# Supporting Information

## Electrically Actuated Concentration of Microparticles through Levitation and Convective Flows in Evaporating Droplets

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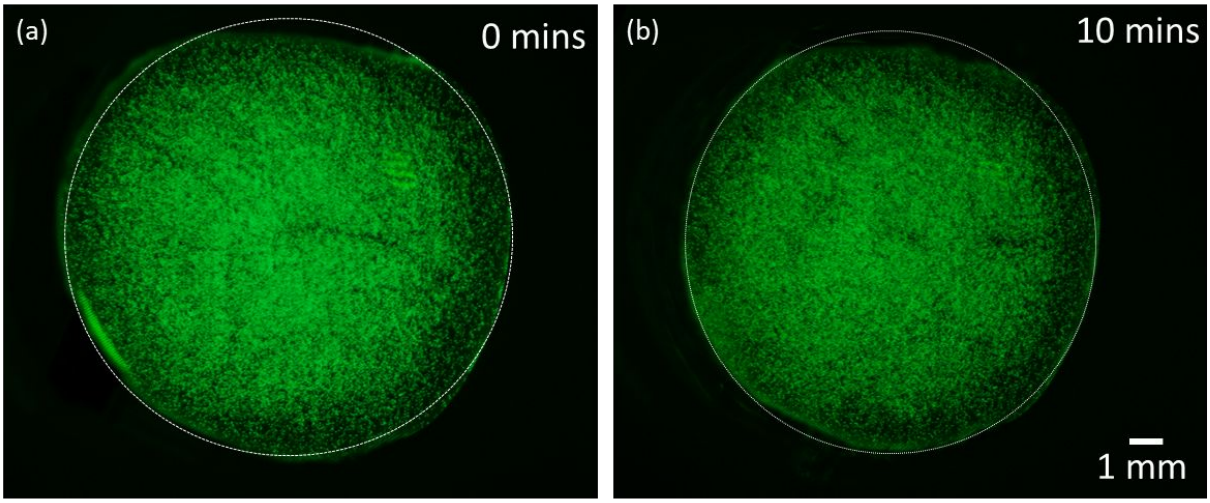


Figure S1: Stereomicroscopic images showing a uniform suspension of fluorescent beads of 18 μm size at 90% relative humidity. White doted circles represent the droplet contact line and show the constant footprint on the substrate over time. (a) The uniform suspension of beads before energizing the interdigitated microelectrodes array. (b) The suspension of beads remains uniform after energizing the array for 10 minutes. At 90% relative humidity, evaporation is negligible and hence the phenomenon is not triggered, where no central aggregation is observed.

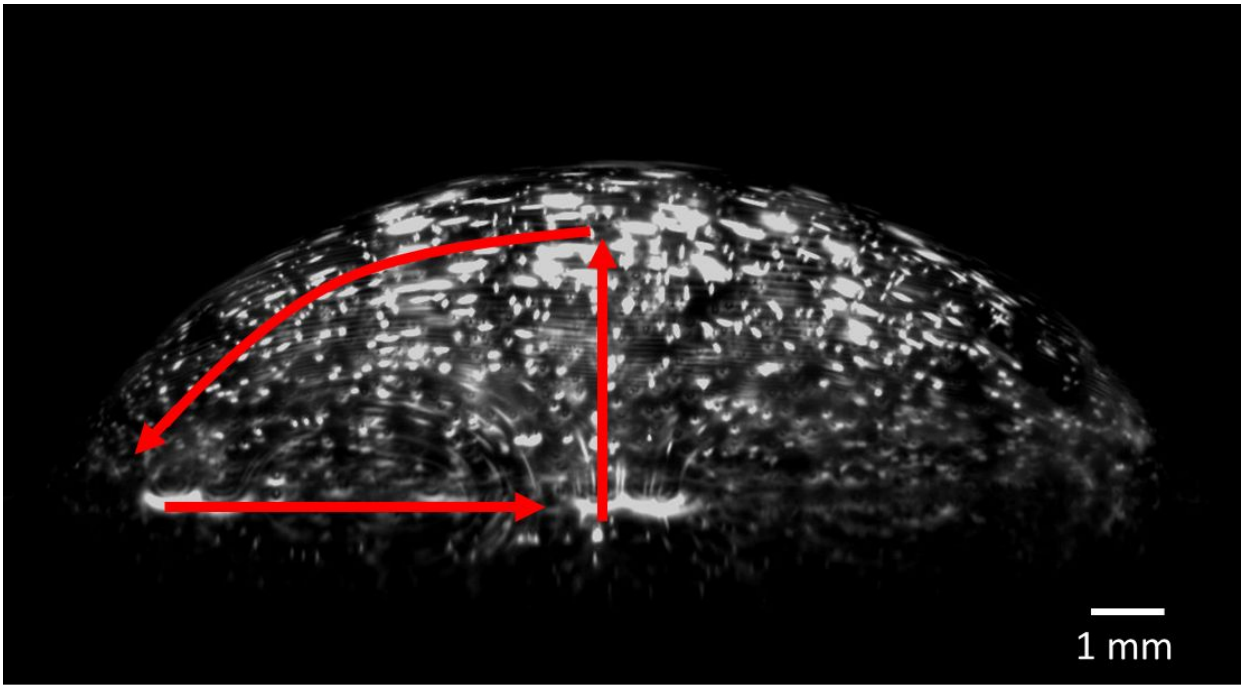


Figure S1: Horizontal microscopic image showing the convective flow pattern using fluorescent 6 μm beads. The high apex temperature causes the fluid to rise above from the stagnation point at the center of the droplet. The fluid then flows to periphery of the droplet along the liquid-air interface due to capillary flow and then it follows radially inward to the center of the droplet. This continuous and symmetrical fluid circulation is observed in entire 3-dimensional space within the droplet. Refer to Supplementary Video 2.

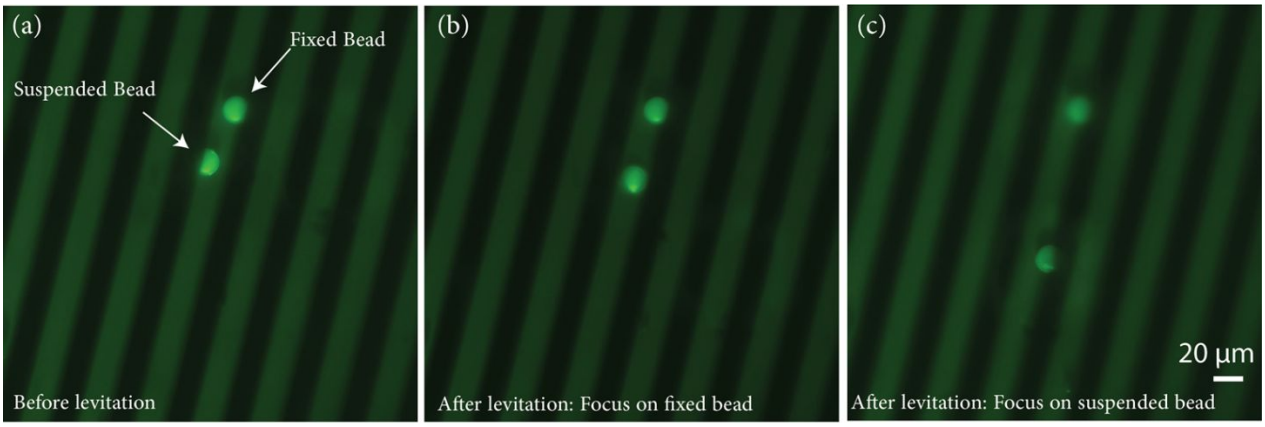


Figure S3: Microscopic images describing the methodology for measuring the levitation height of suspended bead. (a) Before introduction of DEP forces. The suspended bead, fixed bead (height reference), and electrodes are all in focus. (b) Immediately after introduction of DEP forces. The suspended bead levitates to go out of focus while electrodes and the fixed bead remain in focus. (c) After introduction of DEP forces and refocusing camera on the levitated bead. Fixed bead and electrodes are out of focus.

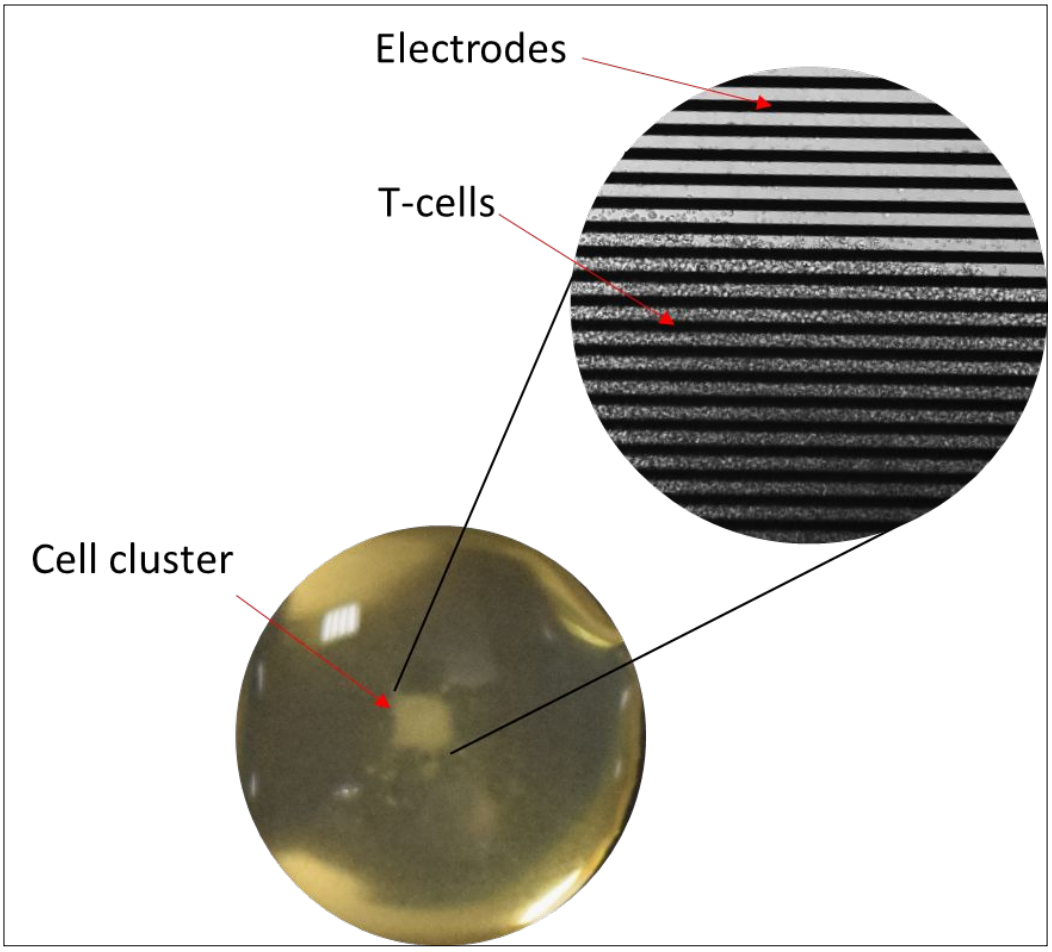


Figure S2: Central aggregate formation of T-cell suspension in buffer. The zoomed inset shows the inverted microscopic image of T-cells forming a multilayered cluster at the center of droplet.