

Abstract Submitted
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The shear-driven failure of liquid-infused surfaces and superhydrophobic surfaces.¹ YING LIU, Princeton University, JASON WEXLER, Oth-erlab, HOWARD STONE, Princeton University — We study experimentally the failure of liquid-infused surfaces under shear. Most of the previous work on this topic focuses on situations where the infused fluid is much more viscous than the external fluid. Here, we study the opposite limit: the viscosity of the infused fluid is much lower than that of the external fluid. Also, we study how the air-filled cavities of superhydrophobic surfaces fill with water under shear, which is another topic that is little studied as compared with pressure-driven failure. In each case we systematically vary the flow rate and characterize both transient and steady-state responses.

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