

Abstract Submitted
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Heterogeneous crystallization of hard-sphere colloids near a wall¹ KYRIL SANDOMIRSKI, Heinrich-Heine-Universitaet Duesseldorf, IPkM, UniversitaetstraÙe 1, D-40225 Duesseldorf, Germany, ELSHAD ALLAHYAROV², Physics Department, CWRU, Cleveland OH, USA, HARTMUT LÖWEN, Heinrich-Heine Universitaet Duesseldorf, Institut fuer Theoretische Physik II, UniversitaetstraÙe 1, D-40225 Duesseldorf, Germany, STEFAN EGELHAAF, Heinrich-Heine-Universitaet Duesseldorf, IPkM, UniversitaetstraÙe 1, D-40225 Duesseldorf, Germany — Confocal microscopy experiments and equilibrium Brownian Dynamics computer simulations were combined to investigate heterogeneous crystallization near a hard wall in a suspension of hard-sphere colloids. Particles near the wall initially rearrange, before an extended regime of steady-state crystal growth is observed. Finally, a depletion zone develops which slows down the progressing crystal-fluid interface. In good agreement between experiment and simulation, the steady-state growth velocity shows a maximum in its dependence on the bulk volume fraction. Beyond this, these techniques allow us to obtain local microscopic information on the level of individual particles, namely the temporal evolution of the density profiles in the fluid and crystal phase as well as the width of the interface.

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