

Supplementary Materials

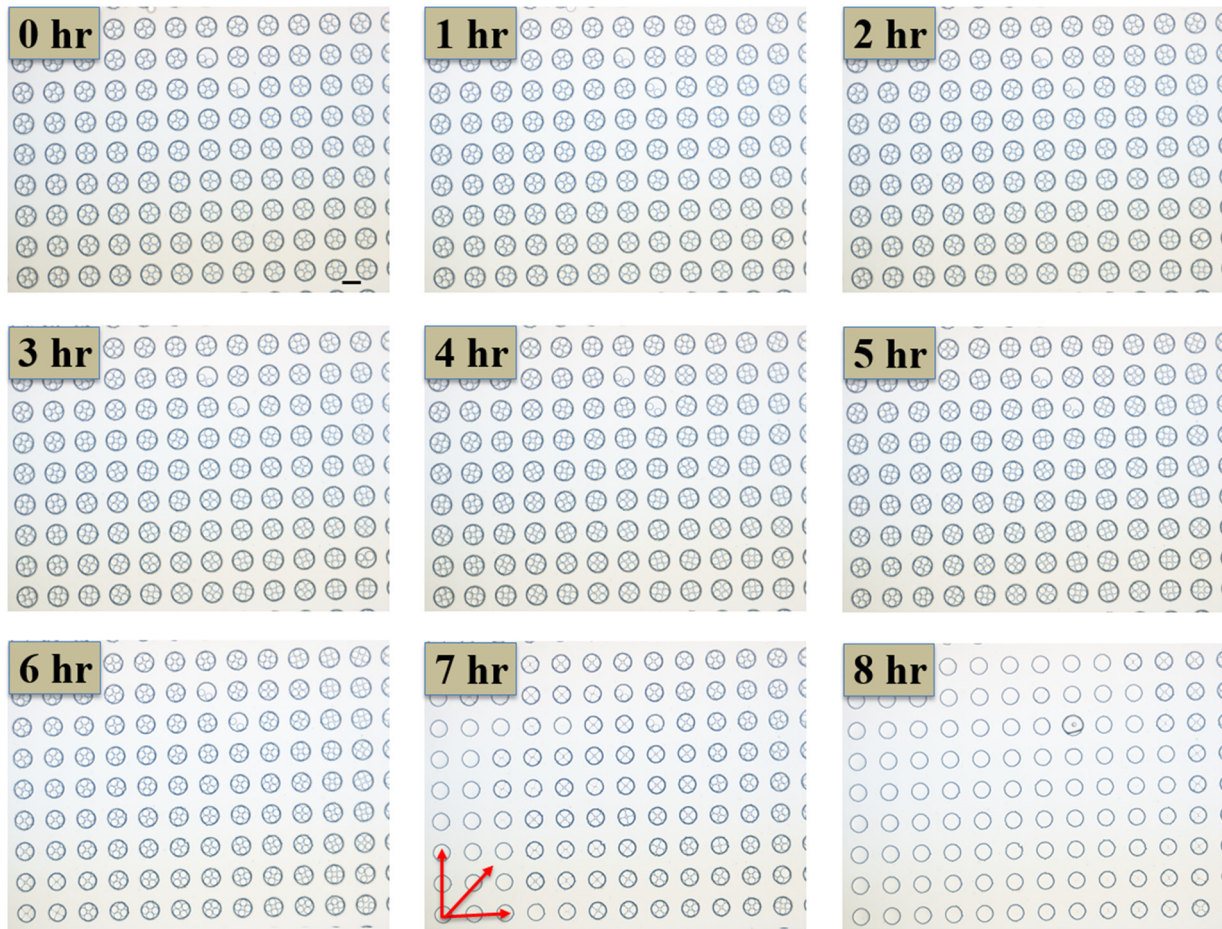


Figure S1. Deformation and evaporation of droplets during extended incubation times. Droplets shrink due to evaporation (29.6% reduction in volume after 5 h, $n = 60$). After five hours, droplet deformation in the wells propagated from the lower left hand corner of the image to the top right hand corner. The red arrows at 7 h represent the direction of propagation for droplet deformation.

Movie S1. Representative video demonstrating droplet trapping in the Floating Droplet Array (FDA) device. 94 μm -sized droplets were generated and trapped within 120 μm wells.

Movie S2. Representative video demonstrating purging of residual droplets. After droplet trapping, residual droplets were purged with a high oil flow rate (10–20 $\mu\text{L}/\text{min}$).

Movie S3. Representative video demonstrating droplet recovery after flipping and applying a high oil flow rate.

Movie S4. Representative video showing a large-scale scan of trapped droplets. 46 μm -sized droplets were trapped in 50 μm wells and imaged under a microscope.