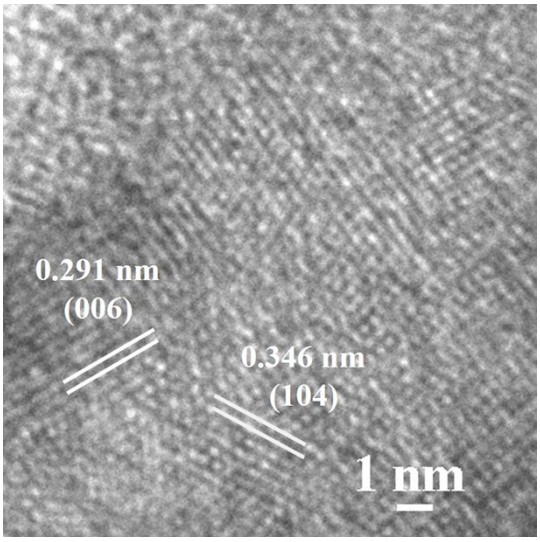

Fig. S1 The HRTEM image of In_2S_3 shell in a $CuO/In_2S_3/ZnO$ heterostructure (Fig. 5).

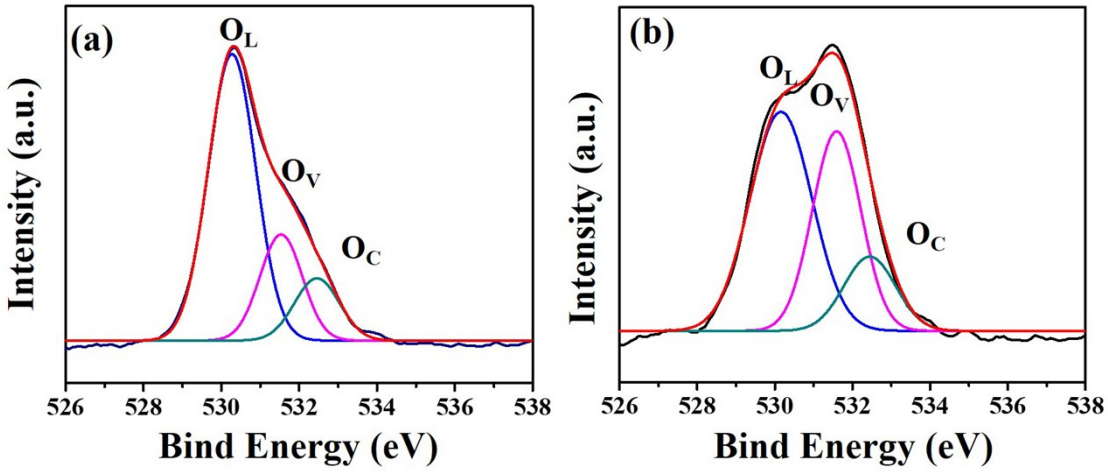

Fig. S2 XPS spectra of O1s for (a) CuO nanowires and (b) $CuO/In_2S_3/ZnO$ heterostructures.

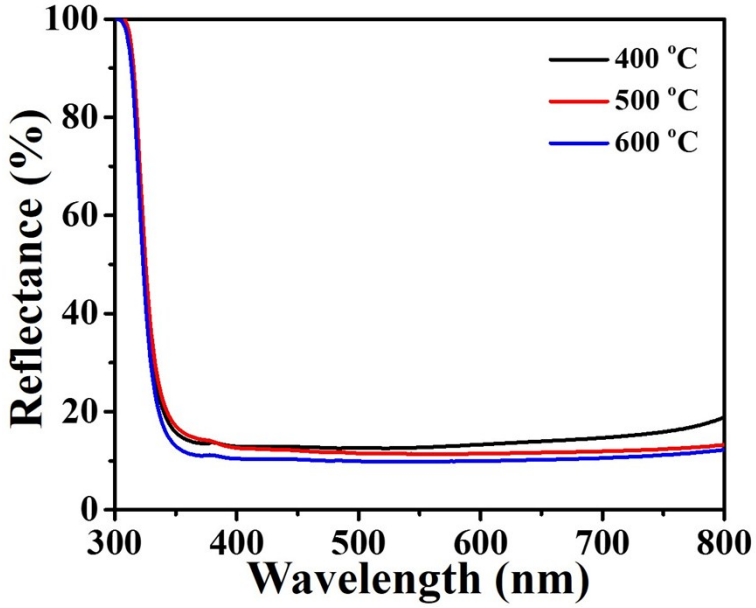

Fig. S3 The reflection spectra of CuO nanowire arrays were grown on the Cu foils at different growth temperatures for 6h.

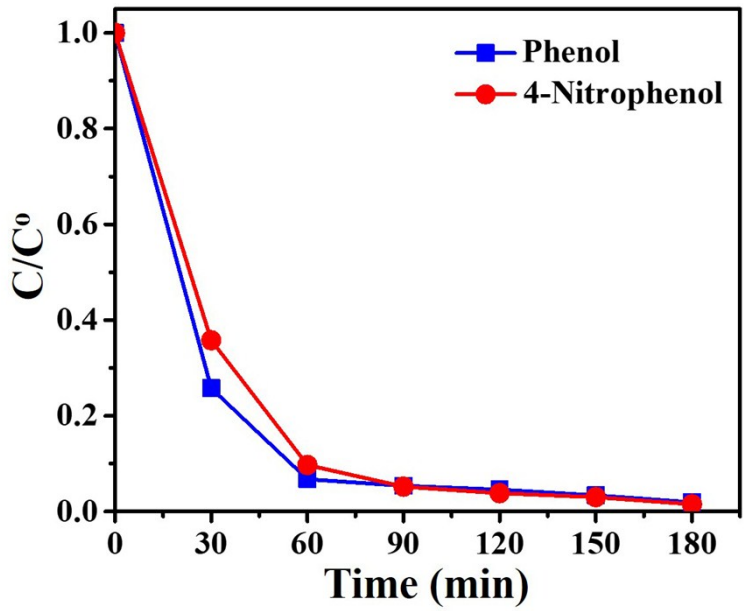

Fig. S4 Photocatalytic activities of the $CuO/In_2S_3/ZnO$ heterostructures for the degradation of phenol and 4-nitrophenol.

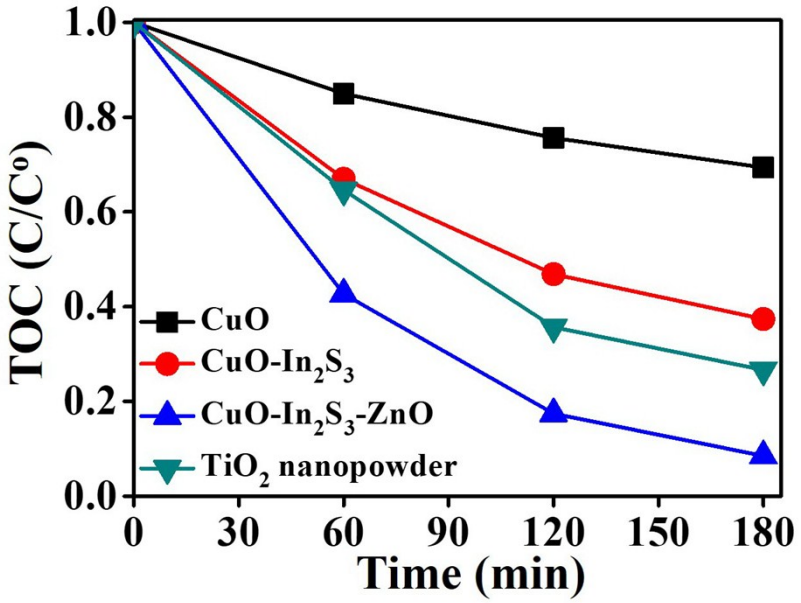

Fig. S5 Total organic carbon as function of irradiation time for photocatalytic degradation of R6G.

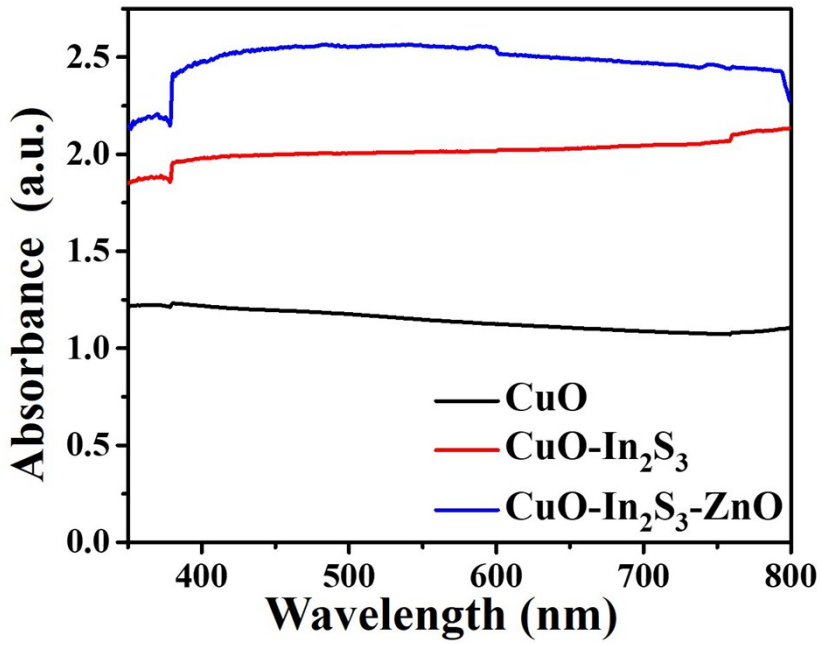

Fig. S6 The absorbance spectra of powder types of CuO nanowires, CuO/In_2S_3 heterostructures $CuO/In_2S_3/ZnO$ heterostructures.

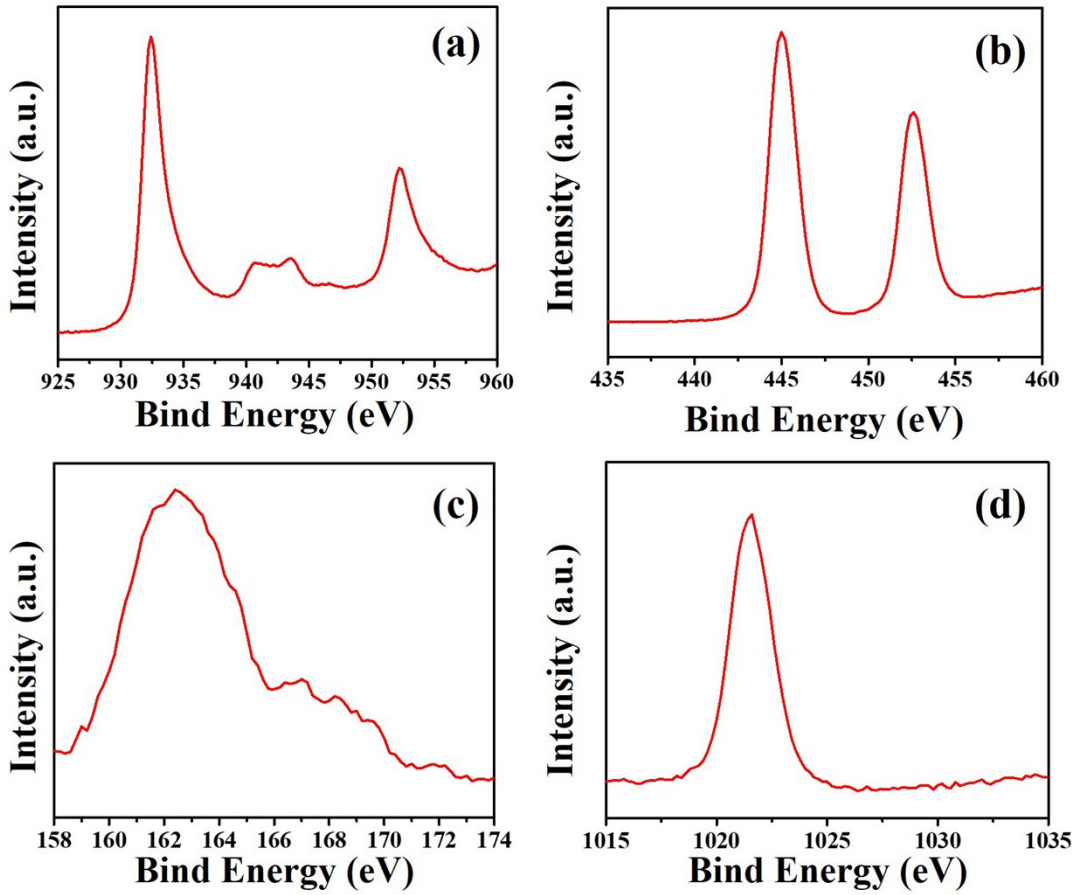

Fig. S7 XPS spectra of (a) Cu 2p, (b) In 3d, (c) S 2p, and (d) Zn 2p for $CuO/In_2S_3/ZnO$ heterostructures.