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CONDUCTING NMR EXPERIMENTS AT SUPERCRITICAL PARAMETERS OF STATE

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NMR spectroscopy is an indispensable method for analyzing the structure and dynamics of molecules in liquids. Modern NMR approaches allow obtaining direct information about the geometrical configuration of molecules in liquids, which is very important when solving problems of modern physical chemistry of fluids. However, the NMR method is extremely problematic when it touches upon experiments at pressures above 100 bar. This report presents the peculiarities of a high pressure NMR experiment, as well as the effect of the NMR cell on the resolution of the spectrometer. In addition, the latest results obtained using the unique molecular fluid spectroscopy instrumentation at G.A. Krestov Institute of Solution Chemistry will be presented and discussed together with the development vistas and possibilities of this method.

The experimental data were obtained using the molecular fluid spectroscopy facility of G.A. Krestov Institute of Solution Chemistry, RAS.

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- [1] Khodov I.A., Dyshin A.A., Ivlev D.V., Kiselev M.G., High pressure NMR spectroscopy technique as applied to conformational equilibrium research of small druglike molecules at supercritical conditions, VIII Scientific and Practical Conference with international participation "Supercritical Fluids (SCF), 2017, 199.