

Supporting information

Photocatalytic Redox on the Surface of Colloidal Silver Nanoparticles Revealed by Second Harmonic Generation and Two Photon Luminescence

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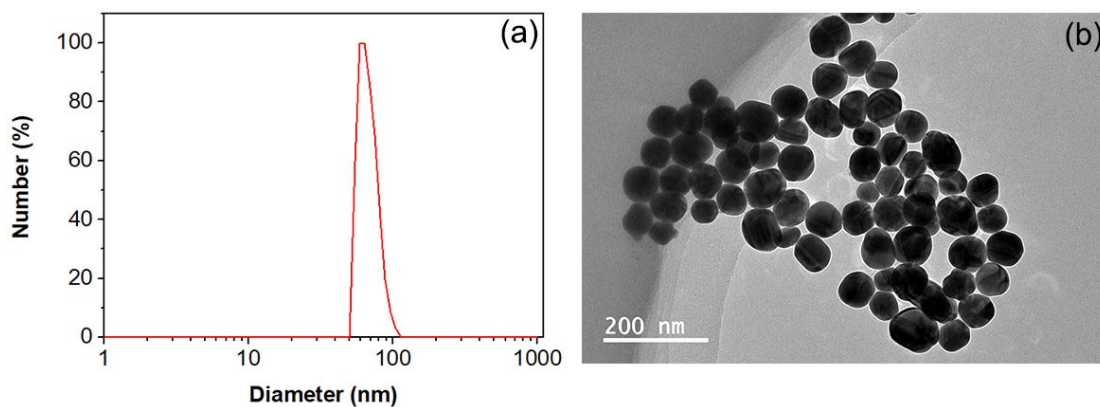


Figure S1. (a) The number distribution of AgNPs at different sizes obtained by DLS measurement. (b) TEM image of the AgNPs.

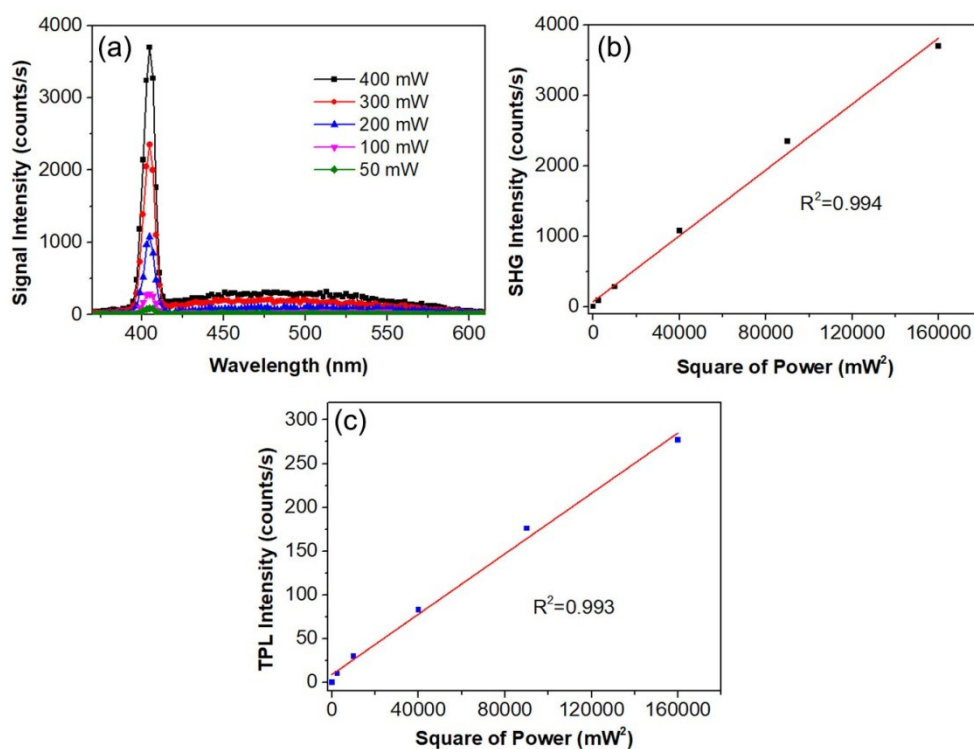


Figure S2. (a) Laser power dependence of the SHG and TPL signals with the SHG and TPF signals leveled off after the experiments shown in Figure 3 (with 300 mW laser power). (b/c) Linear relationship between the SHG/TPL intensities and the square of the laser power. The red curves in (b) and (c) are from linear fitting. This evidence proved the observed signals were second order contributions at both the relatively low and high laser powers, with no higher order contributions.

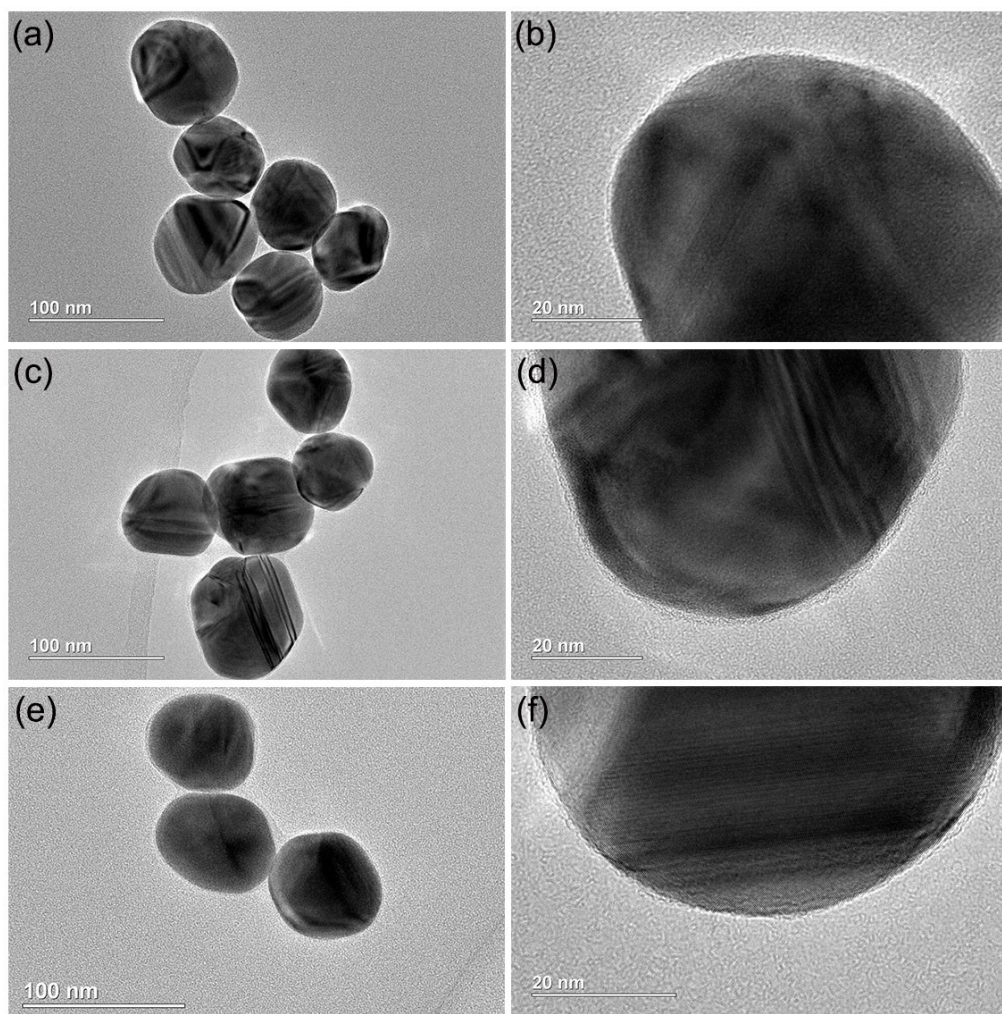


Figure S3. High-resolution TEM images of the AgNPs before and after laser irradiation. (a) (b) AgNPs before laser irradiation. (c) (d) AgNPs after laser irradiation at 100 mW for ~ 1 h. (e) (f) AgNPs after laser irradiation at 700 mW for ~ 3 h.

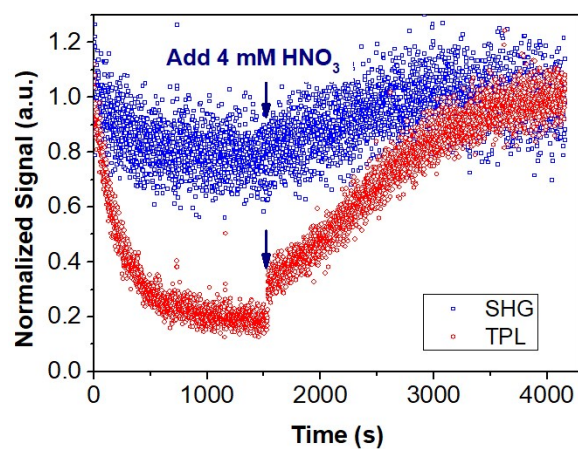


Figure S4. The time-dependent SHG and TPL signals of AgNPs colloids before and after the addition of 4 mM HNO₃ under irradiation by 810 nm laser with power of 100 mW.

Table S1. The Number mean diameter of the AgNPs under excitation of 810 nm laser with different powers for ~ 40 min.

Power (mW)	0	50	100	200	300	500	700
Diameter by Number(nm)	67.9±3.9	69.9±2.4	67.5±2.3	64.4±2.7	64.5±4.9	65.2±4.8	67.1±2.3