Supplementary Information

Synthesis of high-silica AEI zeolite with enhanced thermal stability by hydrothermal conversion of FAU zeolite, and its activity in the selective catalytic reduction of NOx with NH_3

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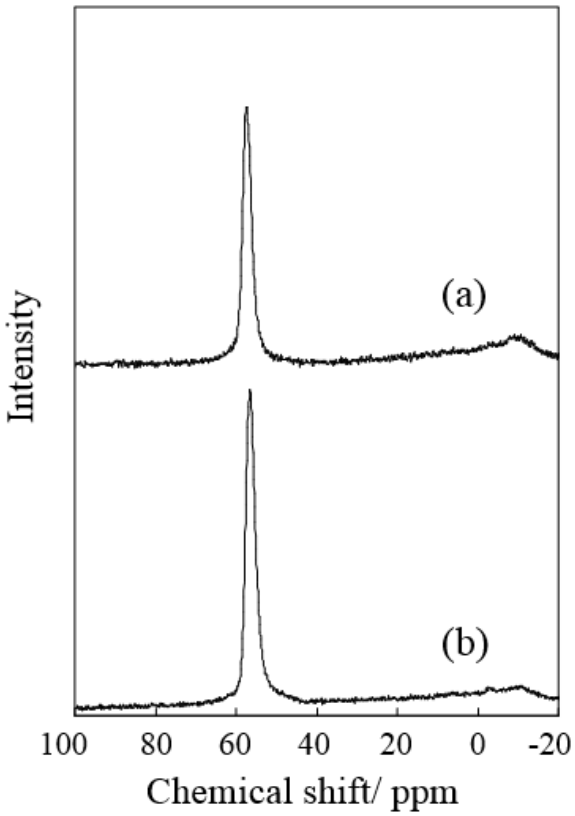

Figure S1. ^{27}Al MAS NMR spectra of AEI zeolites. (a) Sample 20 and (b) Sample 25.

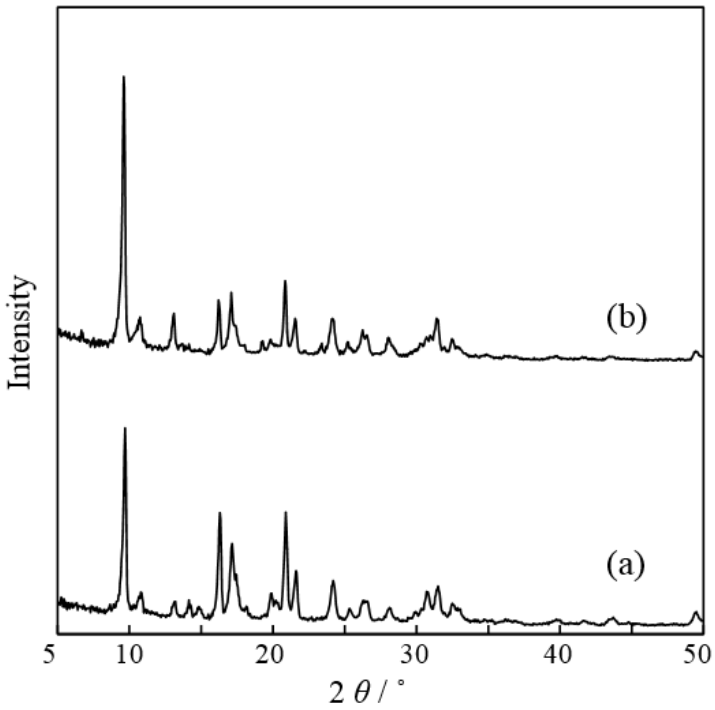

Figure S2. XRD spectra of (a) as-synthesized AEI zeolite and (b) AEI zeolite after thermal treatment at 700 ºC for 6 h under vacuum, followed by calcination in air at 600 ºC for 6 h.

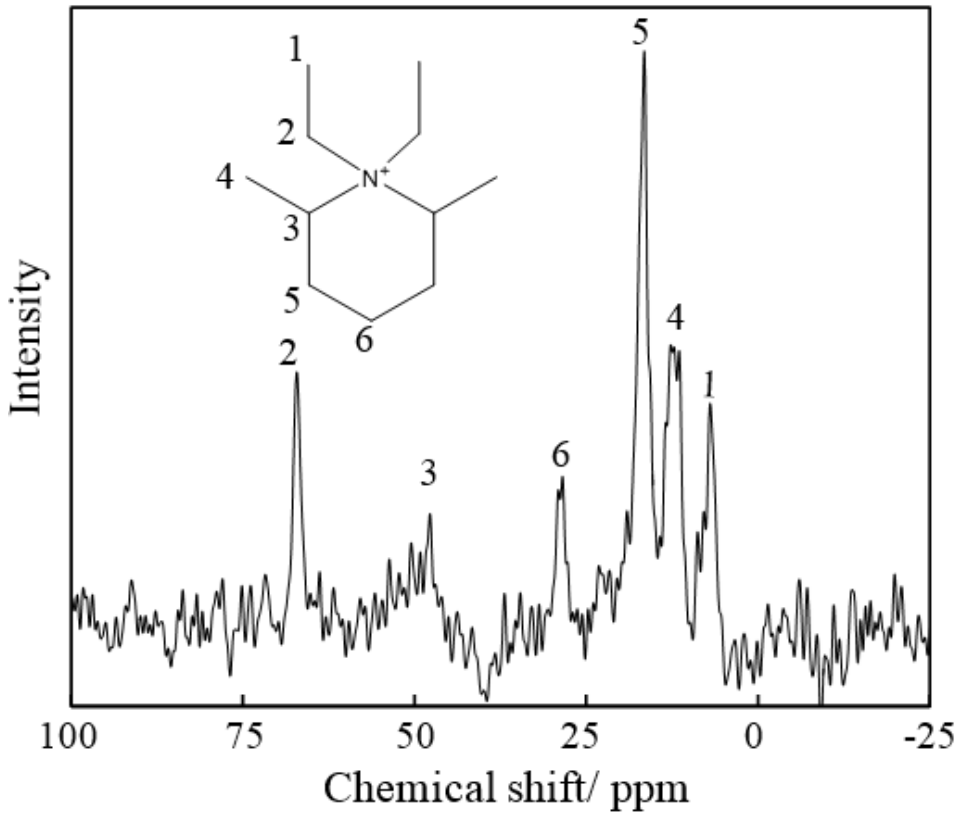

Figure S3. ^{13}C CP/MAS NMR spectrum of AEI zeolite synthesized with the *N,N*-diethyl-2,6-dimethylpiperidinium cation.

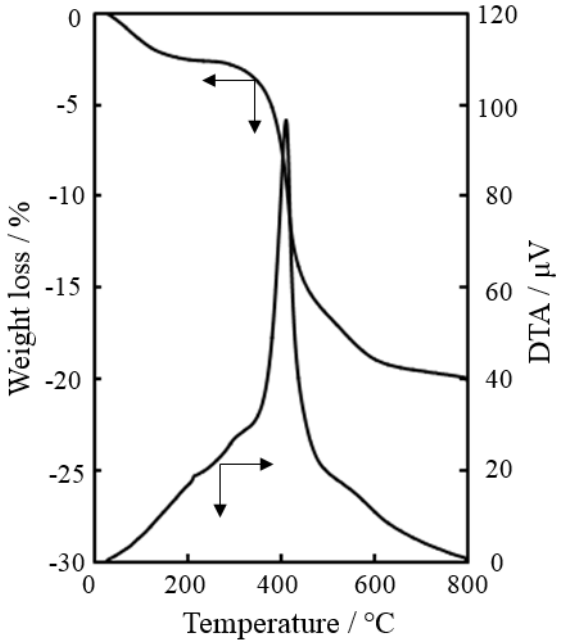

Figure S4. TG/DTA curves of AEI zeolite synthesized with the *N,N*-diethyl-2,6-dimethylpiperidinium cation.

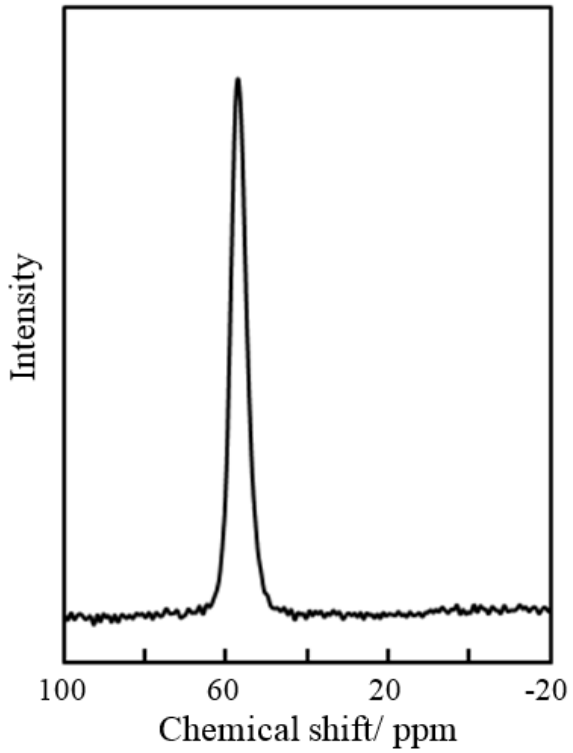

Figure S5. ^{27}Al MAS NMR spectrum of AEI zeolite synthesized with the *N,N*-diethyl-2,6-dimethylpiperidinium cation.

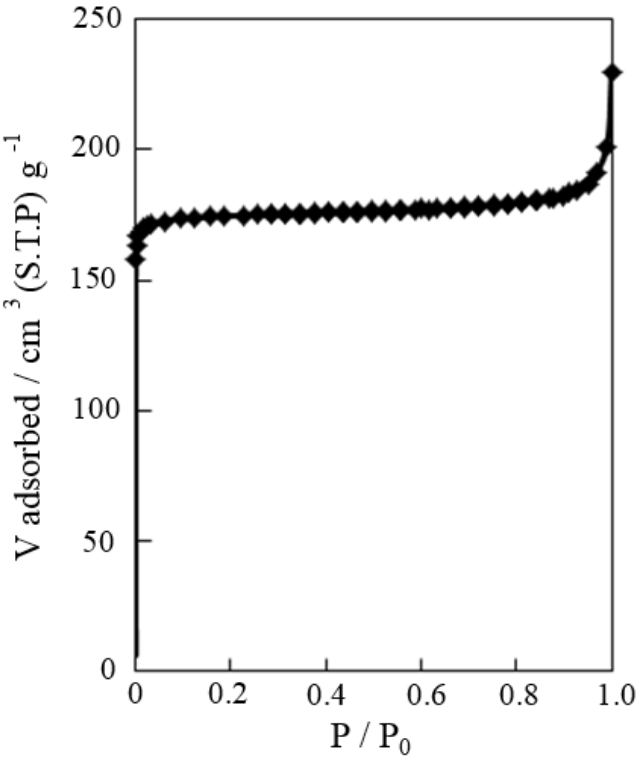

Figure S6. N_2 adsorption isotherm of AEI zeolite synthesized with the *N,N*-diethyl-2,6-dimethylpiperidinium cation.

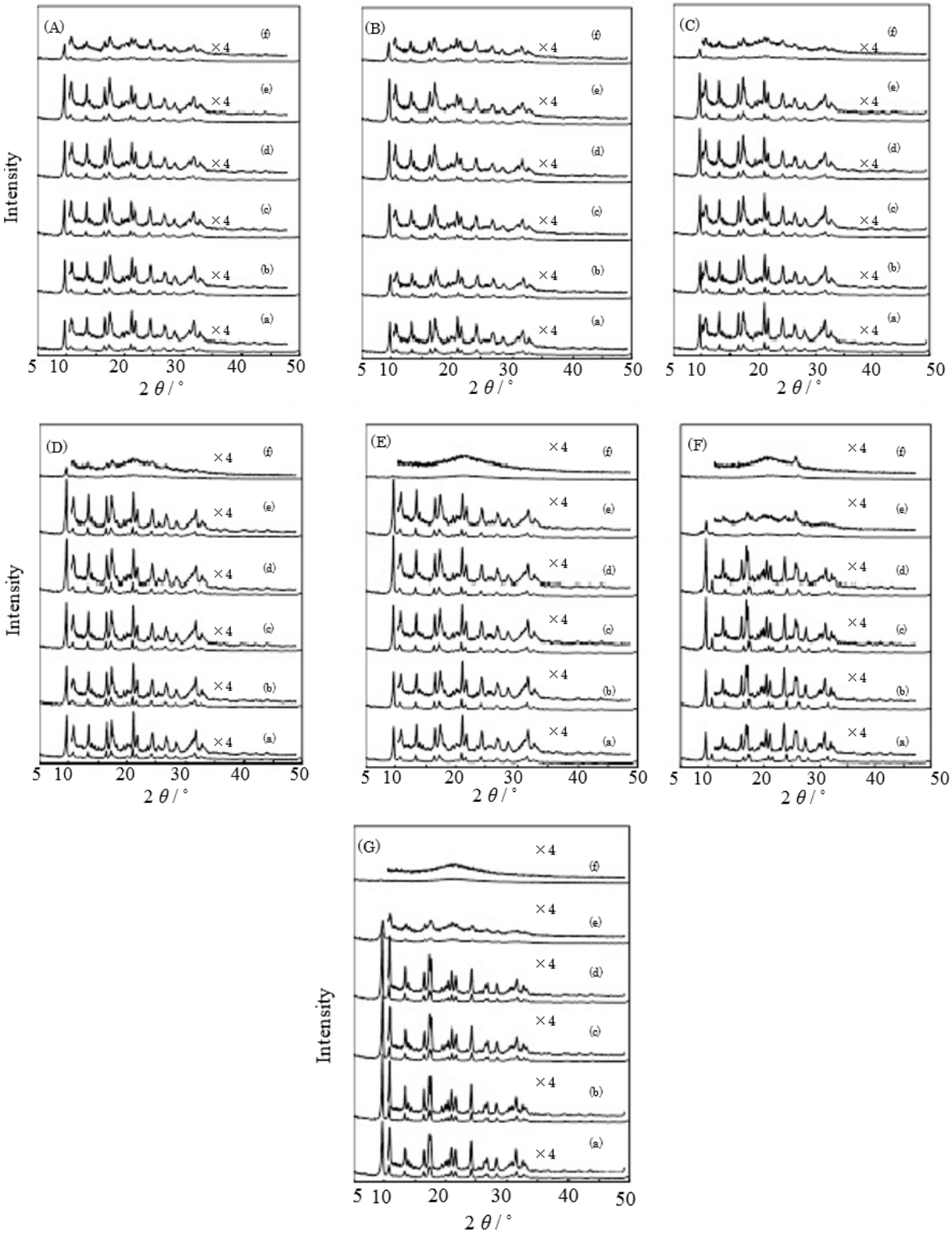

Figure S7. XRD spectra of various AEI zeolites after calcination for 1 h at (a) 600 ºC, (b) 700 ºC, (c) 800 ºC, (d) 900 ºC, (e) 1000 ºC, and (f) 1100 ºC. (A) Sample 17 (P/Al = 1.21), (B) Sample 18 (P/Al = 0.65), (C) Sample 23 (P/Al = 0.59), (D) Sample 20 (P/Al = 0.33), (E) Sample 25 (P/Al = 0.25), (F) Sample 28 (P/Al = 0), and (G) P-modified Sample 28 (P/Al = 0.19).

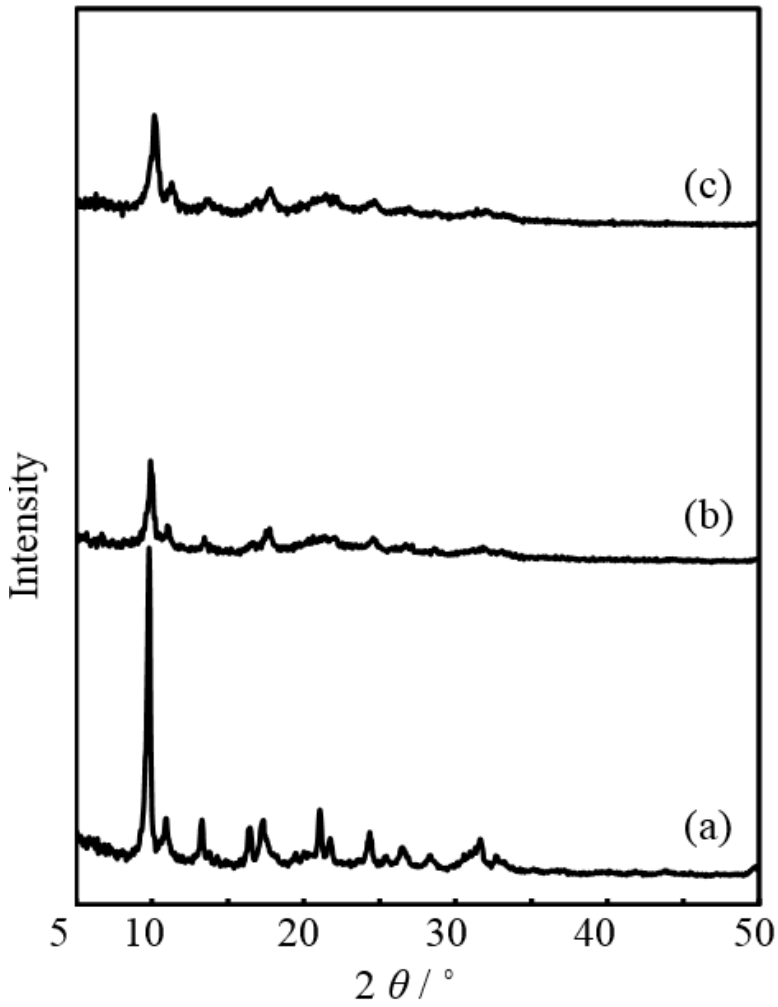

Figure S8. XRD spectra of Cu-loaded AEI catalysts (hydrothermally treated at 900 ºC for 4 h) after the NH_3-SCR of NOx reaction. (a) Modified with P-containing SDA (Catalyst 4), (b) non-phosphorus-modified (Catalyst 6), and (c) modified by impregnation with $(NH_4)_2HPO_4$ (Catalyst 7).