

## Supplementary Information

### Enhanced activity of CuO/K<sub>2</sub>CO<sub>3</sub>/MgAl<sub>2</sub>O<sub>4</sub> catalyst for lean NO<sub>x</sub> storage and reduction at high temperatures

Yaoyao Liu,<sup>a</sup> Lihong Guo,<sup>a,b</sup> Dongyue Zhao,<sup>a</sup> Xingang Li,<sup>\*a</sup> Zhongnan Gao,<sup>a</sup>

Tong Ding,<sup>\*a</sup> Ye Tian,<sup>a</sup> Zheng Jiang,<sup>c</sup>

*a Collaborative Innovation Center of Chemical Science and Engineering (Tianjin),  
Tianjin Key Laboratory of Applied Catalysis Science and Engineering, School of  
Chemical Engineering & Technology, Tianjin University, Tianjin 300072, P. R. China*

*b School of Chemistry and Chemical Engineering, Henan University of Technology,  
Zhengzhou 450001, P. R. China*

*c Shanghai Synchrotron Radiation Facility, Shanghai Institute of Applied Physics,  
Chinese Academy of Sciences, Shanghai, 201800, P. R. China*

\*Corresponding author:

Prof. Xingang Li

**E-mail:** xingang\_li@tju.edu.cn.

Figure S1

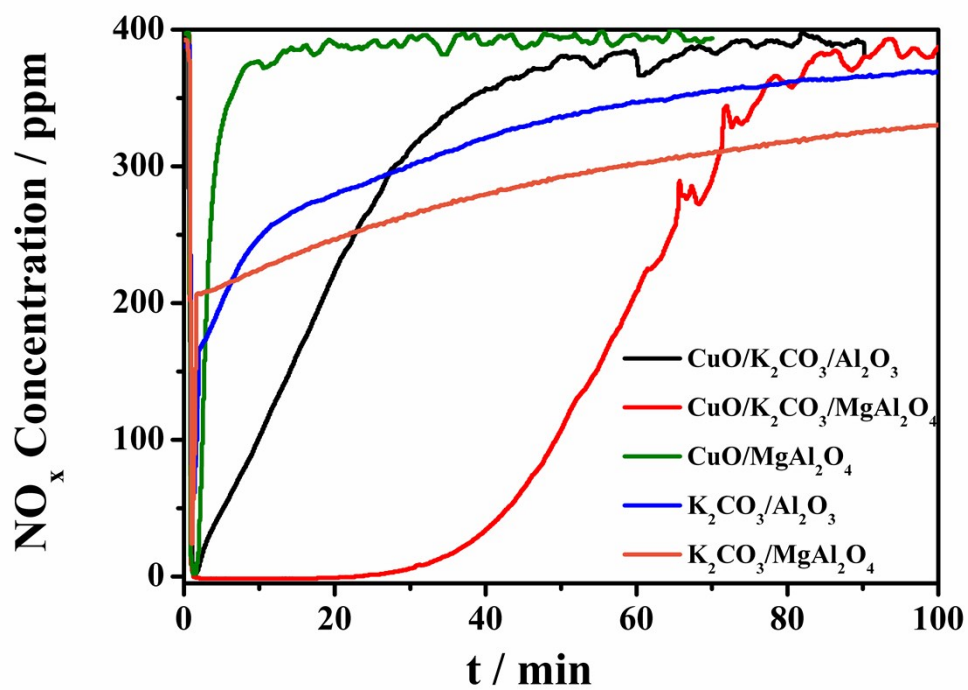
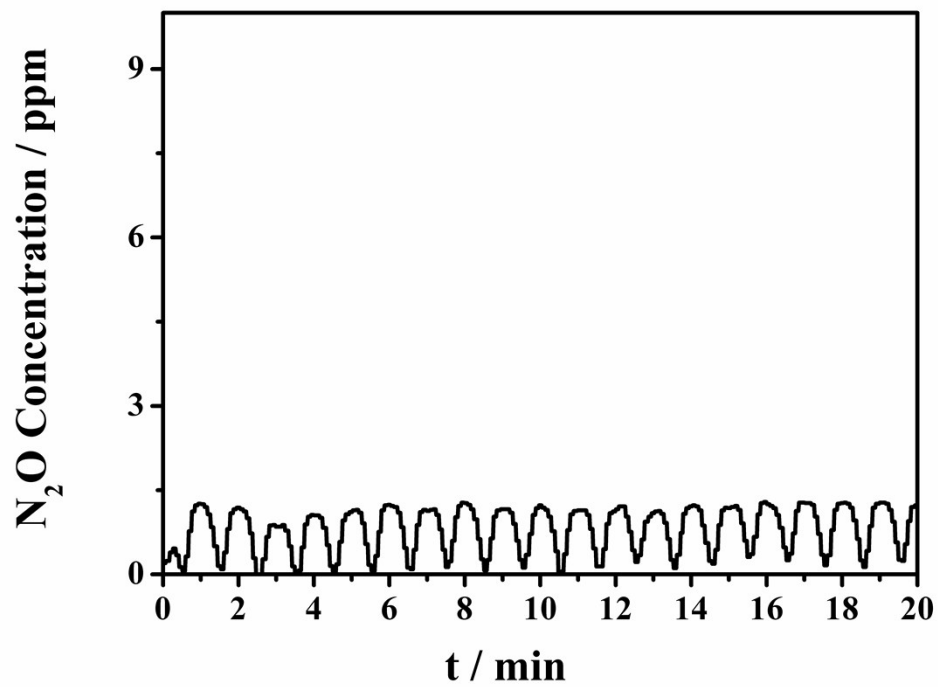


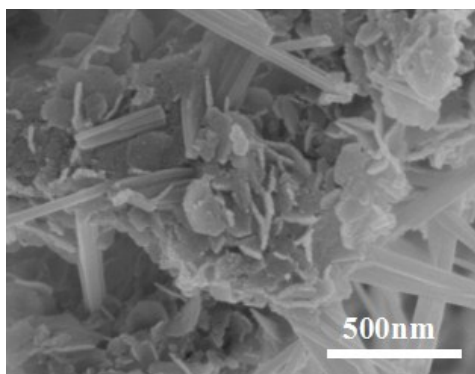
Figure S1. Isothermal NO<sub>x</sub> storage curves of the catalysts at 450 °C.

**Figure S2**



**Figure S2.** N<sub>2</sub>O concentration curve during the lean/rich cycles at 450 °C over CuO/K<sub>2</sub>CO<sub>3</sub>/MgAl<sub>2</sub>O<sub>4</sub> catalyst.

**Figure S3**



**Figure S3.** SEM image of the fresh CuO/K<sub>2</sub>CO<sub>3</sub>/MgAl<sub>2</sub>O<sub>4</sub> catalyst.