Supporting Information

Enhanced Photocatalytic Performance of ZnO/AgCl Composites Prepared by High-Energy Mechanical Ball Milling

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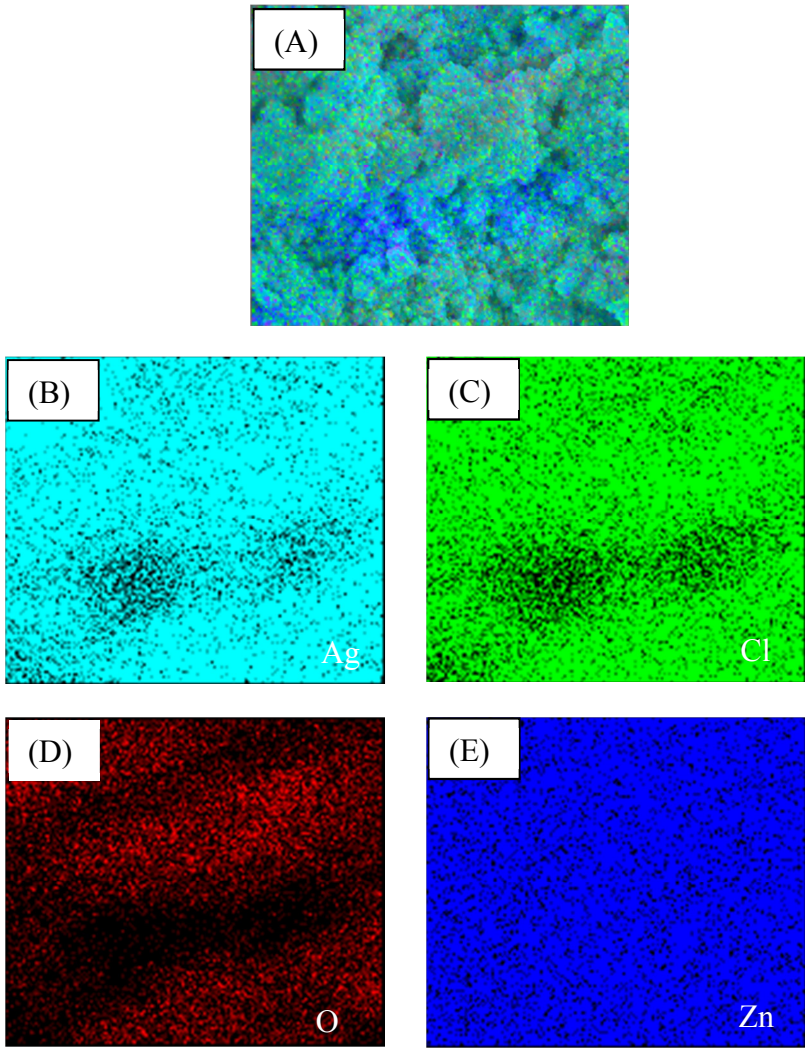

Fig. S1 SEM image of mapping area (A), EDS elements mapping of Ag (B), Cl (C), O (D) and Zn (E) of the BM-ZA-60% sample.

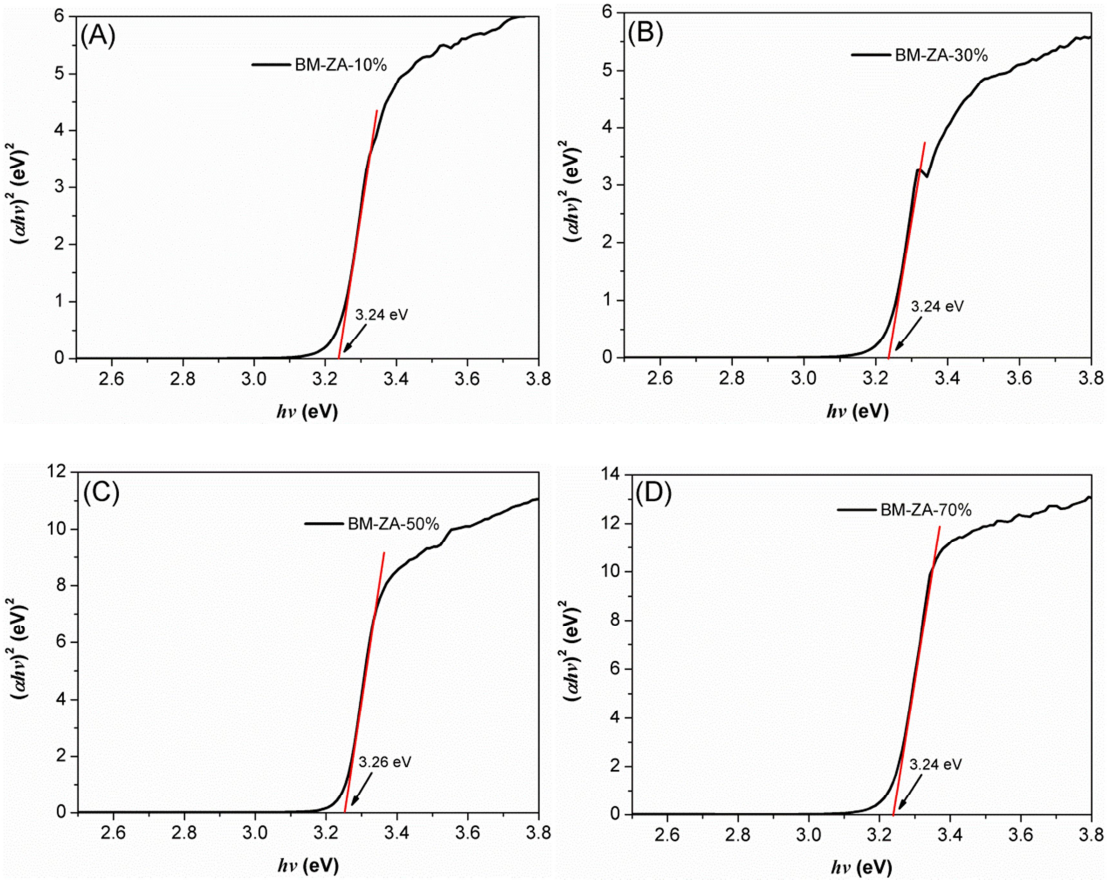

Fig. S2 Calculated band gap of BM-ZA-10% (A), BM-ZA-30% (B), BM- ZA-50% (C) and BM-ZA-70% (D) with $(\alpha h\nu)^2$ graph of relationship with energy ($h\nu$).

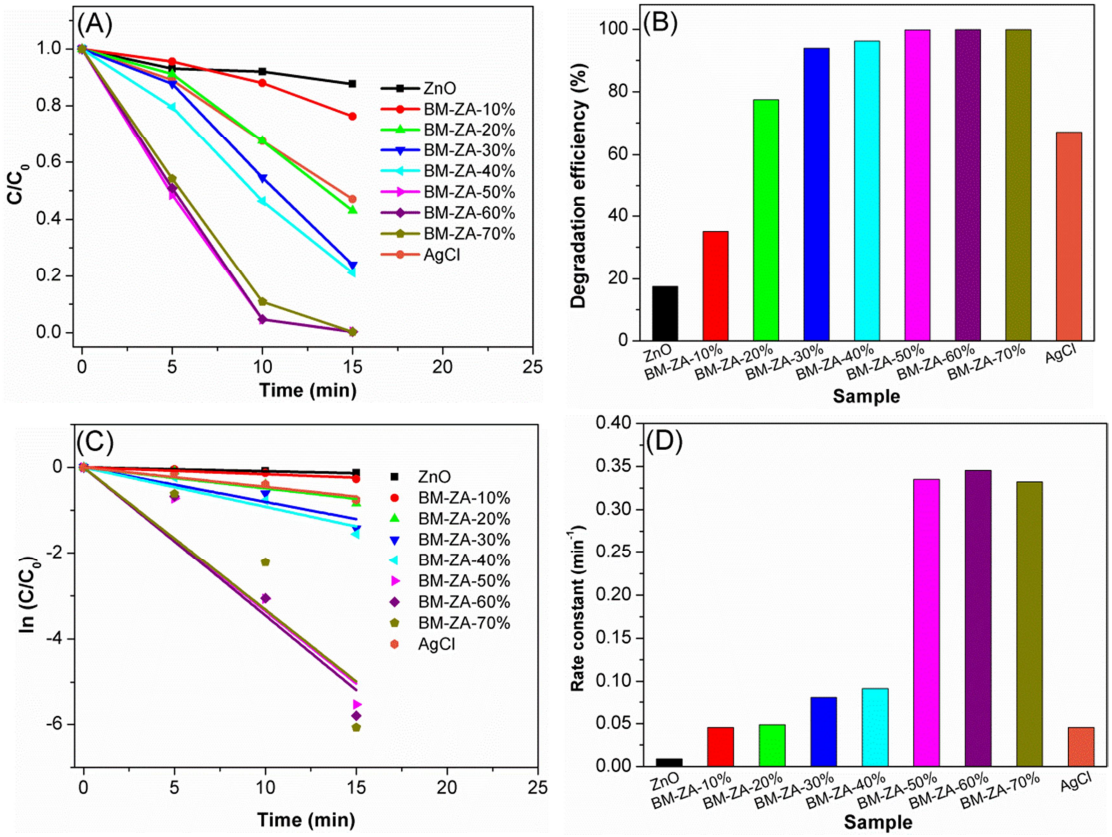

Fig. S3 ZnO, AgCl and BM-ZA-*x*% photocatalytic degradation of RhB under visible light: (A) Kinetic diagram, (B) Degradation efficiency graph, (C) The linear kinetic fitting graph, (D) Comparison of the pseudo first-order rate constants.

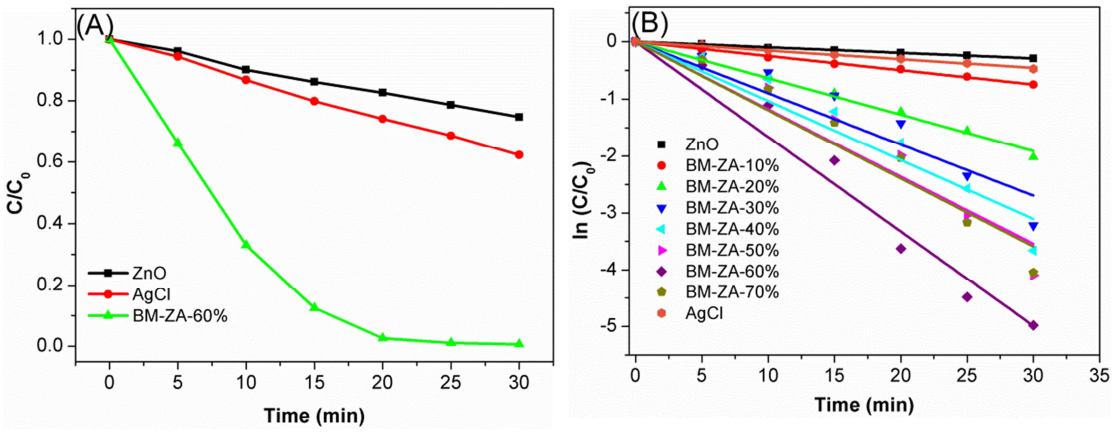

Fig. S4 Photo-dehydrogenation of 1,4-DHP under visible light: (A) Kinetic diagram of ZnO, AgCl and BM-ZA-60%; (B) The linear kinetic fitting graph of ZnO, AgCl and BM-ZA-*x*%.

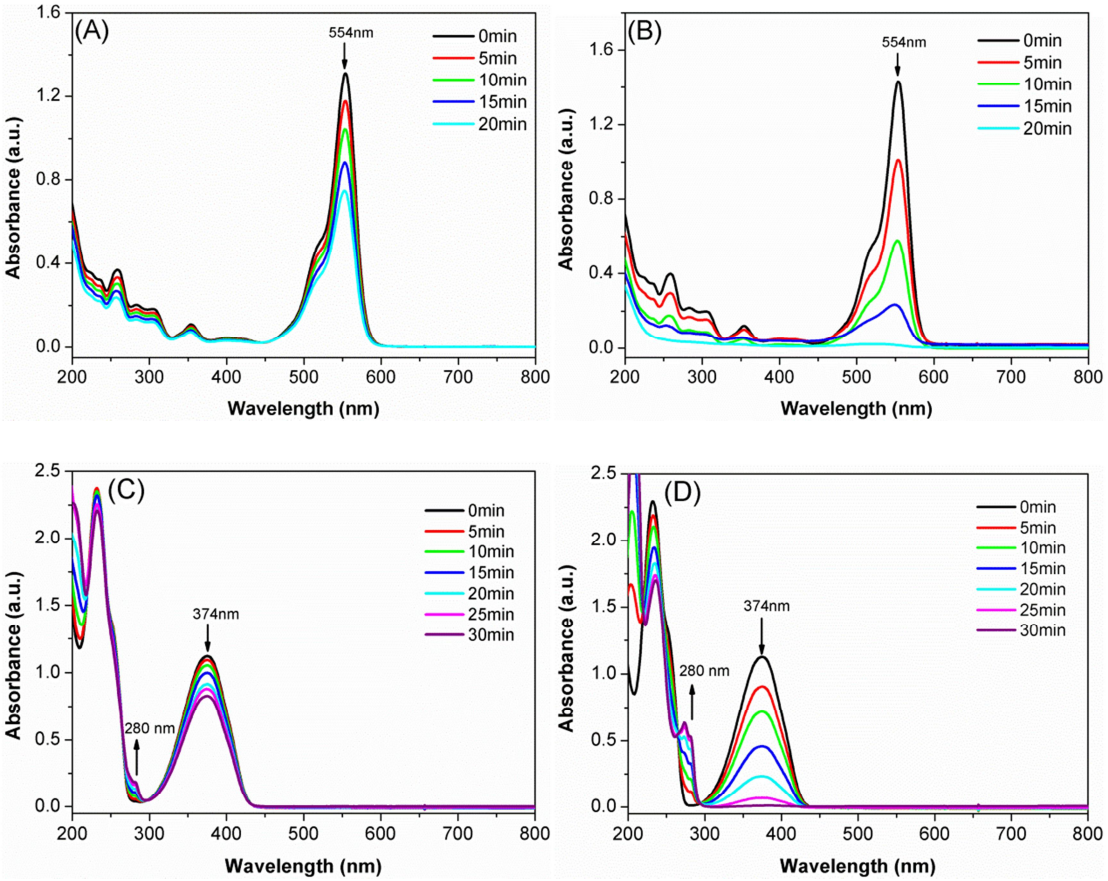

Fig. S5 The UV-Vis spectra changes of RhB solution under visible light irradiation (λ≥400 nm) in the presence of different photocatalysts: (A) SM-ZA-60%, (B) DP-ZA-60%; The UV-Vis spectra changes of 1,4-DHP solution under visible light irradiation (λ≥400 nm) in the presence of different photocatalysts: (C) SM-ZA-60%, (D) DP-ZA-60%.

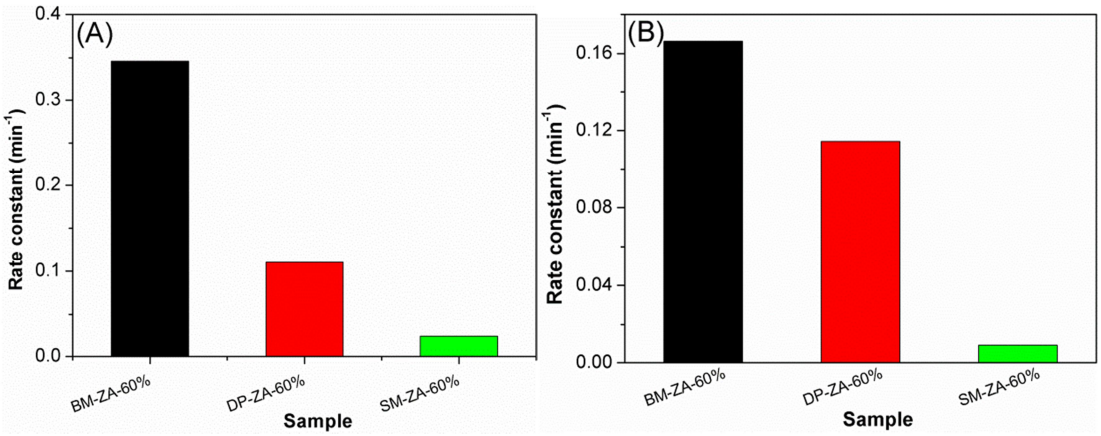

Fig. S6 (A) Comparison of the pseudo first-order rate constants of photodegradation of RhB with ZnO, AgCl, BM-ZA-60%, DP-ZA-60% and SM-ZA-60%; (B) Comparison of the pseudo first-order rate constants of photooxidation of 1,4-DHP with ZnO, AgCl, BM-ZA-60%, DP-ZA-60% and SM-ZA-60%.

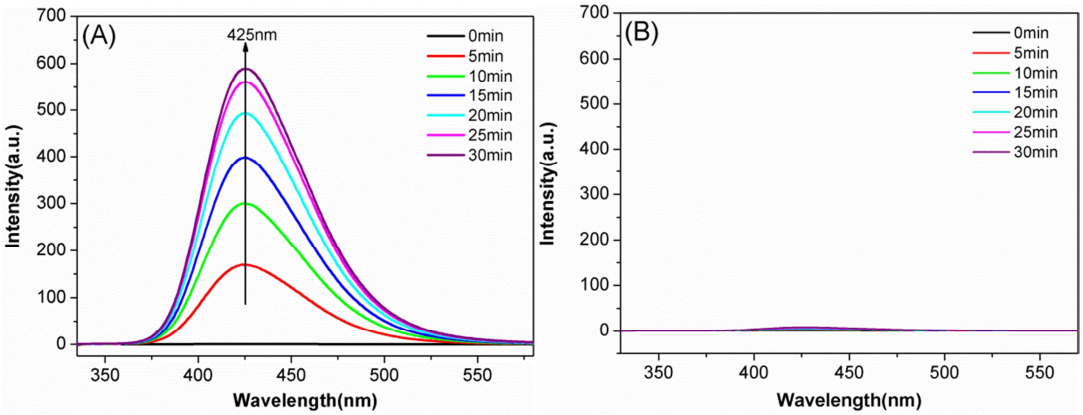

Fig. S7 The fluorescence spectra changes of TA alkaline solution in the presence of TiO_2 (A) and BM-ZA-60% (B).