

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Simulation of blade printing of colloidal morphologies ALEXANDER WAGNER, ALAN DENTON, ERIK HOBBIE, Department of Physics, North Dakota State University — We present a new four-component multi-phase lattice Boltzmann simulation method and its application to blade printing of colloidal morphologies. We consider a solution of colloids and polymers that is applied as a thin film on a substrate. As the mixture is exposed to the surrounding air the solvent evaporates leaving the colloid-polymer mixture unstable to phase-separation. Our new method predicts that as a function of the application speed, initial concentrations, and film thickness different morphologies can be generated.

Alexander Wagner
North Dakota State Univ

Date submitted: 12 Nov 2014

Electronic form version 1.4