

50 Years of Neutron Backscattering Spectroscopy



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On the confinement of liquids in mesoporous hosts

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Confinement presents an unprecedented opportunity to produce and study new materials properties on the nanometer scale. Over the past decades, fundamental questions arising from systems confined in nanochannels have been addressed by impregnation of molecular fluids within nano/mesoporous structures. For pore sizes smaller than few tens of nanometers, strong interfacial and finite size effects dominate the static and dynamical properties of the confined phase, revealing physicochemical properties that have usually no equivalent in the corresponding bulk system. Neutron methods possess unique space and time-scale resolutions to address the structure and the molecular dynamics of such systems. Based on illustrations extracted from pioneering works and from the more recent literature as well, we will present a review of the current advances in the field, as well as some openings for future studies.

Primary author: Dr MORINEAU, Denis (CNRS - Institute of Physics of Rennes)

Presenter: Dr MORINEAU, Denis (CNRS - Institute of Physics of Rennes)

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