^{3}He impurity effect on the superfluidity for liquid ^{4}He confined in 1D nanoporous medium FSM16

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We have studied the superfluidity of liquid ^{4}He confined in FSM16. It was found that the superfluid response depends on measuring frequency, which indicates a dynamical phenomenon.[1] We report here the superfluid response when a small amount of ^{3}He is added. Three samples of 0.0, 2.0, 4.0 atom % were measured at two frequencies of 2000 and 500 Hz by means of double torsional oscillator. As ^{3}He concentration was increased, the superfluid response shifted to lower temperature than pure liquid ^{4}He. Concerning the frequency dependence, the response at 500 Hz was suppressed by several tens mK from 2000 Hz for 2.0 and 4.0 % ^{3}He.

1. J. Taniguchi, K. Demura, M. Suzuki, *J. Low Temp. Phys.*, **171**, 644-649 (2013).

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