

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Liquid-vapor interface in two-dimensional colloid-polymer systems** MARIAM NOURI, Rice University, RYAN MCGORTY, VINOTHAN MANOHARAN, Harvard University, MARC ROBERT, Rice University — The phase diagrams of two-dimensional aqueous colloid-polymer systems are determined experimentally. Mixtures of fluorescent polystyrene spheres and polyacrylamide are confined between a glass slide and a coverslip to construct a two-dimensional system. Liquid–vapor phase coexistence between a colloid-rich phase (colloid liquid) and a polymer-rich phase (colloid vapor) occurs at intermediate polymer concentrations, while vapor–solid phase coexistence between a polymer-rich liquid and a colloid-rich solid is observed at high polymer concentrations. For the interface between the coexisting liquid-vapor phases, the interfacial thickness and tension are measured using image analysis and Fourier analysis of the capillary waves. Close to the critical point, the fluctuations of the interface become large and can no longer be decomposed into waves. It is also observed that the colloid-rich solid and liquid domains coarsen mainly by Ostwald ripening in a short time and long time regime.

Mariam Nouri  
Rice University

Date submitted: 18 Nov 2012

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