

NEUTRON INVESTIGATIONS
OF THE INTERACTION OF SURFACTANT
MOLECULES IN NON-POLAR SOLVENT

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S u m m a r y

Behavior of non-saturated (oleic acid) and saturated (stearic and myristic acids) monocarboxylic acids in a non-polar organic solvent (deuterated benzene) is studied by means of small-angle neutron scattering (SANS). Values of the second virial coefficient and the volumes of molecules of the acids are obtained from experimental data and compared. Oleic and myristic acids are found to be solvated in benzene rather similarly and display a weak attractive interaction in addition to the steric repulsion. But molecules of stearic acid display a very strong attractive interaction, which results in the formation of big aggregates for volume fractions of the acid higher than 6%. The results obtained explain some peculiarities of the different stabilization properties of these acids in ferrofluids.