

Equilibrium distribution of clusters in the size of the finite system

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*Simulation laboratory. Institute of Thermal Physics at SB RAS. Pr. Lavrent'eva St., 1.
Novosibirsk, 630090. Russia. Phone: +7 (383) 354-20-17. E-mail: tepliza@academ.org*

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Abstract

Methods of statistical thermodynamics were used to find the equilibrium distribution of clusters (nanoparticle) by sizes in the system formed of finite numbers of molecules (atoms), being in the long confinement at constant total energy (isolated system). On the basis of the kinetic nucleation equation using single droplet approximation the distribution function was found both for isolated and for the isothermal systems. The results are compared with the data of computer simulation of finite two-dimensional systems.