

CONCENTRATION SPECIFIC
FEATURES OF THE DYNAMICS OF MOLECULES
IN SOLUTIONS WATER–PROPYL ALCOHOL

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S u m m a r y

By the method of quasielastic scattering of slow neutrons, we study the dynamics of molecules in water–propyl alcohol solutions of various concentrations at a temperature of 281 K. In experiments, we registered specific features of the concentration dependence of the efficient self-diffusion coefficient and its one-particle contribution, namely: the presence of two minima in the regions of (0.04÷0.05) mass fractions (m.f.) and (0.18÷0.22) m.f. of alcohol and a monotonous increase of the diffusion coefficient at concentrations greater than 0.4 m.f. of alcohol. The results of neutron-scattering experiments are compared with those of calculations of a structure of the mentioned solutions executed by the Monte-Carlo method. It is shown that the minima of the concentration dependence of the self-diffusion coefficient correspond to certain local structures of the solution under study.