

## Dry Hard: Controlling Cracks in Drying Suspension Drops

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1-mm drops of a 10% aqueous suspension of polystyrene nanoparticles dry on glass substrates with different deposition contact angles. The nanoparticles assemble into solid deposits that crack due to an evaporation-induced buildup of stresses.

At a larger contact angle (left image, top view), the deposit delaminates from the substrate, as evidenced by circular interference fringes. Delamination relieves the stresses in the deposit and the final deposit has large uncracked segments. At a smaller contact angle (right image), the deposit remains attached to the substrate and a multitude of orthoradial cracks emerge to relieve the stresses.

The selection of stress relaxation *via* delamination or *via* orthoradial cracks that occurs for small differences in the contact angle highlights the sensitivity of the pattern selection to changes in the deposit thickness profile, which makes drying cracks hard to control.

