Supporting Information

Contact Time of a Bouncing Nanodroplet

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Table S1. Studies of contact time for a droplet impacting flat superhydrophobic surfaces.

Ref.	R_0 (mm)	*We* range	Impact regime	Conclusion
1	0.1-4.0	0.3-37	Independent	
13	0.4, 0.6	0.01-1.0	Declined and Independent	
14	1.25	24	Independent	
16	1.0	1.5-9.3	Independent	
17	1.0	0.5-1.5	Independent	$\tau \sim (\rho R_0^3/\gamma)^{1/2} = (R_0/v_0) We^{1/2}$
20	1.35	5.47	Independent	
21	2.76	0.16-37	Declined and Independent	
22	0.6-2.1	1.0-100	Independent	
23	1.245, 1.495	0.91-69.0	Independent	
24	1.0-1.8	0.56-4.0	Independent	

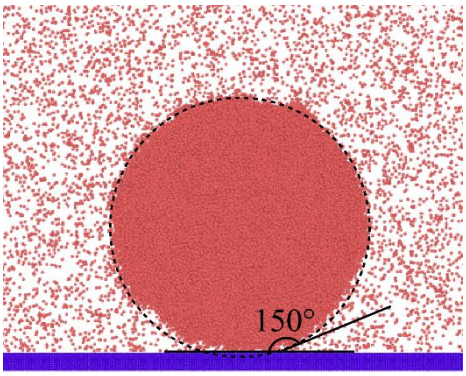

FIG. S1. The static contact angle of an argon nanodroplet on a Pt substrate.

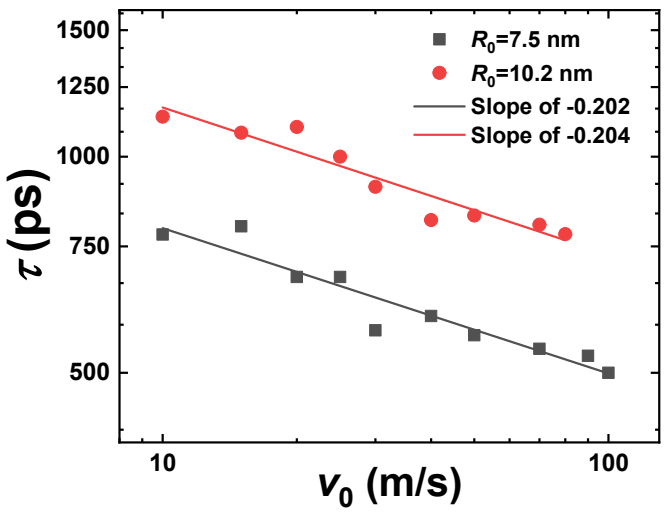

FIG S2. Contact time of bouncing argon nanodroplets as a function of impact velocity in a low velocity impact regime. Solid lines indicate slopes of -0.202 for a 7.5 nm droplet and -0.204 for the 10.2 nm droplet.

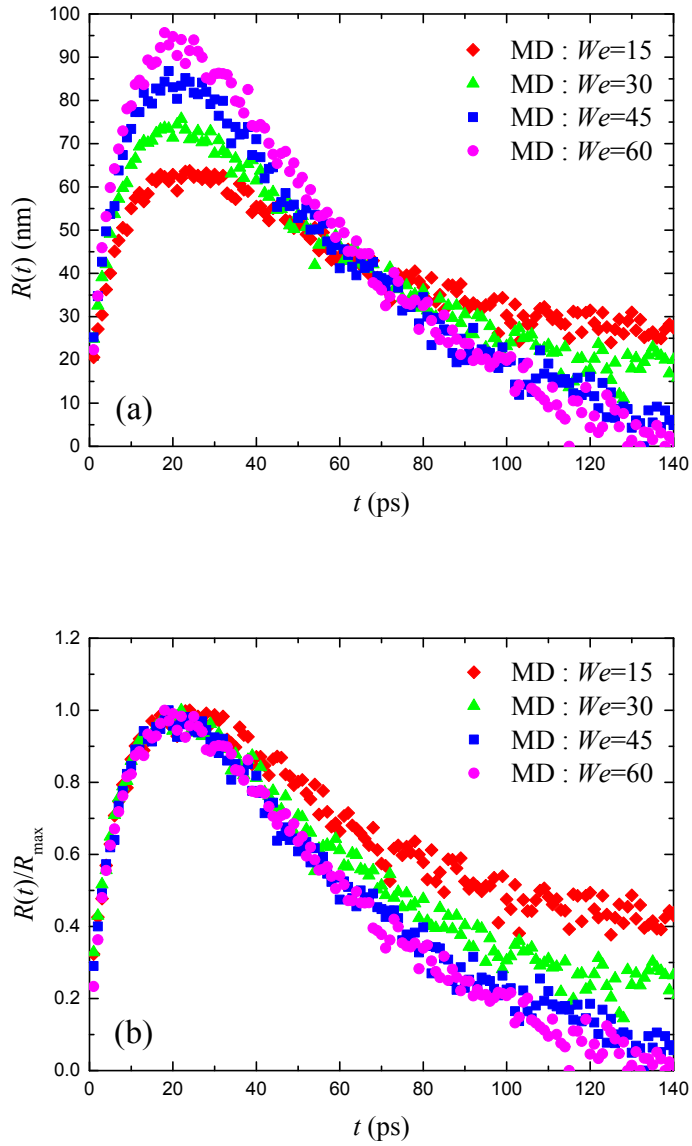

FIG. S3. Temporal evolution of the contact radius for a 5.0 nm water nanodroplet (Oh=1.01) impacting a 125° hydrophobic surface at various impact velocities: (a) contact radius vs. time, and (b) contact radius normalized by the maximum spreading radius vs. time. The contraction rate is independent of the impact velocity for millimeter-sized impact droplets. However, $R(t)/R_{max}$ curves for various impact velocities do not coincide with each other, and thus the retraction dynamics for the water nanodroplet is significantly different from millimeter-sized droplets.

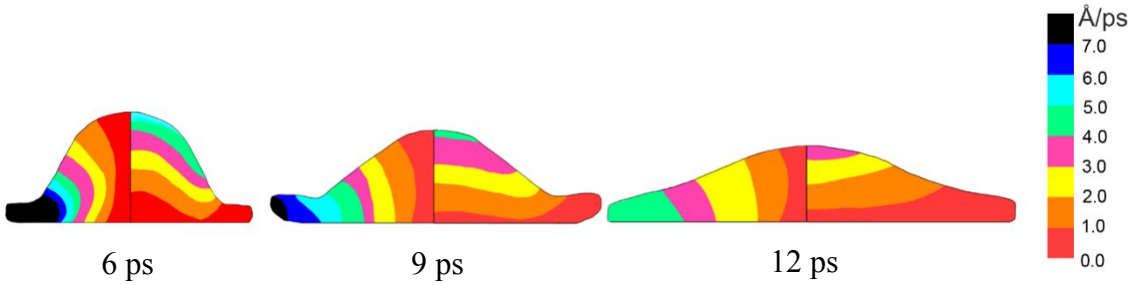

FIG. S4. Velocity contours within a water nanodroplet with R_0=3.6 nm and *We*=23. In each subfigure, the left part denotes the radial component velocity and the right part denotes vertical component velocity.

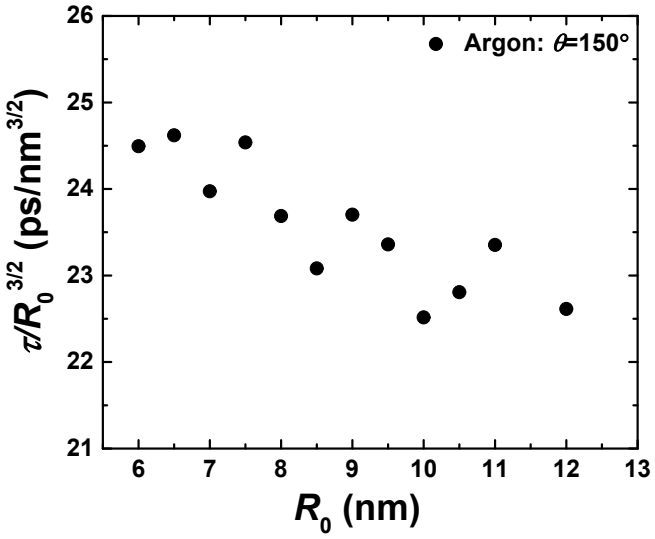

FIG S5. Data of $\tau/R_0^{3/2}$ vs R_0 for argon nanodroplets.