

Abstract Submitted  
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**Confocal Microscopy of Hard Sphere Crystal Growth** MATTHEW SULLIVAN, Princeton University / Schlumberger-Doll Research, KUN ZHAO, ANDREW HOLLINGSWORTH, P.M. CHAIKIN, Princeton University / New York University, WILLIAM B. RUSSEL, Princeton University — Classical crystal growth is determined by the competition between chemical potential differences and surface tension. We use confocal microscopy to measure three dimensional crystal growth in a density matched suspension of PMMA-PHSA colloidal particles. The crystal is nucleated from a surface template that forces growth of face-centered-cubic crystals. The growing crystal surface is rough on the scale of several particle diameters, but the average growth rate is well described by the classical Wilson-Frenkel growth law. The local growth rate does depend on the roughness of the surface, however, and this growth rate variation provides a measure of interfacial surface tension.

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