Supporting Information

Identification of active sites and reaction mechanism on low-temperature SCR activity over Cu-SSZ-13 catalysts prepared by different methods

Tao Zhang,[†] Feng Qiu,[†] Huazhen Chang,[‡] Xiang Li,[†] Junhua Li*,[†]

[†]State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, Beijing, 100084, China

[‡]School of Environment and Natural Resources, Renmin University of China, Beijing 100872, China

* Corresponding authors: Email address: lijunhua@tsinghua.edu.cn

Tel.: +86 10 62771093, fax: +86 10 62771093

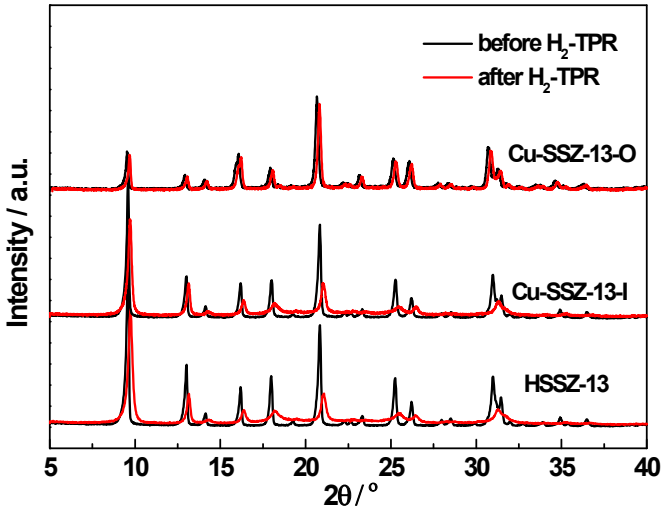

Fig. S1. XRD patterns of HSSZ-13, Cu-SSZ-13-I and Cu-SSZ-13-O before and after H_2-TPR experiments.

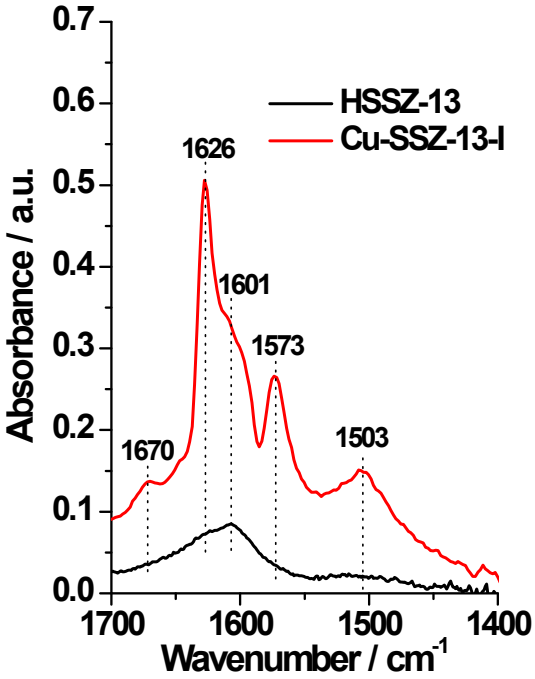

Fig. S2. DRIFTS spectra of chemisorbed 500 ppm NO + 5% O_2/N_2 on HSSZ-13 and Cu-SSZ-13-I at 100 °C.

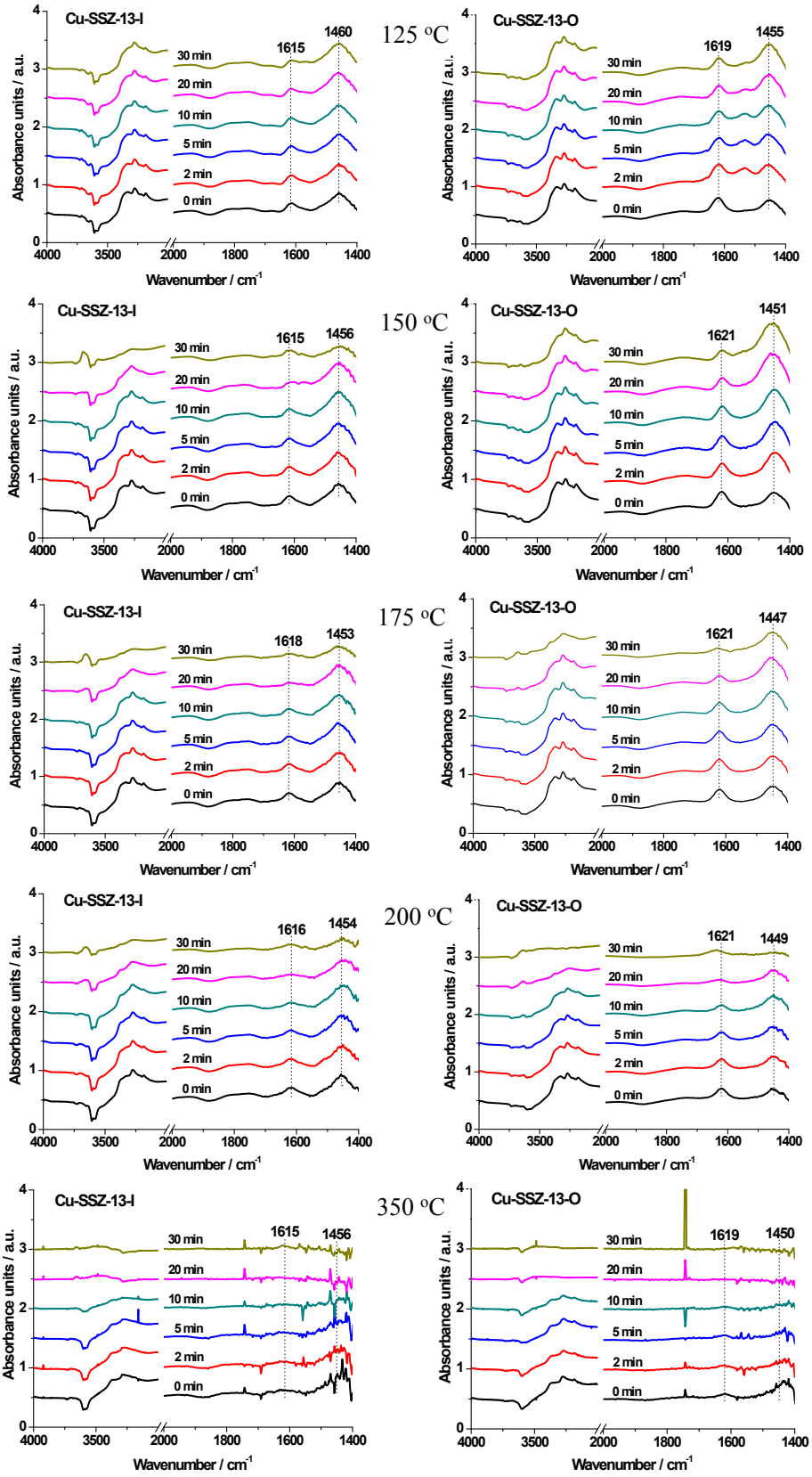

Fig. S3. Consumption of coordinated NH_3 (at approximately 1615 (1619) cm^{-1}) and NH_4^+ ions (at approximately 1460 (1451) cm^{-1}) at different temperatures upon passing 500 ppm NO+5% O_2/N_2 over Cu-SSZ-13-I and Cu-SSZ-13-O with preadsorbed NH_3.

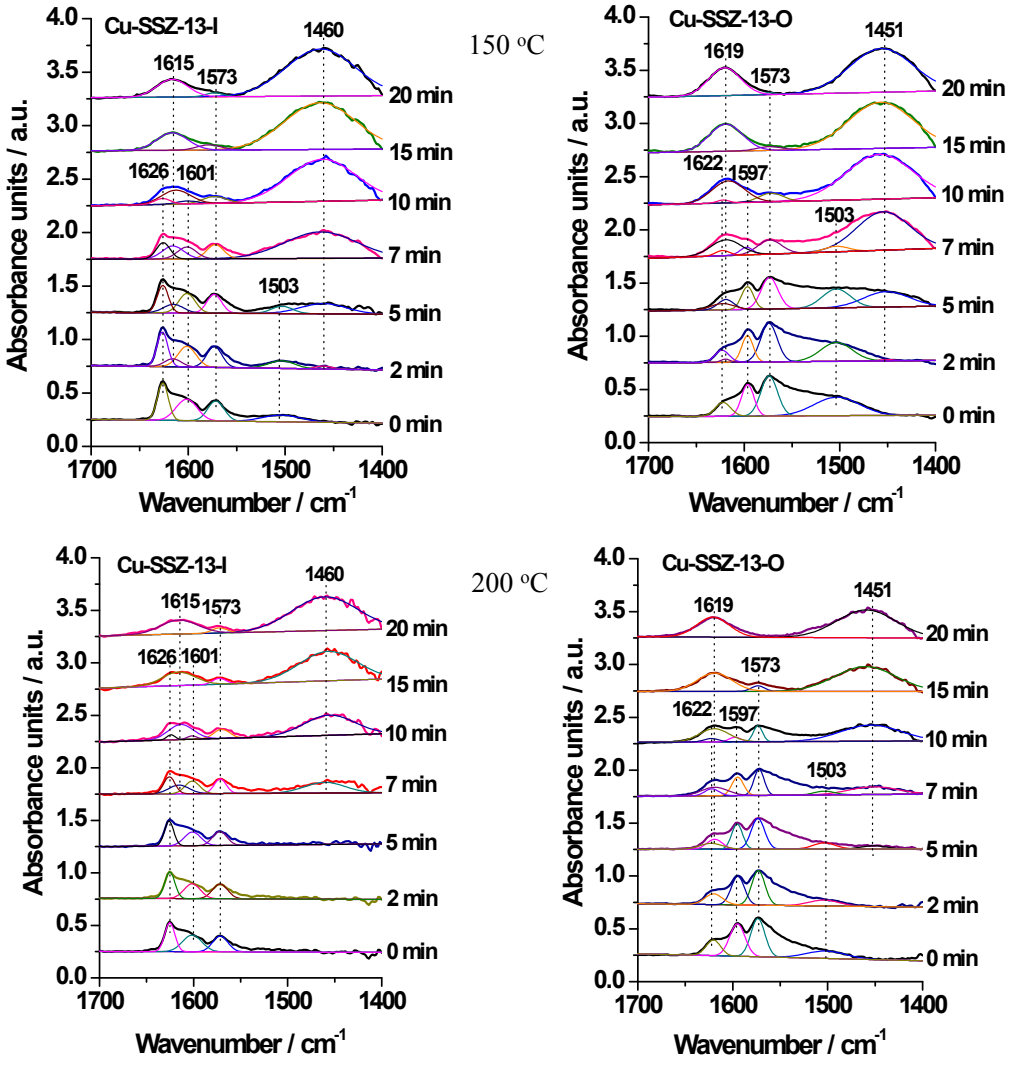

Fig. S4. Consumption of the adsorbed NO_x species and generation of the adsorbed NH_3 species at 150 (a) and 200 °C (b) upon passing 500 ppm NH_3 over Cu-SSZ-13-I and Cu-SSZ-13-O with preadsorbed $NO+O_2$.

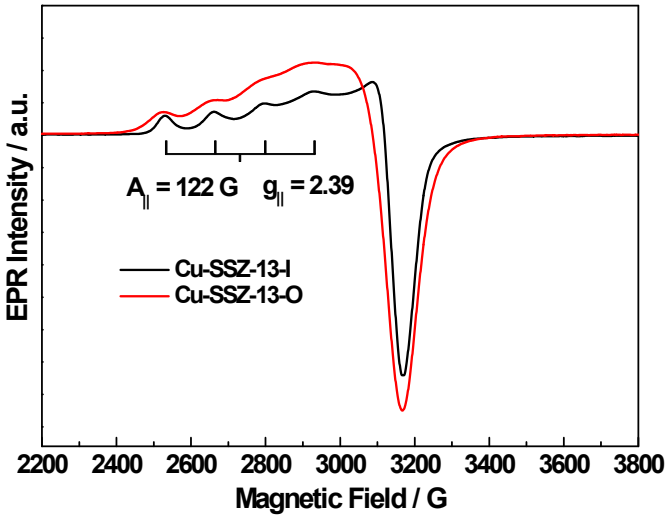

Fig. S5. EPR spectra of Cu-SSZ-13-I and Cu-SSZ-13-O measured at 123 K.

According to the EPR spectra and literature reports,[1] the EPR signals at $g_{||}$ = 2.39 and $A_{||}$ = 122 G on Cu-SSZ-13 catalyst could be ascribed to Cu^{2+} coordinated to three oxygen atoms on the six-ring sites.

References

1 L. Ma, Y. Cheng, G. Cavataio, R. W. McCabe, L. Fu and J. Li, *Chem. Eng. J.,* 2013, **225**, 323-330.