

Supplemental Information

TableS1 Sample crystallinity and yield

Catalysts	Relative crystallinity (%)	Yield ^a (%)
HZ-5	86	72
N-HZ-5	68	56
T-HZ-5	100	100

a) M_a/M , M_a was the mass after treatment, M was the mass before treatment.

TableS2 Textural properties of the catalysts

Catalysts	S_{BET} (m^2/g) ^a	S_{micro} (m^2/g) ^b	V_{total} (cm^3/g) ^b	V_{micro} (cm^3/g) ^b
HZ-5	442	390	0.22	0.14
N-HZ-5	384	257	0.42	0.10
T-HZ-5	443	372	0.32	0.14

a) BET method; b) t-plot method

TableS3 Si/Al ratio on sample surface

Catalysts	Si/Al
HZ-5	26
N-HZ-5	21
T-HZ-5	30

TableS4 Assignment and relative intensities of the peaks in the ^{27}Al MAS NMR spectra of samples

δ [ppm]	Relative peak are ^a [-]		
	HZ-5	N-HZ-5	T-HZ-5
48	0.085	0.077	0.061
55	1	1	1

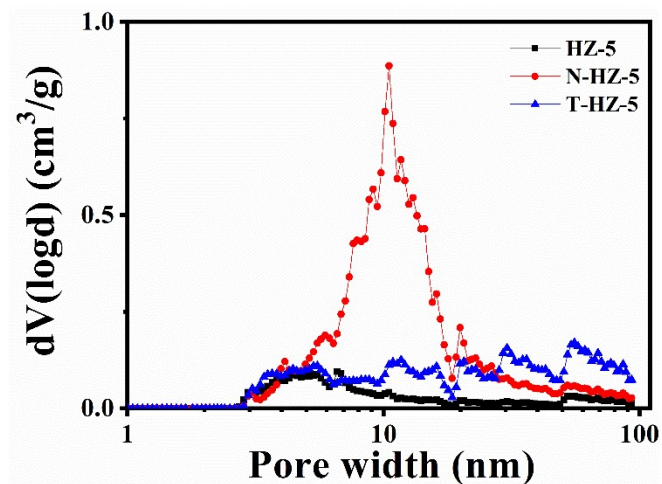
a) Normalized to intensity of peak at 55 ppm

TableS5 Assignment and relative intensities of the peaks in the ^{29}Si MAS NMR spectra of samples

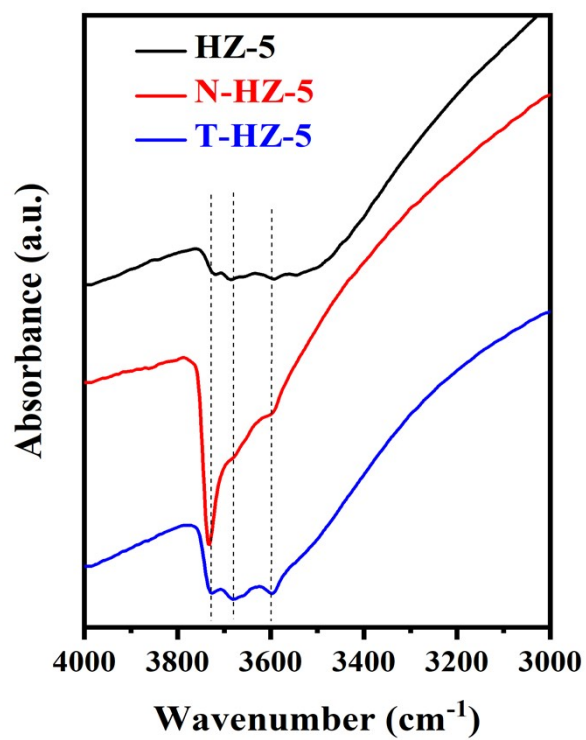
δ [ppm]	Si site	Relative peak are ^a [-]		
		HZ-5	N-HZ-5	T-HZ-5
-103	Si(OSi) ₃ OH	0.062	0.040	0.019
-106	Si(OSi) ₃ Al	0.055	0.055	0.026
-108	T ₁ Si(OSi) ₄	0.157	0.119	0.113
-112	T ₂ Si(OSi) ₄	0.635	0.325	0.458
-113	T ₃ Si(OSi) ₄	1.000	1.000	1.000
-116	T ₄ Si(OSi) ₄	0.347	0.289	0.306

a) Normalized to intensity of peak at -113 ppm

FigS1 Partial enlarged view of pore size distribution of samples



FigS2 FT-IR spectra in the hydroxyl range of sample



FigS3 TG curve after sample inactivation, Reaction conditions: Temperature 773 K, H₂O/CH₃OH molar ratio 1, methanol WHSV=3h⁻¹

