Supporting Information

L-lysine-assisted fabrication of Pd$_x$Pt$_{1-x}$/Ni(OH)$_2$ (0 ≤ x ≤ 1) hybrids with composition-dependent catalytic properties

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Figure S1. IR spectra of (A) L-lysine and (B) the as-made L-lysine modified Ni(OH)$_2$. 
Figure S2. (A, B) TEM images; (C) HRTEM image; and (D) EDX analysis of Pd/Ni(OH)$_2$. 
Figure S3. (A, B) TEM images; (C) HRTEM image; and (D) EDX analysis of Pd$_{0.7}$Pt$_{0.3}$/Ni(OH)$_2$. 
Figure S4. (A, B) TEM images; (C) HRTEM image; and (D) EDX analysis of Pd$_{0.3}$Pt$_{0.7}$/Ni(OH)$_2$. 
Figure S5. (A, B) TEM images; (C) HRTEM image; and (D) EDX analysis of Pt/Ni(OH)$_2$. 
Figure S6. XPS analysis of Pd/Ni(OH)$_2$. 

A) Ni 2p

B) Ni 2p

C) Pt 3d

Intensity (a.u.)

Binding Energy (eV)
Figure S7. XPS analysis of Pd$_{0.7}$Pt$_{0.3}$/Ni(OH)$_2$. 
Figure S8. XPS analysis of Pd$_{0.3}$Pt$_{0.7}$/Ni(OH)$_2$. 
Figure S9. XPS analysis of Pt/Ni(OH)$_2$. 
Figure S10. (A, B) TEM images; (C) HRTEM image of Pd$_{0.5}$Pt$_{0.5}$/Ni(OH)$_2$ after ten cycling tests.
Figure S11 Si10. Photos of the samples: (A) before and (B) after centrifugation.