

Nanoscale physics

Interaction-induced light scattering in thin neon film confined between graphite slabs: MD study

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The detailed knowledge of the properties of fluids in a confined space is important due to their potential applications in nanoscale sensors [1] and nanoelectronic devices [2]. The dynamics of a thin neon layer placed between parallel graphite walls has been studied by the molecular dynamics simulation method [3]. The interaction-induced light scattering spectra [4] of neon layer and the corresponding time correlation functions for several layer's thicknesses have been calculated. The substantial difference between the depolarized light scattering spectra of neon atoms located between narrow and wide graphite slots were observed. The total correlation function of neon polarizability anisotropy does not depend linearly on the slot width for the studied distances between graphite walls. In the innermost region of confined neon layer the increase mobility of neon atoms has been observed.

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