Supporting Information

Dynamics of Water Confined in Hydrophobic Ordered Mesoporous Carbon

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Fig. S1 High resolution transmission electron microscopy (HRTEM) images of OMCs: a) OMC-1; b) OMC-2.



Fig. S2 Water adsorption/desorption isotherms on OMC-1: grey; OMC-2: red.

Preliminary fitting of NSE data according to equation

$$\frac{I^{NSE}(Q,t)}{I^{NSE}(Q)} = \left\{ A(Q,T) + [1 - A(Q,T)]exp\left[-\left(\frac{t}{\tau(Q,T)}\right)^{\beta(Q,T)} \right] \right\}$$
(S1)

Where all parameters are free:



Fig. S3 Fitting of NSE data according to Equation S1 with the fitting parameters free. Error bars represent one standard deviation.

OMC-1	А	ΔΑ	τ	Δτ	β	Δβ
220	2.1277	0.0474	6.6823e-10	1.17e-10	0.5888	0.0544
200	1.8455	0.0449	1.9438e-09	3.42e-10	0.79496	0.0786
190	1.7047	0.225	5.1284e-09	3.5e-09	0.9005	0.191
180	1.2948	0.152	4.8184e-09	5.2e-09	0.98262	0.409

Table S1 Fitting results for the NSE data according to equation S1. Uncertainties represent one standard deviation.

OMC-2	Α	ΔΑ	τ	Δτ	β	Δβ
220	1.47	0.02	0.6	0.1	0.56	0.07
210	1.55	0.06	2.0	0.9	0.52	0.07
200	1.39	0.07	3.5	2.0	0.63	0.11
190	1.25	0.03	3.0	1.0	1.03	0.24
180	1.19	0.15	9.0	14.2	0.94	0.46
170	1.05	0.01	1.9	5.8	10.75	1360.



Fig. S4 Temperature dependence of the parameter β of equation S1. As no dependence can be discerned beyond the error bars the average value (continuous lines) has been taken for further fitting of the data. Error bars represent one standard deviation.



Fig. S5 Fourier transformed DCS data at T=290 K. Continuous lines are the result of the fits according to Eq. 7 of the main text. Error bars represent one standard deviation.



Fig. S6 a) and b) Q dependence of the amplitude of the Fourier transformed DCS data, which results can be analyzed in terms of a Debye Waller factor: $\frac{I_T^{DCS}(Q,T)}{I_T = 20K} = A_{DW} \exp\left(-\frac{1}{3}\langle u^2 \rangle Q^2\right)$ $\langle u^2 \rangle$ represents the mean squared displacement. represent the total area of the spectra normalized to the corresponding value at T=20 K. These , where

 $\langle u^2 \rangle$ represents the mean squared displacement of the hydrogen atoms. c) and d) Temperature dependence of A_{DW} and $\langle u^2 \rangle$. Error bars represent one standard deviation.



Fig. S7 Q dependence of the parameter p of Eq. 7 of the main text as obtained from an initial fitting of the data as shown in Fig. S3. The Q dependence has been parametrized according to Eq. 12 of the main text (dashed lines). Error bars represent one standard deviation.



Fig. S8 Q dependence of the parameter β for the fitting of the DCS and HFBS data. As no dependence can be discerned beyond the error bars the average value (dashed lines) has been taken for further fitting of the data. Error bars represent one standard deviation.



Fig. S9 Temperature dependence of the parameter β averaged over Q (see Fig. S5) for the DCS and HFBS data. No clear trend can be discerned. Error bars represent one standard deviation.