

SUPPLEMENTARY INFORMATION

**Cerium promotion on the hydrocarbons resistance of
Cu-SAPO-34 NH₃-SCR monolith catalyst**

Yi Cao¹, Li Lan¹, Xi Feng², Zhengzheng Yang³, Sha Zou¹, Haidi Xu¹, Zheqi Li¹,

Maochu Gong¹, Yaoqiang Chen^{1, 2, 3, 4*}

1. Key Laboratory of Green Chemistry & Technology of the Ministry of Education, College of Chemistry, Sichuan University, Chengdu, 610064, PR China

2. College of Chemical Engineering, Sichuan University, Chengdu, 610064, PR China

3. College of Architecture and Environment, Sichuan University, Chengdu 610064, Sichuan, PR China

4. Sichuan Province Engineering Center of Environmental Catalytic Materials, Chengdu 610064, PR China

* To whom corresponding authors should be addressed:

nic7501@scu.edu.cn (Yaoqiang Chen)

Tel. /Fax: +86 28 85418451

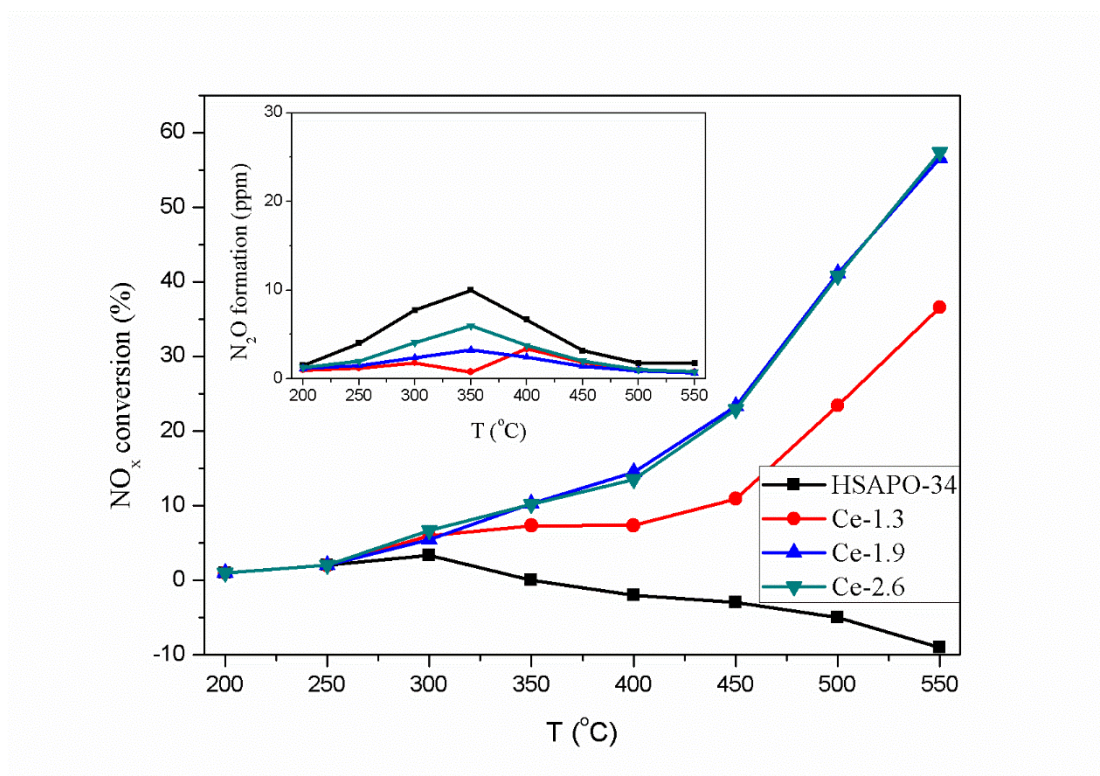


Fig. S1. The NO_x conversion and N₂O formation of the H-SAPO-34 and Ce-x supported material. Feed condition: 350 ppm NH₃, 350 ppm NO, 8% O₂, 5 vol% H₂O and N₂ balance, GSHV: 30,000 h⁻¹.

Table S1. The chemical composition of Ce-x.

sample	Ce (wt%)	Si (wt%)	Al (wt%)	P (wt%)
Ce-1.3	1.2	2.9	20.2	18.1
Ce-1.9	1.9	3.1	19.5	17.5
Ce-2.6	2.6	2.7	19.8	17.9

The NO_x conversion of the H-SAPO-34 and Ce-x supported materials were shown in Fig. S1, and the chemical composition of Ce-x were listed in Table S1. For the

supported materials, it could be found that the H-SAPO-34 supported material showed no NH₃-SCR activity, and the NO_x conversion at temperature above 300 °C was negative. In addition, after the Ce doping, the Ce-x supported materials also showed little NH₃-SCR activity at temperature below 300 °C, indicating that the cerium species was not the active sites for CuCe-x catalysts at the temperature below 300 °C. Furthermore, at the temperature above 300 °C, the NO_x conversion of Ce-x catalysts increased with the content of Ce increasing, until the content of Ce reached 1.9 wt%, suggesting that the NO_x conversion of CuCe-x catalysts may be improved by Ce adding. It could be found that the amount of N₂O formation of Ce-x catalyst increased as the content of Ce increasing, and the maximum concentrations of N₂O formation of Ce-x catalysts were not higher than 10 ppm, indicating that the selectivity of NO_x to N₂ of Ce-x catalysts were high.