

Abstract Submitted
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Size- and Temperature- Dependent Crystal Growth Rates XIANMING BAI, MO LI, Georgia Institute of Technology — Using molecular dynamics simulations and a crystal/melt coexistence model, we have calculated the size-dependent crystal growth rates of a Lennard-Jones system over a wide range of undercooling temperatures. Our results show that the growth rate or interface moving velocity decreases substantially with the increasing system size. It is found that the system fluctuations are related to the finite-size effects. By treating the atomic site acceptance ratio as a function of temperature and system size rather than a constant, we modified the collision-controlled model which fits the simulation results well.

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