Electronic Supplementary Material (ESI) for Soft Matter.

Supplementary information

Droplet leaping governs microstructured surface wetting

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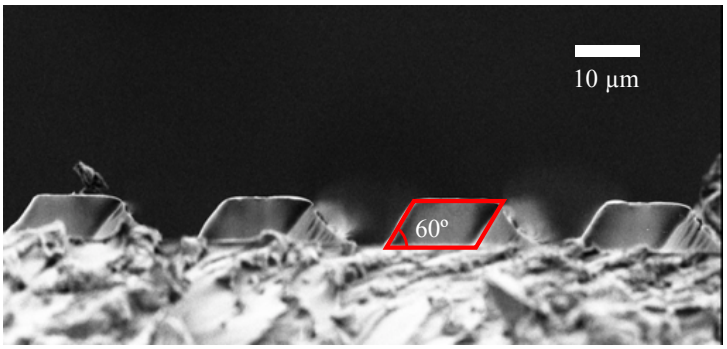
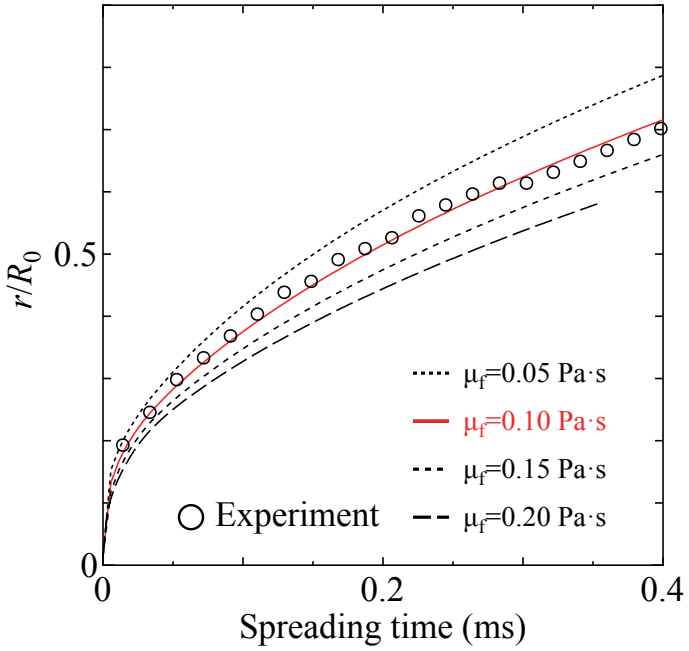


Supplementary figure 1: Cross sectional scanning electron microscopy image of the microstructured surface.



Supplementary figure 2: Comparison of experimental spreading radius on a smooth surface and simulated radius with different line friction parameter μ_f =0.05 , 0.10. 0.15, 0.20 Pa·s to identify the line friction parameter.

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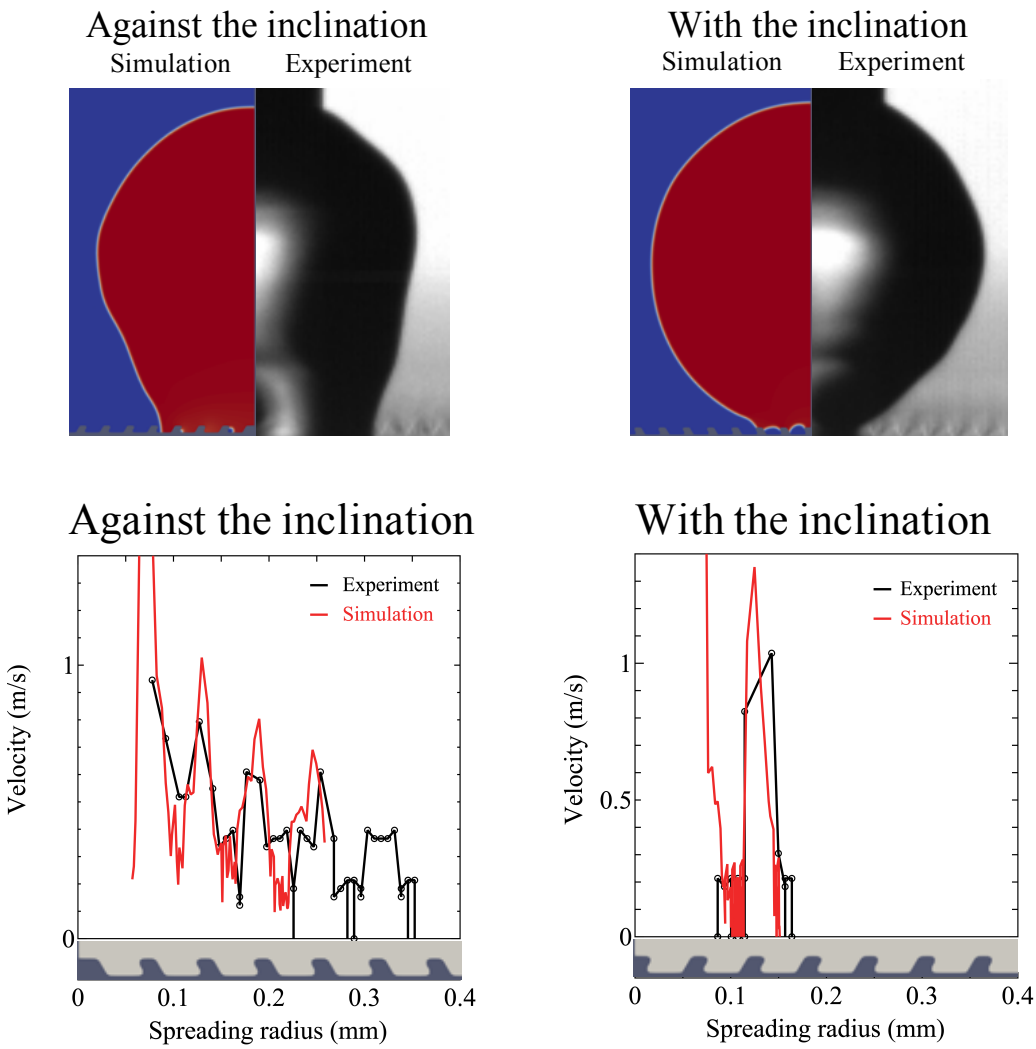
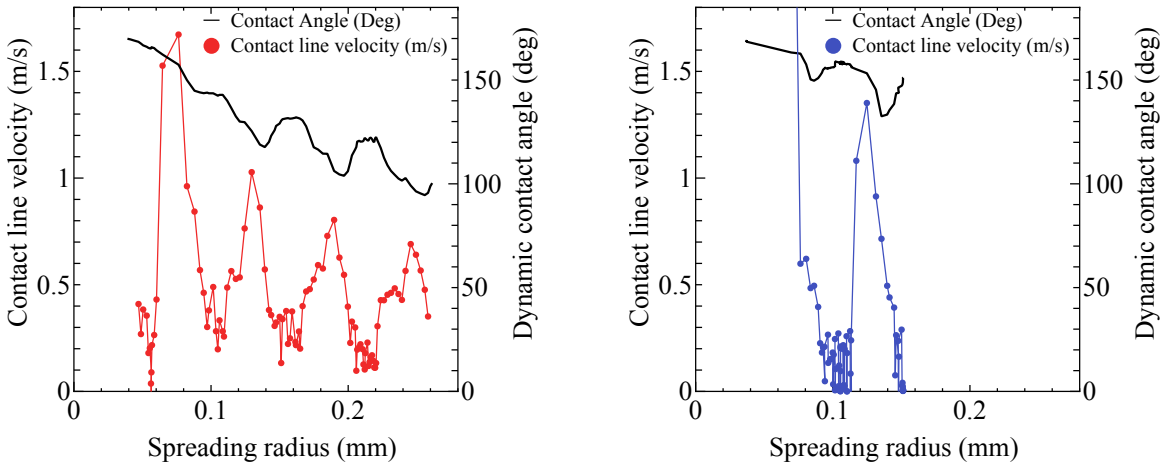
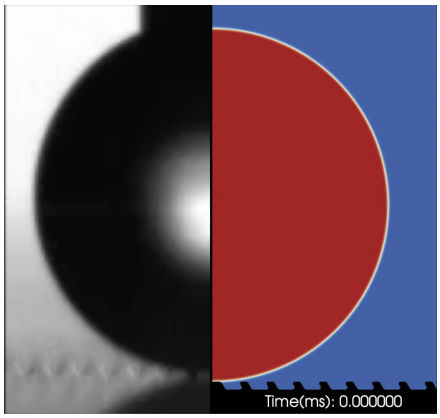


Supplementary figure 3: Top frame shows comparisons between numerical simulations and experiments of the droplet shape after 0.5 ms of spreading. Bottom frame shows spreading velocity both for experiments and numerical simulations on a surface with $(W, P) = (20, 60)$ μm. The corresponding numerical geometries are shown below the curves. The experimental velocity data is shifted in the radial direction within one period so that the peak of the velocity matches to that of the numerical simulations. The reason is that the resolution of the camera is not sufficient to identify the exact location of the contact line relative to the structures.



Supplementary figure 4: Spreading velocities and dynamic contact angles extracted from numerical simulations. Left and right frames correspond to the direction against inclination and to the direction with inclination, respectively.



Supplementary movie 1: ('Smovie-Against.mp4' and 'Smovie-With.mp4') These movies show the evolution of the simulated (red-blue image) and experimentally observed (black-white image) droplet shape during time interval $[0, 0.55]$ ms.