

Guangxu Chen,^a Huayan Yang,^a Binghui Wu,^a Yanping Zheng,^a and Nanfeng Zheng^{a,*}

State Key Laboratory for Physical Chemistry of Solid Surfaces, Collaborative Innovation Center of Chemistry for Energy Materials, and Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China Email: nfzheng@xmu.edu.cn

Experimental details



Fig.S1 The representative TEM image of the Pt nanoparticles prepared by oxidizing the $[Pt_3(CO)_3(\mu_2-CO)_3]_5^2$ clusters in the air at room temperature for 2 days.

Electronic Supplementary Material (ESI) for Dalton Transactions This journal is \odot The Royal Society of Chemistry 2013



Fig. S2 High resolution TEM image of Pt nanoparticle loaded on P25.



Fig. S3 Pt nanoparticles loaded on SiO₂: (a) pure SiO₂ and (b) SiO₂ modified with $-NH_2$.

Electronic Supplementary Material (ESI) for Dalton Transactions This journal is \odot The Royal Society of Chemistry 2013



Fig. S4 TEM images of $Pt-SiO_2$ (a) and Pt-P25 (b) catalysts prepared with conventional impregnation method.



Fig. S5 The curve of CO conversion against temperature for the unsupported Pt nanoparticles mixed with metal oxides (physical mixing).

Electronic Supplementary Material (ESI) for Dalton Transactions This journal is \odot The Royal Society of Chemistry 2013



Fig. S6 The TEM images of the catalysts after catalysis: a) Pt-P25, b) Pt-CeO₂, c) Pt-Fe₂O₃ and d) Pt-SiO₂.



Fig. S7 CO titration data on Pt-SiO₂. The adsorption temperature was 50 °C.

Electronic Supplementary Material (ESI) for Dalton Transactions This journal is 0 The Royal Society of Chemistry 2013



Fig. S8 Turnover frequencies (TOF) of the different Pt-based catalysts for the catalysis of CO oxidation.



Fig. S9 TEM image of the Pt-Fe₂O₃ catalysts after the decrease of the activity.

Electronic Supplementary Material (ESI) for Dalton Transactions This journal is o The Royal Society of Chemistry 2013



Fig. S10 Pt 4f spectra of Pt nanoparticles loaded on different supports.