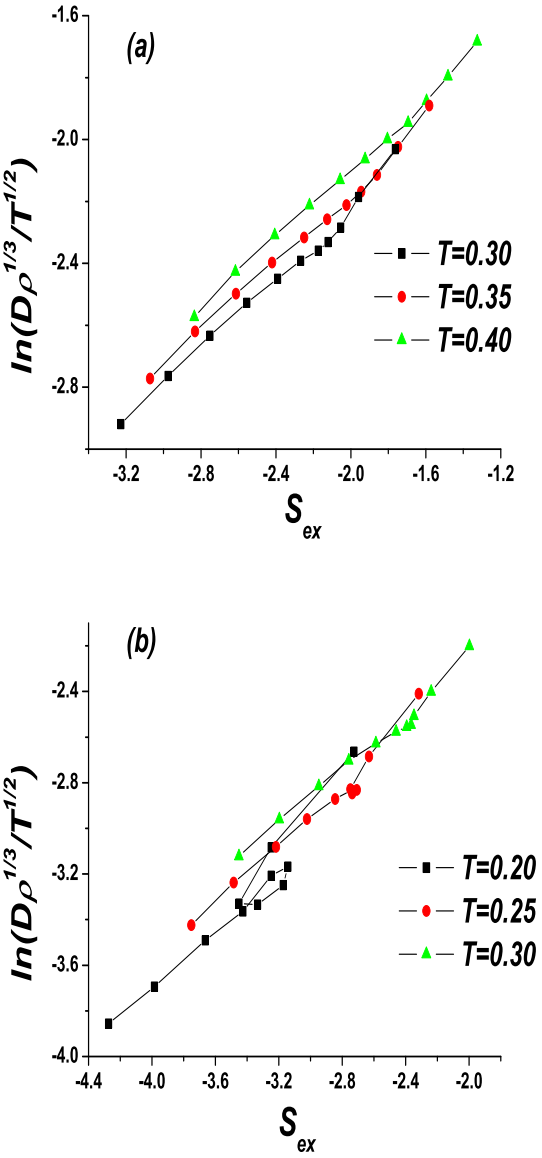

FIG. 14: The diffusion scaling with the excess entropy at (a) high and (b) low temperatures for the soft repulsive shoulder system.

by a mixture of hard spheres of two different sizes. The concentration of components of such mixture is pressure and temperature dependent. As it was shown in literature (see, for example, [69]) the excess entropy scaling holds for binary mixtures too. But in the case of quasi-binary mixture since the effective concentration depends on the pressure and temperature the behavior becomes more complex. This brings to the breakdown of the scaling rules for this case.

Obviously, the systems with bounded potentials can not be approximated by hard sphere potentials too. It seems that this may be the reason of violation of Rosenfeld entropy scaling for these systems.

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