

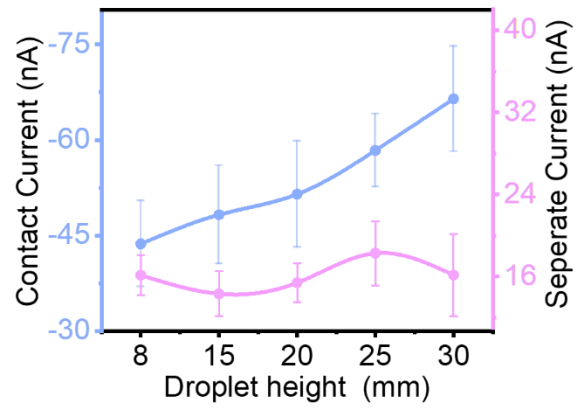
## Supporting Information

### Studying the Droplet Sliding Velocity on the Charge Transfer at Liquid-Solid Interface

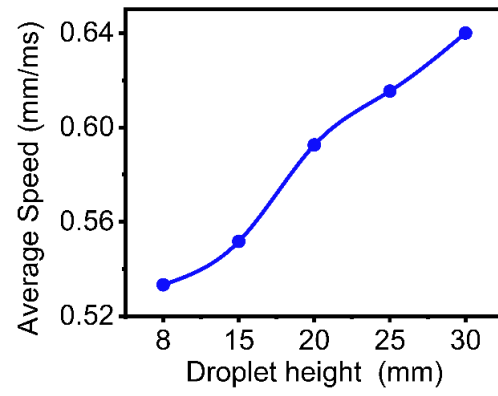
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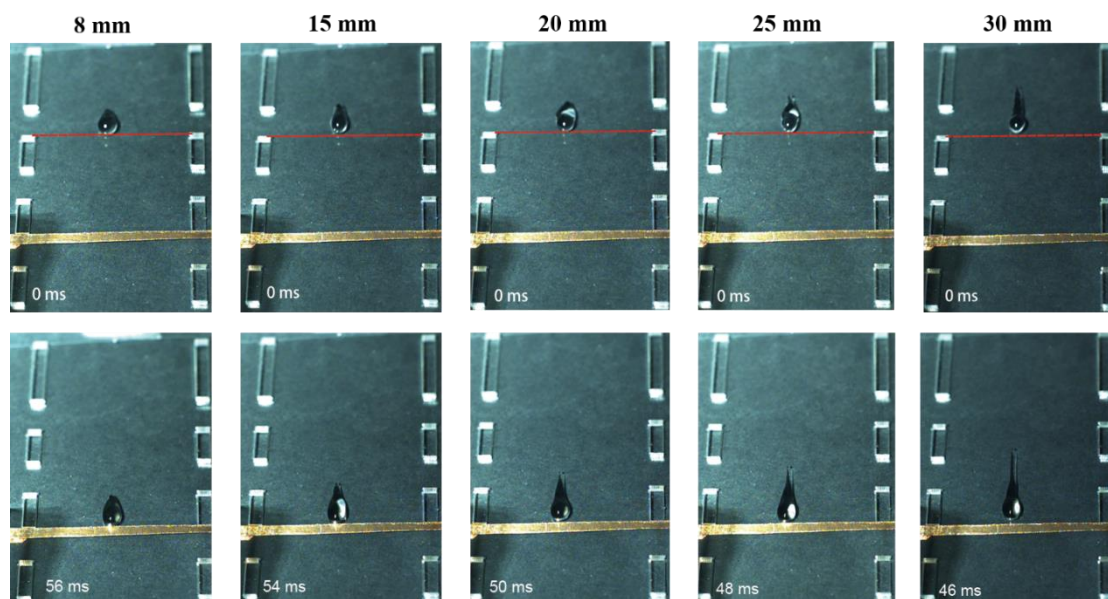
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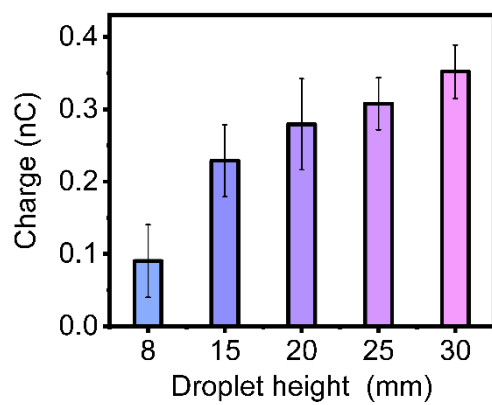
**Figure S1.** Contact and separation currents generated by droplets dropping at different heights when sliding through the FEP film.



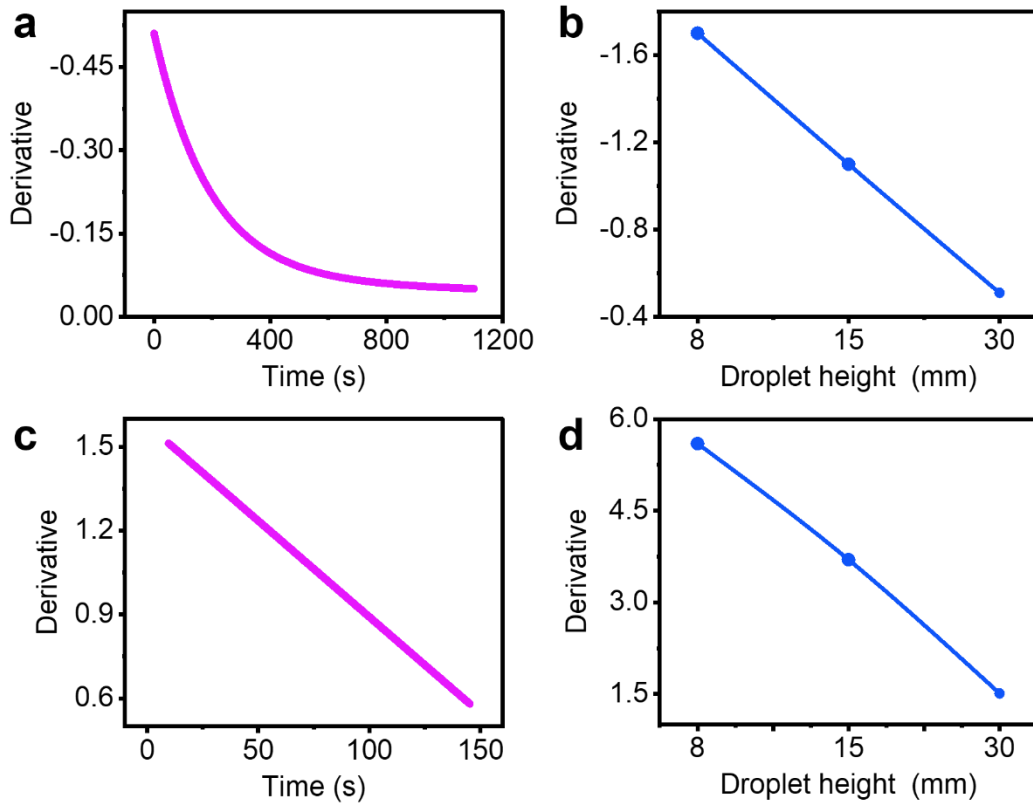
**Figure S2.** The relationship between slip velocity and drop height.



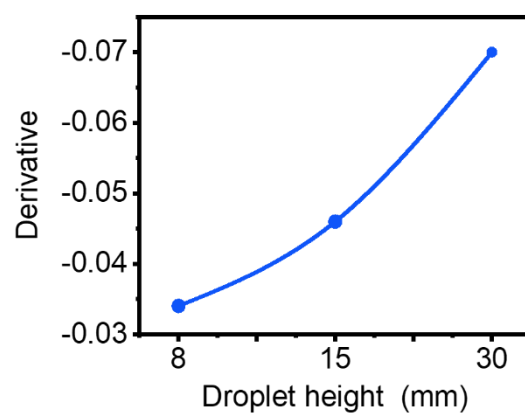
**Figure S3.** The high-speed camera captures the time it takes for droplets to slide down a distance when they drop from different heights.



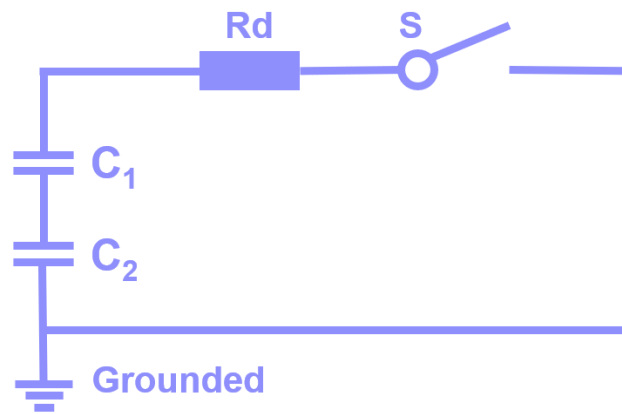
**Figure S4.** Transferred charges of water droplets sliding at different heights on PTFE films.



**Figure S5.** (a) Charge saturation rate at a drop height of 30 mm. (b) Comparison of charge saturation rates at three drop heights. (c and d) Voltage saturation rate of droplet slip at 30 mm height and comparison of voltage saturation rate at different drop heights.



**Figure S6.** The slope of the line obtained by fitting the relationship between the concentration of NaCl solution and the amount of transferred charges at different drop heights.



**Figure S7.** The equivalent circuit when droplet contacts the FEP surface, the switch  $S$  is closed.