Promoting Pt catalysis for CO oxidation via the Mott–Schottky effect

Peiwen Wu, a,b Zili Wu, b David R Mullins, b Shi–Ze Yang, c, Xue Han, d Yafen Zhang, b Guo Shiou Foo, b Huaming Li, a Wenshuai Zhu, a,* Sheng Dai b, * and Huiyuan Zhu b,d,*

a School of Chemistry and Chemical Engineering; Institute for Energy Research, Jiangsu University, Zhenjiang, 212013, China.

b Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, 37830, USA.

c Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, 37830, USA.

d Chemical Engineering, Virginia Tech, Blacksburg, VA 24061, USA

Corresponding authors: zhuws@ujs.edu.cn (W. Zhu); dais@ornl.gov (S. Dai); huiyuanz@vt.edu (H. Zhu)
Fig. S1. STEM image of Pt/CN-600.

Fig. S2. STEM image of Pt/CN-650.
Fig. S3. EELS spectrum of Pt/CN-700.

Fig. S4. XRD patterns of CNs.
Fig. S5. XRD patterns of Pt/CNs.

Fig. S6. FT-IR spectra of CNs.
Fig. S7. FT-IR spectra of Pt/CNs.

Fig. S8. XPS characterization of Pt/CN catalysts. (a) A XPS survey of Pt/CN; (b) N1s core-level XPS spectra of Pt/CN; (c) C1s core-level XPS spectra of Pt/CN
Fig. S9. Pt 4f core-level XPS spectrum of Pt/SiO$_2$.

Fig. S10. N and C molar ratio of prepared CNs determined by elemental analysis.
Fig. S11. *Ex-situ* C1s and N1s core-level XPS spectra of Pt/CN-700.