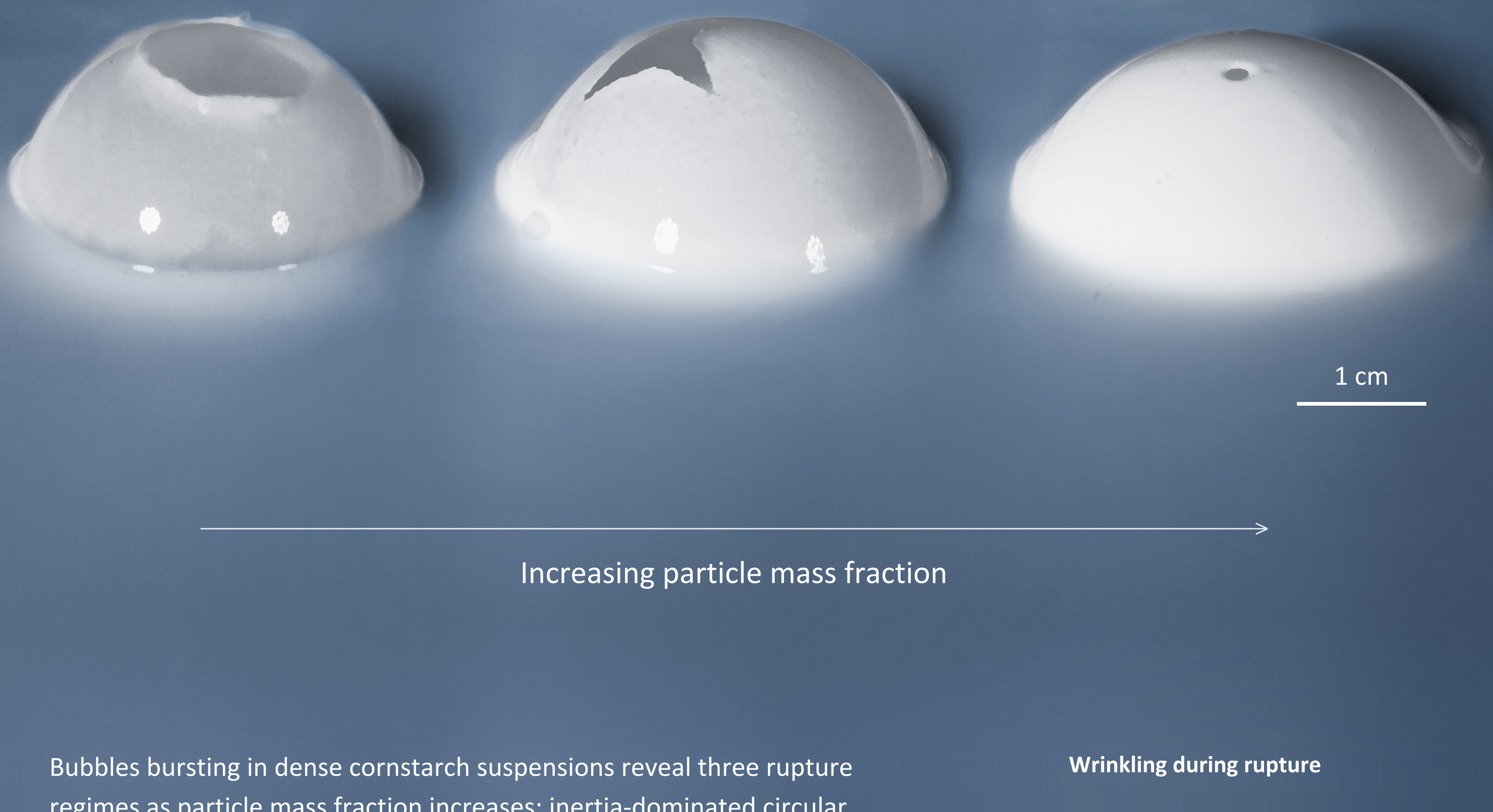
Fractured Flows

Bursting Bubbles in Dense Suspensions

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Bubbles bursting in dense cornstarch suspensions reveal three rupture regimes as particle mass fraction increases: inertia-dominated circular opening, fracture, and viscosity-dominated circular opening. In the fracture regime, the suspension film dynamically solidifies as it ruptures. Solidification occurs for mass fractions below those associated with discontinuous shear thickening in bulk suspensions, suggesting distinct rheology in thin suspension films. The fractured films also develop wrinkles. These transient morphologies show how particle concentration can be used to tune bubble rupture.

Wrinkling during rupture

