

Nanostructured surfaces

Peculiarities of Density Spatial Profiles of Fluid in the Field of Rigid Wall

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In modern development of nanosciences, the study of interfaces is very important. Interaction on interfaces plays a crucial role to nanostructure formation and strongly influence on its properties. For example, the laser ablation of solid wafer in fluid is widely used for nanocluster formation. Clearly, that efficient usage of these techniques has been based on understanding of physical nature of interaction between solid and liquid.

In the paper, the statistical approach for evaluation of thermodynamical functions of Lenard-Jones fluid in the potential of rigid wall is applied. The finite action distance of this potential is taken to simulate the change in density of adjusted fluid to solid surface. In the framework of this approach the conditions of dramatically increasing fluid density is achieved. It is shown that the quantities and quality estimation are in good correlation with the experimental and theoretical results obtained early[1 – 4].

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4. *Gordillo M. C., Martí J.*, Water on graphene surfaces // *Journal of Physics: Condensed Matter.* –2010. –**22**. –P. 284111.