Effects of SO_2 on Cu-SSZ-39 catalyst for the selective catalytic reduction of NO_x with NH_3

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Include 9 pages, 7 figure, 3 tables.

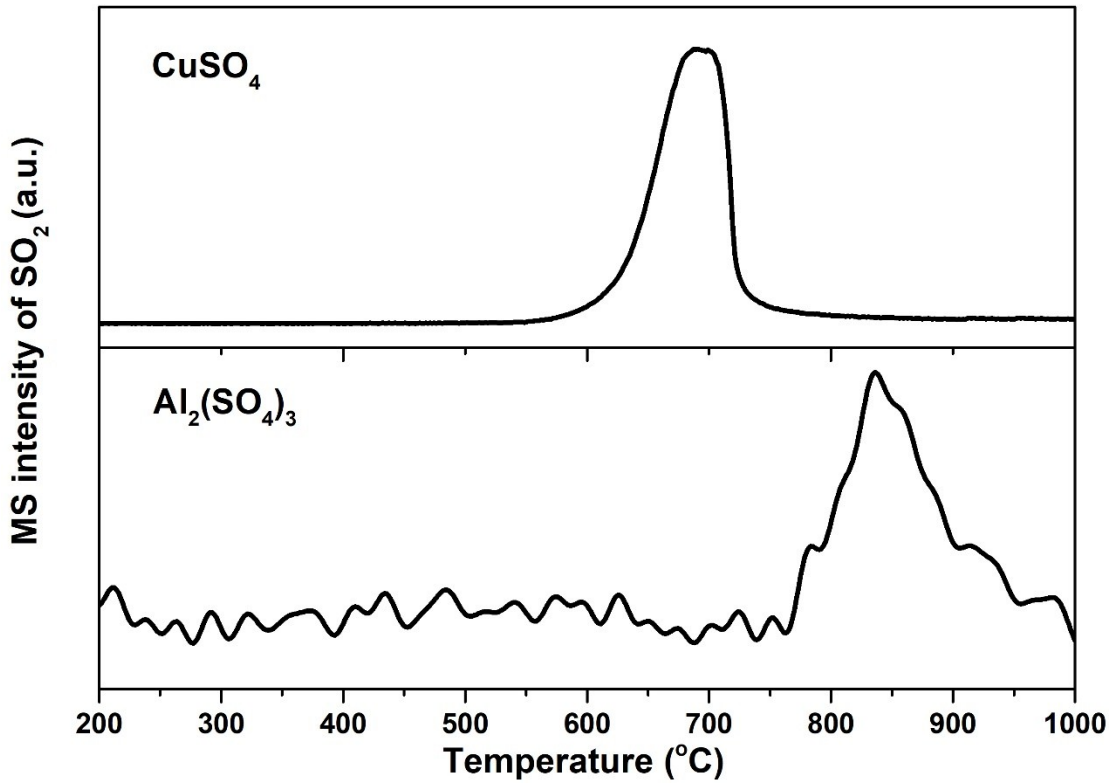

Figure S1. TPD profiles of pure $CuSO_4$ and $Al_2(SO_4)_3$. The relative molecular mass of 64 was taken as the signal of SO_2.

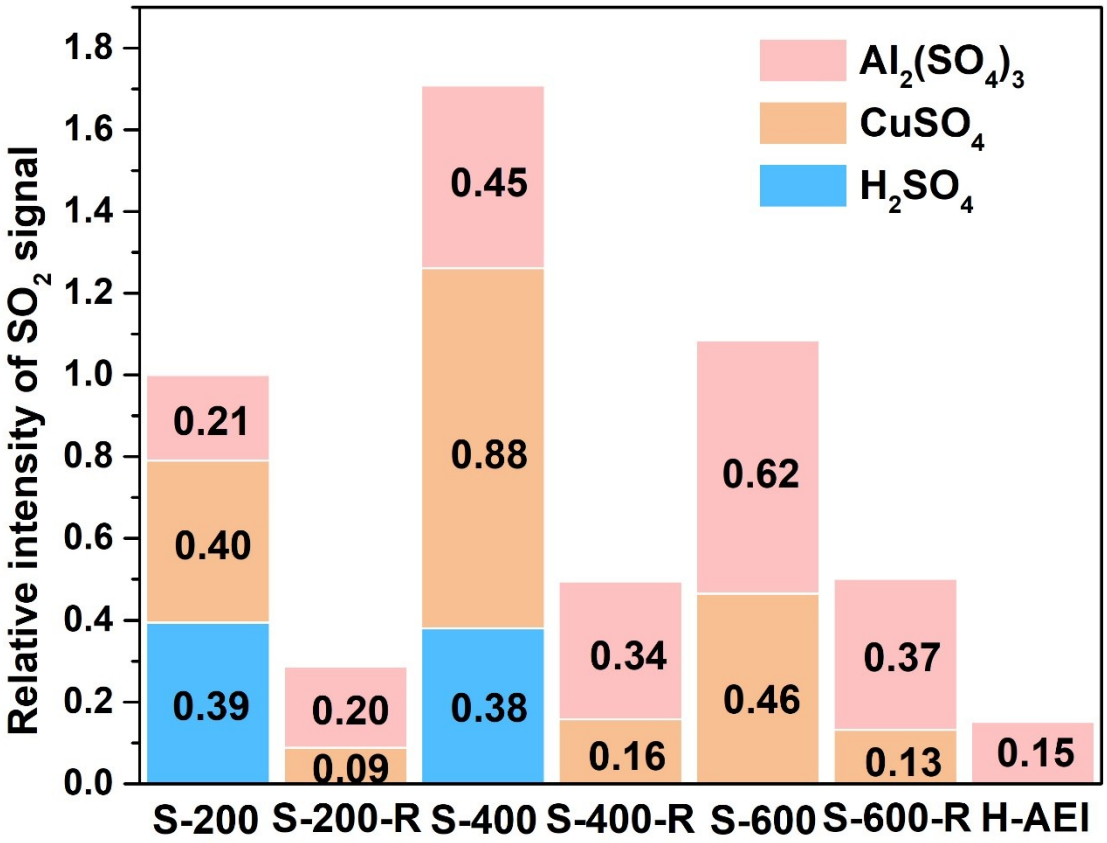

Figure S2. The integrated SO_2 desorption amounts from SO_2-TPD results (The intensity of total SO_2 desorption signal for S-200 was taken as 1, and the intensity of SO_2 signal for other samples was a relative amount to S-200).

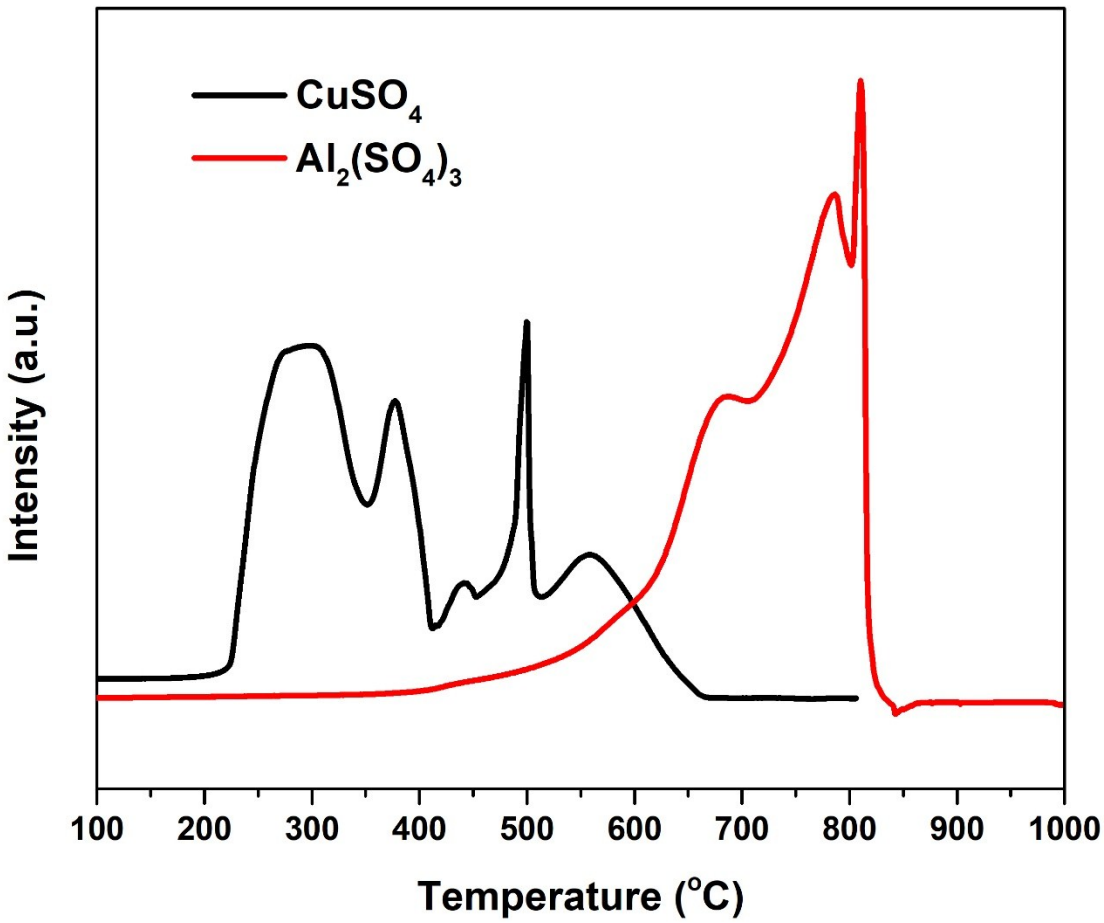

Figure S3. The H_2-TPR profiles of pure $CuSO_4$ and $Al_2(SO_4)_3$.

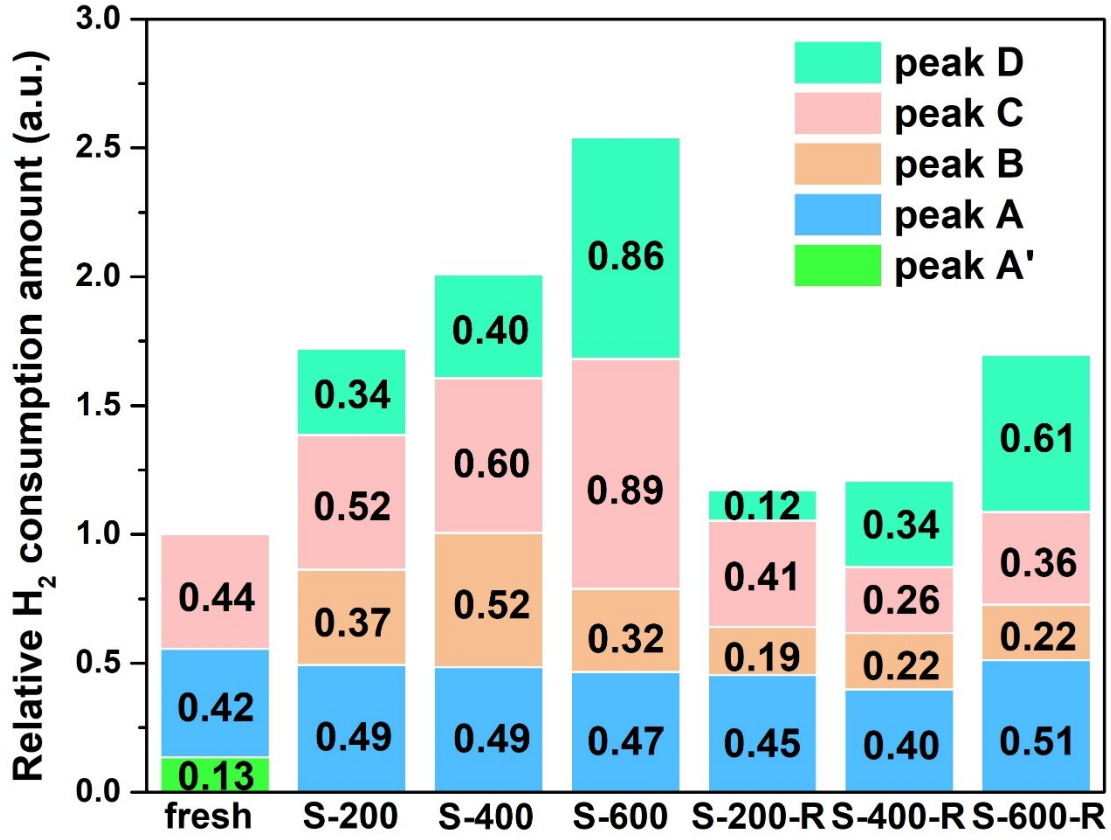

Figure S4. The integrated H_2 consumption amounts from H_2-TPR results (The amount of total H_2 consumption S-200 was taken as 1, and the amount of H_2 consumption for other samples was a relative amount to S-200).

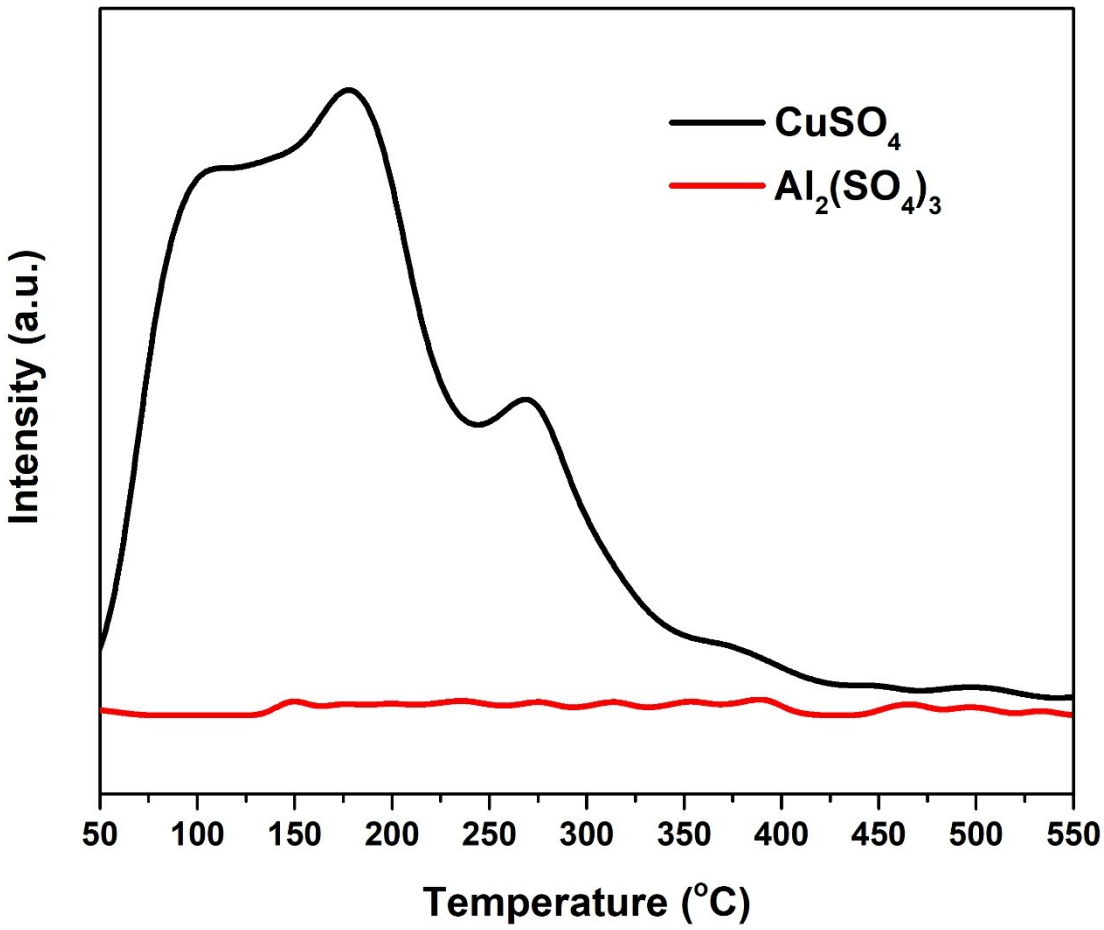

Figure S5. The NH_3-TPD profiles of pure $CuSO_4$ and $Al_2(SO_4)_3$.

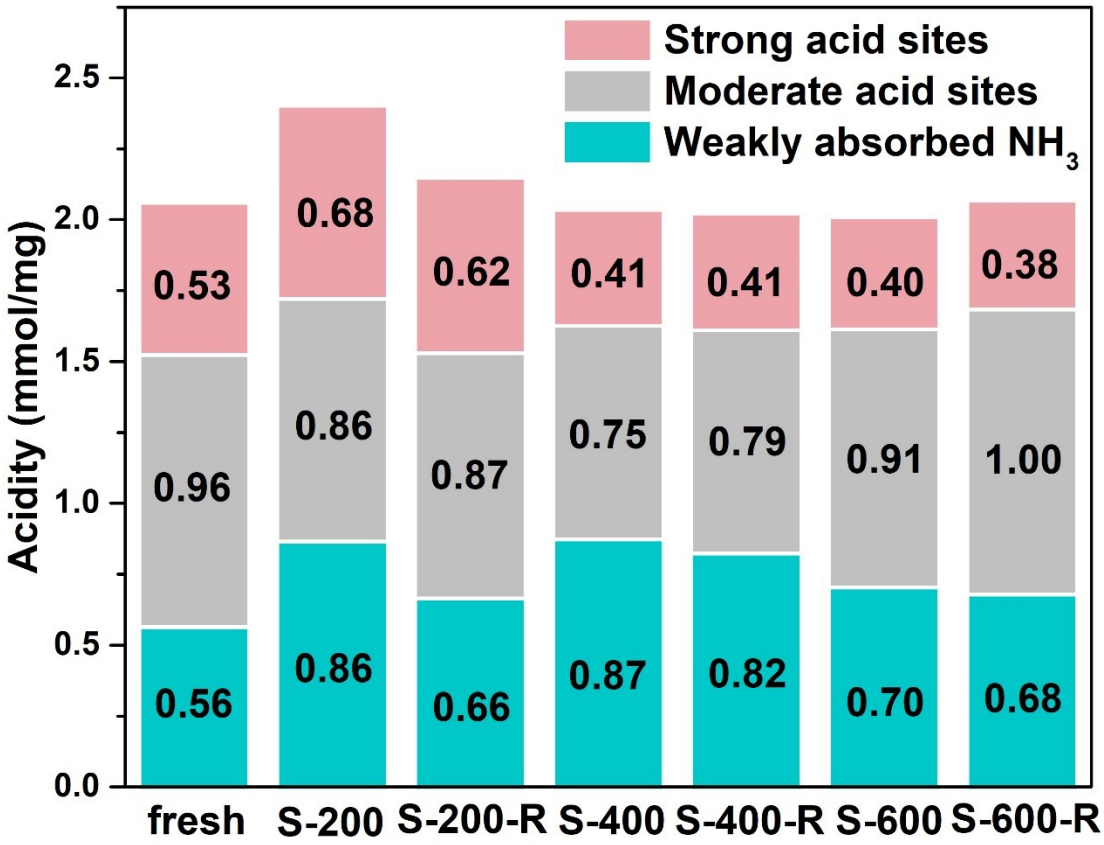

Figure S6. The integrated NH_3 desorption amounts from NH_3-TPD results.

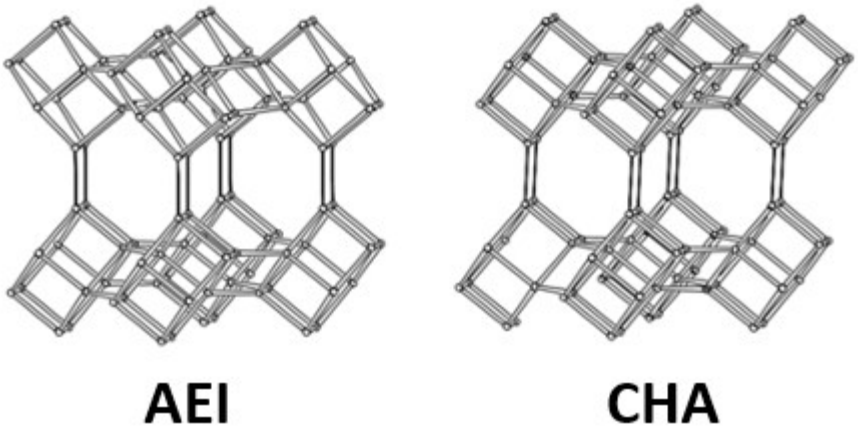

Figure S7. The framework of Cu-SSZ-39 (AEI structure) and Cu-SSZ-13 (CHA structure). The picture was obtained from International Zeolite Association: Structure Commission. Data base of Zeolite Structures, http://www.iza-structure.org/.

Table S1. Relative crystallinity of fresh, sulfated and regenerated catalysts. (the results are derived from XRD data)

Sample	fresh	S-200	S-200-R	S-400	S-400-R	S-600	S-600-R
Relative crystallinity/%	100	91.4	94.4	91.9	98.1	91.0	84.9

Table S2. Surface area and pore volume of fresh, sulfated and regenerated catalysts.

Sample	fresh	S-200	S-200-R	S-400	S-400-R	S-600	S-600-R
Surface area (m^2/g)	419	347	383	352	341	344	323
Pore volume (cm^3/g)	0.23	0.19	0.21	0.19	0.20	0.20	0.20

Table S3. Relative Cu^{2+} content of fresh, sulfated and regenerated catalysts. (The results are calculated from the area of double integral of EPR profiles, and the relative Cu^{2+} content of fresh sample was taken as 100%)

Sample	fresh	S-200	S-400	S-600	S-200-R	S-400-R	S-600-R
Relative Cu^{2+} content/%	100	97.0	85.8	95.9	92.3	91.6	93.3