



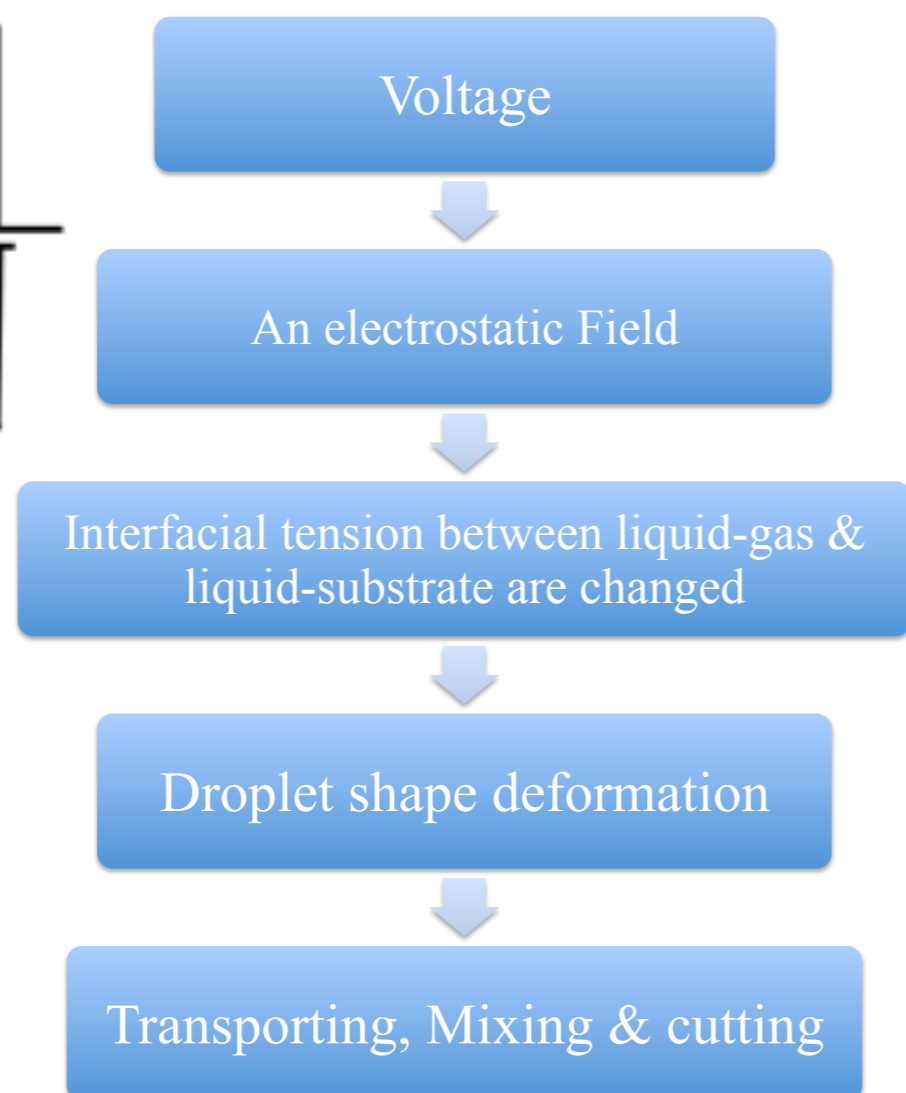
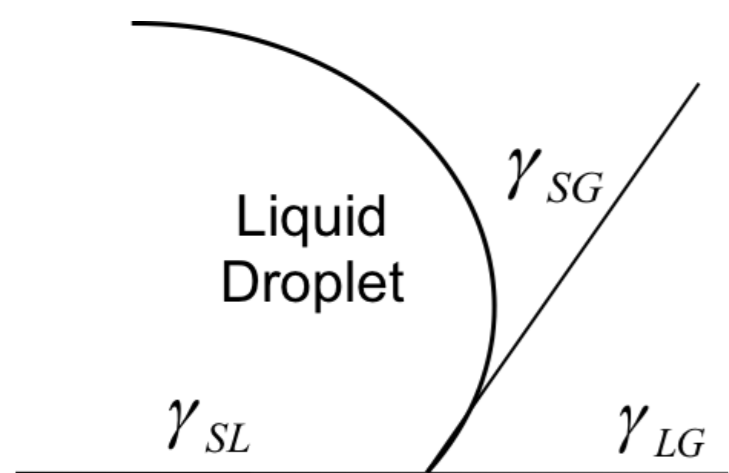
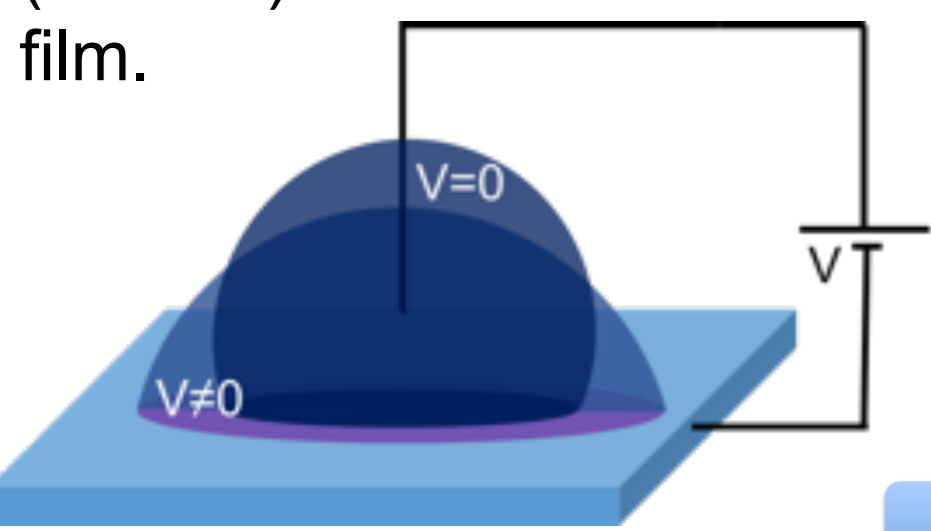
Revisiting Lab-On-a-Chip Technology for Discrete Liquid Manipulation Using TFT Array

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Evolution of micro-fabrication and microfluidics processes has led the concept of Lab-On-a-Chip (LoC), one of the ideal paradigm for chemical researcher and biological study based upon micromanipulation of discrete droplets. Besides, Thin Film Transistor (TFT) array deduce from lower glass of liquid crystal display (LCD) helps to automate integrate and miniature the microfluidic Devices.

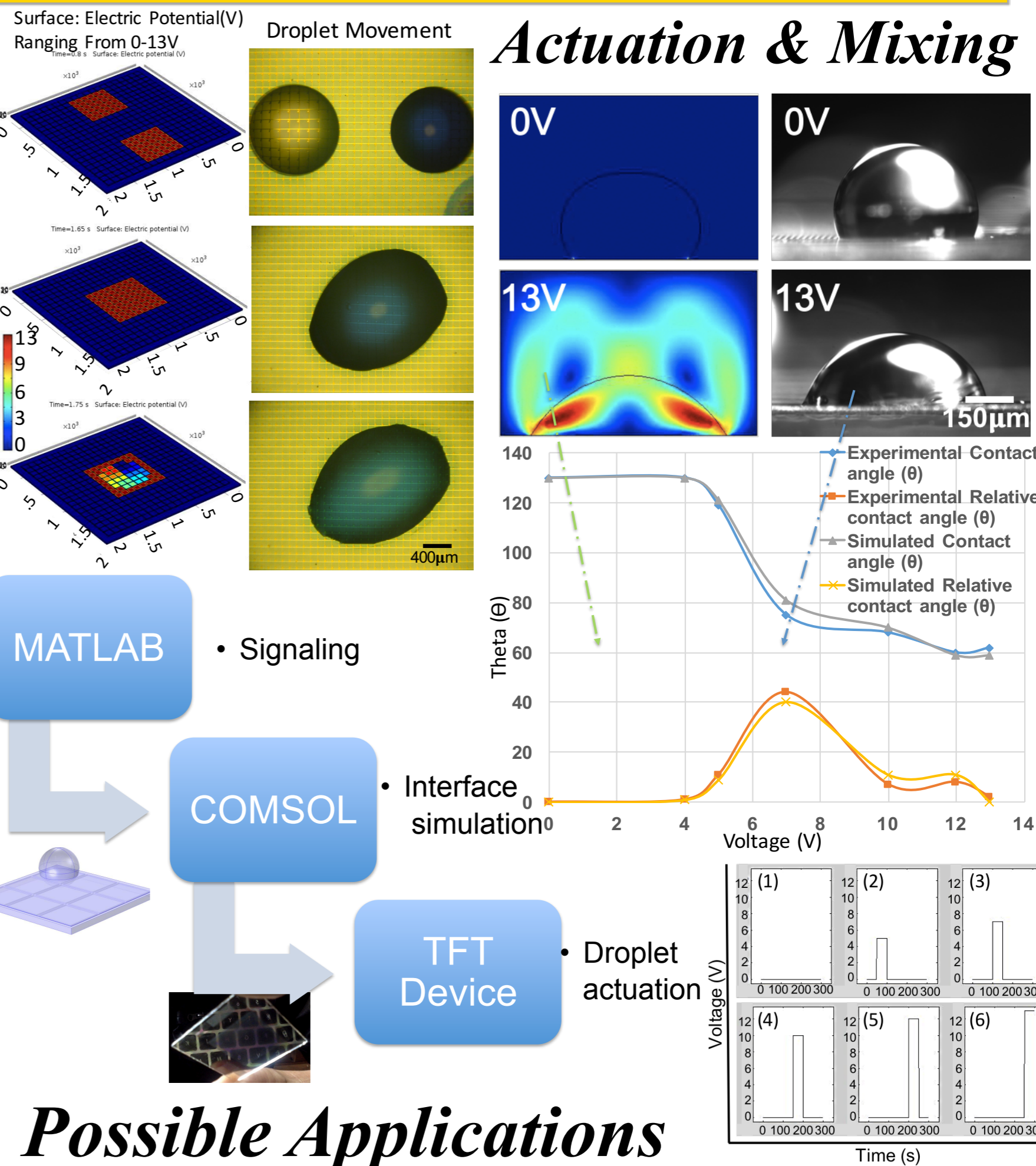
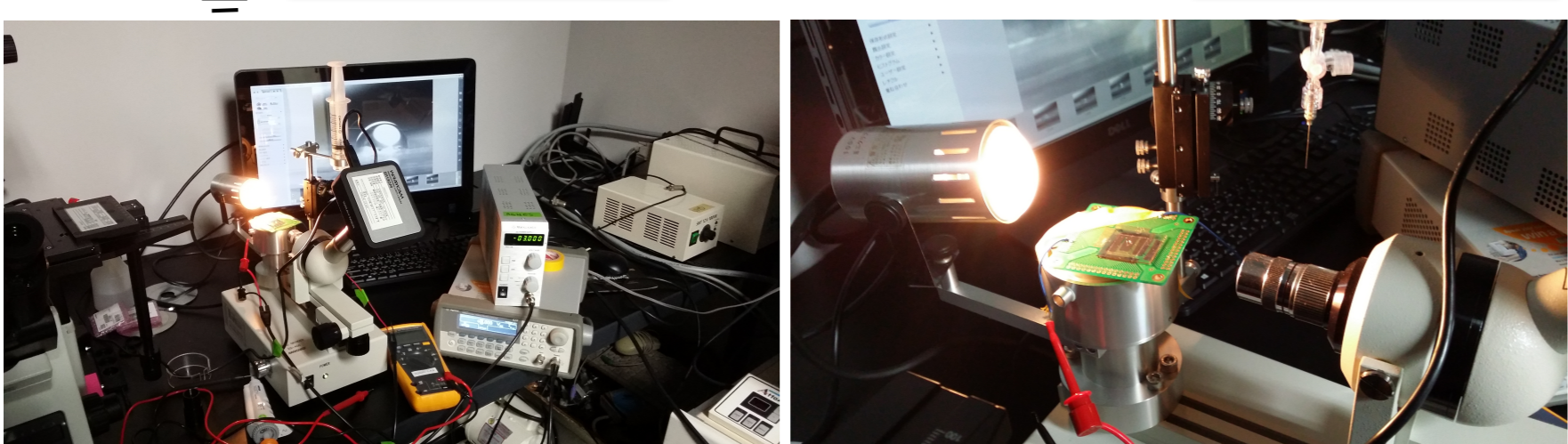
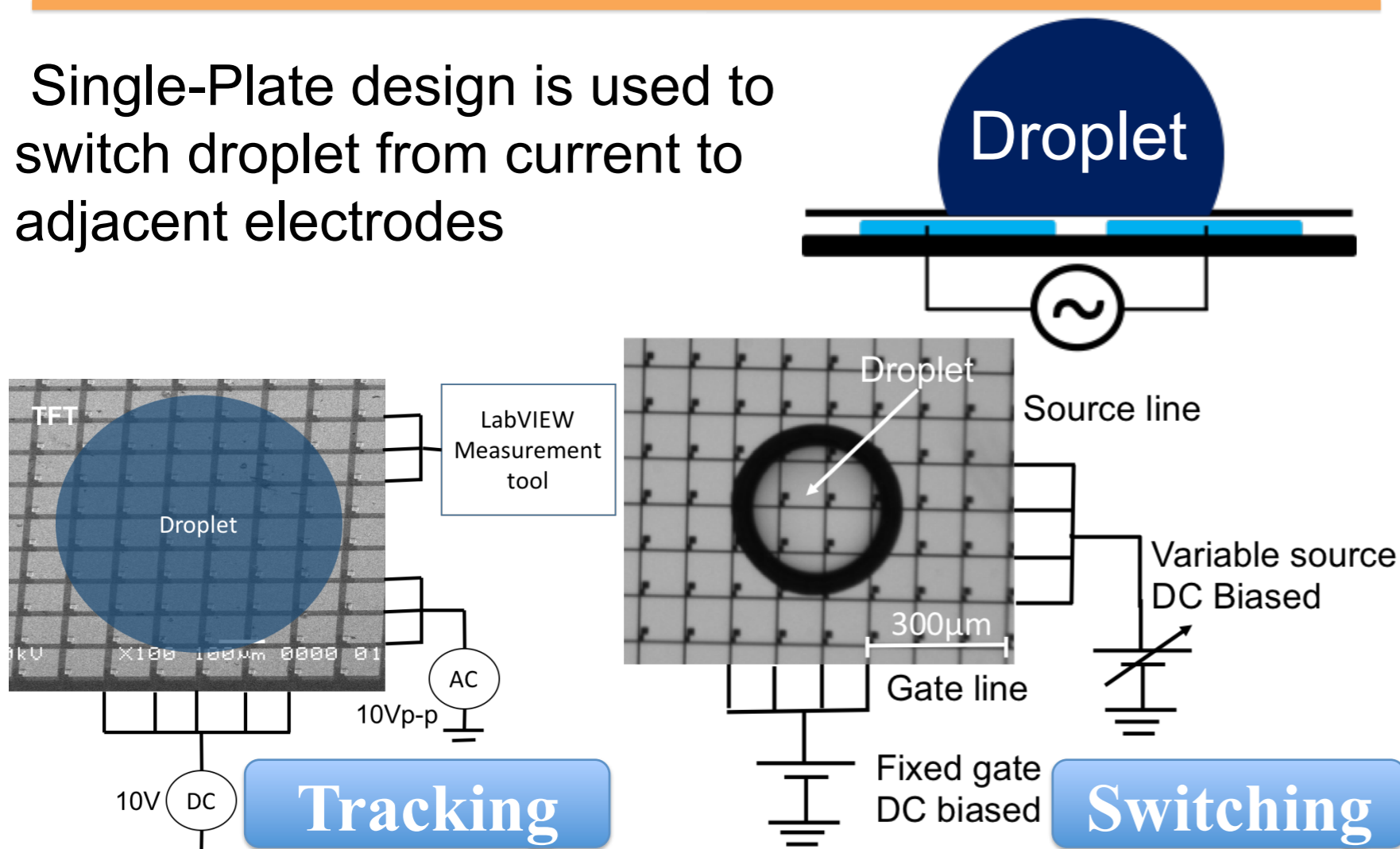
Concept

One flexible technique used to manipulate fluids on a micro scale platform is electrowetting-on-dielectric (EWOD). In EWOD, force appear on three phase line when a potential difference is applied between a conducting liquid surrounded by an insulating medium (like air) and an electrode covered with a dielectric film.

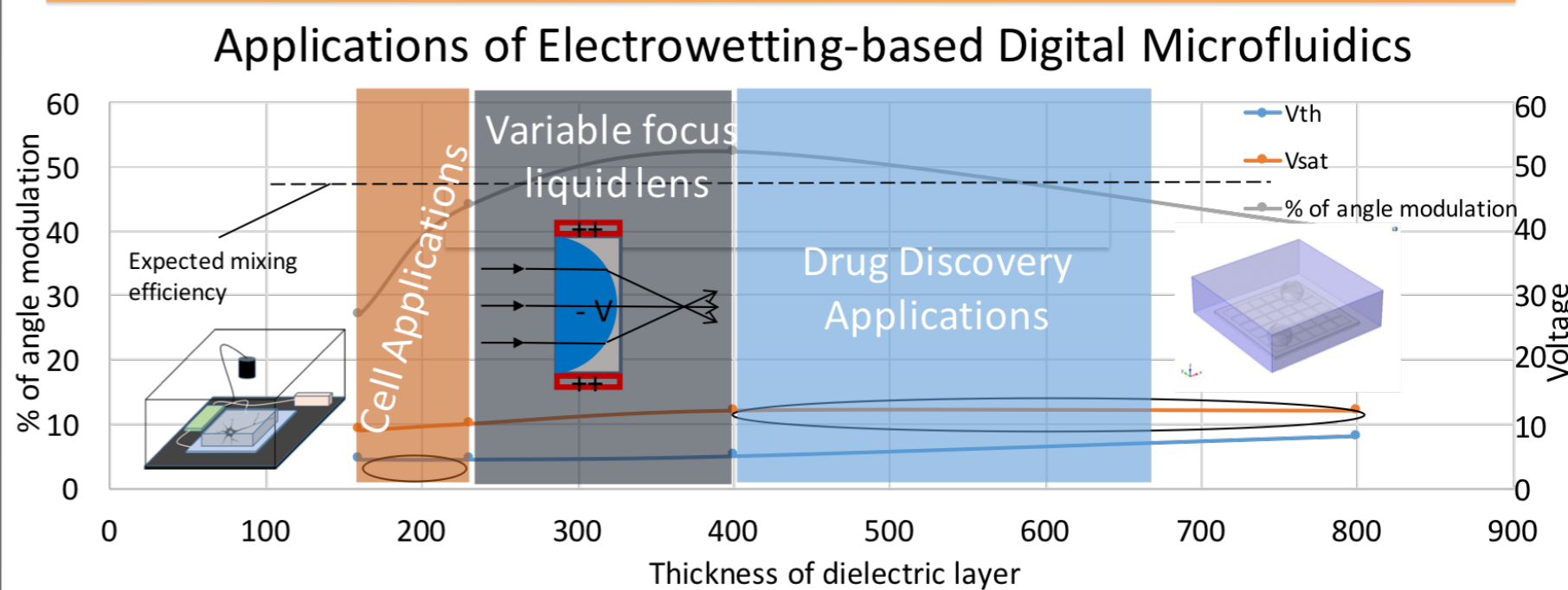


Experimental setup

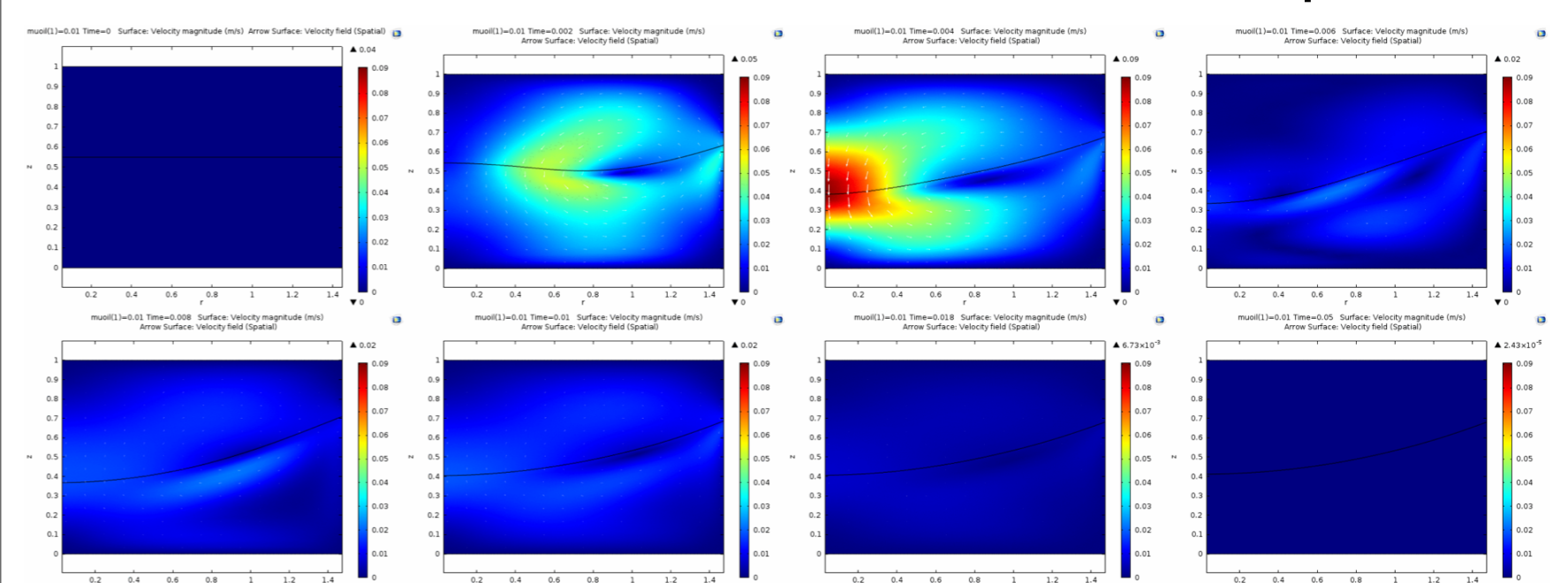
Single-Plate design is used to switch droplet from current to adjacent electrodes



Possible Applications



COMSOL Simulation of Variable focus liquid lens



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