

Abstract Submitted
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X-ray imaging of wetting ridge on a soft solid¹ SU JI PARK, BYUNG MOOK WEON, JI SAN LEE, JUNG HO JE, Pohang University of Science and Technology, ROBERT W. STYLE, GUY K. GERMAN, ERIC R. DUFRESNE, Yale University, STEVE WANG, Argonne National Laboratory — Softness of solids affects a microscopic deformation, called a ‘wetting ridge’, at a three-phase contact line. We present a direct visualization of wetting ridges by high-resolution x-ray imaging, which shows a spatial transition between elastic and fluidic wetting behaviors on a soft solid. The fluidic behavior that corresponds to Neumann’s triangle occurs at the vicinity of the triple point while the elastic deformation at $|x| < l_e$ (the elasto-capillary length). Real-time x-ray imaging clearly shows temporal variation of wetting ridge.

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