Supporting information

Defective Crystal Plane-Oriented Induced lattice Polarization For Photocatalytic Enhancement of ZnO

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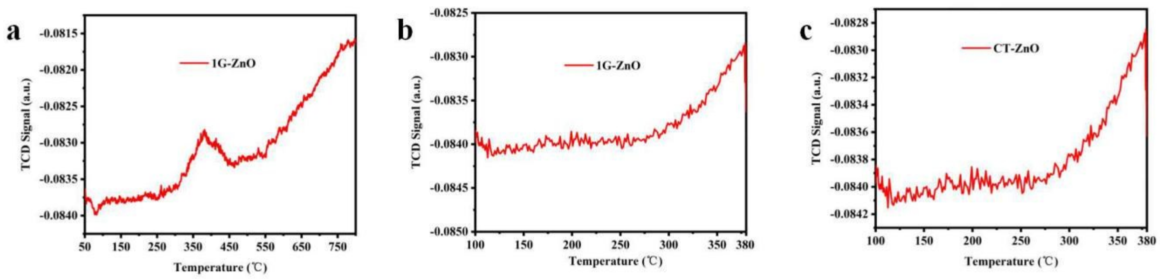

Fig. S1 The reaserch of the optimal temperature for H_2-TPR. (a) The TCD signal of the 1G-ZnO, (b,c) The TCD signal of the 1G-ZnO and CT-ZnO within the optimal temperature.

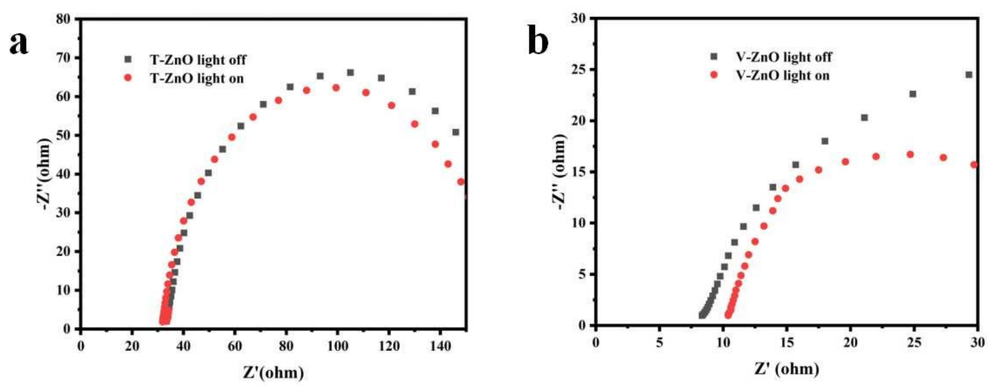

Fig. S2 Electrochemical impedance spectra (EIS) of (a) T -ZnO and (b) V -ZnO at light on and off.

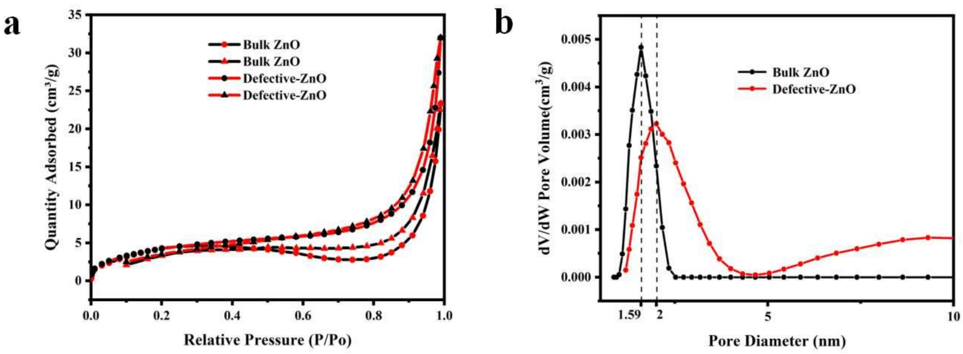

Fig. S3 (a) Nitrogen adsorption-desorption isotherms and (b) the pore size distribution curves of the bulk ZnO and defective-ZnO

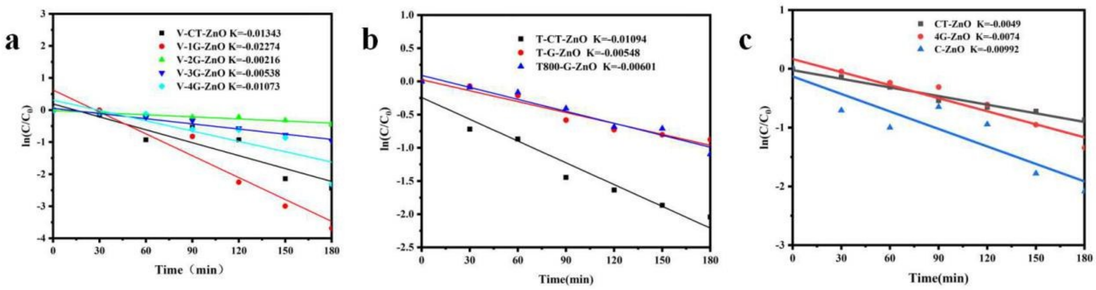

Fig. S4 Methylene blue degradation pathway of variation of ln (C/C_0) with irradiation time: (a) V-ZnO series samples, (b) T-ZnO series samples, (c) Control ZnO series samples.

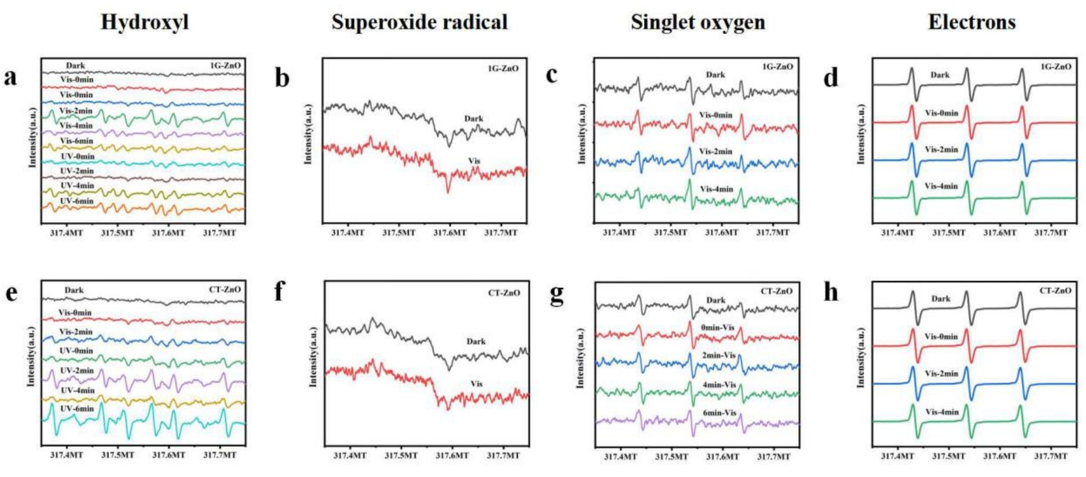

Fig. S5 ESR signal of 1G-ZnO producted by (a) hydroxyl, (b) superoxide radical, (c) singlet oxygen, (d) electrons and ESR signal of CT-ZnO producted by (e) hydroxyl, (f) superoxide radical, (g) singlet oxygen, (h) electrons.

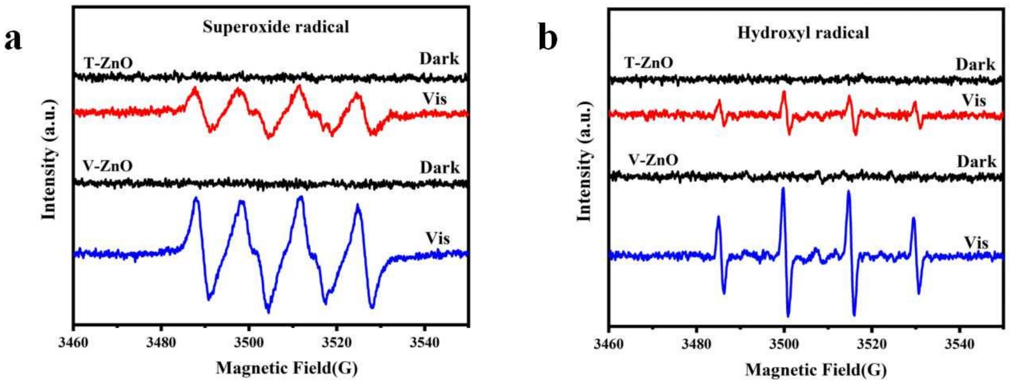

Fig. S6 ESR spectra of active species. (a) Superoxide radical and (b) Hydroxyl radicals.