Supplementary Information

Preparation of platinum nanoparticles immobilized on ordered mesoporous Co_3O_4-CeO_2 composites and enhanced catalytic activity

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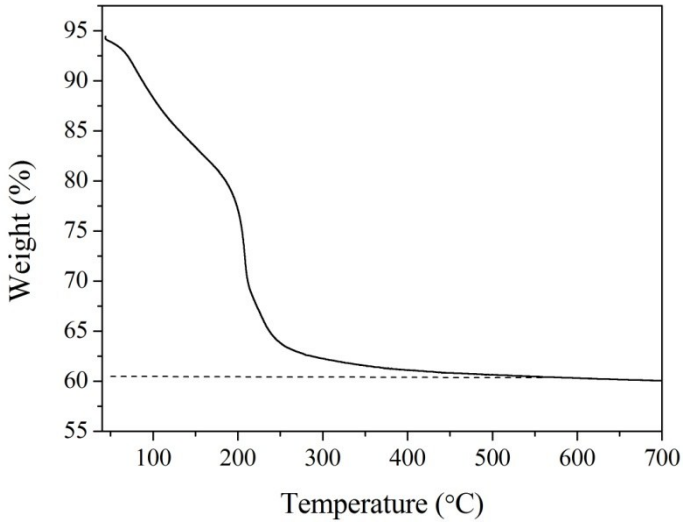

Fig. S1 TG curve of the mixture of $Ce(NO_3)_3.6H_2O$ and $Co(NO_3)_3.6H_2O$ loaded on KIT-6 (Co/(Ce+Co)= 30 mol%).

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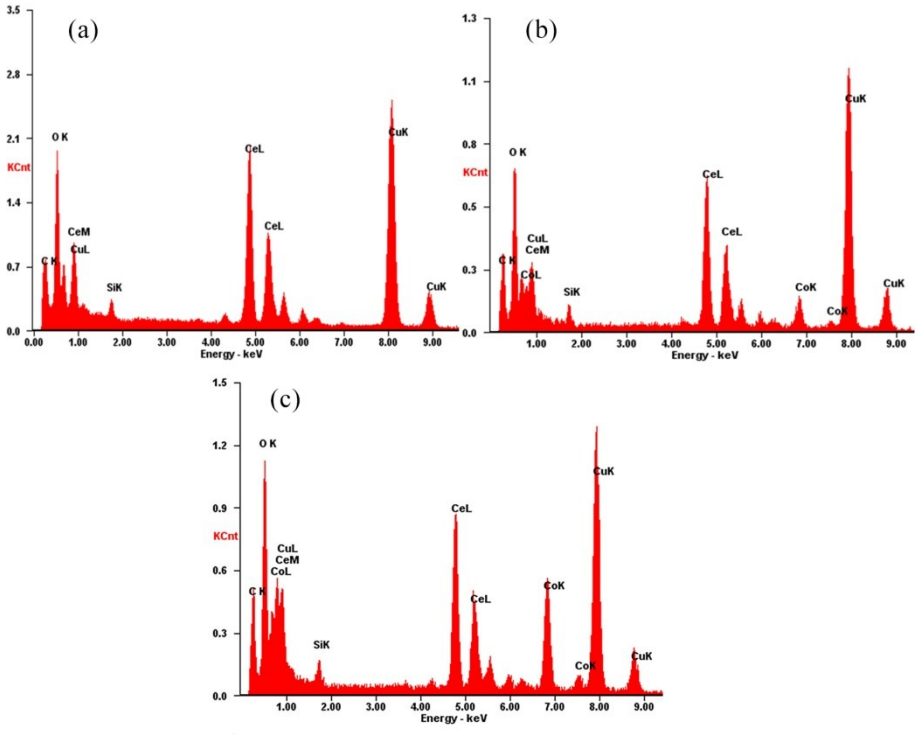

Fig. S2 EDX analysis of (a) meso-CeO_2, (b) meso-CeO_2Co10 and (c) meso-CeO_2Co30.

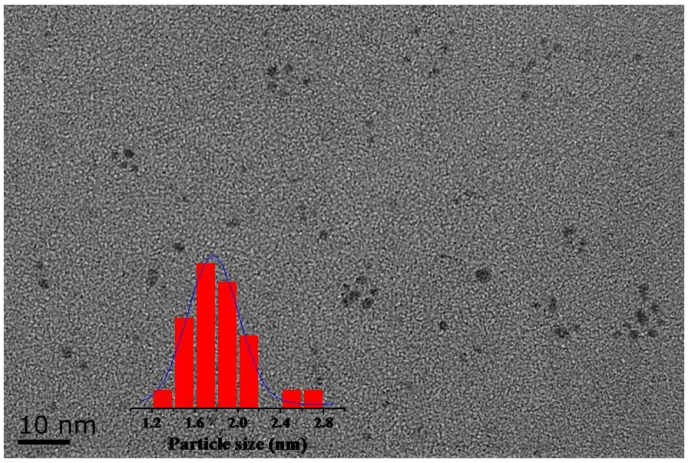

Fig. S3 TEM image of PAMAM dendrimers-templated Pt NPs (inset is the particle size distribution histogram of Pt NPs).

Table S1 Comparison of catalytic activity by Pt-based catalysts for the reduction of 4-nitrophenol

Catalyst	k (s^{-1})	k_{nor} (k/m) (s^{-1} g^{-1})	Ref.
Pt/meso-CeO_2Co10	11.30×10^{-3}	75.33	This work
Pt/meso-CeO_2	6.03×10^{-3}	40.20	This work
Pt nanoflowers	7.00×10^{-4}	7.80	1
RGO/Pt/CeO_2	69.92×10^{-3}	11.28	2
Fe_3O_4@PDA-Pt	2.30×10^{-3}	57.50	3
PtNi/RGO	2.17×10^{-3}	43.40	4
mSiO_2/Pt/CeO_2/Fe	2.87×10^{-3}	15.06	5

References

1 S. Mourdikoudis, T. Altantzis, L. M. Liz-Marzan, S. Bals, I. Pastoriza-Santos and J. Perez-Juste, *CrystEngComm*, 2016, **18**, 3422.

2 Z. Y. Ji, X. P. Shen, Y. L. Xu, G. X. Zhu and K. M. Chen, *J. Colloid Interface Sci.*, 2014, **432**, 57.

3 S. W. Bian, S. Liu and L. Chang, *J. Mater. Sci.*, 2016, **51**, 3643.

4 P. Song, J. J. Feng, S. X. Zhong, S. S. Huang, J. R. Chen and A. J. Wang, *RSC Adv.*, 2015, **5**, 35551.

5 C. Zhang, Y. M. Zhou, Y. W. Zhang, Q. L. Wang and Y. M. Xu, *RSC Adv.*, 2015, **5**, 12472.