Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Preparation of Ag_3PO_4 tetrapods anchored with nitrogen-doped carbon quantum dots for enhanced photocatalytic performance

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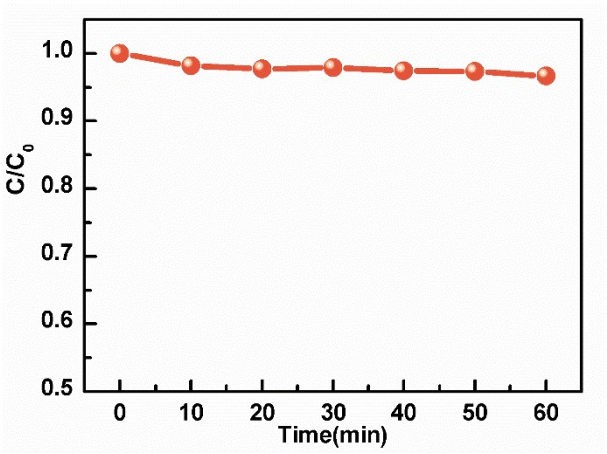

Fig. S1. Dark adsorption curve of Ag_3PO_4.

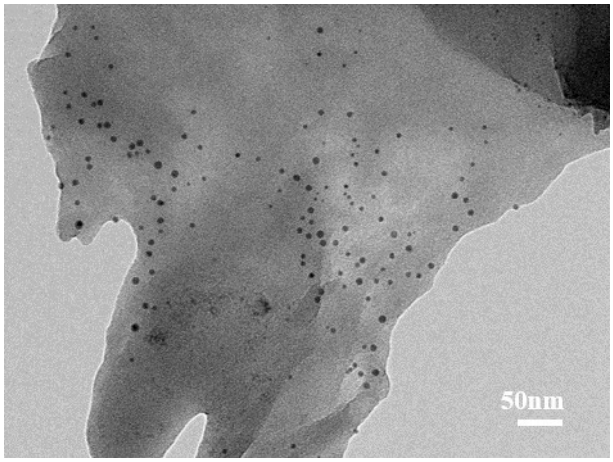

Fig.S2. TEM images (a)NCQDs

Table S1. The radiative fluorescence lifetimes and their relative percentages of photogenerated carriers in Ag_3PO_4 and NCQDs(0.75%)/Ag_3PO_4.

Sample	τ_1-Rel%	τ_2-Rel%	τ_3-Rel%	Average(ns)
Ag_3PO_4	5.55 -39.86	5.53 -25.19	1.42 -34.96	4.10
NCQDs(0.75%)/Ag_3PO_4	6.29 -38.15	6.27 -26.68	1.46 -35.17	4.59

Table S2. First-order kinetic constant equation and k value of as-prepared samples.

series	photocatalyst	the first order kinetic equation	K(min^{-1})	R^2
1	Ag_3PO_4	$-\ln(C/C_0) = -0.0180+0.0244t$	0.0244	0.9979
2	Ag_3PO_4 -sintering	$-\ln(C/C_0) = -0.0462+0.0259t$	0.0259	0.9875
3	NCQDs(0.25%)/Ag_3PO_4	$-\ln(C/C_0) = -0.1343+0.0235t$	0.0235	0.8793
4	NCQDs(0.50%)/Ag_3PO_4	$-\ln(C/C_0) = -0.0649+0.0399t$	0.0399	0.9779
5	NCQDs(0.75%)/Ag_3PO_4	$-\ln(C/C_0) = -0.0776+0.0841t$	0.0841	0.9911
6	NCQDs(1.00%)/Ag_3PO_4	$-\ln(C/C_0) = -0.0953+0.0385t$	0.0385	0.9736

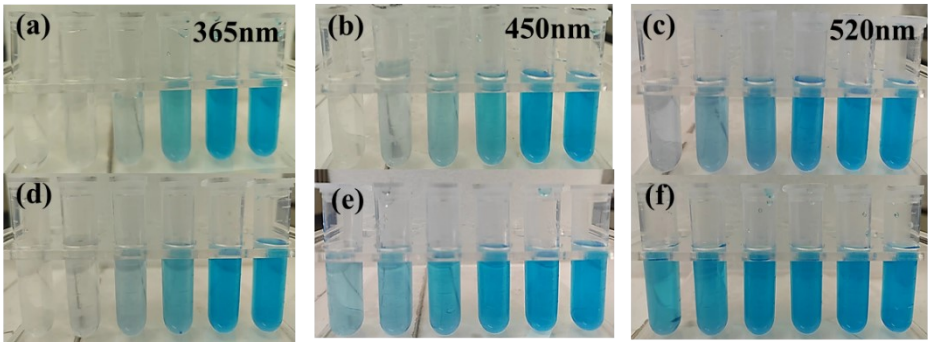

Fig. S3. MB solution with time over 365nm, 450nm and 520nm monochromatic light, respectively by (a-c) NCQDs(0.75%)/Ag_3PO_4 and (d-f) Ag_3PO_4.

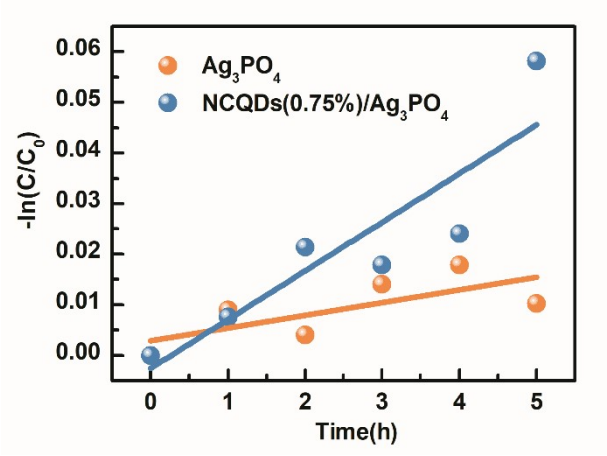

Fig. S4. plots of -ln(C/C_0) vs. irradiation time for the samples over 750 nm monochromatic light irradiation.

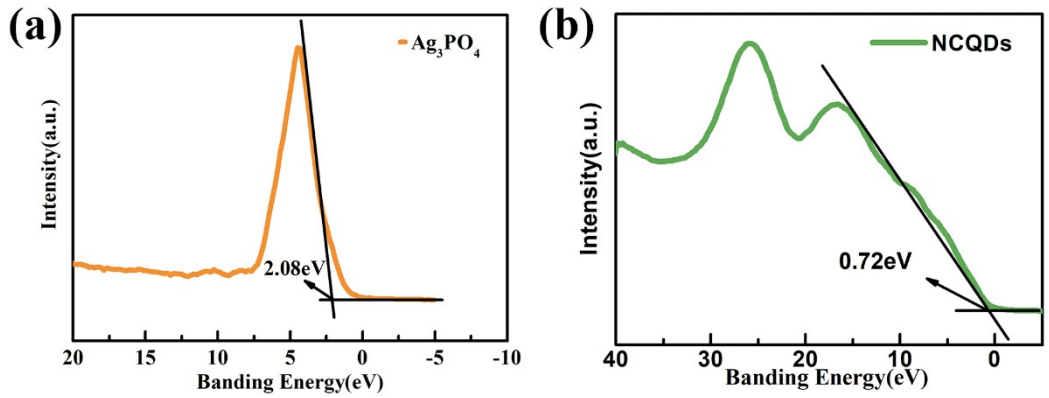

Fig. S5. VB-XPS spectra of (a) Ag_3PO_4 and (b) NCQDs.

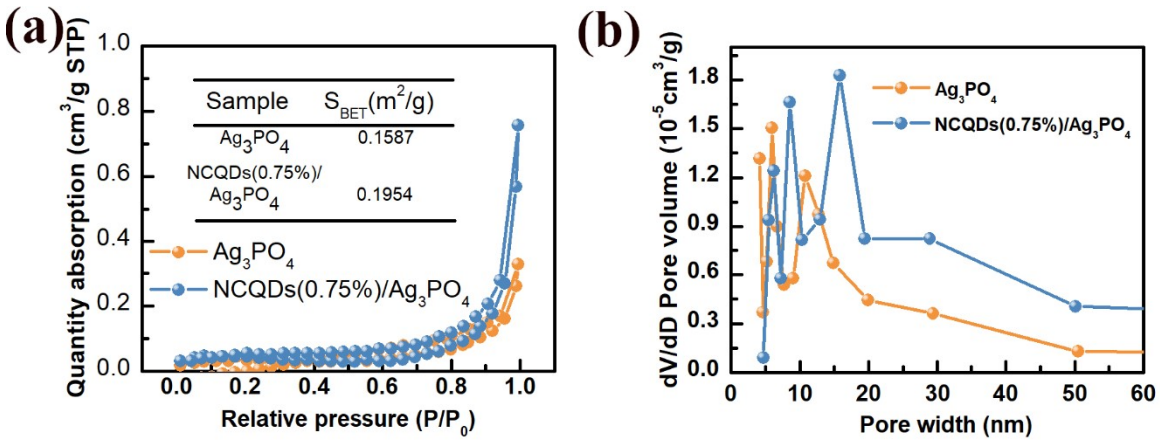

Fig. S6. (a) N_2 adsorption–desorption isotherm and (b) the corresponding pore-size distribution of Ag_3PO_4 and NCQDs/Ag_3PO_4.