

## **$^3\text{He}$ adsorption processes on aerogel surface and their influence on $^3\text{He}$ spin kinetics**

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Supreme role of adsorbed  $^3\text{He}$  layer on aerogel surface in processes of nuclear magnetic relaxation was studied earlier <sup>1</sup>. In present work significant influence of surface heterogeneity on the processes of  $^3\text{He}$  nuclear magnetic relaxation at temperatures 1.5-4.2 K in two types of silica aerogel (aerogel with filamentary structure and powder aerogel with particle size 1-10 mkm) is discovered. This influence appears, for instance, in differences of  $^3\text{He}$   $T_1$  relaxation times for small portion of  $^3\text{He}$  adsorbed at different temperatures. Binding energy data of  $^3\text{He}$  on both silica aerogels was obtained experimentally. Distributions of binding energy do not differ significantly for both aerogel samples and lies in wide range up to 250 K. Adsorbed  $^3\text{He}$  molecules with binding energies 60-250 K play supreme role in processes of nuclear magnetic relaxation of gaseous and liquid  $^3\text{He}$  in aerogel.

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