

Proposal:	6-02-491	Council:	10/2011	
Title:	Dynamics of water confined in cage-like mesoporous silica SBA-16			
This proposal is a new proposal				
Research Area:	Physics			
Main proposer:	BELLISSENT-FUNEL Marie-Claire			
Experimental Team:	BELLISSENT-FUNEL Marie-Claire KITTAKE Shigeharu YAMAGUCHI Toshio YOSHIDA Koji			
Local Contact:	FOUQUET Peter			
Samples:	Silica, D2O			
Instrument	Req. Days	All. Days	From	To
IN11	9	6	31/10/2012	06/11/2012
Abstract: SBA-16 is mesoporous silica that has well defined cage-like pores connected by cylindrical pores one another (Y.Sakamoto et al, Nature, 2000,(408),449). The water confined in SBA-16 shows complex phase behaviour: freezing at a temperature near the homogeneous nucleation temperature of ice independent of pore size, but melting at temperatures dependent on pore size, which has not so far been found for cylindrical mesoporous materials. The proposed experiment aims to investigate the slow dynamic motion of monolayer and capillary condensed (CC) water confined in SBA-16 in the supercooled state on IN11 by neutron spin-echo spectroscopy to reveal the underlying mechanism of freezing and melting of water in SBA-16.				

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