Electronic Supplementary Material

One-Step Synthesis of Monodisperse Polydopamine-Coated Silver Core-Shell Nanostructures for Enhanced Photocatalysis

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Fig. S1

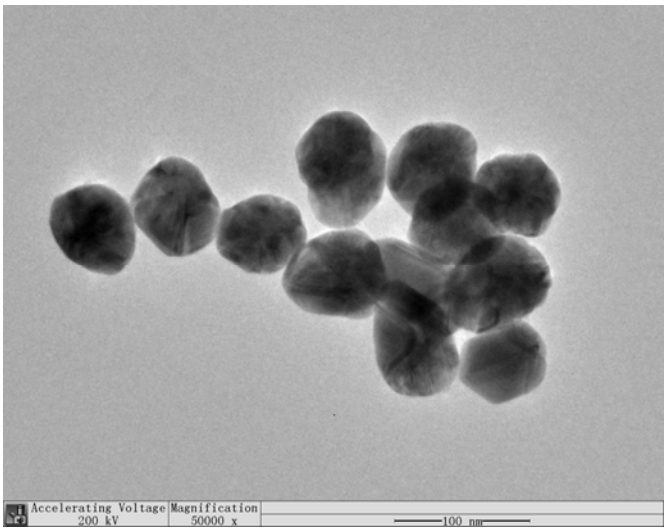

Fig. S1 TEM image of the synthesized AgNPs.

Fig. S1 provides the morphology of the as-synthesized Ag nanostructures through TEM experiments, revealing that many AgNPs are formed with the diameter of about 60-80 nm.

Fig. S2

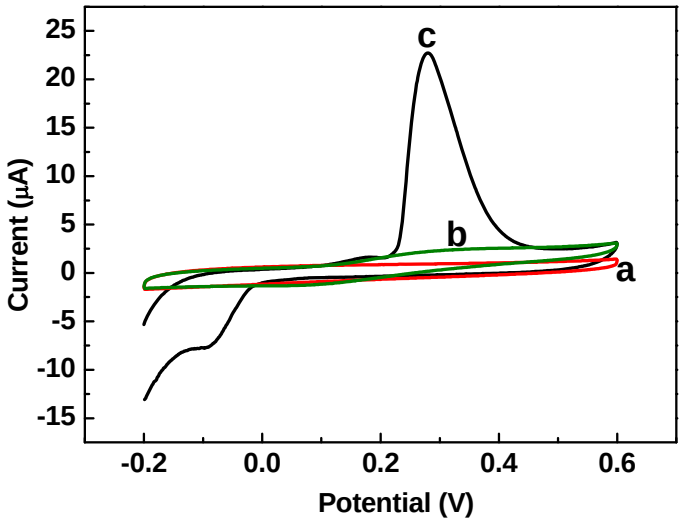

Fig. S2 Cyclic voltammograms of the bare (a), PDA (b), and AgNPs@PDA (c) modified electrodes in 25 mM phosphate solution (pH = 7.0) at 0.1 $V \cdot s^{-1}$

The cyclic voltammograms (CVs) of the different sample modified electrodes were recorded in phosphate solution (Fig. S2). Clearly, there is no peak appeared on the bare electrode (curve a). While, on the pure PDA modified electrode, a pair of broad and weak redox peaks is observed at 0.336 V and 0.068 V, which is ascribed to the redox peaks of PDA (curve b). Meanwhile, on the AgNPs@PDA modified electrode, there is a pair of redox peaks obviously observed at 0.278 V and -0.093 V (curve c), which is assigned to the redox peaks of the AgNPs from the electrode and further demonstrates the formation of AgNPs in the composites.

Table S1

Materials and method	Effects of process parameters	Reaction rate constant (*k*)	Refs.
Crystalline TiO_2 nanopowder	1. Concentration of TiO_2 nano-powder 2. Irradiation time	_____	1
ZnO/Fenton	1. Concentration of dye, catalyst *et al.* 2. Irradiation time 3. Fenton reagent	3.07×10^{-4} s^{-1}	2
HPA/TiO_2	1. Amount of catalyst or oxidants 2. pH of the solution	_____	3
TiO_2	1. Type of photocatalyst 2. pH of the solution 3. Concentration of dye or catalyst	_____	4
AgNPs@PDA	1. Concentration of dye or catalyst 2. Irradiation time	$k_1 = 9.56\times10^{-2}$ min^{-1} $k_2 = 0.56\times10^{-2}$ min^{-1}	Our study

Table S1 Comparison of the experimental setup for the photocatalytic and degradation studies with those previously published in the literature.

References

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