

Swelling-induced wrinkling of floating granules

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Hygroscopic granules (e.g., basil seeds) float at the air–liquid interface and swell upon hydration. Their collective expansion generates in-plane compressive stresses. Beyond a critical strain, the system undergoes an out-of-plane buckling instability, producing self-organized wrinkle patterns. This simple system provides a model for growth-induced instabilities in soft interface.

*Blue dye was added after full swelling for visualization

