Supporting Information for

Self-supported Composites of Thin Pt-Sn Crosslinked Nanowires for Highly Chemoselective Hydrogenation of Cinnamaldehyde under Ambient Conditions

Lin-Xiu Dai, Wei Zhu, Mu Lin, Zhi-Ping Zhang, Jun Gu, Yu-Hao Wang, Ya-Wen Zhang*

Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Rare Earth Materials Chemistry and Applications, PKU-HKU Joint Laboratory in Rare Earth Materials and Bioinorganic Chemistry, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China. Fax: +86-10-62756787; Tel: +86-10-6275678; Email: ywzhang@pku.edu.cn

Table S1. Rietveld refinement of PXRD for the obtained products

Phase	Space Group	Cell Parameters			R_p	R_{wp}	R_{exp}	GOF
		a (Å)	*b* (Å)	*c* (Å)				
Pt_9Sn	Fm-3m	3.950(1)	3.950(1)	3.950(1)	0.124	0.167	0.152	1.09
SnO_2	P42/mnm	4.745(3)	4.745(3)	3.184(2)				
Ratio (wt%)	$Pt_9Sn : SnO_2 = 57.9 : 42.1$							

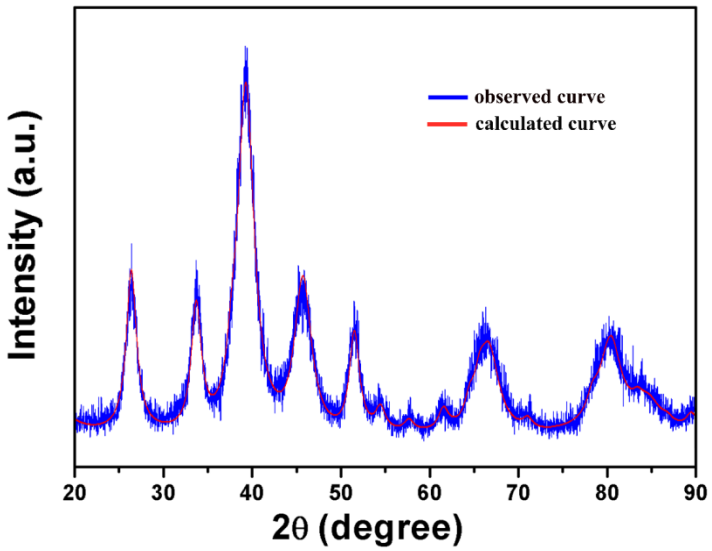

Figure S1. Rietveld refinement of PXRD for the obtained product.

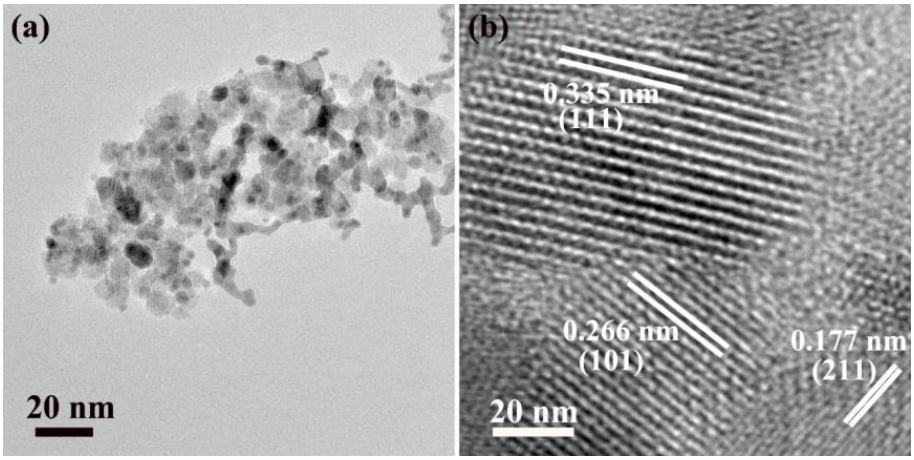

Figure S2. TEM images of segregation structure of $PtSn/SnO_2$ NPs in the synthetic process of $PtSn/SnO_2$ CNs.

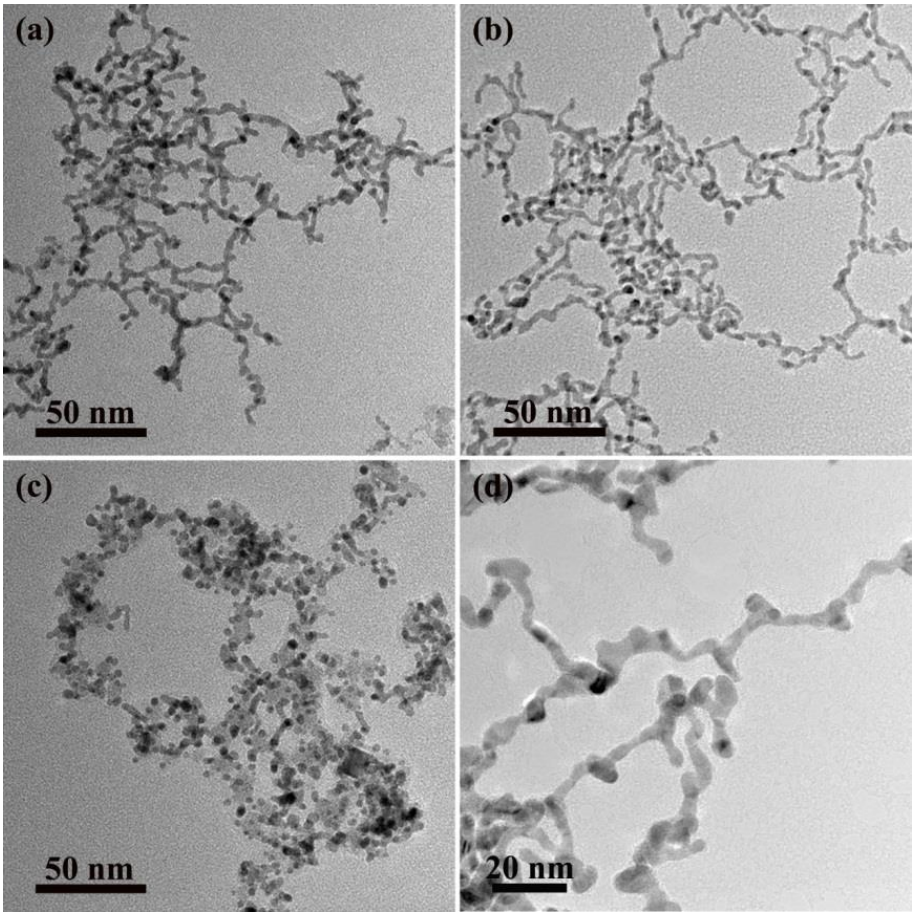

Figure S3. TEM images of the products with using H_2PtCl_6 and $SnCl_4$ (a), K_2PtCl_4 and $SnCl_4$ (b), K_2PtCl_4 and $SnCl_2$ (c), and H_2PtCl_6 and $SnCl_2$ (d) as precursors, respectively, after the hydrothermal reaction for 24 hours at 180 °C.

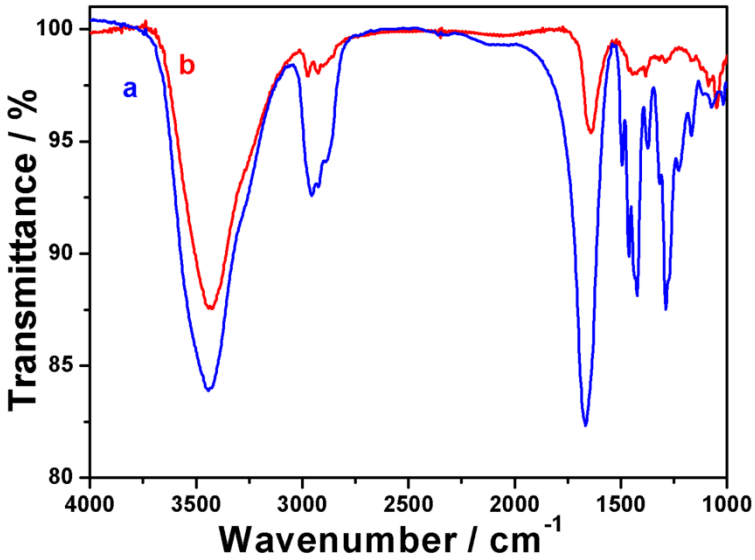

Figure S4. FTIR spectra (obtained on Bruker Tensor27 FTIR spectrometer) of pure PVP (*M*w = 55000) (a) and the as-obtained products (b).

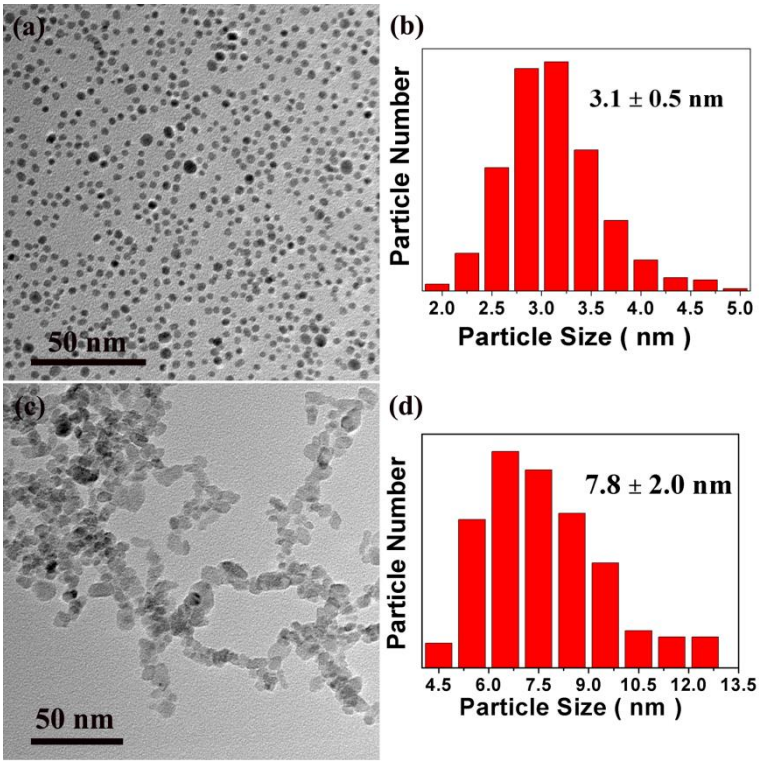

Figure S5. TEM image (a) and size distribution histogram (b) of Pt NPs, TEM image (c) and size distribution histogram (d) of SnO_2 NPs.

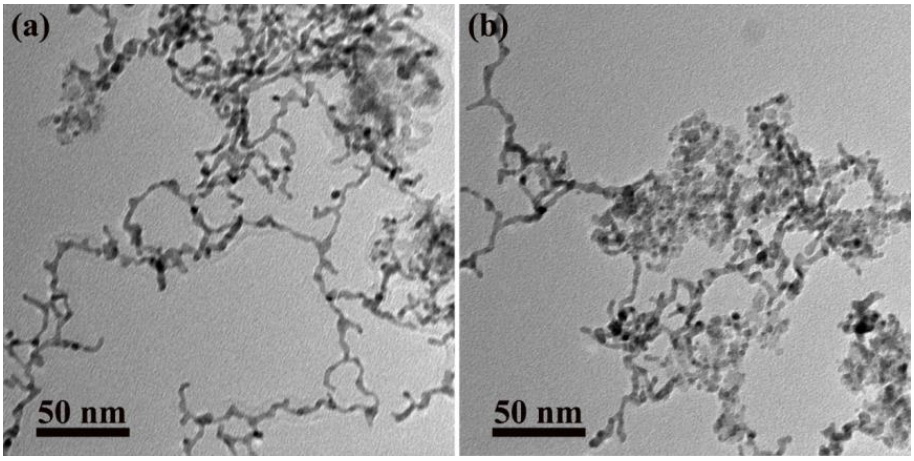

Figure S6. TEM images of $PtSn/SnO_2$ CNs after 1 cycle (a) and 3 cycles (b) for CAL hydrogenation.

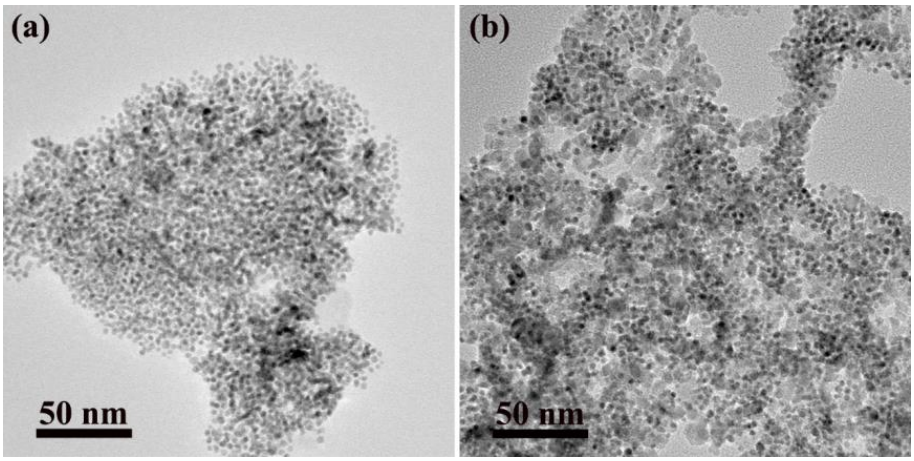

Figure S7. TEM images of Pt NPs (a) and $Pt+SnO_2$ NPs (b) after 1 cycle for CAL hydrogenation.