Electronic Supplementary Material (ESI) for RSC Advances

Synthesis and visible light photoactivity of anatase Ag and garlic loaded TiO_2 nanocrystalline catalyst

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1) 3 Equations

2) 2 Tables

3) 1 Figure

Power rate law calculations

$$-\frac{d[A]}{dt}=k[A] \quad (1)$$

This equation may be further integrated to:

$$-\ln\left(\frac{A}{A_o}\right)= kt \quad (2)$$

$$[A]=[A]_o\, e^{-kt} \quad (3)$$

where A_o is the initial MO concentration (ppm), A is the concentration after time (t, min) and k is the pseudo-first order reaction rate constant (min^{-1}).

BET surface area and porosity

Table SI 1. BET surface area, pore volume and pore size of Degussa P25 and doped TiO_2 samples

	BET surface area ($m^2\ g^{-1}$)	Pore Volume ($cm^3\ g^{-1}$)	Pore size (nm)
Degussa P25	56	0.25	17.5
S-TiO_2 (450 ^oC)	170	0.2	2.3
Ag/S-TiO_2 (450 ^oC)	45.9	0.16	7.2
Ag/S-TiO_2 (700 ^oC)	44.8	0.16	7.5

XPS analysis

Table SI 2: Results of curve fitting of the XPS spectra for the C 1s, O 1s, Ti 2p, Ag 3d and S 2p regions

Sample	C %	O %	Ti %	Ag %	S %
S-TiO_2	5.5	68.8	22.5	---	4.4
Ag/S-TiO_2	7.1	66.7	24.9	1.2	1.8

XPS spectra

Figure SI 1. High resolution XPS spectra of ech region in samples calcined at 450^o C (as BE of both, S/C and Ag, S/C codoped TiO_2 nanocatalysts were similar, only representative S 2p, Ti 2p, O 1s, C 1s and Ag 3d are given below).