

Supporting Information

High-Efficiently Visible-Light-Responsive Photocatalysts: Ag_3PO_4 Tetrahedral

Microcrystals with Exposed $\{111\}$ Facets of High Surface Energy

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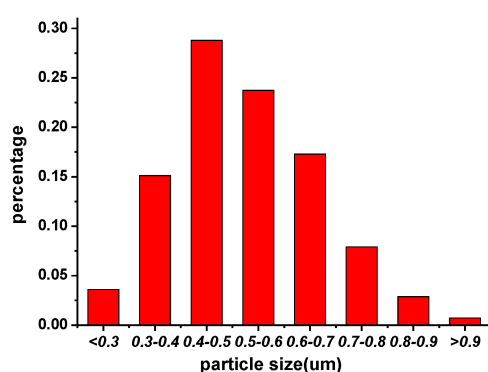


Fig. S1 The histogram of particle size distributions of the Ag_3PO_4 tetrahedral microcrystals.

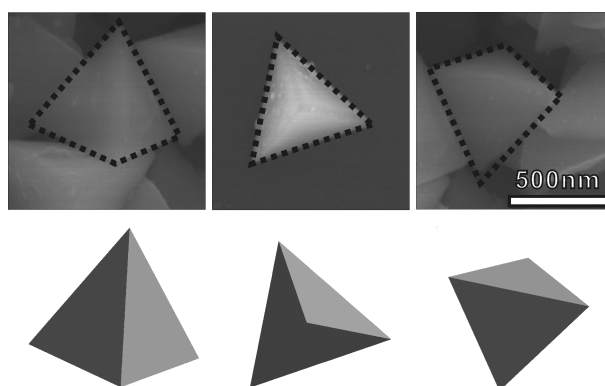


Fig.S2 A series of high-magnification SEM images and corresponding models of the tetrahedral Ag_3PO_4 in different orientations.

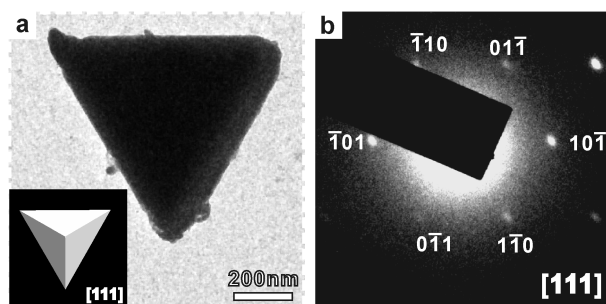


Fig.S3 (a) Typical low-magnification TEM image and (b) the corresponding SAED pattern of a tetrahedral Ag_3PO_4 sub-microcrystal viewed along the $[111]$ direction. The TEM image agrees well with the schematic model of an ideal tetrahedron enclosed by $\{111\}$ facets viewed along the $[111]$ direction (inset in Fig. S3a), indicating that the surface of Ag_3PO_4 sub-microcrystal consists of $\{111\}$ facets.

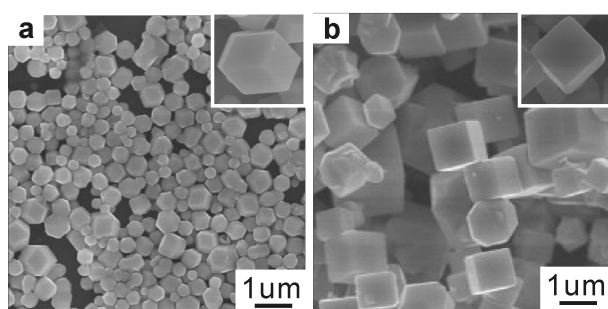


Fig.S4 The SEM images of Ag_3PO_4 sub-microcrystals with different morphologies: (a) rhombic dodecahedrons; (b) cubes.

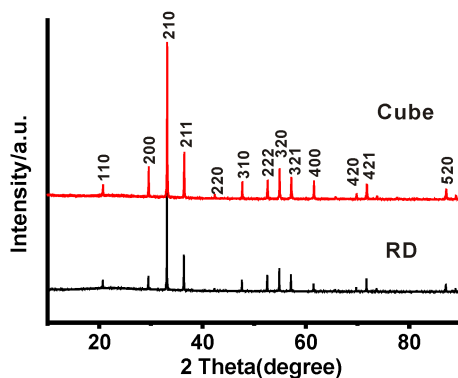


Fig.S5 XRD patterns of Ag_3PO_4 rhombic dodecahedrons and cubes.

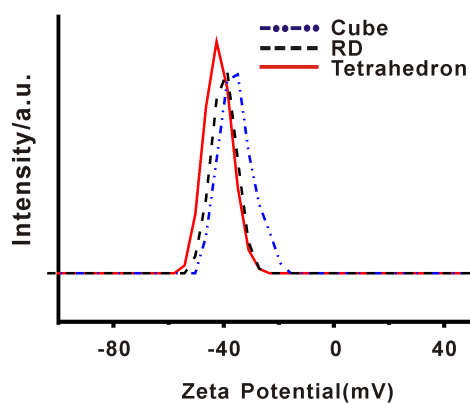


Fig. S6 Zeta potentials of Ag₃PO₄ with difference morphologies.

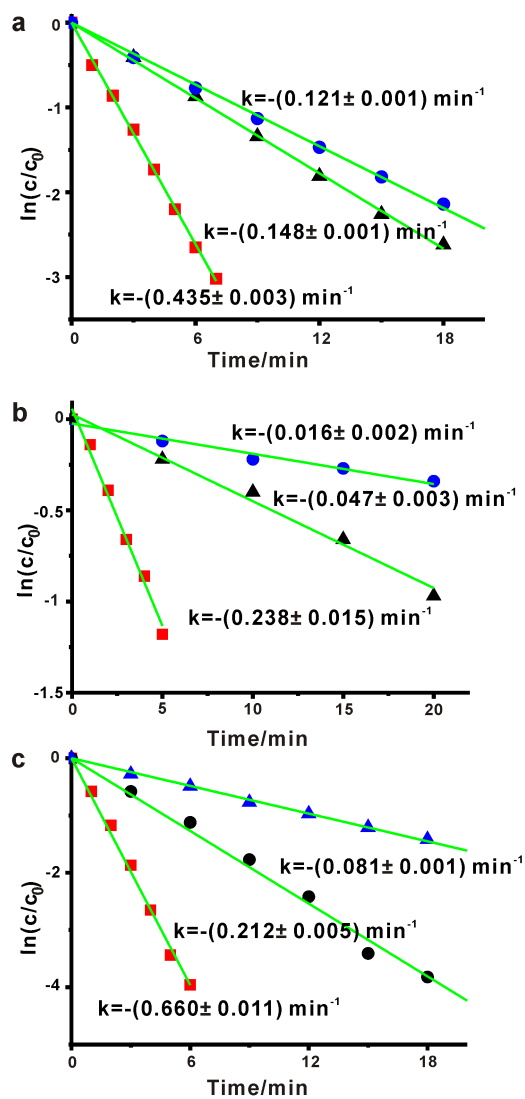


Fig. S7 Pseudo first-order reaction kinetics of (a) MB, (b) MO and (c) RhB degradation over Ag₃PO₄ tetrahedra (■), rhombic dodecahedra (●) and cubes (▲).

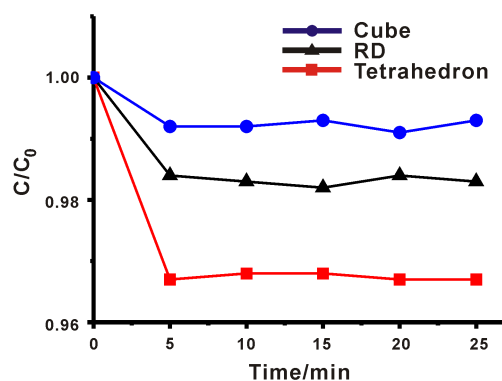


Fig. S8 The adsorption properties of MB over Ag_3PO_4 tetrahedra, rhombic dodecahedra and cubes under dark conditions.

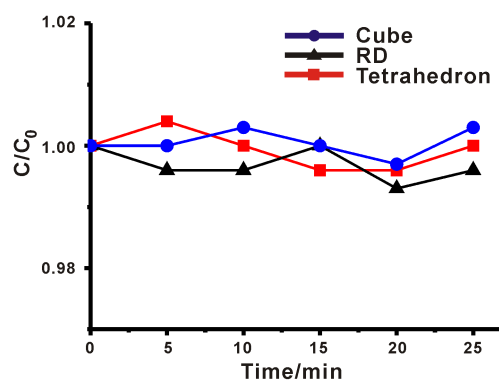


Fig. S9 The adsorption properties of MO over Ag_3PO_4 tetrahedra, rhombic dodecahedra and cubes under dark conditions.

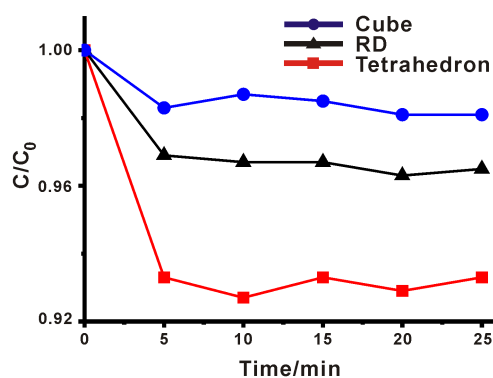


Fig. S10 The adsorption properties of RhB over Ag_3PO_4 tetrahedra, rhombic dodecahedra and cubes under dark conditions.