

### Supplementary Information

#### Low-field NMR relaxation-exchange measurements for the study of gas admission in microporous solids

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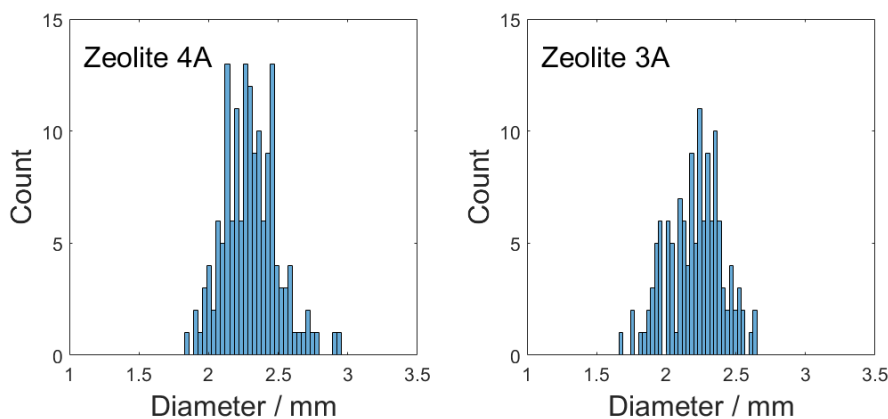


Figure S1. Particle size distributions of the Linde Type A zeolite spheres used in this work. Histogram data was acquired from an image of > 125 particles in each case and analysed using the Fiji distribution of ImageJ.

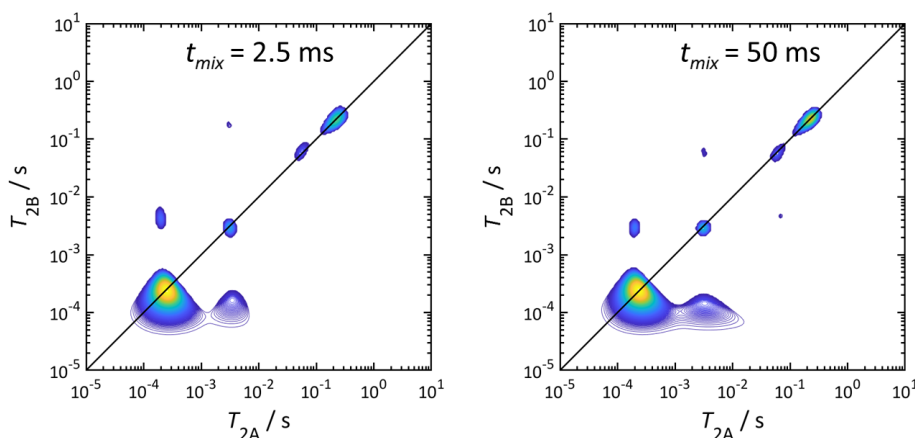


Figure S2. Example 2D relaxation-exchange correlation data obtained from zeolite 4A at 25 bar.

#### Uncertainty bounds in Figure 5

The uncertainty bounds on each data point within Figure 5 panels a and b (35 bar data) illustrate  $\pm 1$  standard deviation of at least three separate measurements at each  $t_{mix}$ . However, due to experimental time constraints it was not possible to repeat measurements at each different mixing time at 25 bar. The uncertainty bounds shown in Figure 5 panel c are therefore given as relative uncertainties, calculated from 3 separate measurements at  $t_{mix} = 10$  ms.