Electronic Supplementary Material (ESI) for Nanoscale.

Facet-Selective Deposition of Au and Pt on Ag Nanocubes for the Fabrication of Bifunctional Ag@Au-Pt Nanocubes and Trimetallic Nanoboxes

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KEYWORDS: facet-selective deposition; trimetallic nanocrystals; nanoboxes; surface-enhanced Raman scattering; localized-surface plasmon resonance

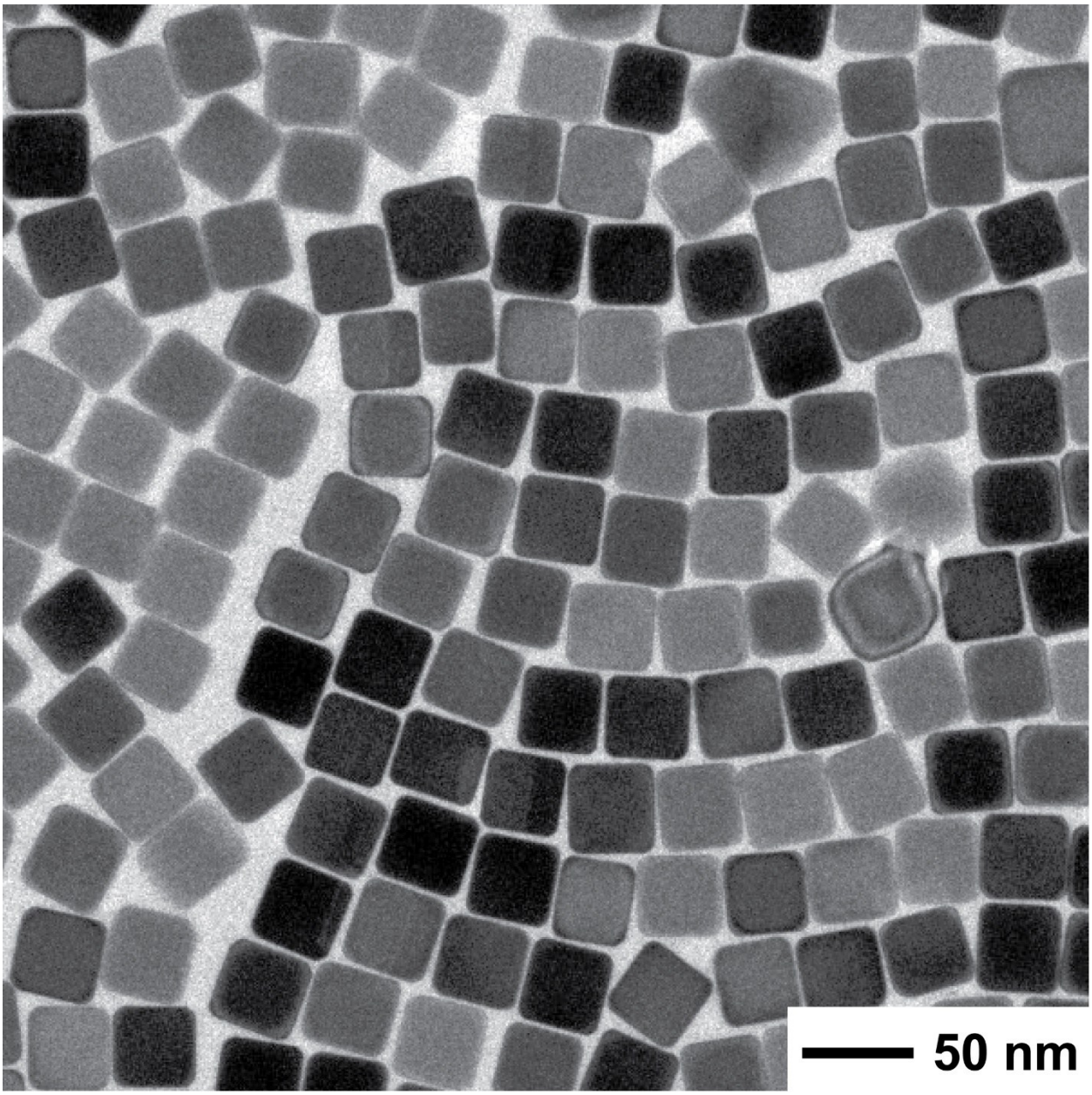

Figure S1. TEM image of Ag nanocubes with edge length about 37.5 ± 1.5 nm.

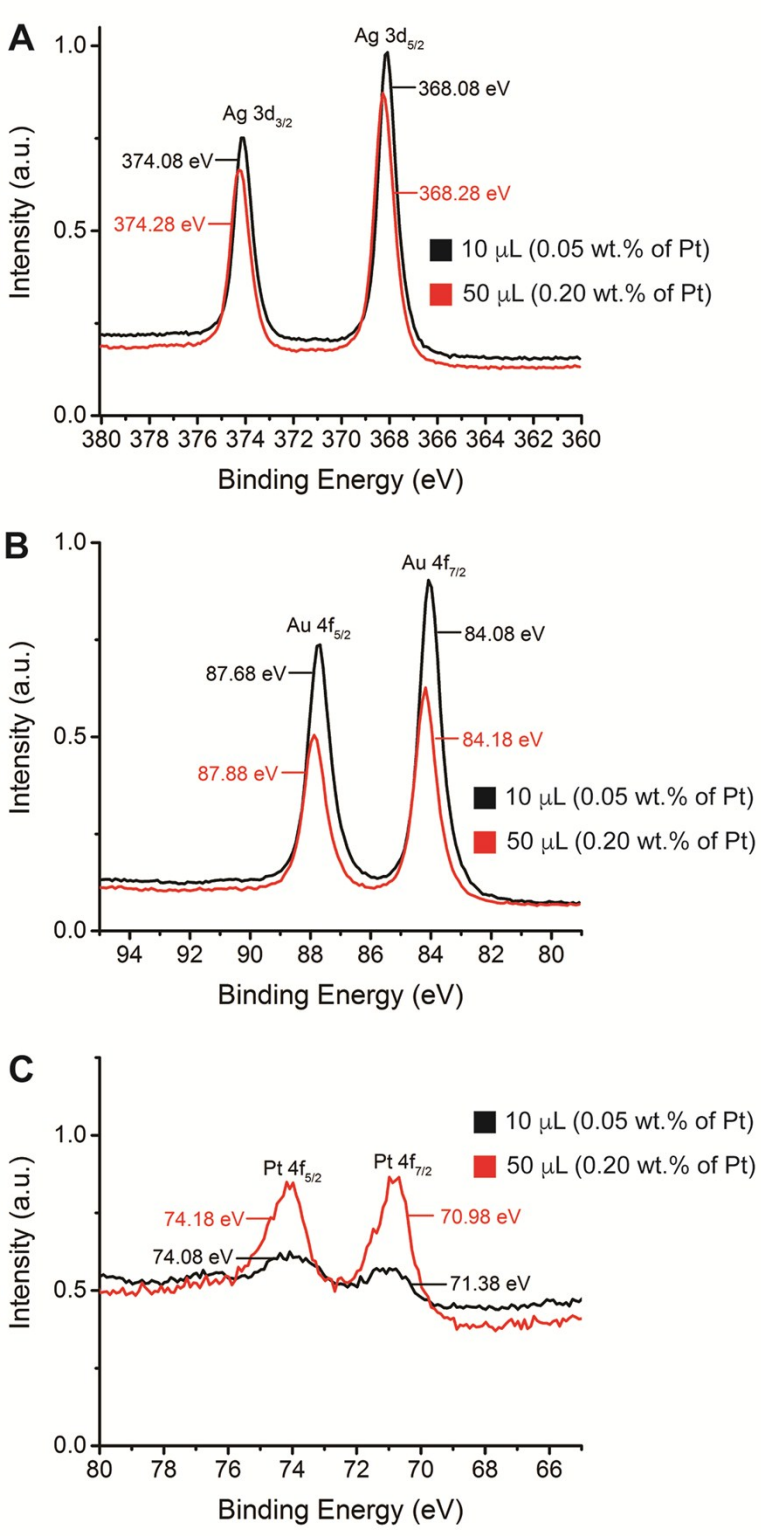

Figure S2. XPS of samples prepared by reacting Ag@Au nanocubes with 10 μL and 50 μL of 0.2 mM H_2PtCl_6 in the presence of H_2Asc and PVP.

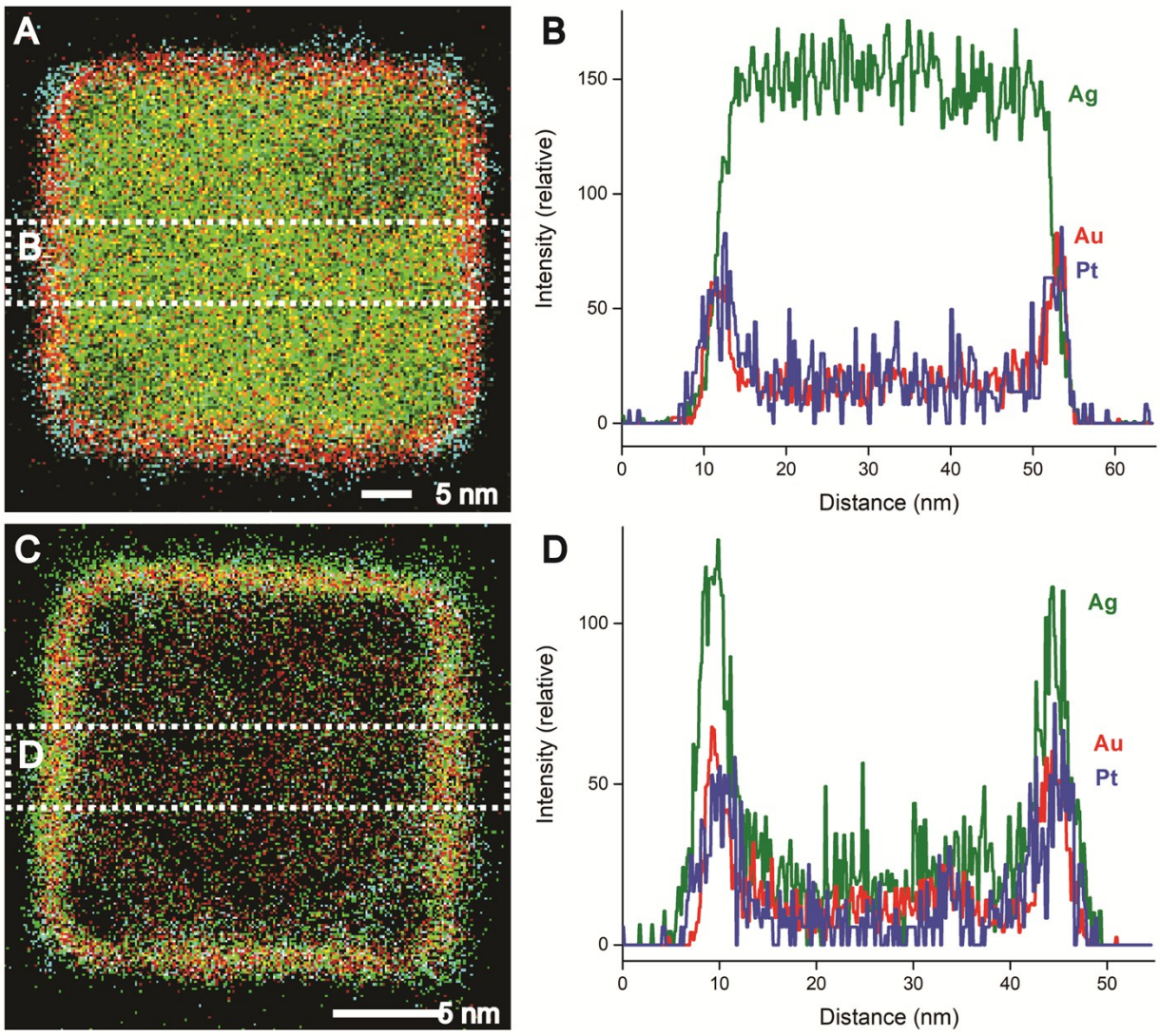

Figure S3. (A) EDS mapping results of the Ag@Au-Pt nanocube prepared by reacting Ag@Au nanocubes with 50 μL of 0.2 mM H_2PtCl_6 in the presence of H_2Asc and PVP. (green: Ag; red: Au; blue: Pt). (B) The line-scan result of Ag@Au-Pt nanocube by using the original EDS data (marked by the white dashed box in (A)) for the data analysis. (C) EDS mapping of the Ag-Au-Pt nanobox prepared by reacting Ag@Au nanocubes with 50 μL of 0.2 mM H_2PtCl_6 in the presence of H_2Asc and PVP, followed by H_2O_2 etching. (green: Ag; red: Au; blue: Pt). (D) The line-scan result of Ag-Au-Pt nanobox by using the original EDS data (marked by the white dashed box in (C)) for the data analysis.

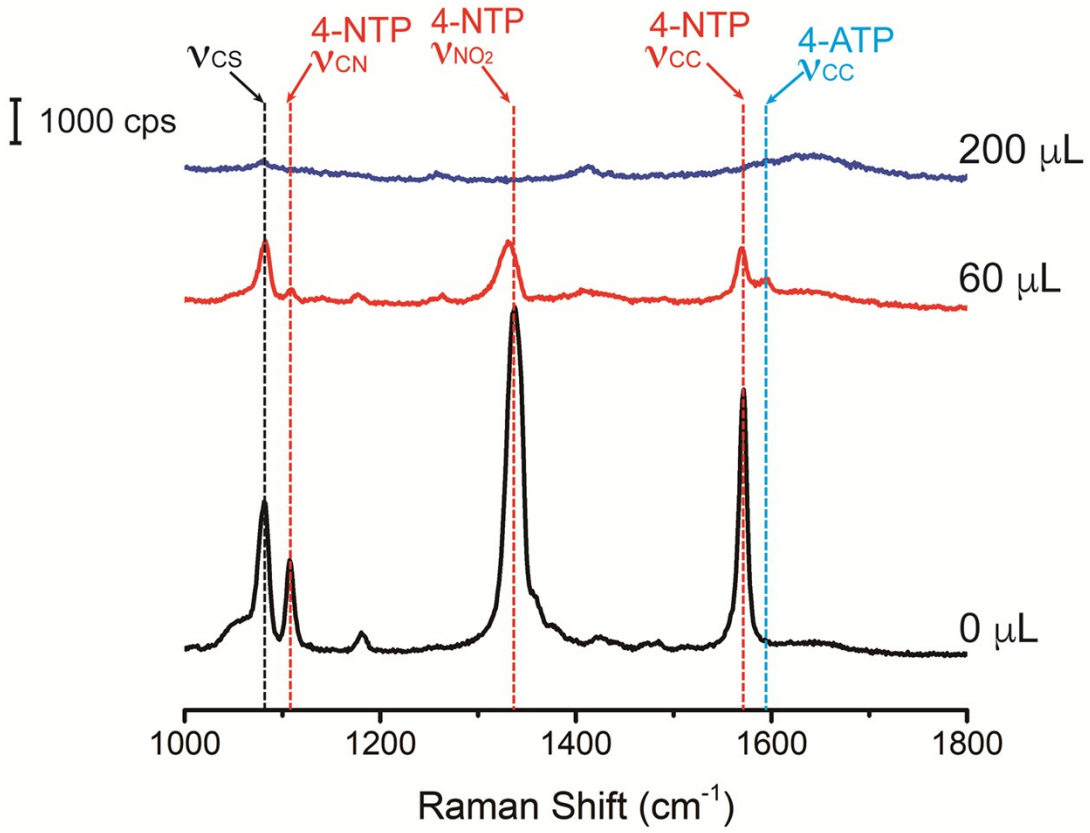

Figure S4. SERS spectra recorded at 20 min from the reduction of 4-NTP to 4-ATP by different volume of 0.1 mg/mL $NaBH_4$ using Ag@Au-Pt nanocubes as the catalysts.