

Superfluid ^3He in Planar Aerogel

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We report results of experiments with liquid ^3He confined in a high porosity anisotropic nanostructure which we call planar aerogel. This aerogel consists of nanofibers (with diameters ~ 10 nm) which are randomly oriented in the plane normal to the specific axis. We used two samples of planar aerogel prepared using different techniques. We have found that at all used pressures (s.v.p – 29.3 bar) on cooling from the normal phase of ^3He the superfluid transition in both samples occurs into an Equal Spin Pairing superfluid phase. NMR properties of this phase qualitatively agree with the properties of the ABM superfluid state but there are essential quantitative differences. Possible reasons of that will be discussed in the talk. The obtained superfluid phase diagrams will be also presented.

Section: QF - Quantum Fluids

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