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Supplementary Information

New Journal of Chemistry

Transport properties of catalyst supports studied by pulsed field gradient (PFG) and 2D exchange (EXSY) NMR spectroscopy

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sample	T_1 (s) C_6H_{14} (adsorbed, P=6.10^6 Pa)	T_1 (s) C_6H_{14} (liquid)	T_1 (s) Xe (adsorbed, P=10^6 Pa)
Al_224_b	0.41	2.58	0.55
Al_237_m	0.45	0.44	0.29
Al_204_m	2.51	2.0	8.39
bulk phase	0.88	3.74	25

Table S1. T1 relaxation times of liquid n-hexane impregnated in Al_224_b, Al_237_m and Al_204_m samples, of adsorbed xenon and n-hexane and of the corresponding bulk phases (under same pressure and temperature).

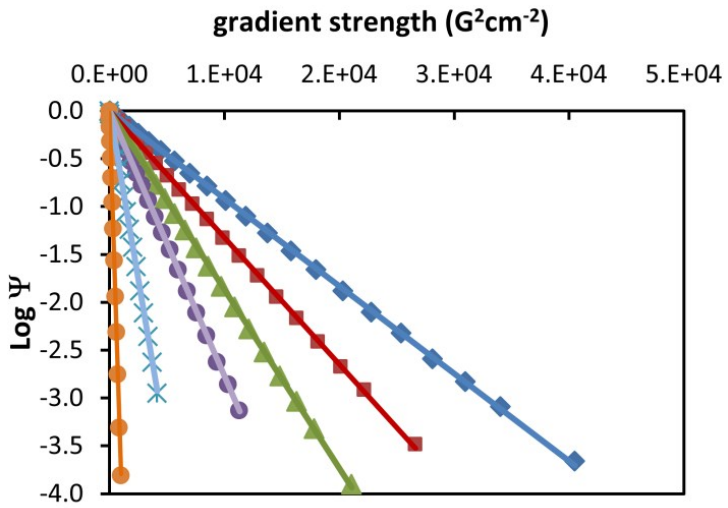

Figure S1. Attenuation curves of liquid n-hexane impregnated in Al_224_b for observation times ranging from: 7 ms (blue lozenges), 10 ms (red squares**)**, 14 ms (green triangles), 20 ms (purple circles), 50 ms (light blue stars), 300 ms (orange circles)**.** The solid lines represent are the least square fits to the data.

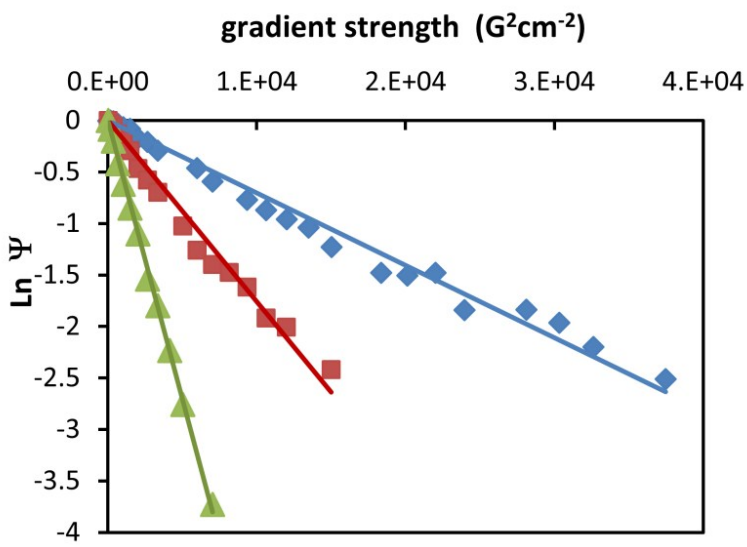

Figure S2. Attenuation curves of liquid n-hexane impregnated in Al_204_m for observation times, 8 ms (dark blue), 20 ms (red squares) and 50 ms (green triangles). The solid lines represent the least square fits to the data.

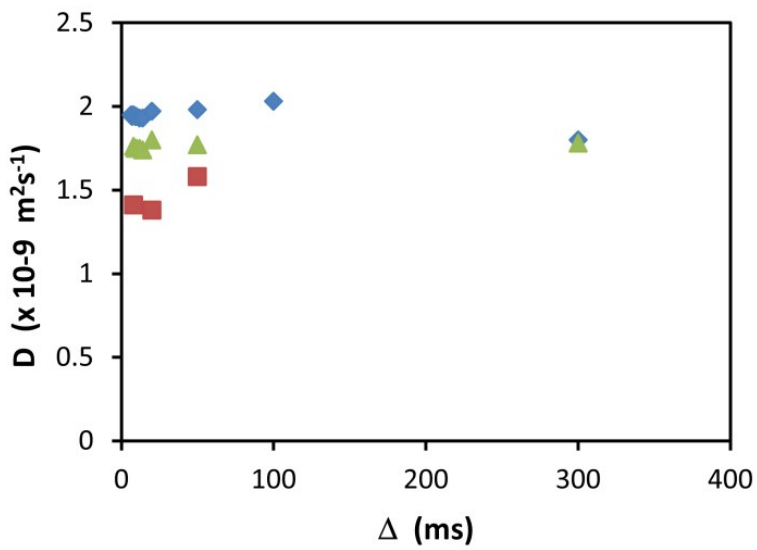

Figure S3. Diffusivity values of liquid n-hexane versus observation time for Al_224_b (blue lozenges), Al_204_m (red squares) and Al_237_m (green triangles).

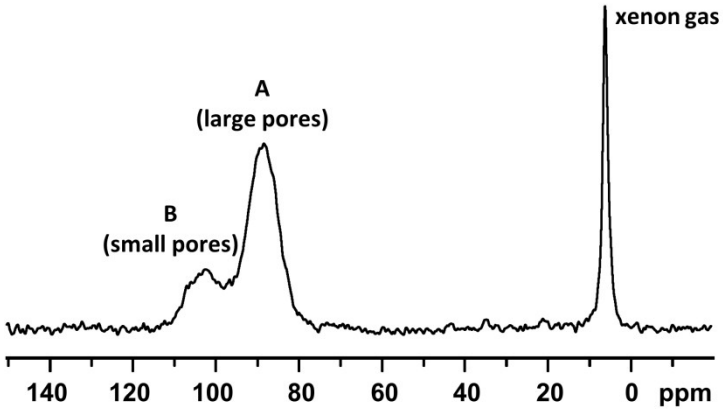

Figure S4. 1D NMR spectrum of xenon adsorbed in bimodal alumina Al_224_b under P = 1 MPa

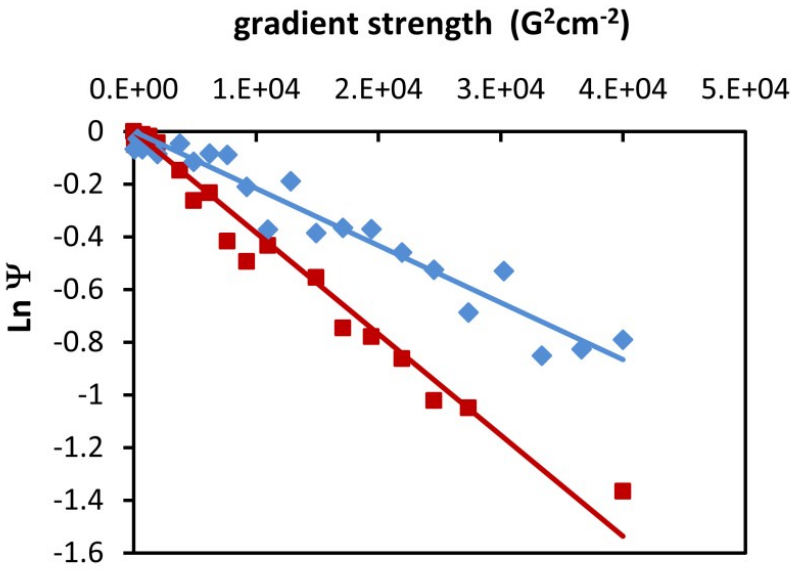

Figure S5. Attenuation curves of xenon adsorbed under P = 1 MPa in porosity A (red squares) and porosity B (blue lozenges) of the bimodal alumina Al_224_b for 2.25 ms observation time. The solid lines represent are the least square fits to the data.

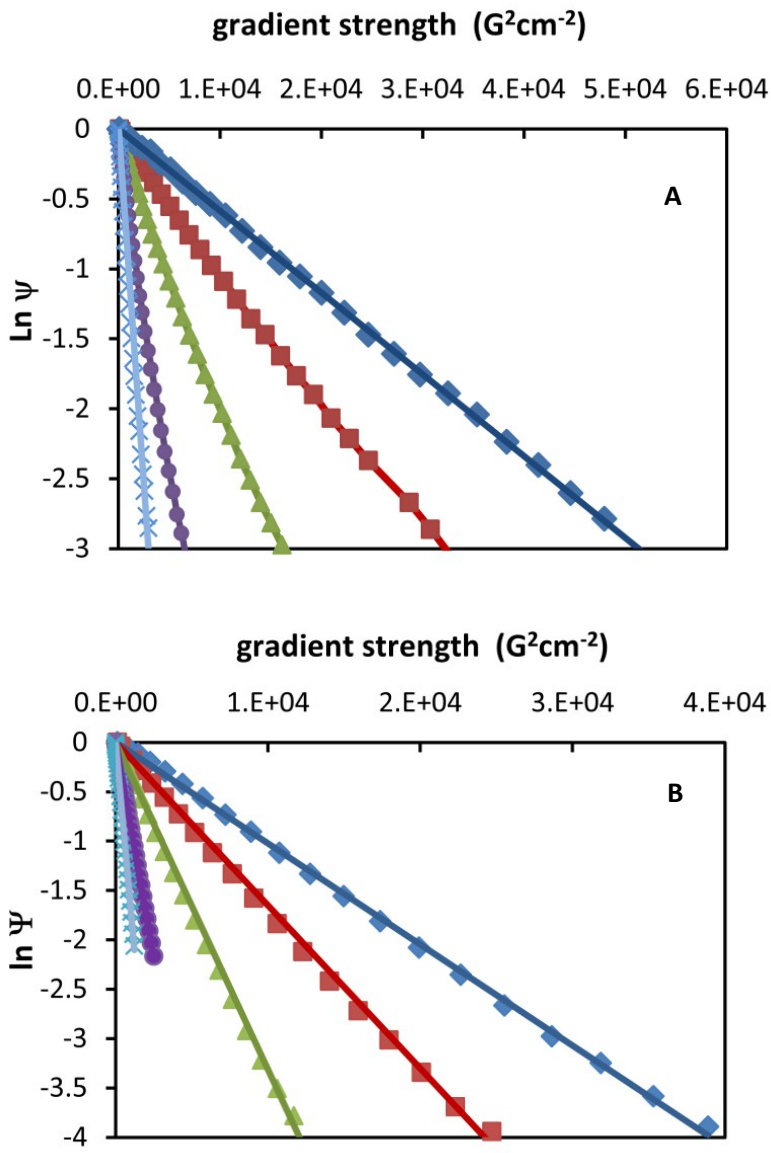

Figure S6. Attenuation curves of n-hexane adsorbed under 55 kPa in Al_224_b (A) and in Al_204_m (B) for observation times: 6.4 ms (blue lozenges), 10 ms (red squares), 20 ms (green triangles), 50 ms (purple circles) and 100 ms (light blue crosses). The solid lines represent are the least square fits to the data.

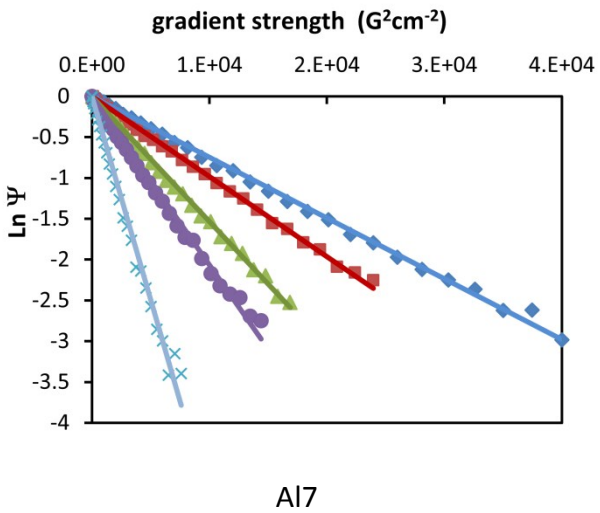

Figure S7. Attenuation curves of n-hexane adsorbed in Al_237_m under 13 kPa for observation times: 7.4 ms (blue lozenges), 10 ms (red squares), 15 ms (green triangles), 20 ms (purple circles) and 50 ms (light blue crosses). The solid lines represent the least square fits to the data.

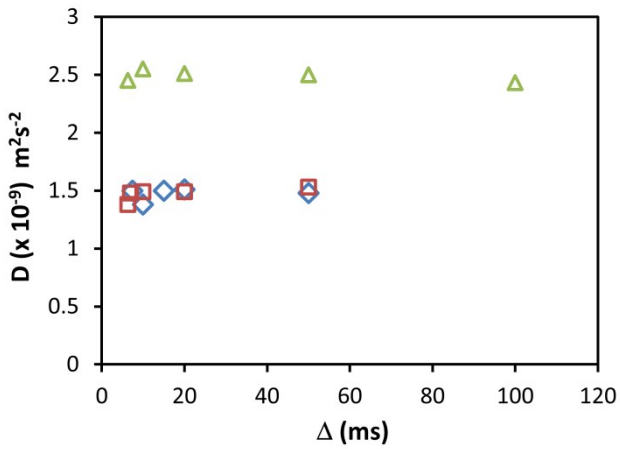

Figure S8. Diffusivity values of adsorbed n-hexane versus observation time for Al_224_b (red squares), Al_204_m (green triangles) and Al_237_m (blue lozenges).

sample	D (m^2s^{-1})	τ
Al_224_b	1.5×10^{-9}	468[(a)]
Al_237_m	1.9×10^{-9}	422
Al_204_m	2.5×10^{-9}	393

[(a)] calculated with the average pore size of the two types of pores of the bimodal alumina.

Table S2. Diffusivity of n-hexane adsorbed, DC6H14, measured with the bi-polar 13-interval pulse sequence and tortuosity (τ) determined using Knudsen diffusivity calculated for each pore size as reference diffusivity.