Supporting information

Fabrication of ultralong ceria nanobelts via a coordination polymer precursor method

Yuan Li, Honghong Zou, Zhiwei Qiao, Yuanyuan Liao, Lei Wang*, Shengliang Zhong*

College of Chemistry and Chemical Engineering, Jiangxi Normal University, Nanchang330022, P. R. China.

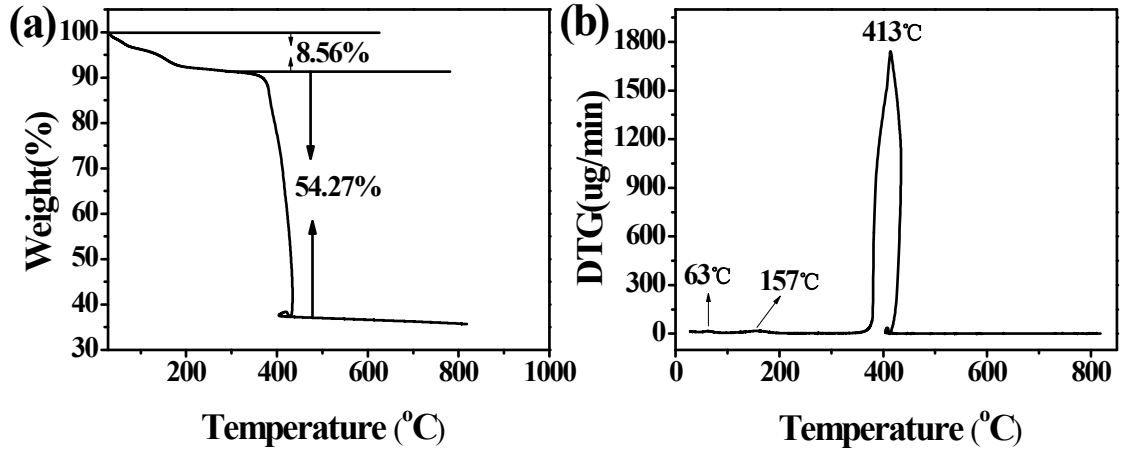

Fig. S1 (a) TG and (b) DTG curves of sample 1.

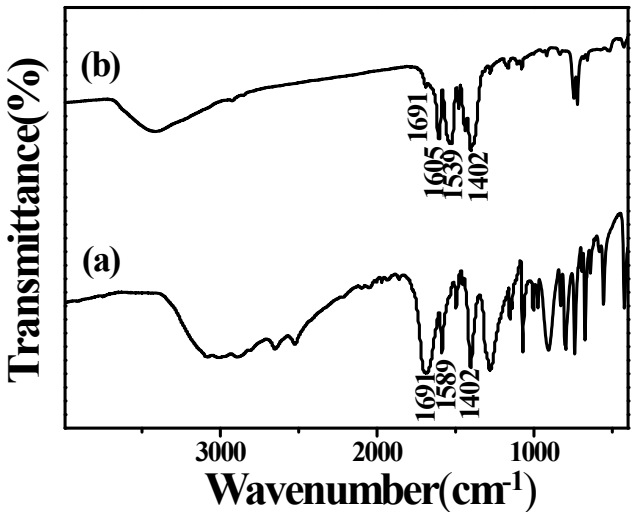

Fig. S2 FT-IR spectra of (a) 1,3-H_2BDC and (b) sample 1.

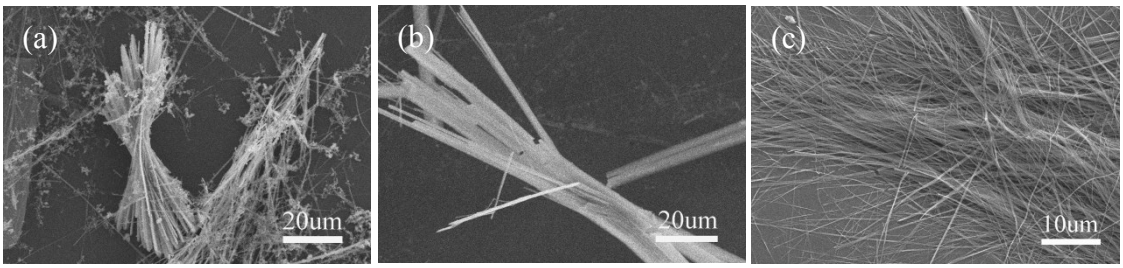

Fig. S3 SEM images of the samples prepared with various $Ce(NO_3)_3$: 1,3-H_2BDC molar ratios: (a) 2: 2 mmol, (b) 2 : 3 mmol and (c) 2:4 mmol (water-ethanol (100 mL, v/v = 1 : 4), 160 ^oC 24 h).

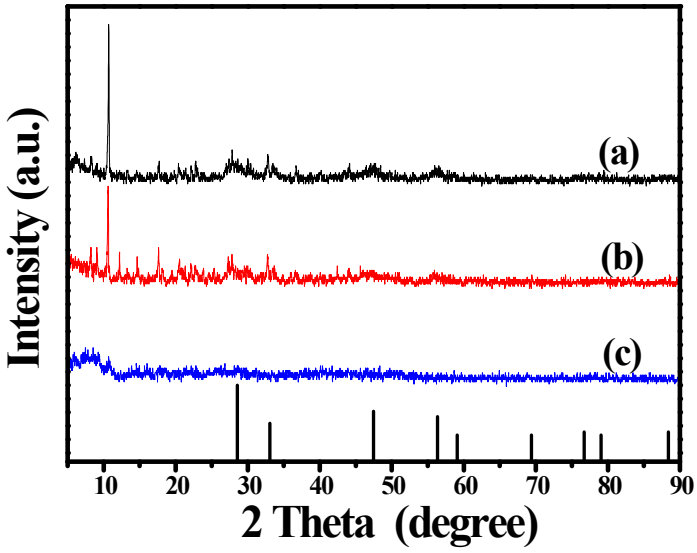

Fig. S4 XRD patterns of the samples prepared with various $Ce(NO_3)_3$: 1,3-H_2BDC molar ratios: (a) 2: 2 mmol, (b) 2 : 3 mmol and (c) 2:4 mmol (water-ethanol (100 mL, v/v = 1 : 4), 160 ^oC 24 h).

The vertical lines below are the standard XRD pattern of CeO2 with JCPDS No. 34-0394.

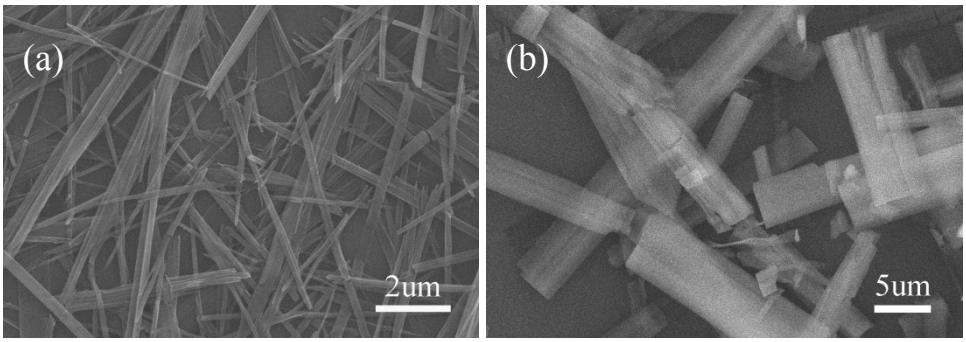

Fig. S5 SEM images of the samples prepared at different reaction temperatures: (a) 120 ^{o}C and (b) 200 ^{o}C (water−ethanol (100 mL, v/v =1 : 4), molar ratioof $Ce(NO_3)_3$ to 1,3-H_2BDC = 2 : 4 mmol, 24 h).

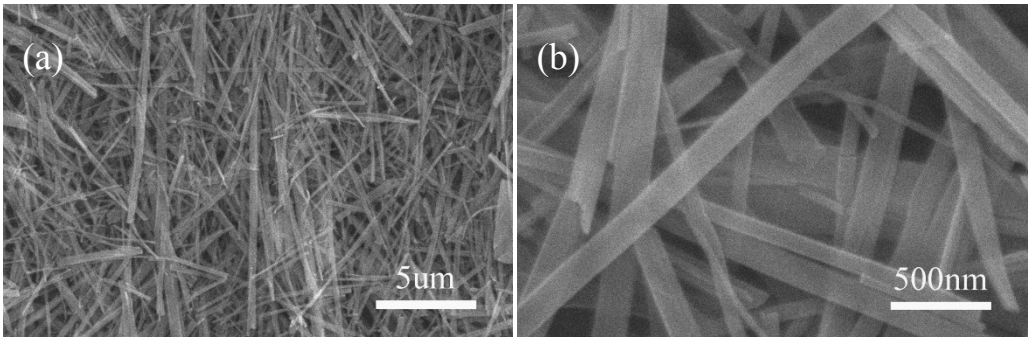

Fig. S6 SEM images of the product obtained after being heated at 160 ^{o}C for 2 h (water−ethanol (100 mL, v/v =1 : 4), molar ratioof $Ce(NO_3)_3$ to 1,3-H_2BDC = 2 : 4 mmol).

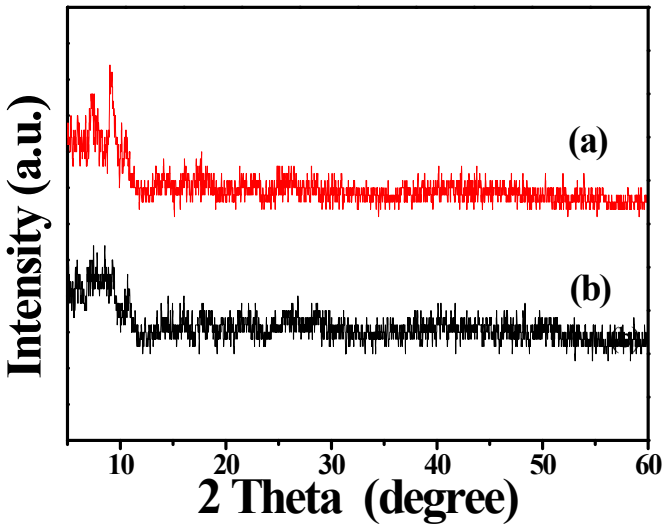

Fig. S7 XRD patterns of the products obtained after being heated at 160 °C for (a) 2 h and (b) 24 h separately (water–ethanol (100 mL, v/v =1 : 4), molar ratioof $Ce(NO_3)_3$ to 1,3-H_2BDC = 2 : 4 mmol).

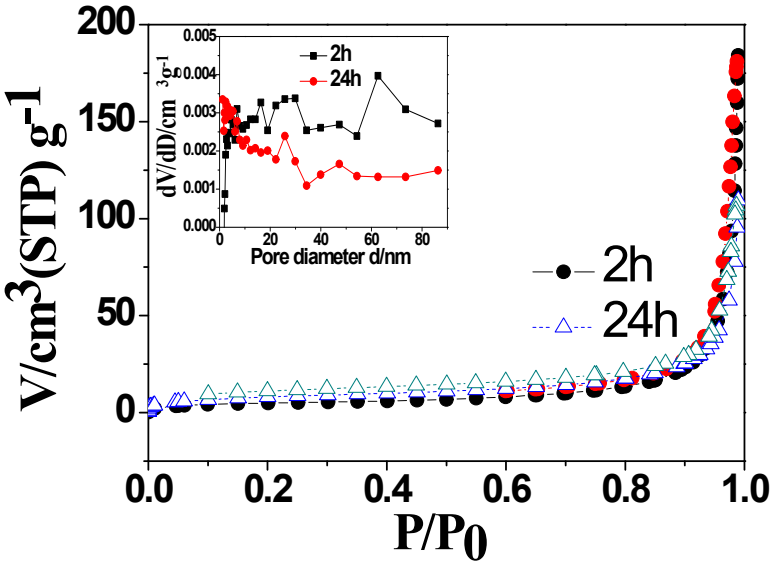

Fig. S8 Nitrogen adsorption–desorption isotherms and BJH pore size distributions diagrams of the products obtained after being heated at 160 °C for (a) 2 h and (b) 24 h separately (water–ethanol (100 mL, v/v =1 : 4), molar ratioof $Ce(NO_3)_3$ to 1,3-H_2BDC = 2 : 4 mmol).

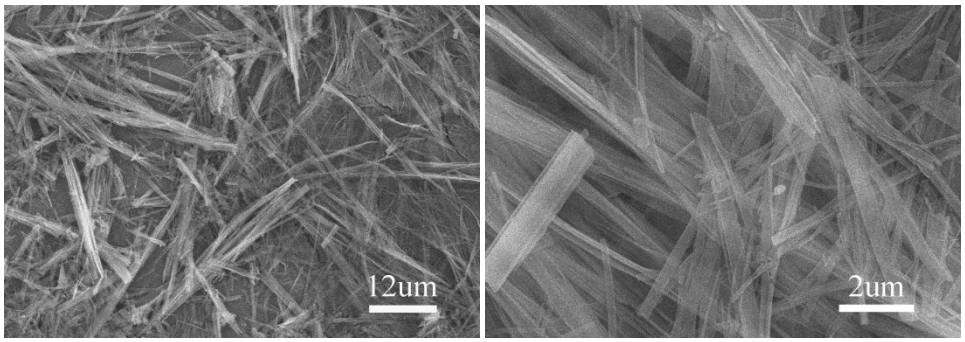

Fig. S9 SEM images of the products obtained with water–ethanol v/v =1 : 3 (molar ratio of $Ce(NO_3)_3$ to 1,3-H_2BDC = 2 : 4 mmol, 120 ^oC 6 h).

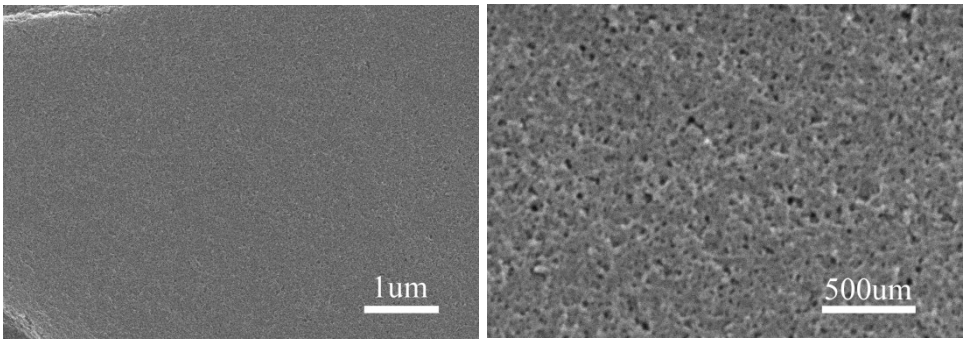

Fig. S10 SEM images of the product prepared with Sc^{3+} and 1,3-H_2BDC.

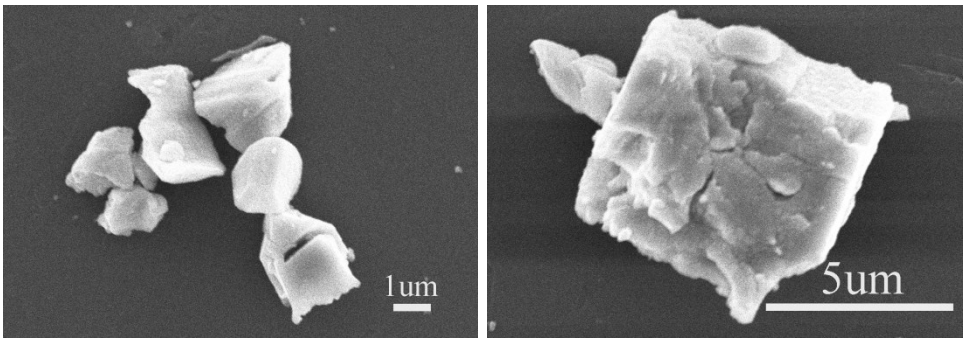

Fig. S11 SEM images of commercial CeO_2.

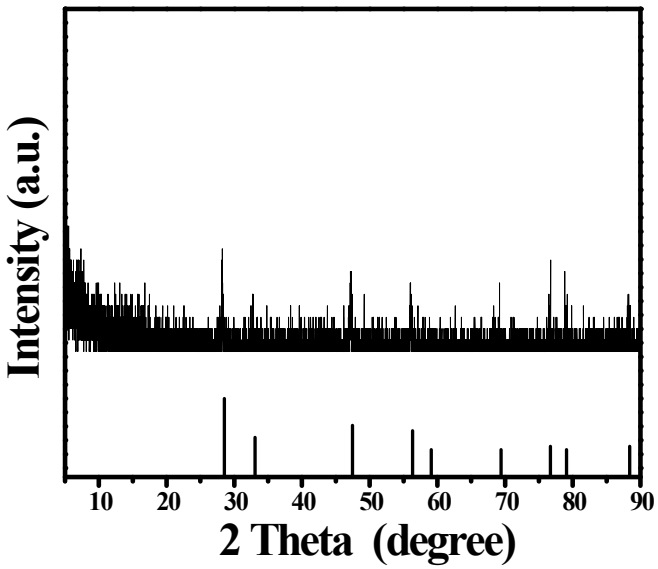

Fig. S12 XRD patterns of commercial CeO_2. The vertical lines below are the standard XRD pattern of CeO_2 with JCPDS No. 34-0394.

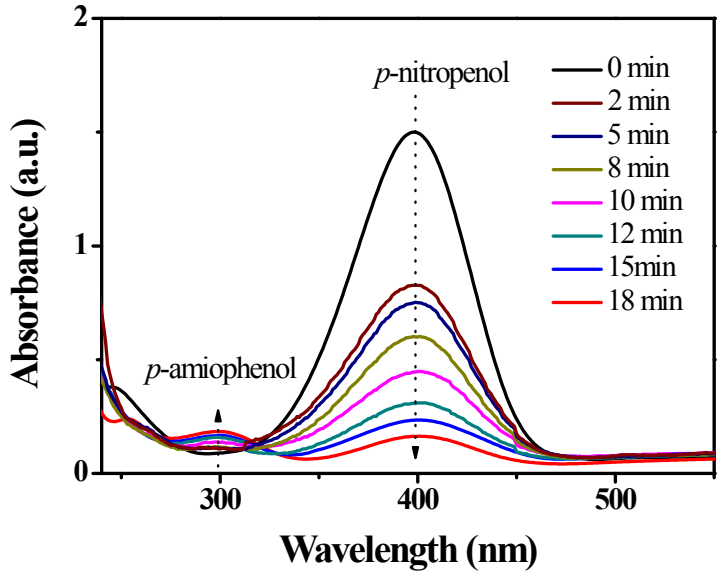

Fig. S13 Successive UV-vis spectra for the reduction reaction of p-nitrophenol by $NaBH_4$ with 1 wt% Pt supported on commercial CeO_2