

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Crystal Nucleation behavior near gas-liquid spinodal line** LIMEI XU, Boston University, GIANCARLO FRANZESE, Universitat de Barcelona, SERGEY V. BULDYREV, Yeshiva University, H. E. STANLEY, Boston University — The complex problem of crystal nucleation is currently at stage. Using molecular dynamics simulations, we study the crystal nucleation behavior of colloids modeled by hard-core particles with narrow square well attractive potential. For this system the liquid gas critical point lies below the gas-crystal equilibrium line. We investigate how the nucleation rate depends on the pressure and density, in particular in the vicinity of the liquid-gas spinodal. We find that there is a correlation between nucleation rate and spinodal line. We interpret our results using classical nucleation theory.

Limei Xu  
Boston University

Date submitted: 30 Nov 2005

Electronic form version 1.4