SMALL-ANGLE NEUTRON SCATTERING ON MAGNETIC FLUIDS STABILIZED BY MONOCARBOXYL ACIDS

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S u m m a r y

Using the method of variation of a contrast in the small-angle scattering of non-polarized thermal neutrons, we have investigated the magnetic liquid systems on the basis of water having steric stabilization. As magnetic nanoparticles, we used magnetite particles covered by lauric or myristic acid. Applying a new method of basic functions to the study of polydisperse superparamagnetic systems, we have got data on the structural features of magnetic fluids for the size range (1÷100) nm. We have found that the form of aggregates of magnetic particles depends on the type of a surfactant stabilizing the magnetic liquid system. It is shown that the samples treated by lauric acid have the best stabilization properties.