

# Supporting information

## Bridging Structural and Dynamical Models of a Confined Sodium Nitroprusside Complex

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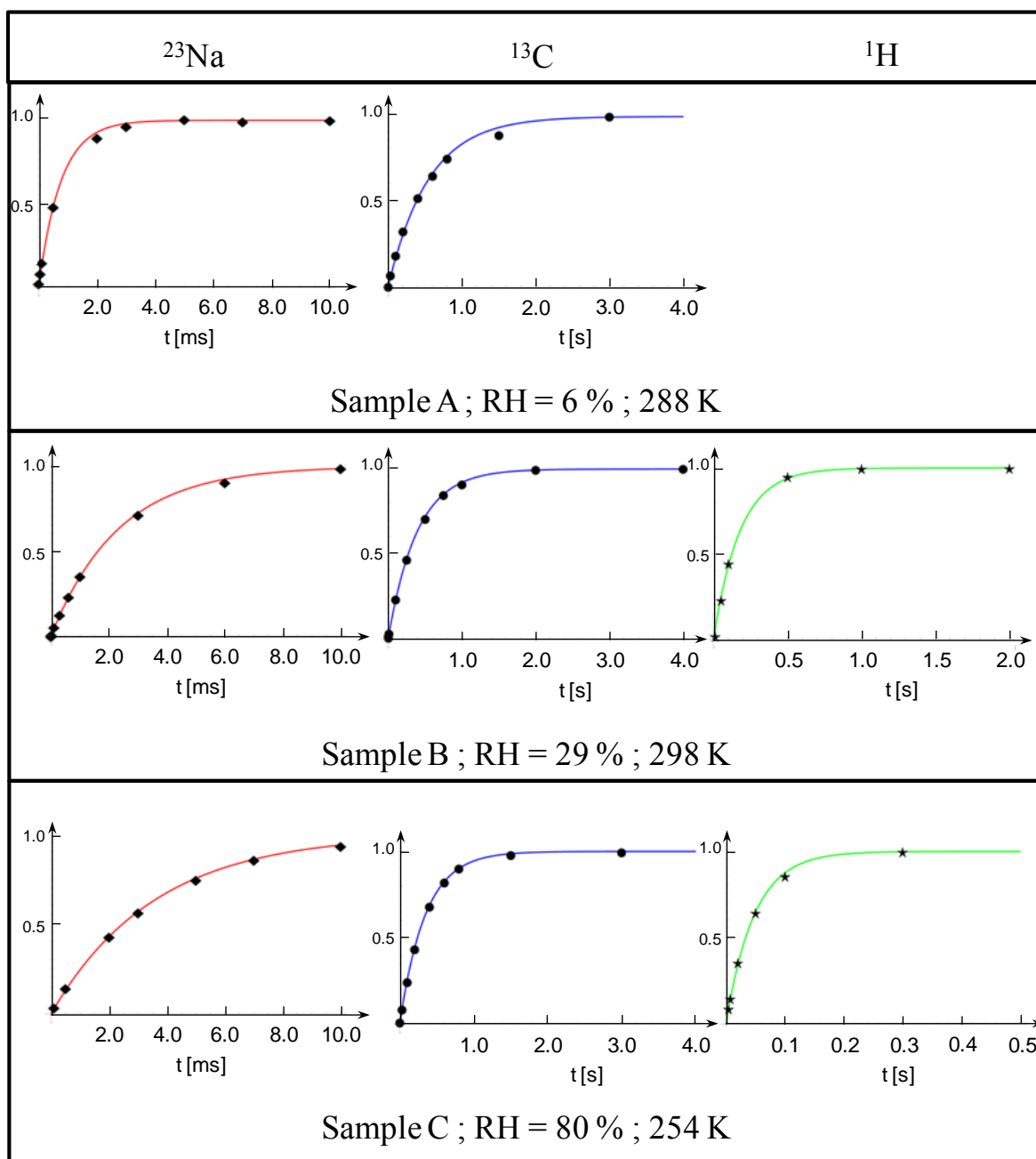


Figure S1 :  $^{23}\text{Na}$ ,  $^{13}\text{C}$  and ( $^1\text{H}$ ) Saturation-recovery data for SNP@SiO<sub>2</sub> samples A, B and C, represented with the corresponding mono-exponential fittings. For a good visual display, some experimental points for long times are not represented.

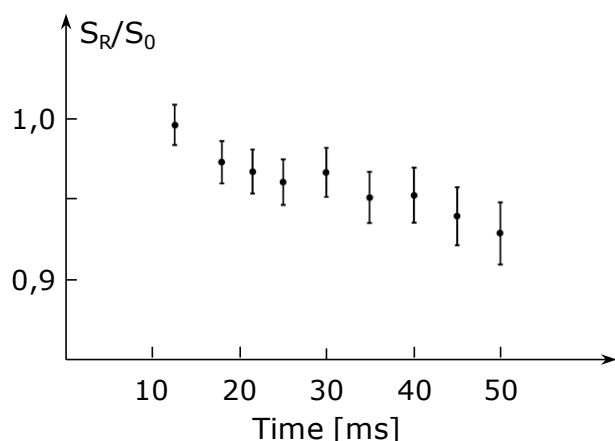


Figure S2 :  $^1\text{H}$ - $^{29}\text{Si}\{^{13}\text{C}\}$  REDOR  $S_R/S_0$  dephasing curve for sample A' SNP@SiO<sub>2</sub>. Since the maximal relative attenuation is not reached and in the host matrix all detected  $^{29}\text{Si}$  spins are not in the vicinity of NP ions, we thus cannot normalize the curve to all interacting  $^{29}\text{Si}$  nuclei. This dataset is therefore not sufficient to allow the quantitative determination of  $^{13}\text{C}$ - $^{29}\text{Si}$  distances or the second Van-Fleck moment. Nevertheless, because maximal relative attenuation is not reached, we can safely assume that the  $^{13}\text{C}$ - $^{29}\text{Si}$  distances are larger than 4Å by comparing the evolution to numerical simulations and analytical calculations.

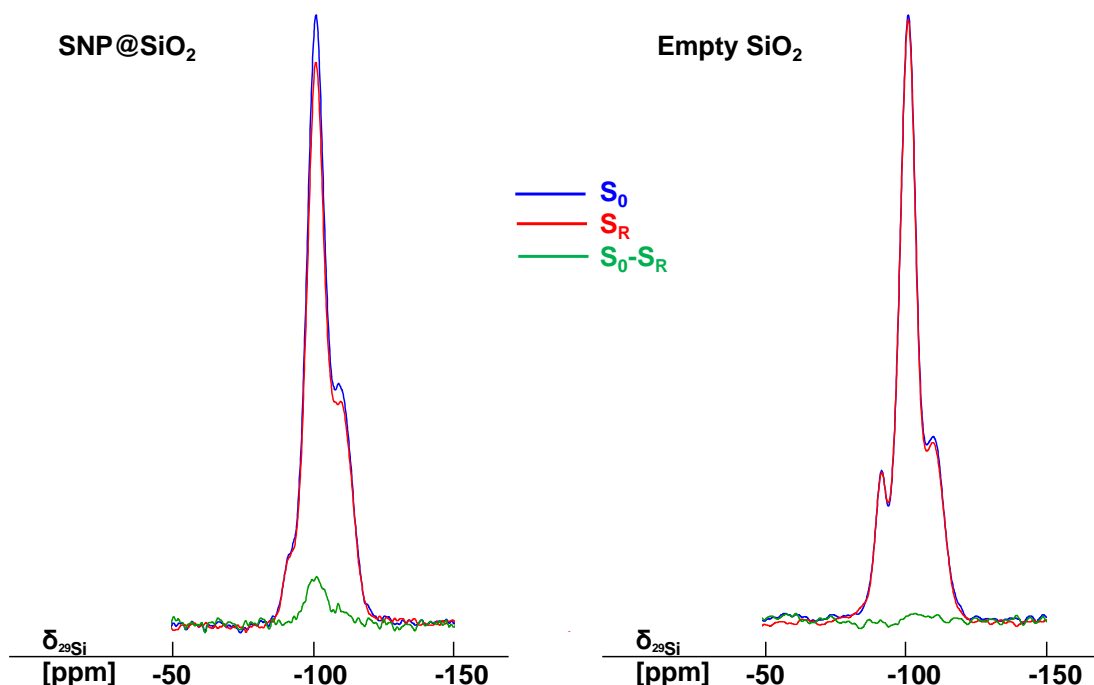


Figure S3 : Comparison between reference and dephased  $^1\text{H}$ - $^{29}\text{Si}\{^{13}\text{C}\}$  REDOR spectra (50ms echo) for sample A' SNP@SiO<sub>2</sub> (left) and an empty SiO<sub>2</sub> matrix (right). Reference S<sub>0</sub> in blue, dephased S<sub>R</sub> in red and difference spectra in green. Comparing the results from both samples verifies that the dephasing does not originate from electronic instabilities.