

Supplementary Information

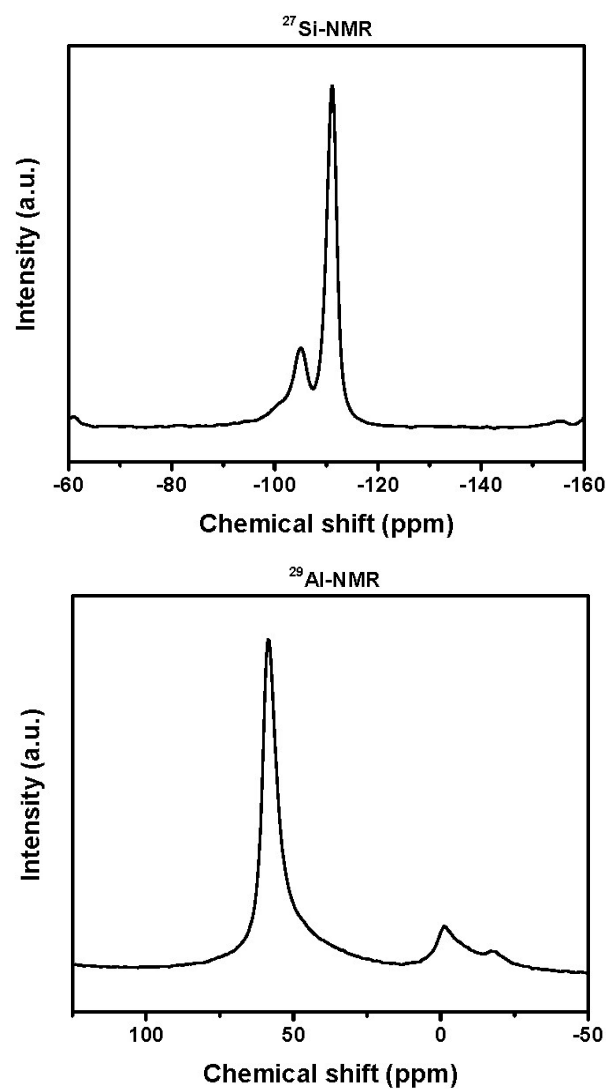


Fig. S1 ^{27}Si and ^{29}Al solid NMR data of H-SSZ-13.

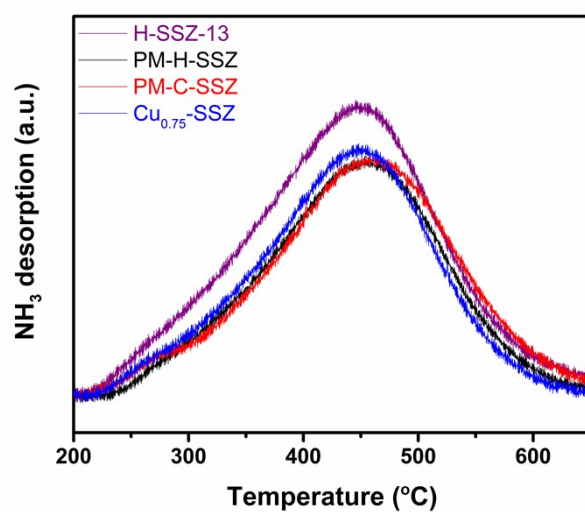


Fig. S3 NH_3 desorption profiles over physically mixed SSZ-13 and $\text{Cu}_{0.75}$ -SSZ after wet purging.

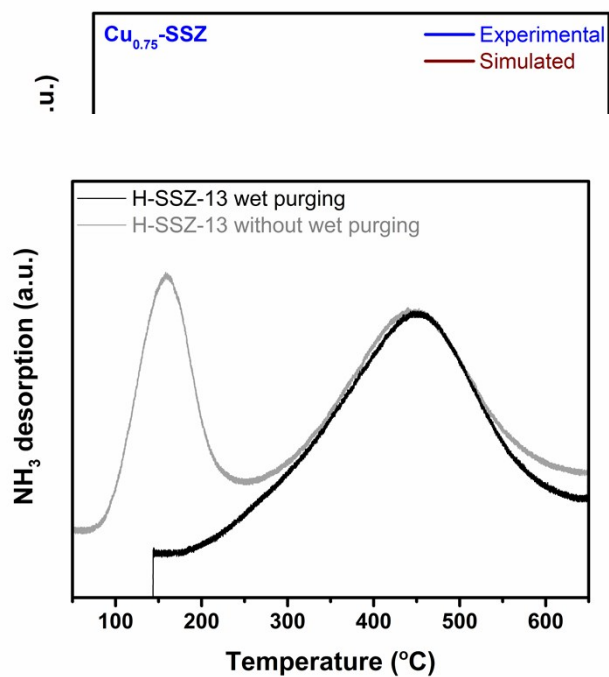
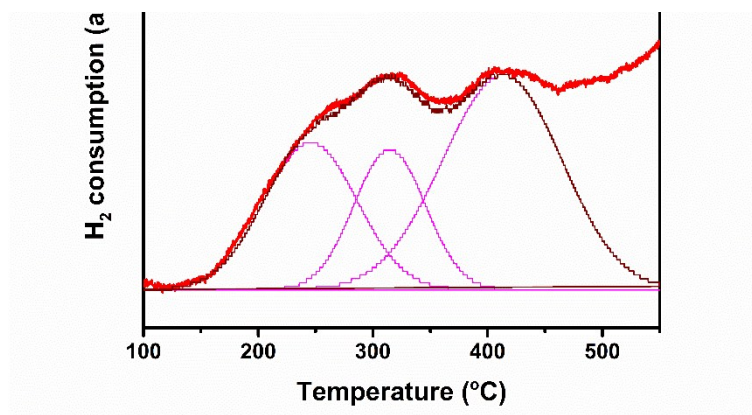


Fig. S4 Comparison of NH_3 desorption profiles of H-SSZ-13 between with and without wet purging.

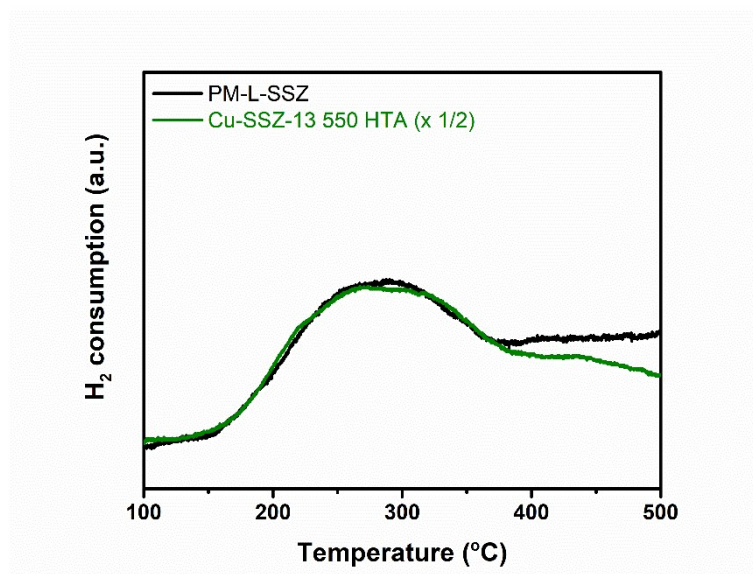


Fig. S5 H₂-TPR profiles over the PM-L-SSZ and Cu-SSZ-13 HTA 550. Hydrogen consumption profiles of Cu-SSZ-13 are multiplied by 1/2 for comparison.

Table S1 Amount of Cu and Al in Cu-SSZ-13 and low loading Cu-SSZ-13 from ICP-AES results.

ICP-AES			
Sample	Al (ppm)	Cu (ppm)	Cu/Al (mol ratio)
Cu-SSZ-13	25200	17564	0.296
Cu _{0.75} -SSZ	24830	7575	0.130

Table S2 Amount of two types of Cu ions in physically mixed SSZ-13 and reference from H₂-TPR.

Sample	Cu ²⁺ amount from H ₂ consumption (mmol/cat g)			
	1Al [Cu-OH] ⁺ _1	1Al [Cu-OH] ⁺ _2	2Al Cu ²⁺	Total
PM-L-SSZ	0.072	0.028	0.038	0.138
PM-C-SSZ	0.038	0.028	0.074	0.140
Cu _{0.75} -SSZ	0.028	0.020	0.078	0.126

Table S3 Quantification results and ratio of Cu species calculated from EPR analysis.

Sample	EPR spin concentration under hydrated	EPR spin concentration under dehydrated	Ratio of 2Al Cu	Ratio of 1Al Cu
PM-L-SSZ	1.05 x 10 ¹⁰	2.56 x 10 ⁹	0.246	0.754
PM-C-SSZ	1.25 x 10 ¹⁰	7.47 x 10 ⁹	0.596	0.404
Cu _{0.75} -SSZ	1.04 x 10 ¹⁰	5.90 x 10 ⁹	0.568	0.432