

A Novel Strategy to Fabricate Hierarchical Ni-Al LDH Platinum Nanocatalyst  
with Enhanced Thermal Stability

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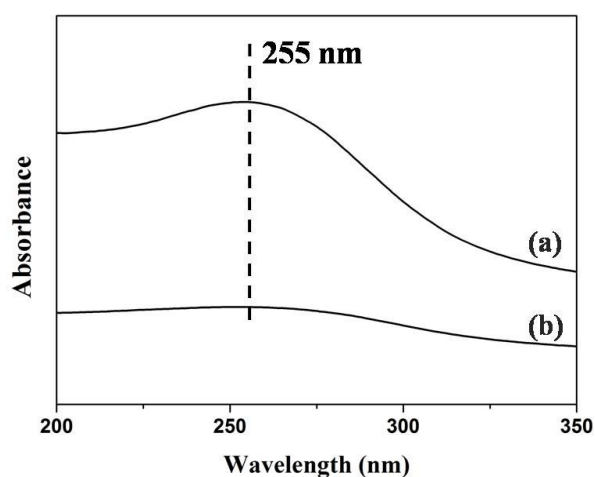


Fig. S1 UV-vis spectra of the (a) NCSs/Pt particles, (b) NCSs/Pt/Al<sub>2</sub>O<sub>3</sub> particles. All the particles were dispersed in ethanol solution.

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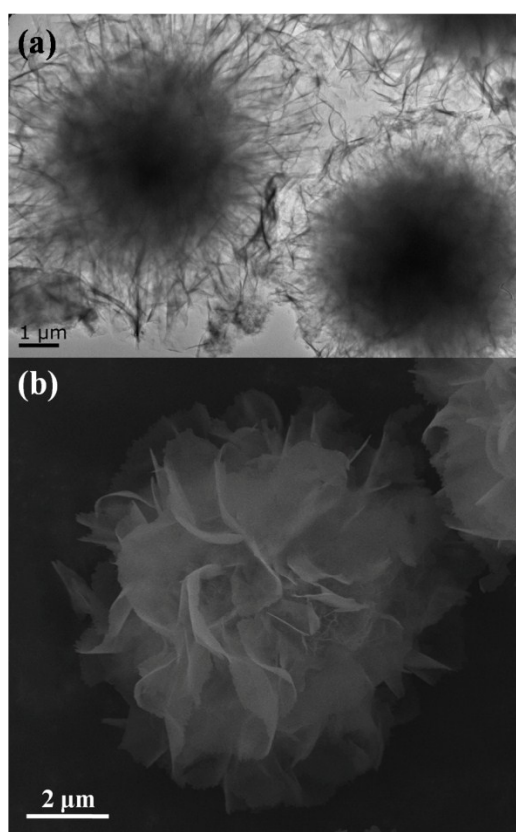


Fig. S2 (a) TEM and (b) corresponding SEM image of TLDH-Pt.

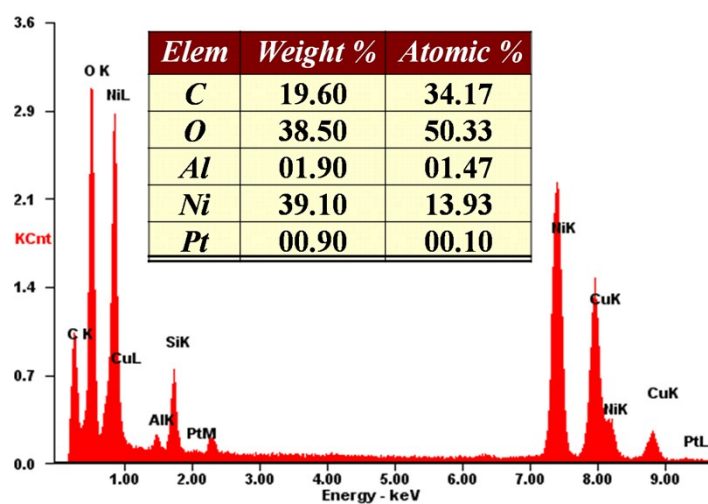


Fig. S3 EDX analysis of TLDH-Pt.

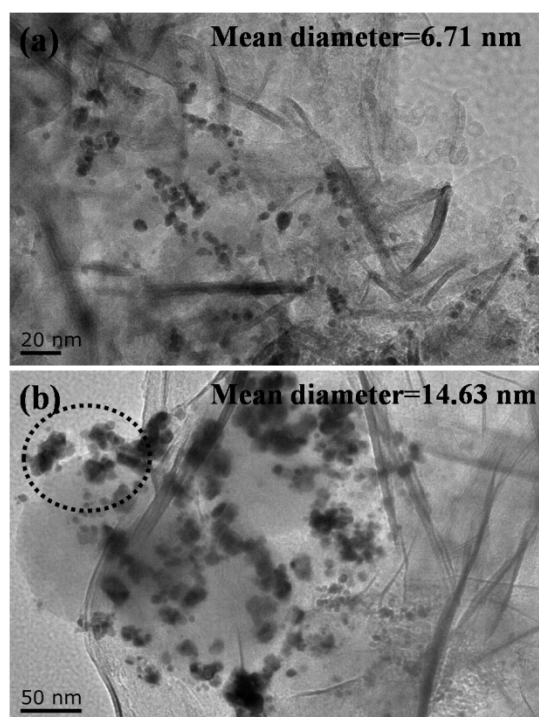


Fig. S4 TEM images of (a) LDH-Pt and (b) TLDH-Pt after propane dehydrogenation experiments.

Table S1 Comparison of rate constant for the catalytic reduction of 4-NP by NaBH<sub>4</sub> using Pt-based nanocatalysts.

Catalyst	Initial concentration of 4-NP (mM)	Amount of noble NPs (nmol)	k <sub>app</sub> per noble NPs content (min <sup>-1</sup> μmol <sup>-1</sup> )	The multiple of k <sub>napp</sub>
LDH-Pt (This work)	0.1	41	23.17	1
PtCo/NaY <sup>[1]</sup>	7.2	579.5	1.0332	0.0446
Au@SiO <sub>2</sub> <sup>[2]</sup>	0.1	135.9	0.84	0.036
ultra-small Pt NPs <sup>[3]</sup>	0.14	510	2.472	0.11
Fe <sub>3</sub> O <sub>4</sub> @SiO <sub>2</sub> -Au@mSiO <sub>2</sub> <sup>[4]</sup>	0.24	335	1.044	0.045
Fe@Pt/Ti(OH) <sub>4</sub> <sup>[5]</sup>	0.1	56.38	3.06	0.132
dendritic Pt NPs <sup>[6]</sup>	2	0.935	48	2.1

## References

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