

Electronic Supplementary Information

Peculiar surface-interface properties of nanocrystalline ceria-cobalt oxides with enhanced oxygen storage capacity

Nan Qiu,^a Jing Zhang^{a,*} and Ziyu Wu^{a,b,*}

^a Beijing Synchrotron Radiation Laboratory, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, 100049, P. R. China. Email: jzhang@ihep.ac.cn

^b National Synchrotron Radiation Laboratory, University of Science and Technology of China, Hefei 230026, P.R. China. Email: wuzy@ustc.edu.cn

Table S1. Co structural parameters for the calcined samples

	shells	CN ^a	R (Å) ^b	σ^2 (10^{-3} Å ²)
Co ₃ O ₄ ^[1]	Co-O	6	1.89	-
	Co-Co1	6	2.86	-
	Co-Co2	6	3.35	-
CeCo6	Co-O	3.8	1.91	6.9
	Co-Co	0.4	2.82	2.0
	Co-Ce	1.1	3.75	6.8
CeCo14	Co-O	4.2	1.92	5.1
	Co-Co1	2.1	2.86	4.1
	Co-Co2	2.7	3.38	6.3

^a and ^b :Errors were estimated to be 20% for the coordination numbers (CN) and 0.02 Å for the bond distances (R).

Table S2. Ce structural parameters for the calcined samples

	shells	CN ^a	R (Å) ^b	σ^2 (10^{-3} Å ²)
CeO ₂	Ce-O	8*	2.34	1.9
CeCo0	Ce-O	7.1	2.34	3.7
CeCo6	Ce-O	5.2	2.33	2.9
CeCo14	Ce-O	4.9	2.33	2.9

^a and ^b : Errors were estimated to be 20% for the coordination numbers (CN) and 0.02 Å for the bond distances (R). ^c: The content of Ce or Co in components in sample CeCo6 and CeCo14. * : fixed parameter.

[1] Liu, T.; Xu, H.; Chin, W. S.; Yang, P.; Yong, Z.; Wee, A. T. S. *J. Phys. Chem. C* **2008**, *112*, 13410.