

SUPPORTING INFORMATION

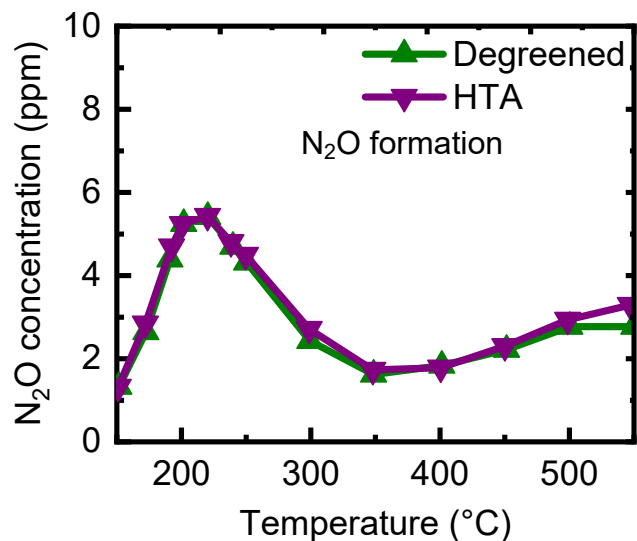


Fig. S1. N₂O formation comparison between degreened and HTA pretreated Cu-SSZ-13 catalysts during NH₃-SCR reactions.

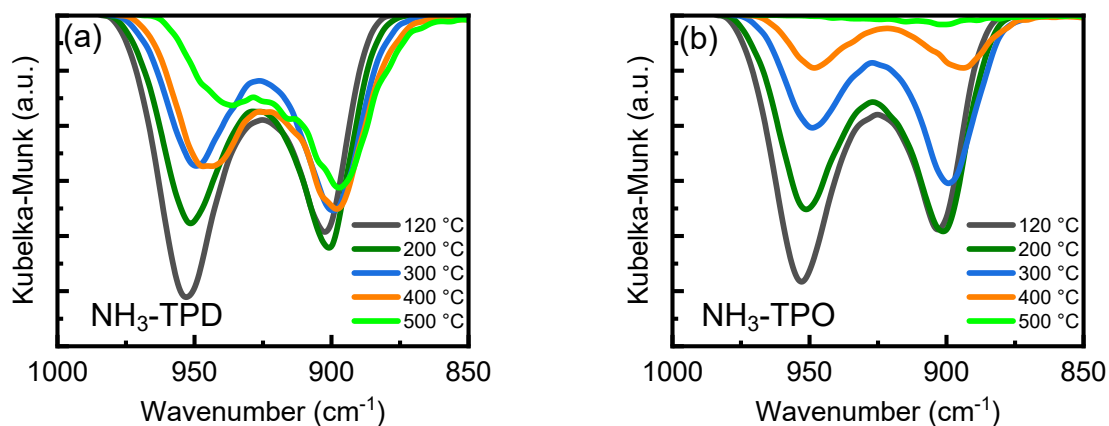


Fig. S2. DRIFTS results obtained during (a) NH₃-TPD and (b) NH₃-TPO experiments on the Cu-SSZ-13 catalyst after scraping from a monolith brick. Both experiments were conducted after oxygen pretreated at 500 °C for 1 h, cooling to 120 °C in He and then 1000 ppm NH₃ balance in He. For the TPD, He was used while 10% O₂ balance in He was used in the TPO experiment. The temperature ramp was 10 °C/min.

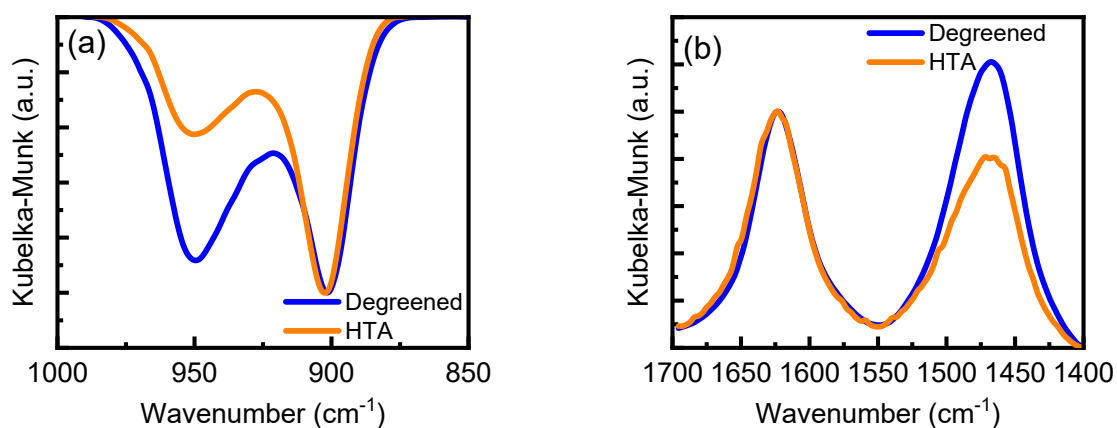


Fig. S3. DRIFTS NH₃ adsorption spectra comparison between the degreened and HTA catalysts in (a) the T-O-T vibration region and (b) the Brønsted and Lewis acid sites region. The spectra were normalized separately in these two regions. In (a), the spectra were normalized using the 900 cm⁻¹ feature while in (b), the spectra were normalized using the 1620 cm⁻¹ feature.

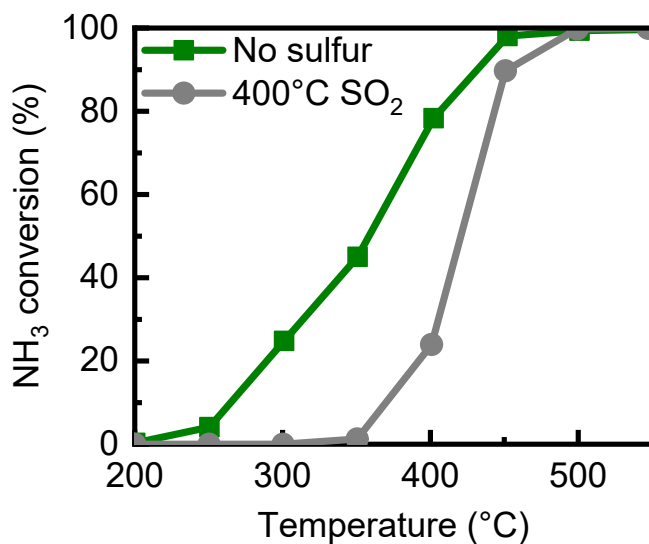


Fig. S4. NH₃ oxidation conversion over the degreened catalyst before and after sulfur exposure at 400 °C SO₂. During the NH₃ oxidation experiment, 10% O₂, 7% H₂O, 8% CO₂, 200 ppm NH₃ and balance in N₂ were used.

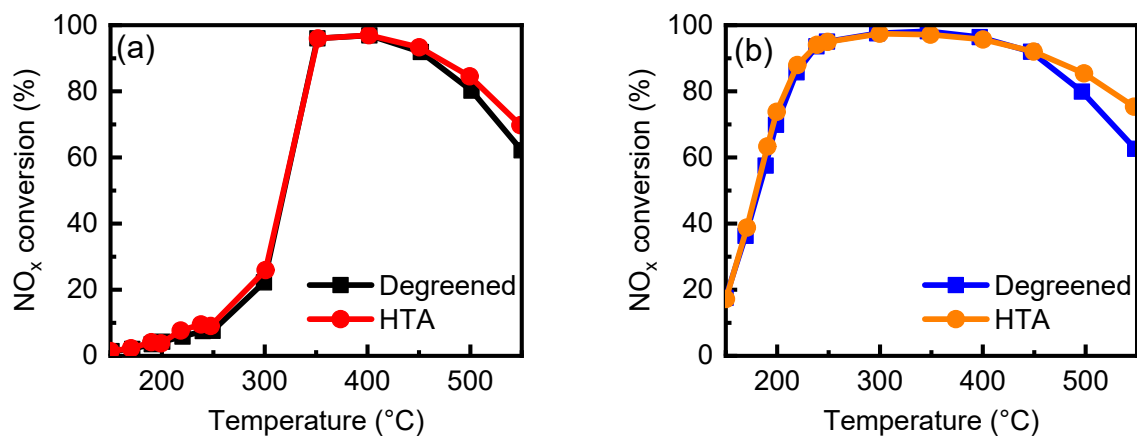


Fig. S5. A comparison of SCR results after (a) 25 ppm SO₂ and 25 ppm SO₃ exposure at 200 °C and after (b) 50 ppm SO₂ exposure at 200 °C for the degreened and HTA catalysts. The SCR reaction conditions are described in Table 1.

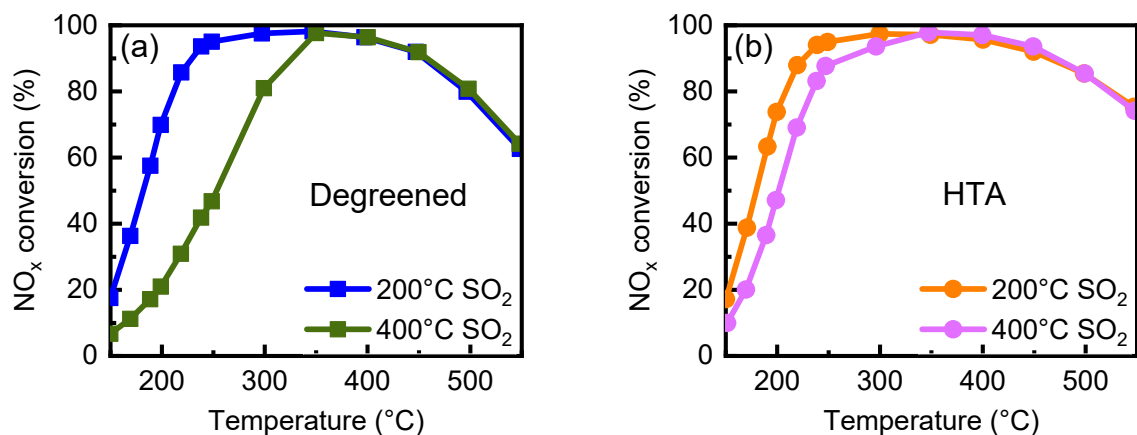


Fig. S6. A comparison of SCR results after a 50 ppm SO₂ exposure at 200 and 400 °C on the (a) degreened and (b) HTA catalysts. The SCR reaction conditions are described in Table 1.

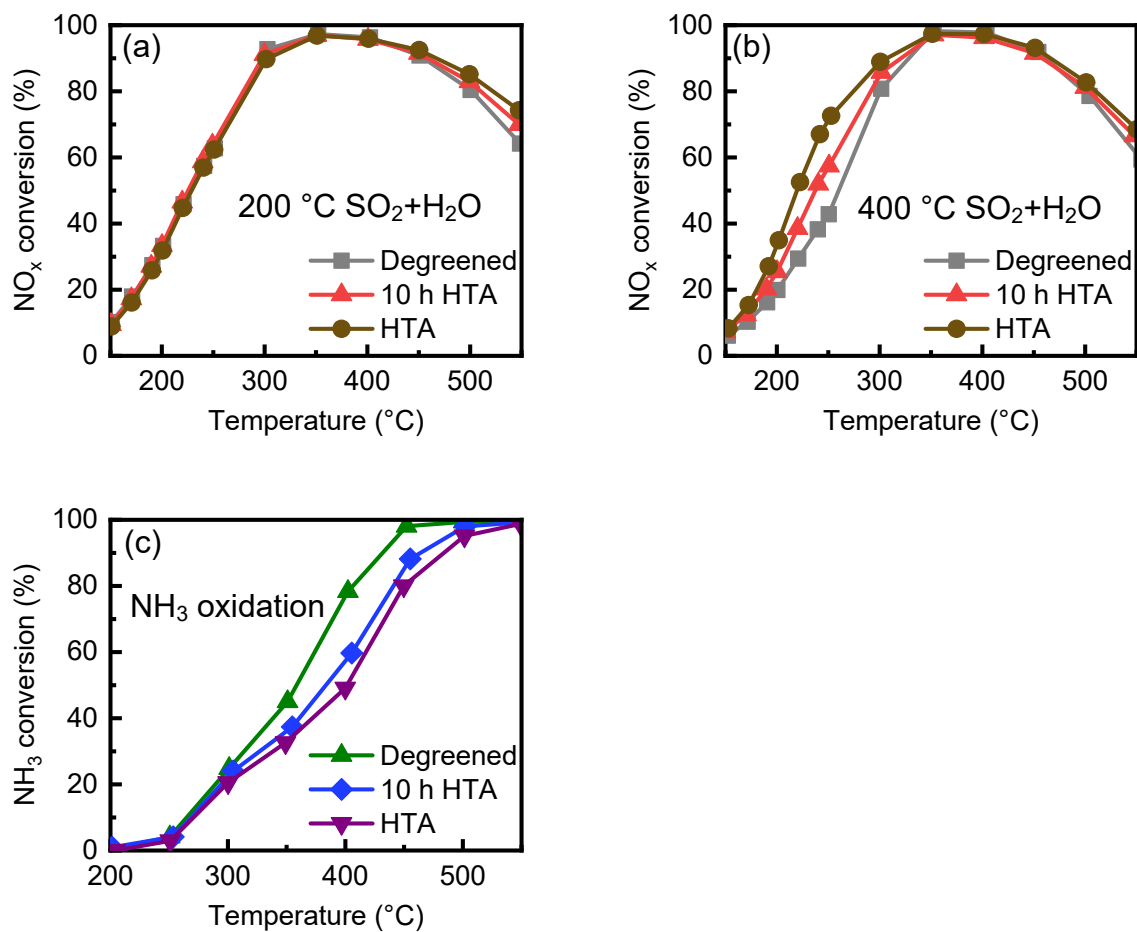


Fig. S7. A comparison of degreened, 10 h HTA and HTA (for 25 h) samples after (a) 200 °C and (b) 400 °C SO₂+H₂O exposure. The NH₃ oxidation comparison before sulfur exposure between three samples is shown in (c). The SCR and NH₃ oxidation conditions are listed in the experimental methods session.

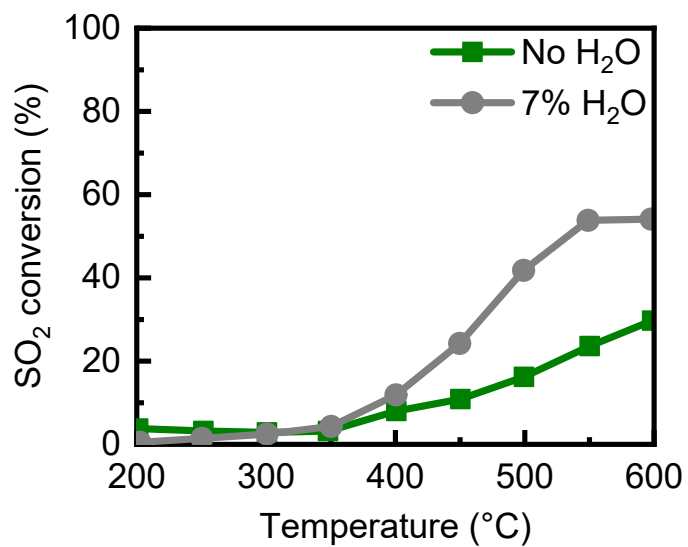


Fig. S8. SO₂ oxidation over the degreened catalyst. The SO₂ oxidation conditions in the absence of water were 50 ppm SO₂, 10% O₂ and balance in N₂ and the SO₂ oxidation conditions in the presence of water were 50 ppm SO₂, 10% O₂, 7% H₂O and balance in N₂.