Electronic Supplementary Material (ESI) for Soft Matter.

Movie S1. Crystal Growth in a Rapid Quenching Experiment.

This movie depicts the crystal growth during a rapid quenching process at an effective temperature of $\tilde{T} \approx 0.081$, corresponding to a vertical magnetic field strength of $H = 7.0\,Oe$. Each frame of the movie consists of (left) the raw experimental image and (right) the false-color version showing the crystal domains as identified by image processing. Gray particles are not a part of crystalline structures. The experimental time is indicated at the top of the movie.

Movie S2. Free-defects Simulation of Rapid Quenching at $\tilde{T} \approx 0.076$ (particles confined to a 2-D plane).

This movie shows a Brownian dynamics simulation of a rapid quenching process at $\tilde{T} \approx 0.076$. Magnetic and nonmagnetic are colored gray and red, respectively.