Electronic supplementary information

Thermally Stable and Highly Active Pt/CeO₂@SiO₂ Catalysts

with a Porous/Hollow Structure

Guozhu Chen,^{a*#} Ying Yang,^{a#} Zeyi Guo,^a Daowei Gao,^a Wei Zhao,^b Han Yan, ^c Wei-

Wei Wang,^c Chun-Jiang Jia*^c and Guoxin Sun^a

^[a] Prof. Dr. G. Chen, Prof. Dr. G. Sun, Dr. D. Gao, Y. Yang, Z. Guo

Key Laboratory of Interfacial Reaction & Sensing Analysis in Universities of Shan

dong School of Chemistry and Chemical Engineering

University of Jinan

Jinan, Shandong Province, 250022 (China)

E-mail: chm_chengz@ujn.edu.cn (G. Chen)

^[b] Dr. W. Zhao

Shandong Institute and Laboratory of Geological Sciences

Jinan, Shandong Province, 250013 (China)

^[c] Prof. C. Jia, Dr. W. Wang, Mr. H. Yan

School of Chemistry and Chemical Engineering

Shandong University

Jinan, Shandong Province, 250100 (China)

E-mail: jiacj@sdu.edu.cn (C. Jia)

[#] These authors contributed equally to this work.



Figure S1. TEM images of the solid $Pt/CeO_2@SiO_2$ (a) and solid Pt/CeO_2 -CuO@SiO_2(b) catalysts.



Figure S2. The color of the samples: (a) solid Pt/CeO₂-CuO@SiO₂ (b) porous/hollow

structured $Pt/CeO_2@SiO_2$ and (c) solid $Pt/CeO_2@SiO_2$.



Figure S3. The statistical graphs of size distribution for the porous/hollow structured nanoparticles (a) and for their cores (b).



Figure S4. XRD patterns of the prepared porous/hollow structured Pt/CeO₂@SiO₂,

solid $Pt/CeO_2@SiO_2$ and Pt/CeO_2 -CuO@SiO_2 catalysts.



Figure S5. SAED pattern of the prepared porous/hollow structured Pt/CeO₂@SiO₂ catalyst.



Figure S6. CO conversion as a function of temperature over the solid $Pt/CeO_2 @SiO_2$

catalysts treated at different temperatures.



Figure S7. XRD pattern of the prepared hollow/porous structured $Pt/CeO_2@SiO_2$ catalyst treated at 600 °C for 2h.