Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Influence of the ultrasonic-assisted synthesis on Al distribution in MOR zeolite. From gel to resulting material

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Electronic Supplementary Information

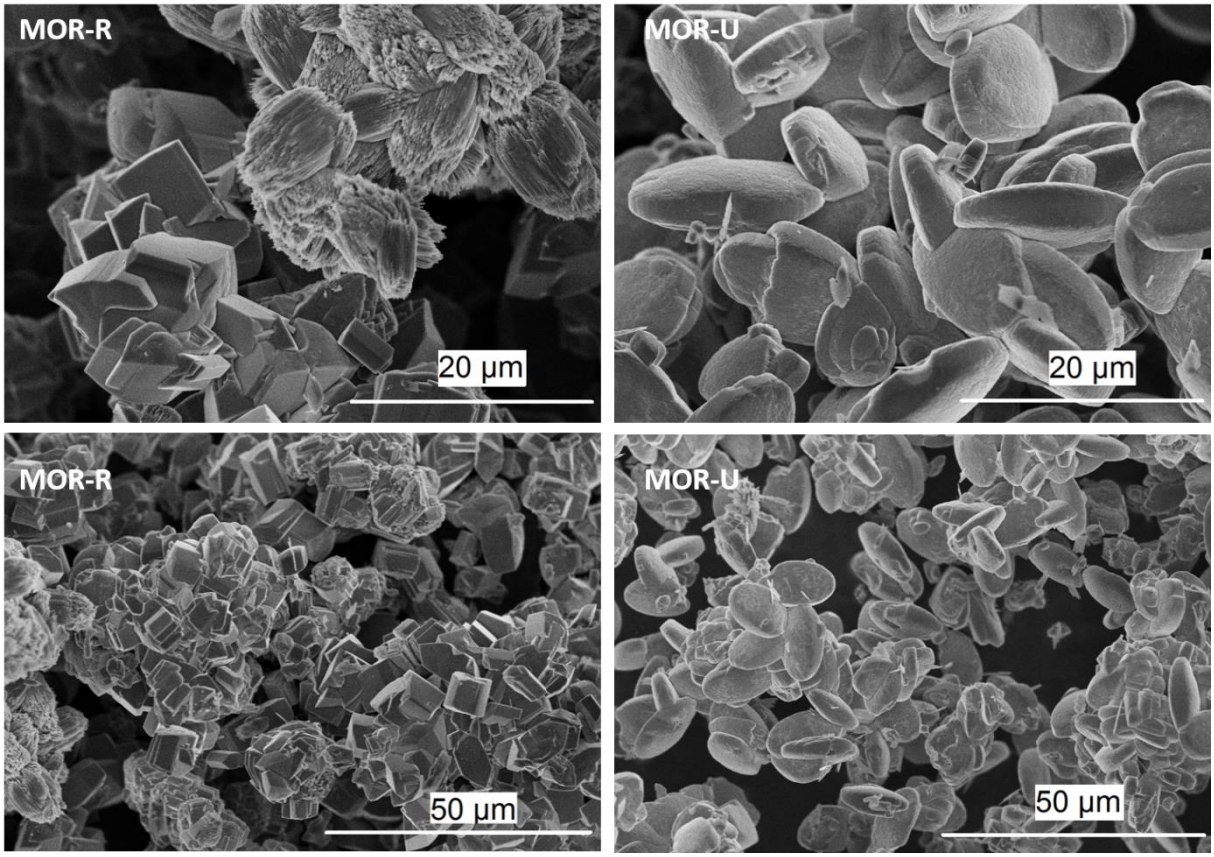


Fig. S1. SEM images of mordenites prepared by US assisted synthesis (MOR-U), and by standard approach (MOR-R).[1]

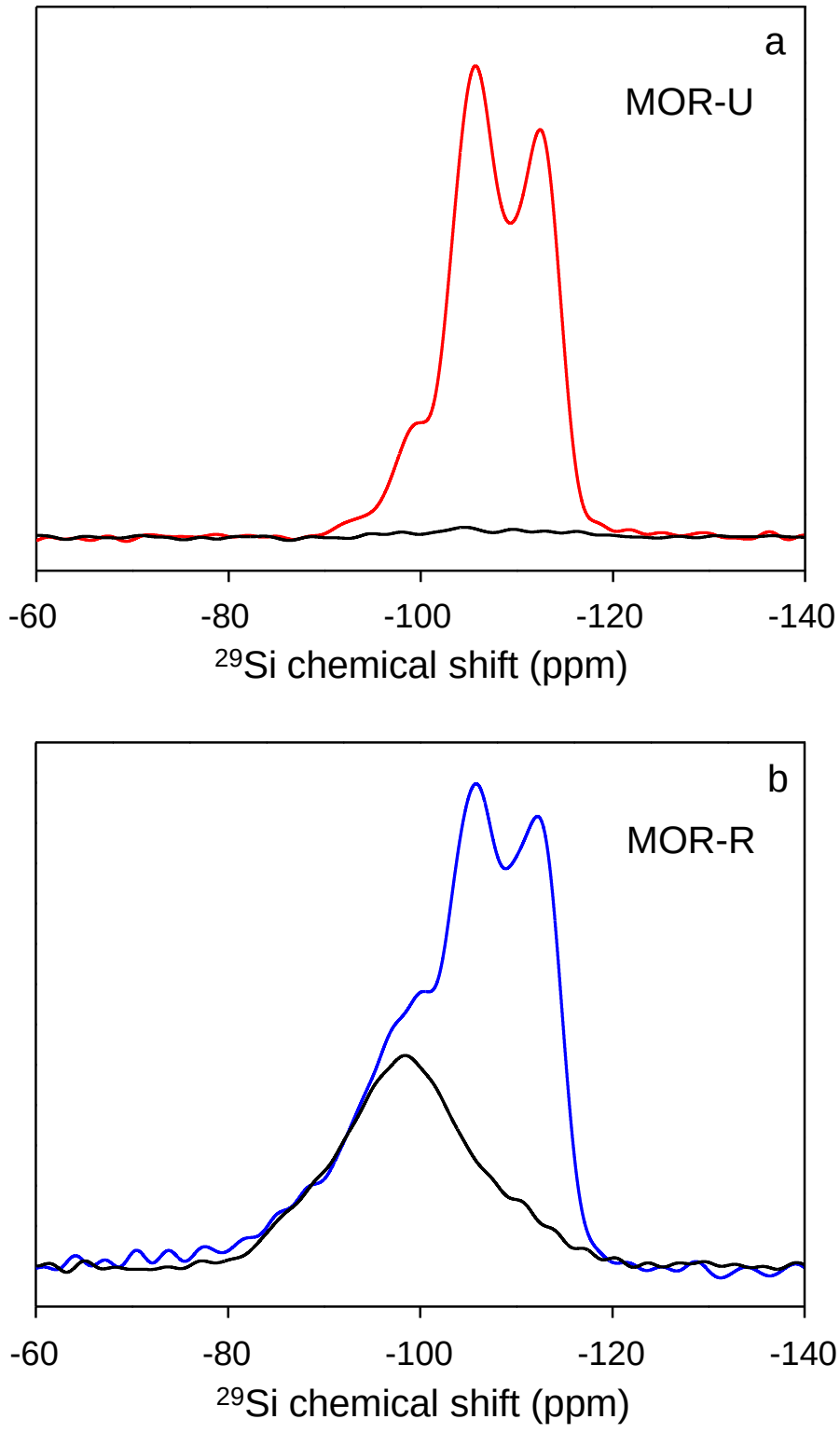
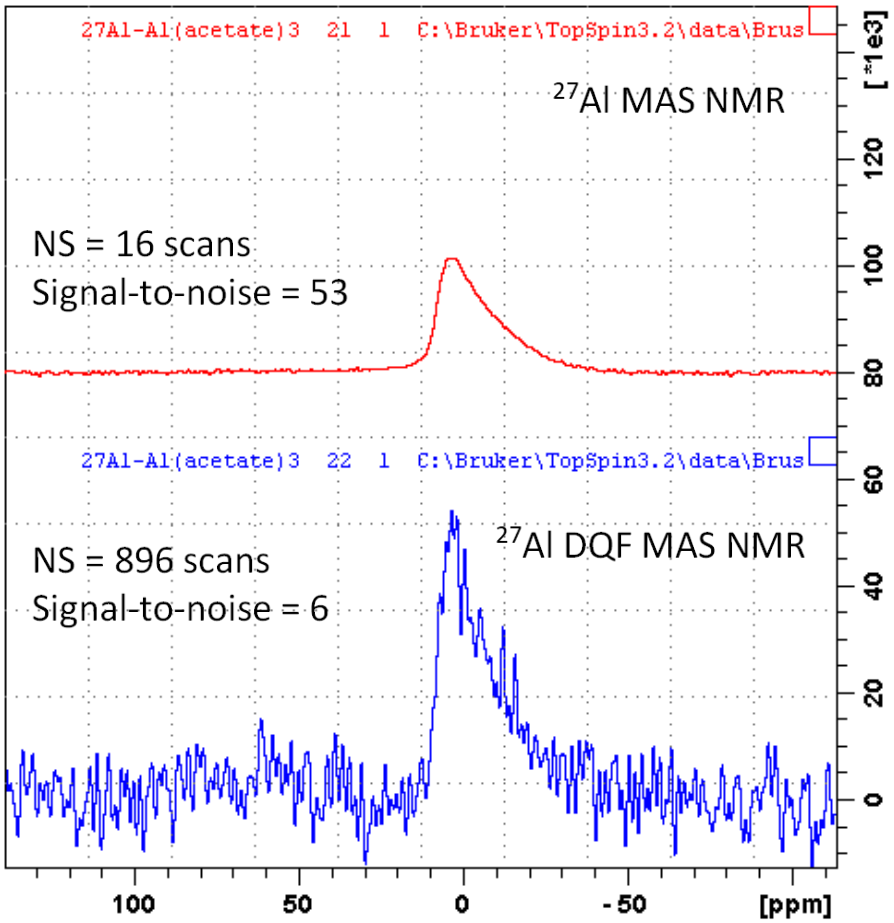


Fig. S2. ^{29}Si MAS NMR spectrum of MOR-U (a), and MOR-R (b). Single-pulse spectra in colors, and ^{29}Si CP MAS NMR spectra in black.[1]

A) **^{27}Al MAS NMR vs. ^{27}Al DQF MAS NMR**



B) **^{27}Al DQF MAS NMR (build-up of DQ coherence)**

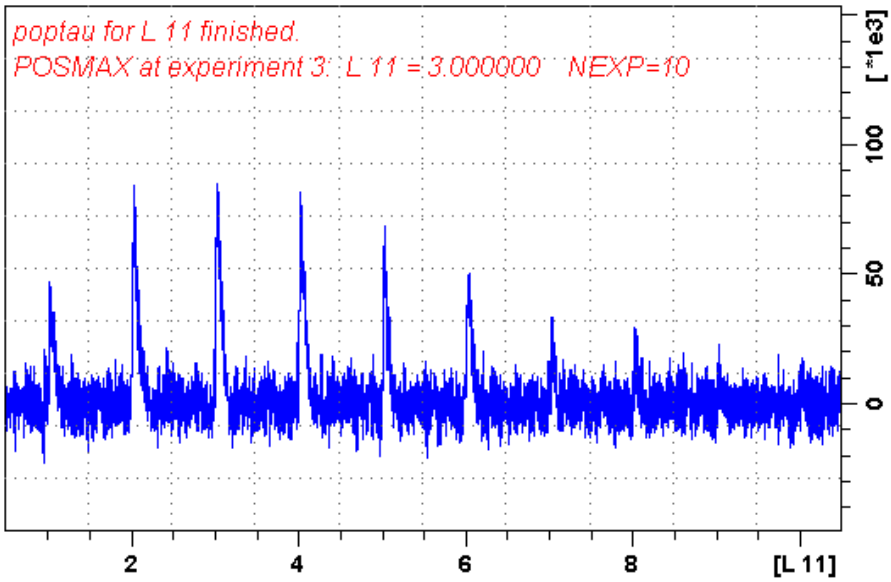


Fig. S3. Comparison of ^{27}Al MAS NMR and ^{27}Al DQF MAS NMR spectra of $Al(CH_3COO)_3$ (a); the build-up of ^{27}Al DQ coherence followed for recoupling periods ranging from 200 to 2000 μs (b).

Table S1. Concentration of SiOHAl calculated basing on the intensity of the band at 3613 cm^{-1} on FTIR spectra of evacuated H-forms of MOR-R and MOR-U, and after d_3-acetonitrile adsorption.

Sample	SiOHAl [mmol/g]	
	evacuation at 450 °C	after CD_3CN interaction
MOR-U	1.9	0.15
MOR-R	2.3	0.05

Extinction coefficient for BOH in FER 4.05 cm µmol taken form from Wichterlova et al..[2]

Table S2. Chemical composition from XRF analysis of all studied mordenite samples in their H-, Na-, and CoNa-forms.

Sample	Si/Al	Na/Al	Co/Al	Al	Na	Co
				mmol/g		
H-MOR-U	5.7	-	-	2.35	-	-
H-MOR-R	8.0	-	-	1.77	-	-
Na-MOR-U	6.8	0.91	-	1.98	1.80	-
Na-MOR-R	6.1	0.82	-	2.32	1.90	-
CoNa-MOR-U	6.0	0.34	0.27	2.24	0.89	0.60
CoNa-MOR-R	8.1	0.39	0.20	1.75	0.80	0.36

References

1. A. Kornas, J. E. Olszówka, M. Urbanova, L. Brabec, J. Rathousky, J. Dedecek and V. Pashkova, *ACS Omega*, 2021, **6**, 2340-2345.
2. B. Wichterlova, Z. Tvaruzkova, Z. Sobalik and P. Sarv, *Microporous Mesoporous Mat.*, 1998, **24**, 223-233.