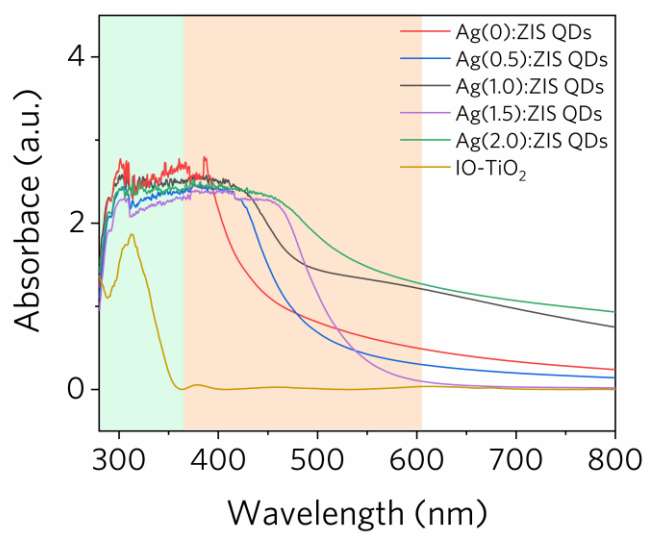
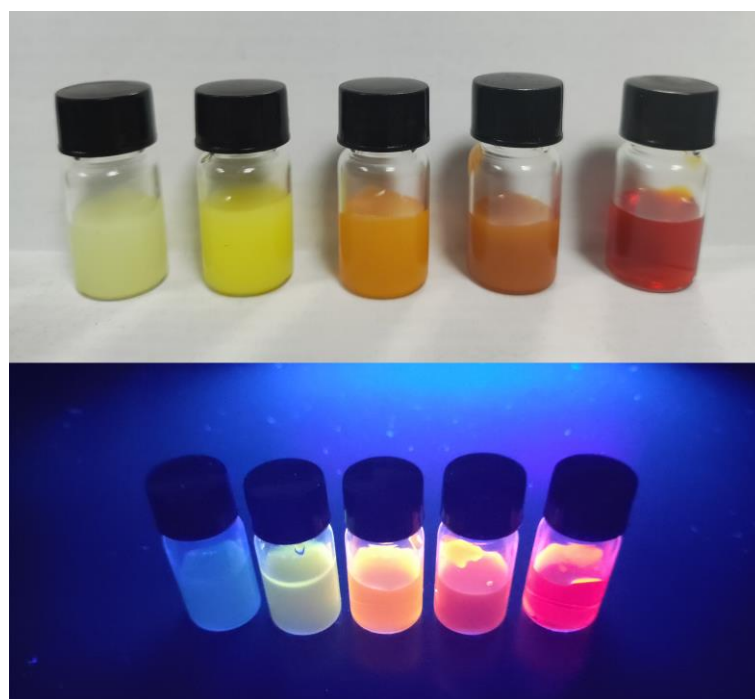


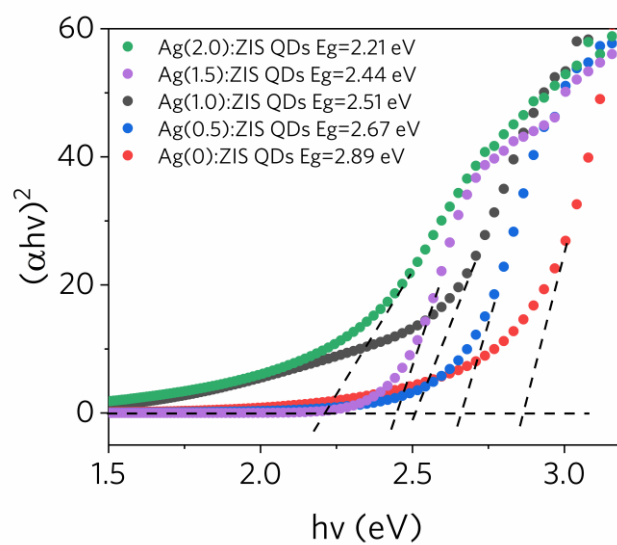
**Figure S1.** X-ray photoelectron spectroscopy of O1s and Ti 2p.



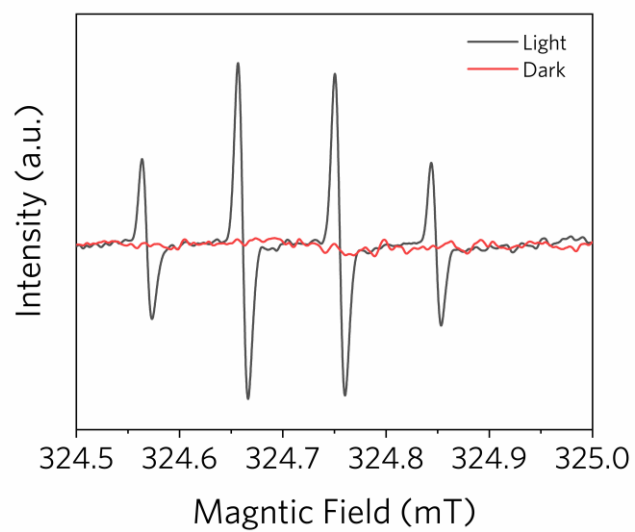
**Figure S2.** UV-Vis spectra of IO-TiO<sub>2</sub> and various Ag contents of ZnIn<sub>2</sub>S<sub>4</sub> QDs.



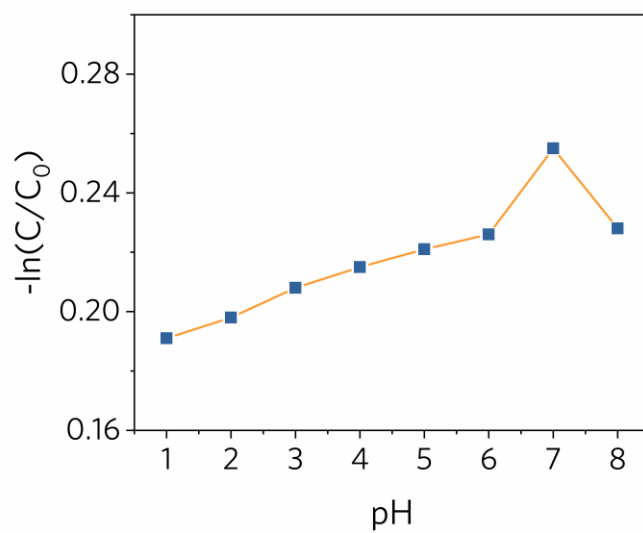
**Figure S3.** Digital photograph of various Ag contents of ZnIn<sub>2</sub>S<sub>4</sub> QDs under light ( ultraviolet light).



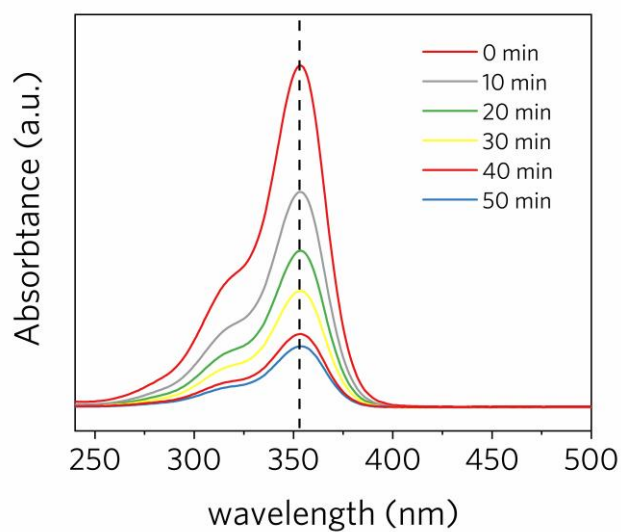
**Figure S4.** Tauc plots of Ag(X=0, 0.5, 1.0, 1.5, 2.0): ZIS QDs.



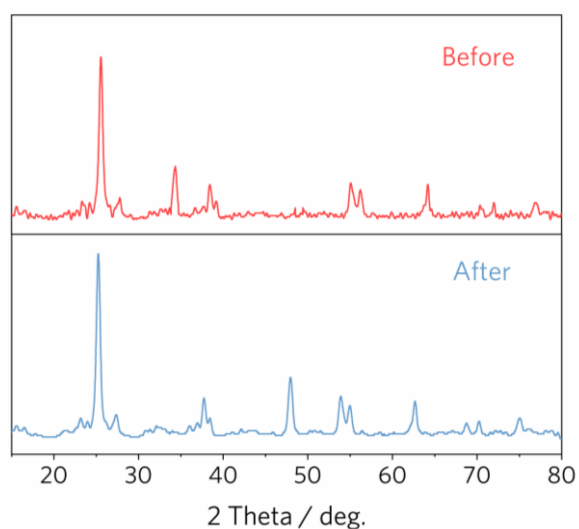
**Figure S5.** EPR spectra of DMPO-OH.



**Figure S6.** Optimization of pH for TC photodegradation experiment.



**Figure S7.** UV-Vis spectra of tetracycline (TC) aqueous solution in the presence of Ag(2): ZIS QDs/IO-TiO<sub>2</sub> heterojunction under visible light irradiation.



**Figure S8.** XRD of the catalyst before and after 4th recycle run.

**Table S1.** Electrolyte resistance ( $R_s$ ), charge transfer resistance ( $R_{CT}$ ), and double-layer capacitance values ( $C_{DL}$ ) of Ag (X): ZIS QDs/IO-TiO<sub>2</sub>.

	$R_s$	$R_{CT}$	$C_{DL}$
Ag (0): ZIS QDs/IO-TiO <sub>2</sub>	9.4	107.2	1.79
Ag (0.5): ZIS QDs/IO-TiO <sub>2</sub>	10.4	67.5	1.13
Ag (1.0): ZIS QDs/IO-TiO <sub>2</sub>	10.6	59.6	0.99
Ag (1.5): ZIS QDs/IO-TiO <sub>2</sub>	11.4	58.3	0.97
Ag (2.0): ZIS QDs/IO-TiO <sub>2</sub>	15.6	7.6	0.13