Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Correlation of the Changes in Framework and Active Cu sites for Typical Cu/CHA Zeolite (SSZ-13 &SAPO-34) During Hydrothermal Aging

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N_2 Physical Adsorption.

The surface area and volume of micropore were preserved for SAPO-34 after hydrothermal aging, while the decrease was 58 m^2/g and 0.02 cm^3/g for the surface area and volume of micropore of aged Cu/SSZ-13. It demonstrated that SAPO-34 showed greater stability than SSZ-13 during hydrothermal aging process.

Table S1 Pore structure properties of H/CHA and Cu/CHA before and after aging at 800 °C

Catalysts	Cu content (wt%)	Specific surface area of micropore (m^2/g)	Micropore volume (cm^3/g)
H/SAPO-34 (Fresh)	0	693	0.25
H/SAPO-34 (800 °C,12h)	0	603	0.24
Cu/SAPO-34 (Fresh)	2	544	0.2
Cu/SAPO-34 (800 °C,12h)	2	540	0.2
H/SSZ-13 (Fresh)	0	754	0.27
H/SSZ-13 (800 °C,12h)	0	662	0.25
Cu/SSZ-13 (Fresh)	2	723	0.26
Cu/SSZ-13 (800 °C,12h)	2	665	0.24

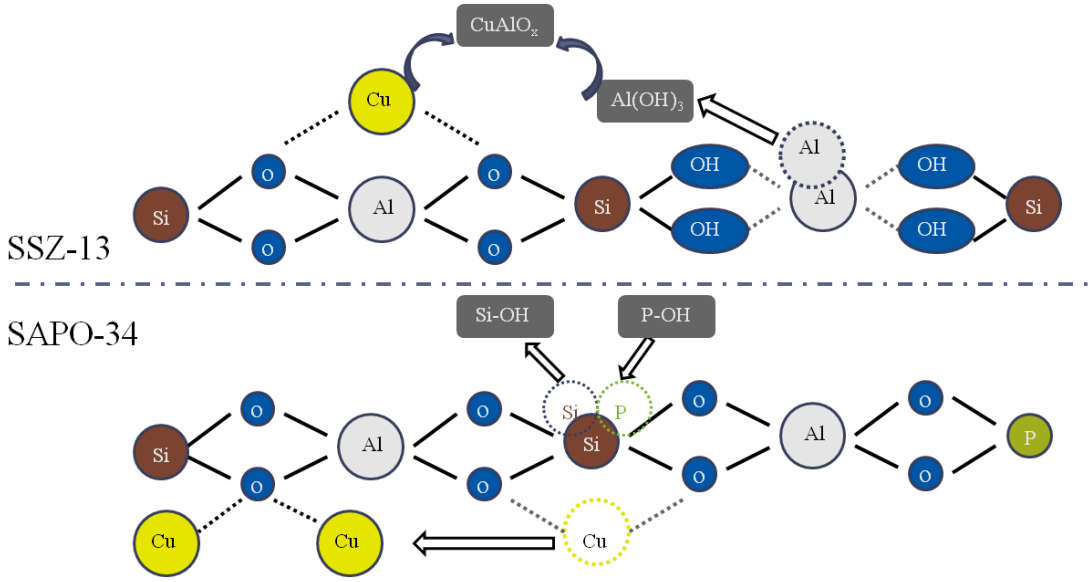

Figure S1. Schematic diagram about the variation of framework and Cu species of Cu/SAPO-34 and Cu/SSZ-13 during hydrothermal aging.

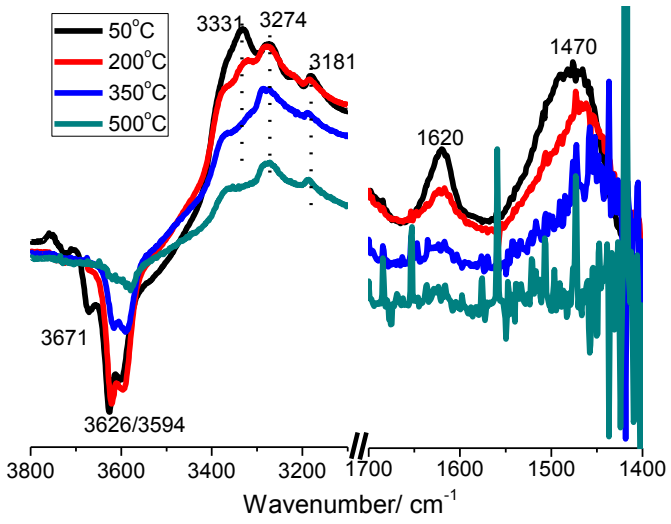

Figure S2. DRIFTS spectra obtained during NH_3-TPD after the Cu/SAPO-34 had been exposed to 500 ppm NH_3/N_2, followed by a N_2 purge.

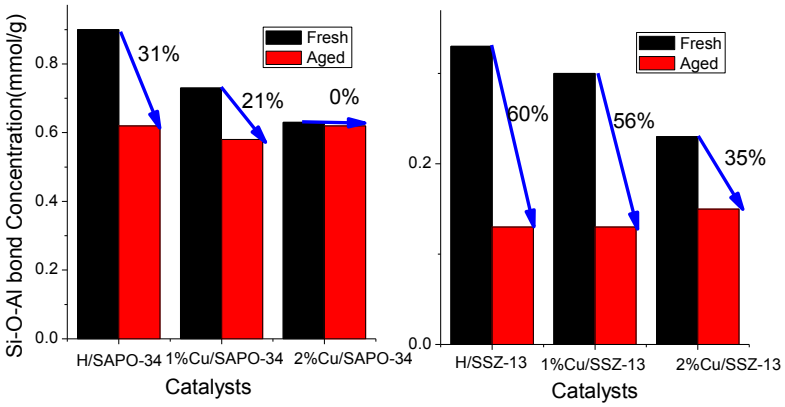

Figure S3. Si-O-Al bond concentration of fresh and aged (at 800 °C) H(Cu)/SAPO-34(left) and H(Cu)/SSZ-13 (right) catalysts calculated by NH_3 desorption at high temperatures