Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

**Kinetics of phase separation in a dilute short-ranged square-well system: a molecular dynamics study** HONGJUN LIU, Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, Troy, NY 12180, SHEKHAR GARDE, SANAT KUMAR — We report on a molecular simulation study of the phase separation in a dilute short-ranged square-well system. The phase diagram of model displays solid-fluid equilibrium, with a metastable fluid-fluid separation. Equilibrium fluid configuration are quenched along the isochore at a sequence of temperatures and followed during the time evolution. We present the clear evidence of the metastable fluid-fluid separation, of the homogeneous crystallization and of the kinetically arrested gel. We also discuss the relevance of our simulation to the "crystallization slot".

Hongjun Liu
Rensselaer Polytechnic Institute

Date submitted: 30 Nov 2005 Electronic form version 1.4