Supporting Information

Plasmonic Effects on the Growth of Ag Nanocrystals in Solution

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1. Supplementary figures

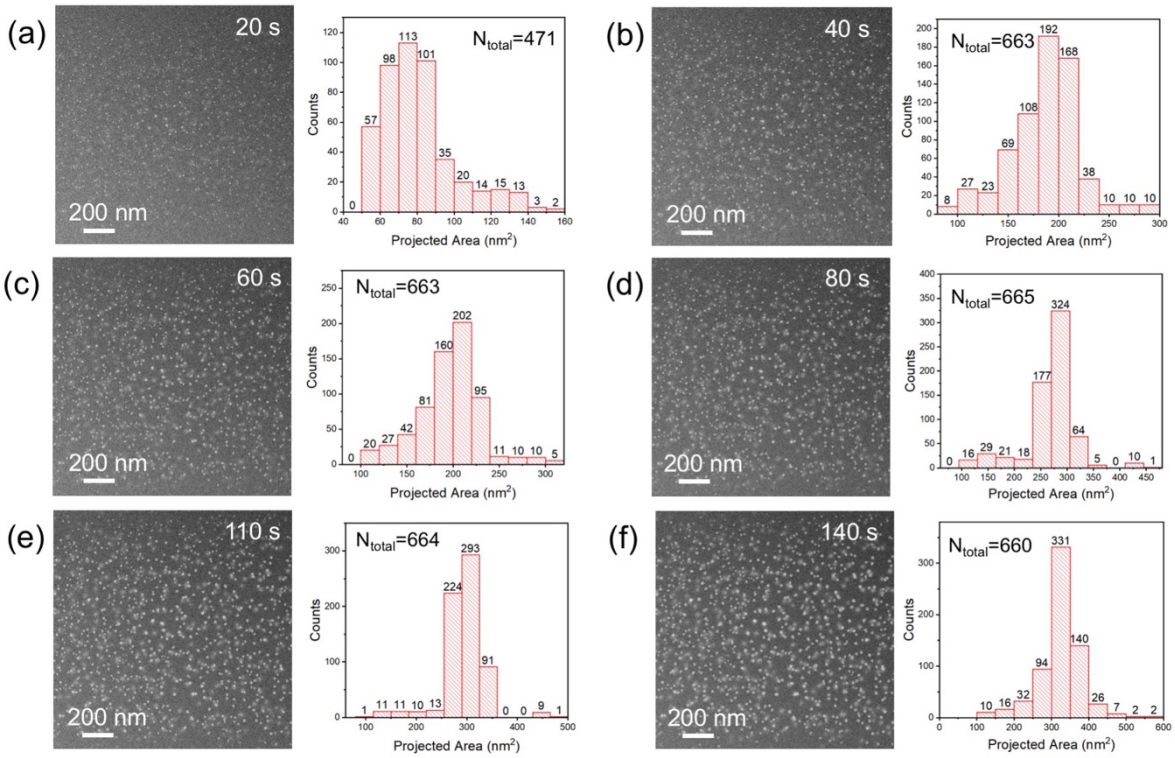

Figure S1. Statistical analysis of the number and the projected area distributions of Ag nanoparticles as a function of growth time in aqueous $AgNO_3$ solution (0.35 mM).

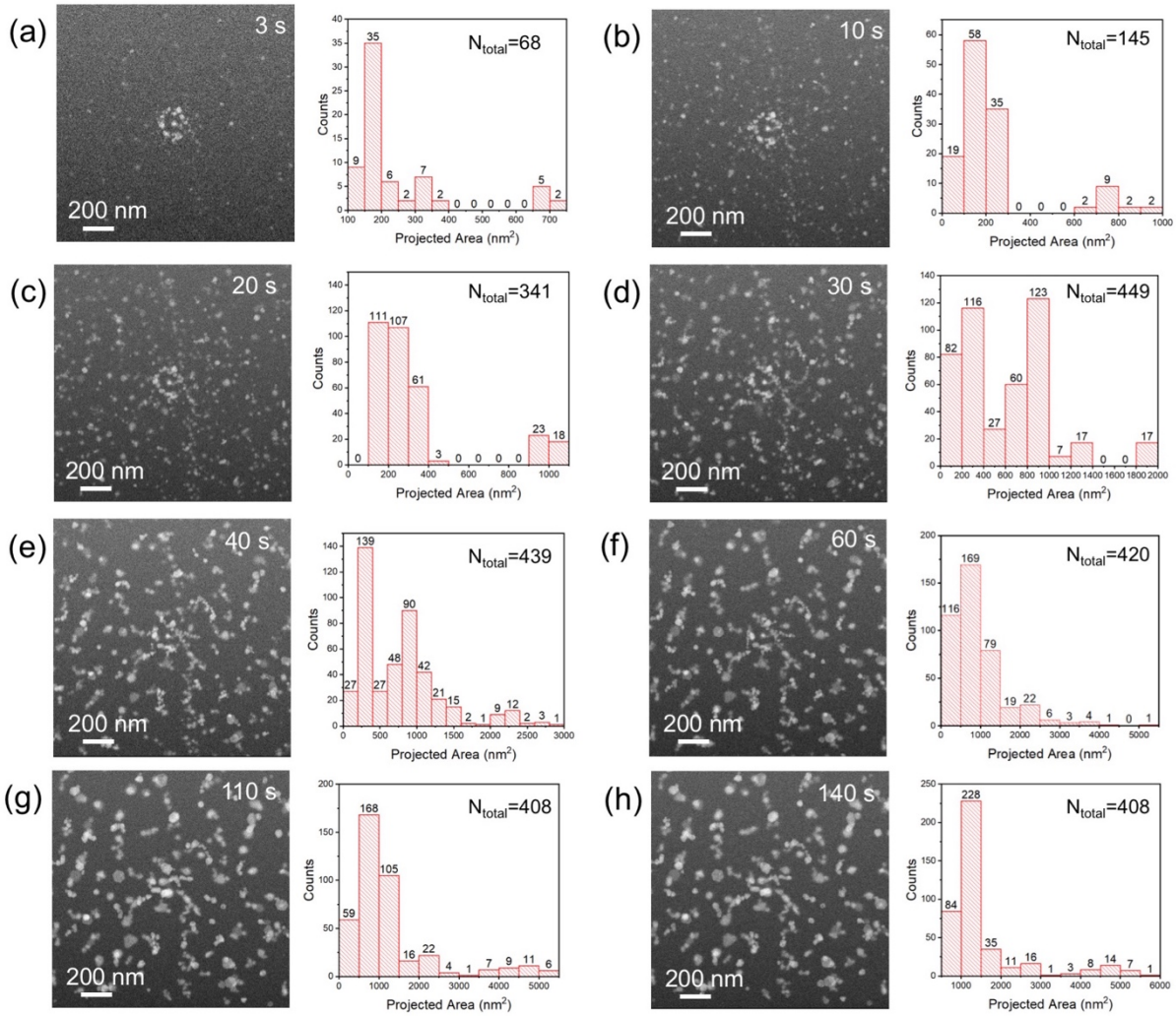

Figure S2. Statistical analysis of the number and the projected area distributions of Ag nanoparticles as a function of growth time in aqueous $AgNO_3$ solution (0.35 mM) containing sodium citrate (0.7 mM).

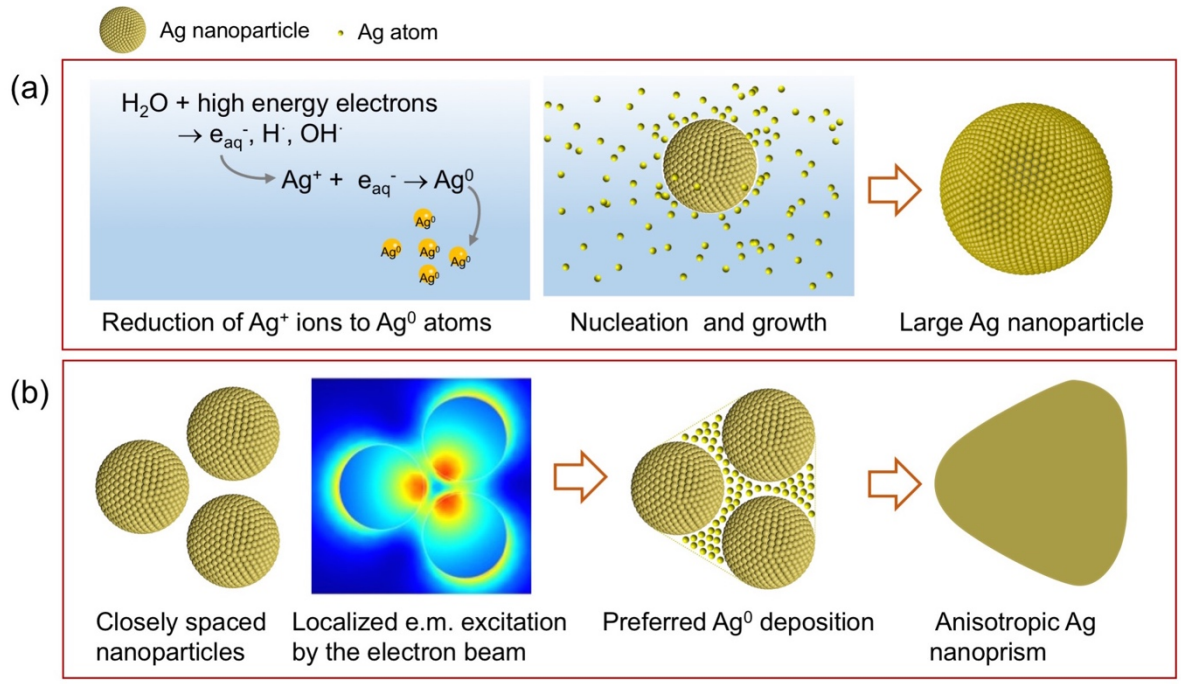

Figure S3. (a) Schematic illustration showing the mechanism of reduction of silver ions by radiolysis generated aqueous electrons aqueous solutions containing $AgNO_3$. Supersaturation with atomic silver results in nucleation and growth of isotropic Ag nanoparticles.
(b) Schematic illustration showing the mechanism of the plasmon-mediated growth of Ag nanostructures in aqueous solutions containing $AgNO_3$ and sodium citrate. The electric field of the electron probe excites local surface plasmon resonance (LSPR) of Ag nanoparticles and leads to field enhancement that promotes the preferential deposition of Ag in areas between closely spaced particles and transformation to anisotropic Ag nanoprisms.

2. Supplementary Movies

Supplementary Movie S1. *In-situ* observation of Ag nanoparticle growth in aqueous 0.35 mM AgNO3 solution. Acquisition conditions: Field of view 512 × 512 pixels, 4 µs pixel dwell time, 1.05 s/frame, electron dose per image was 14.8 $e^-/Å^2$, electron dose rate of 14.1 $e^-/Å^2 \cdot s$.

Supplementary Movie S1. *In-situ* observation of Ag nanoparticle growth in aqueous 0.35 mM AgNO3 solution with added sodium citrate (0.7 mM). Acquisition conditions: Field of view 512 × 512 pixels, 4 µs pixel dwell time, 1.05 s/frame, electron dose per image was 14.8 $e^-/Å^2$, electron dose rate of 14.1 $e^-/Å^2 \cdot s$.