

†Electronic Supporting Information

Morphology evolution of Ag/Au nanocomposites
via temperature-controlled galvanic exchange to
enhance catalytic activity

*Tae-Hyeon Park, Hyeri Lee, Jaewon Lee and Du-Jeon Jang**

Department of Chemistry, Seoul National University, NS60, Seoul 08826, Korea

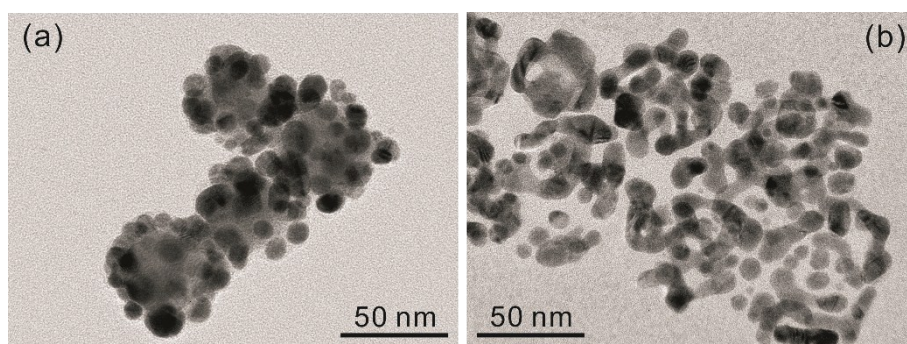


Fig. S1. TEM images of (a) Ag/Au(0) and (b) Ag/Au(105).

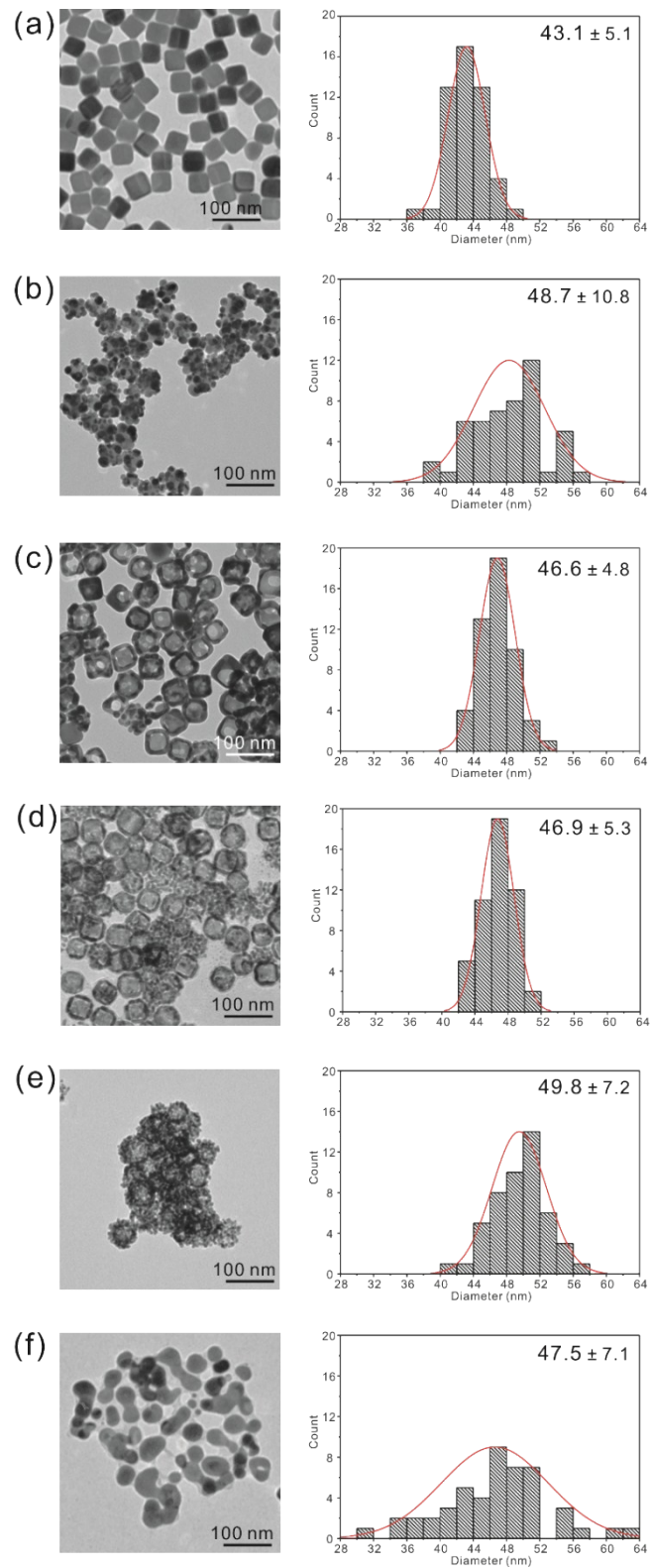


Fig. S2. TEM images and edge-size distribution histograms of (a) Ag(pr), (b) Ag/Au(0), (c) Ag/Au(25), (d) Ag/Au(55), (e) Ag/Au(85), and (f) Ag/Au(105). Average edge sizes are indicated inside the histograms.

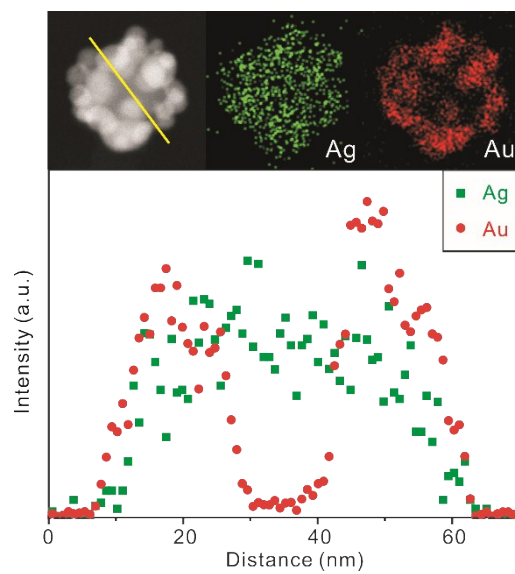


Fig. S3. STEM image, EDX elemental maps, and area-normalized line-scanned (along the line of the STEM image) elemental intensity profiles of Ag/Au(0).

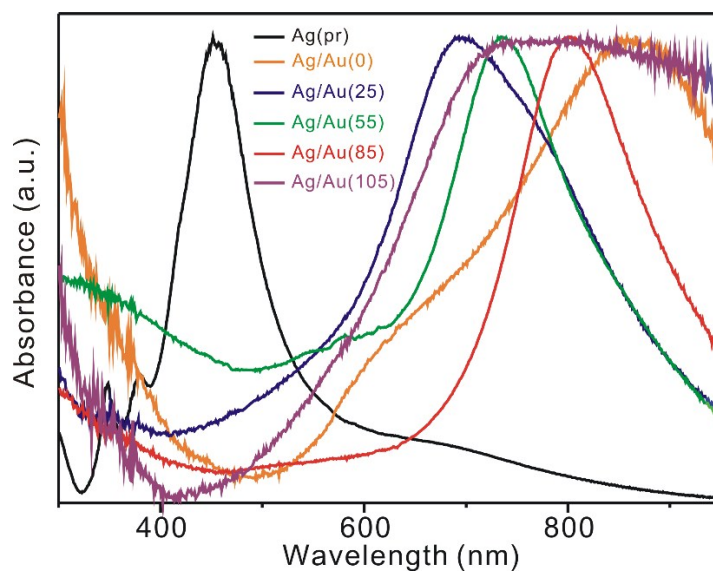


Fig. S4. Maximum-normalized surface-plasmon resonance spectra of indicated nanocatalysts in water.

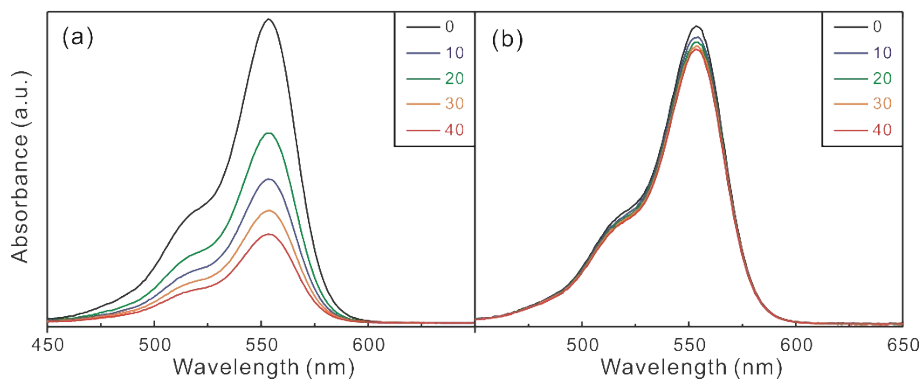


Fig. S5. Absorption spectra at 25 °C of 11 μM RhB(aq) in the presence of 1.3 mM KBH_4 , measured at elapsed times indicated in the units of min after addition of (a) Ag/Au(0) and (b) Ag/Au(105).

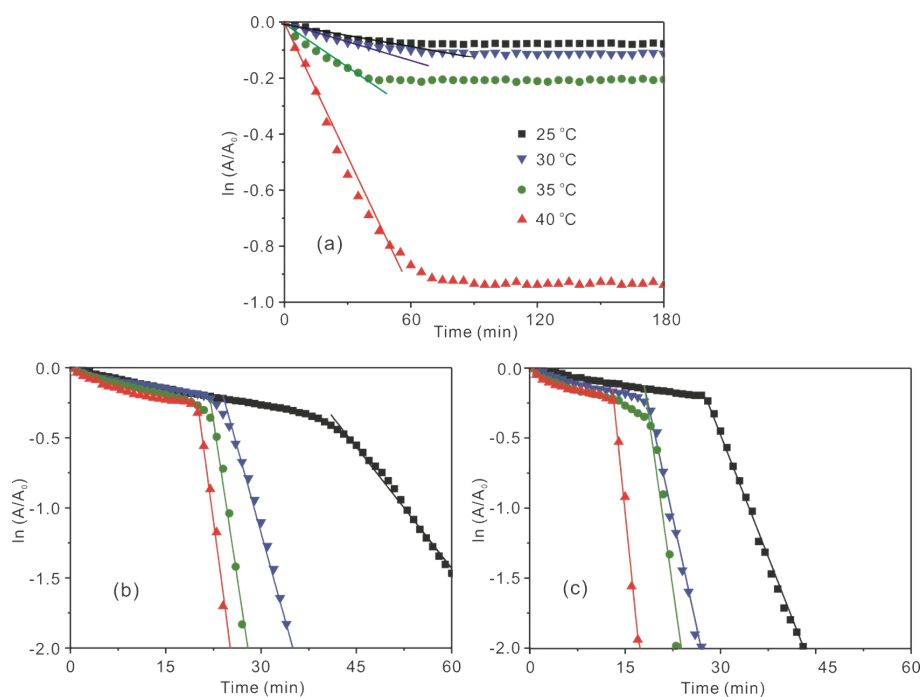


Fig. S6. $\ln(A/A_0)$ vs t for the catalytic reduction of 11 μM RhB(aq) via (a) Ag(pr), (b) Ag/Au(25), and (c) Ag/Au(55) in the presence of 1.3 mM KBH_4 at indicated temperatures.

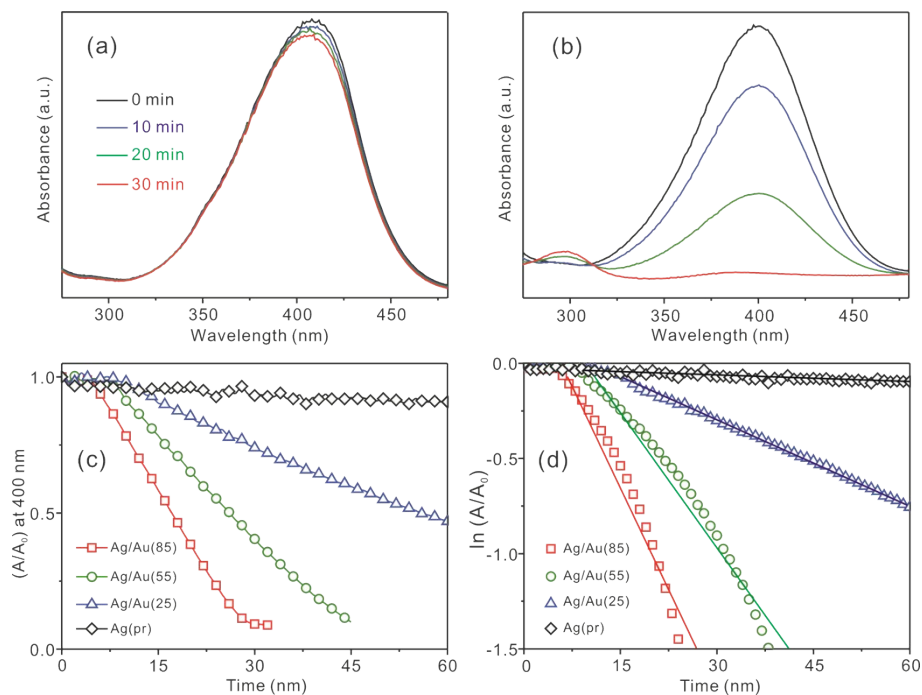


Fig. S7. Absorption spectra at 25 °C of 33 μM 4-NP(aq) in the presence of 2.0 mM KBH_4 , measured at elapsed times indicated in the units of min after addition of (a) Ag(pr) and (b) Ag/Au(85). Decay kinetic profiles at 400 nm (c) and first-order decay profiles (d) of 4-NP via indicated nancatalysts in the presence of KBH_4 .

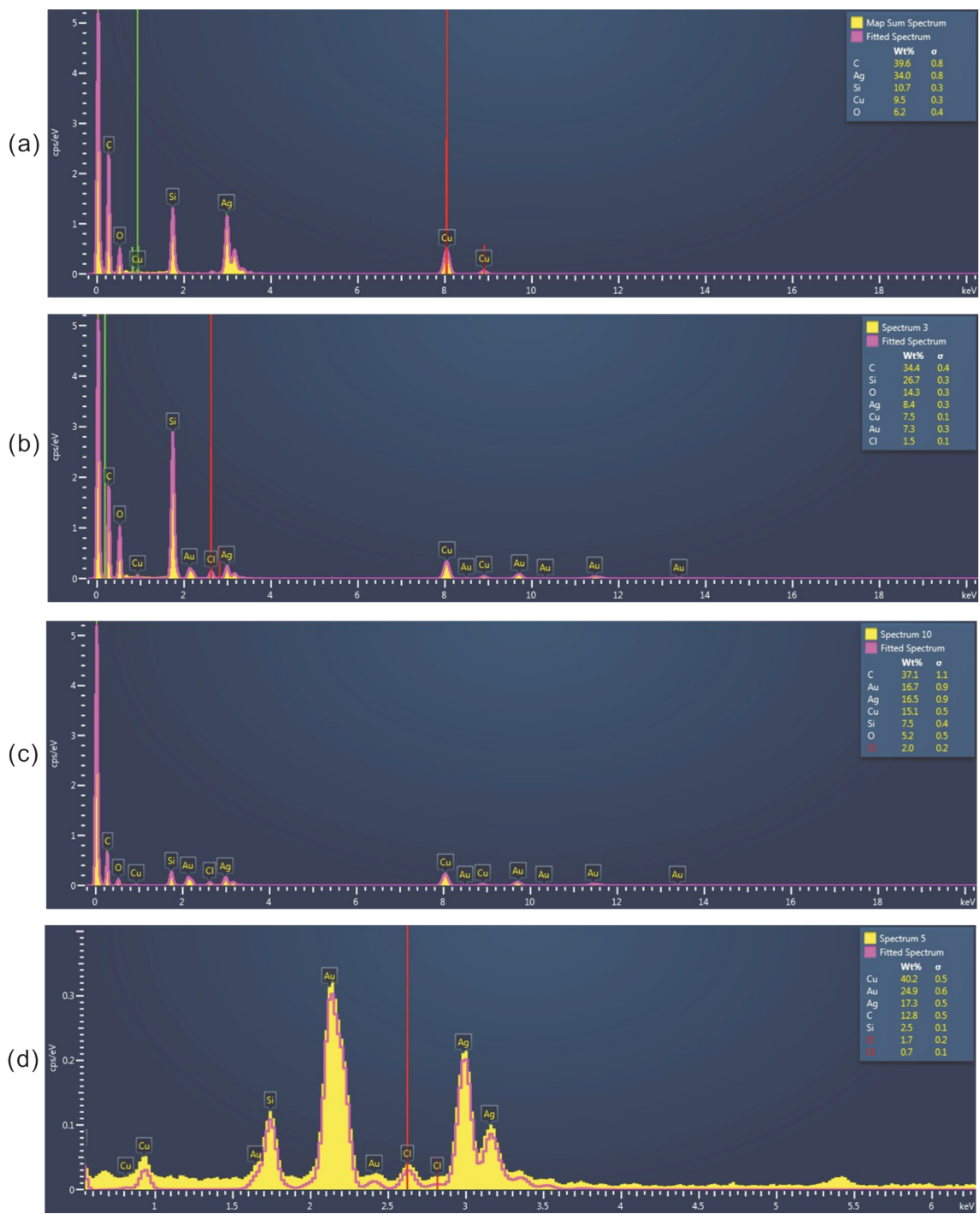


Fig. S8. EDX analysis spectra of (a) Ag(pr), (b) Ag/Au(25), (c) Ag/Au(55), and (d) Ag/Au(85).

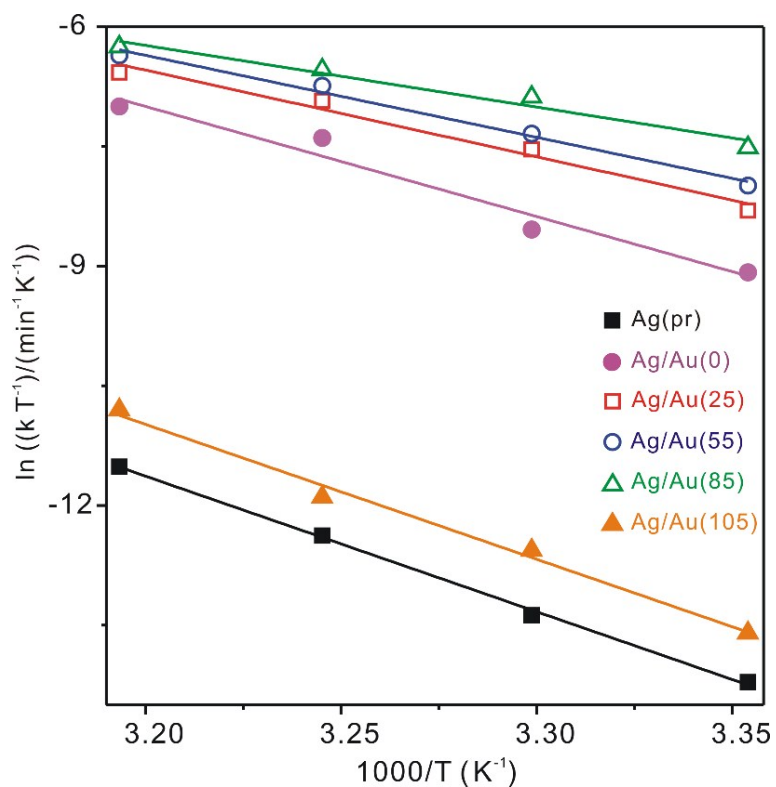


Fig. S9. Eyring plots for the catalytic reduction reaction of 11 μM RhB(aq) via indicated nanocatalysts in the presence of 1.3 mM KBH_4 .

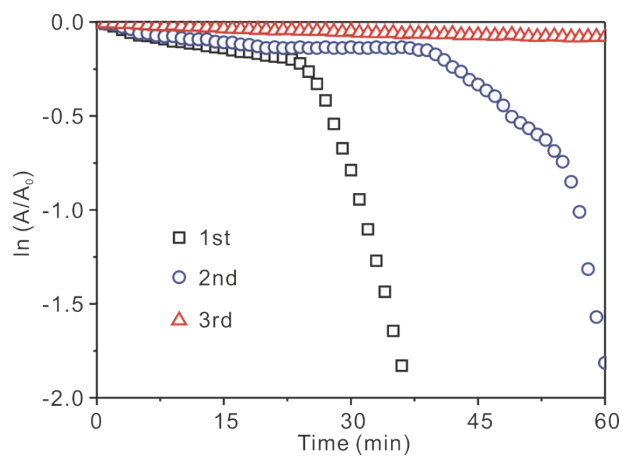


Fig. S10. $\ln(A/A_0)$ vs t for the catalytic reduction of 11 μM RhB(aq) via Ag/Au(85) in the presence of 1.3 mM KBH_4 at 25 $^\circ\text{C}$ for three indicated recycles.