Electronic Supplementary Material (ESI) for CrystEngComm

Supporting Information:

One-pot, seedless synthesis of flowerlike Au-Pd bimetallic nanoparticles with core-shell-like structure via sodium citrate coreduction of metal ions

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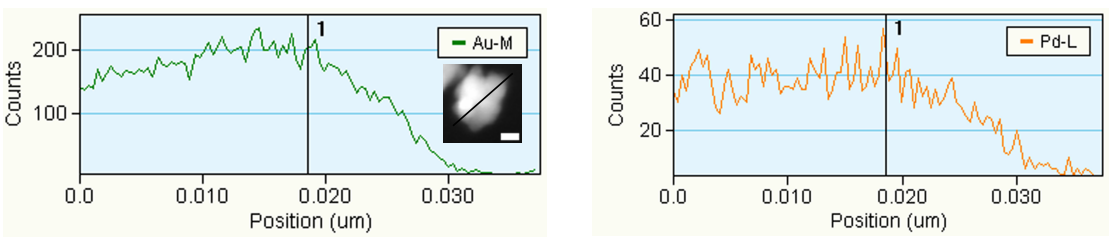
Figure S1. The cross-sectional compositional line profiles of flowerlike Au-Pd bimetallic NPs in Figure 1f. (Left) Au elemental distribution, and (right) Pd elemental distribution. The scale bar is 10 nm. It can be seen that the total content of Au element is higher than Pd. In additional, Au content is higher in the center than the edge, whereas no obvious difference for the distribution of Pd element is found. This result indicates that the flowerlike Au-Pd NPs possess the core-shell-like structure, namely, Au-rich core and Pd-rich shell.



Normalization of electrochemically active surface area (ECASA).

The ECASA of catalyst was calculated by the following equation:

$$ECASA = \frac{Q_0}{q_0}$$

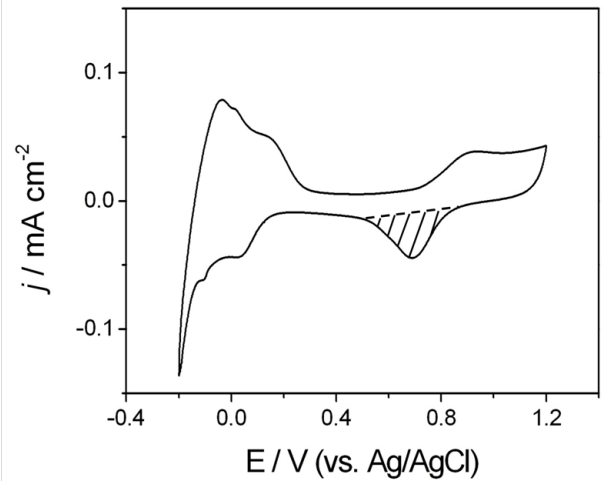
The Q_0 was the surface charge that can be obtained by the area under the CV curve of oxygen desorption (Figure S1), where *v* was the scanning rate.

$$Q_0 = \frac{\int IdE}{v}$$

The q_0 was the charge required for desorption of monolayer of oxygen on the NP surfaces.

$$q_{Au/Pd} = 424\mu C / cm^2, \quad q_{Pd} = 424\mu C / cm^2, \quad q_{Au} = 400\mu C / cm^2$$

Figure S2. CV curve of flowerlike Au-Pd NPs in 0.1 M $HClO_4$ with a scan rate of 0.1 V/s.



[1] M. Watanabe, M. Tomikawa and S. Motoo, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* 1985, **182**, 193.

[2] J. W. Hong, D. Kim, Y. W. Lee, M. Kim, S. W. Kang and S. W. Han, *Angew. Chem. Int. Ed.* 2011, **50**, 8876.