Electronic Supplementary Material (ESI) for Lab on a Chip

Supporting Information for

Configuration change of liquid crystal microdroplets coated with a novel polyacrylic acid block liquid crystalline polymer by protein adsorption

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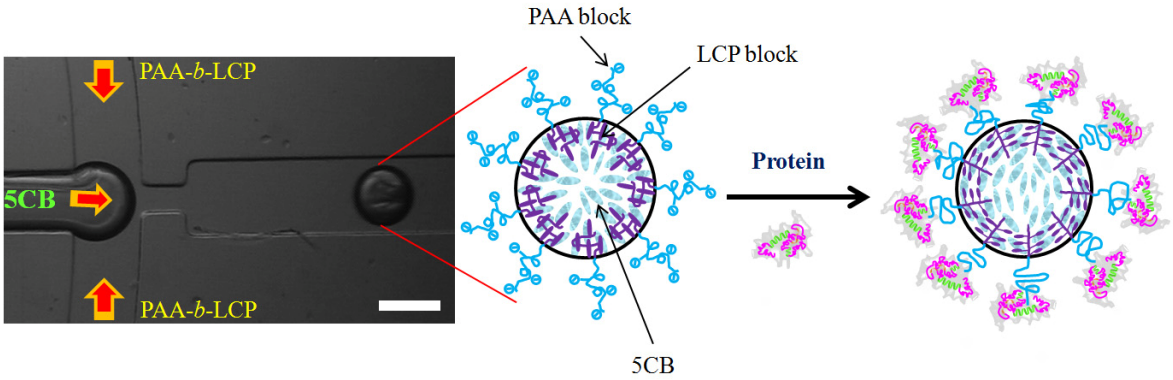
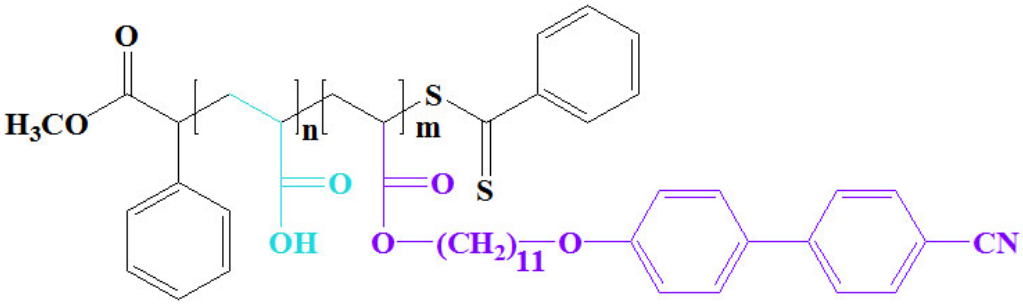
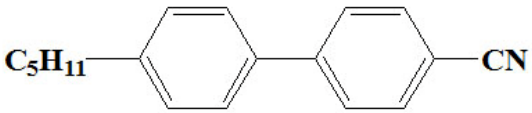


(a)



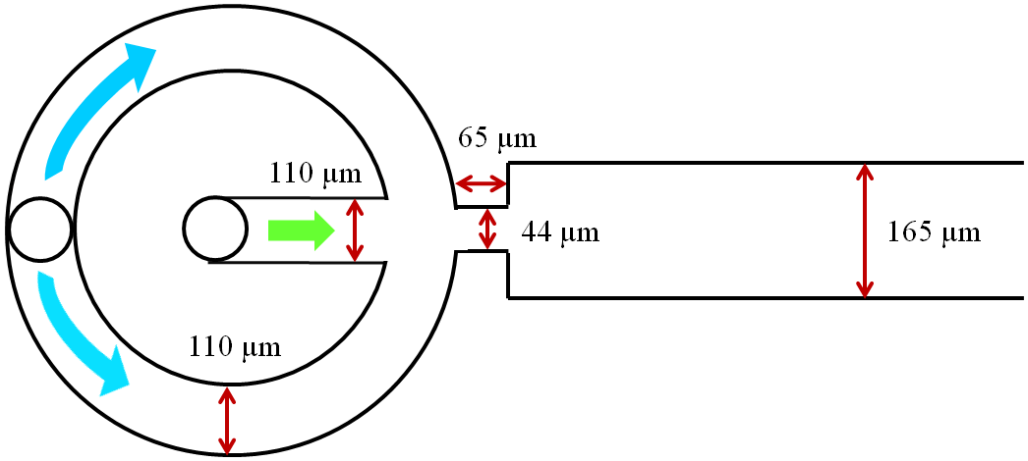
PAA-b-LCP



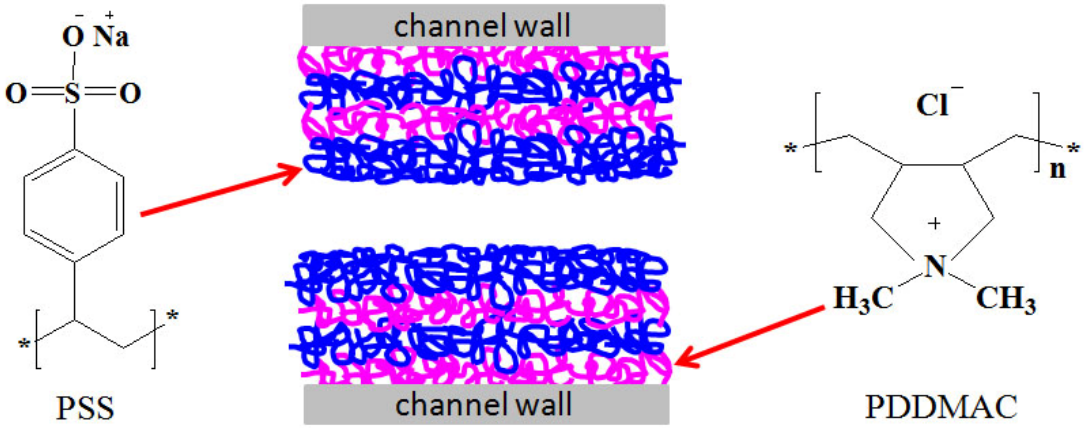
5CB

(b)

Figure SI 1. (a) The microfluidic system for the production of LC microdroplets and a schematic representation of a 5CB droplet coated with PAA-*b*-LCP (LC_{PAA} droplet) and the subsequent adsorption of proteins on it; long linear PAA chains were attached to the 5CB core by the LCP block; the scale bar in the channel represents 100 μm. (b) The chemical structures of PAA-*b*-LCP and 5CB, respectively.



(a)



(b)

Figure SI 2. (a) The microchip used for the droplets generation and (b) the schematic illustration of the surface modification of the PDMS microchannel with the multi layers of PDDMAC (purple) and PSS (blue) complex with chemical structures of PDDMAC (cationic polyelectrolyte) and PSS (anionic polyelectrolyte).

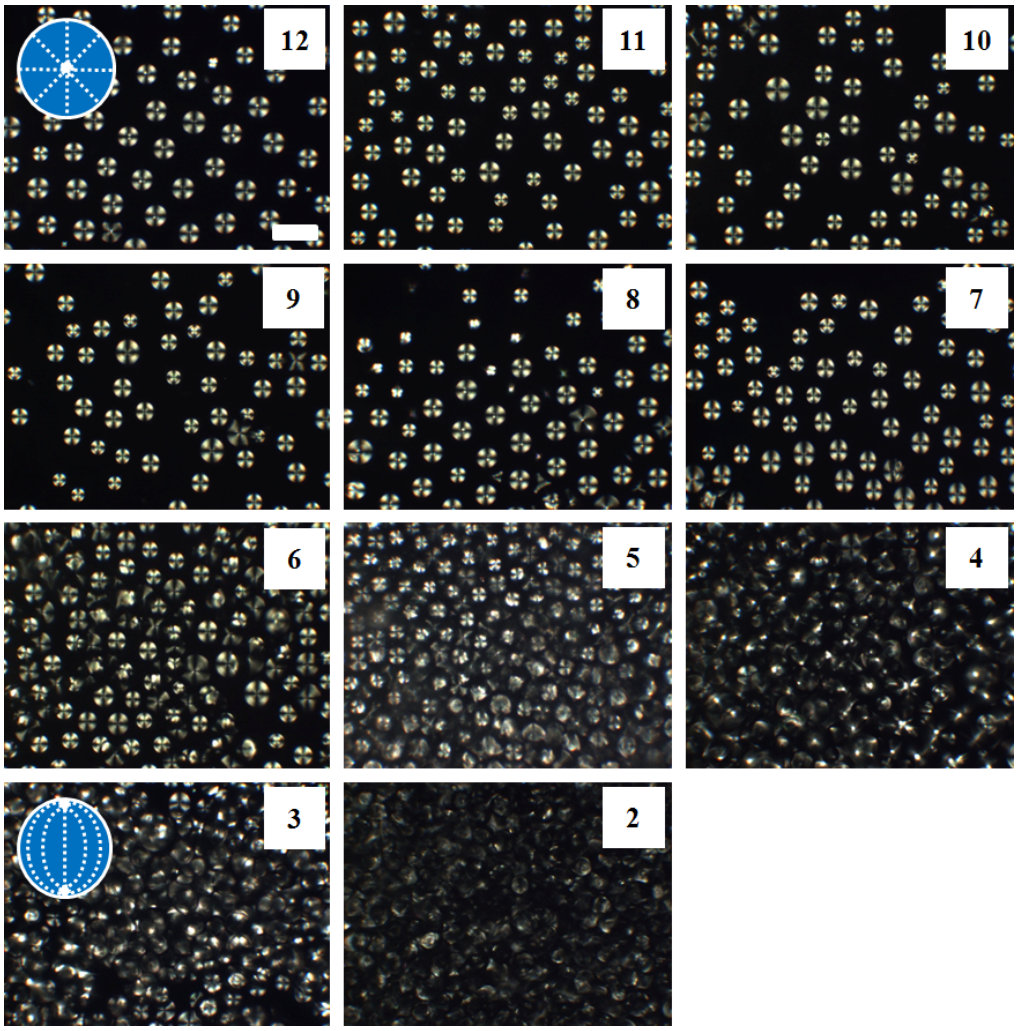


Figure SI 3. Optical micrographs of the LC_{PAA} droplet observed under a POM with a cross polar state at different pHs; schematics in the insets at pH=12 and 3 are typical LC droplets director profiles representing radial and bipolar configurations, respectively; the numbers in the figure indicate the pH; the scale bar at pH=12 represents 100 μm and is applied to all micrographs.

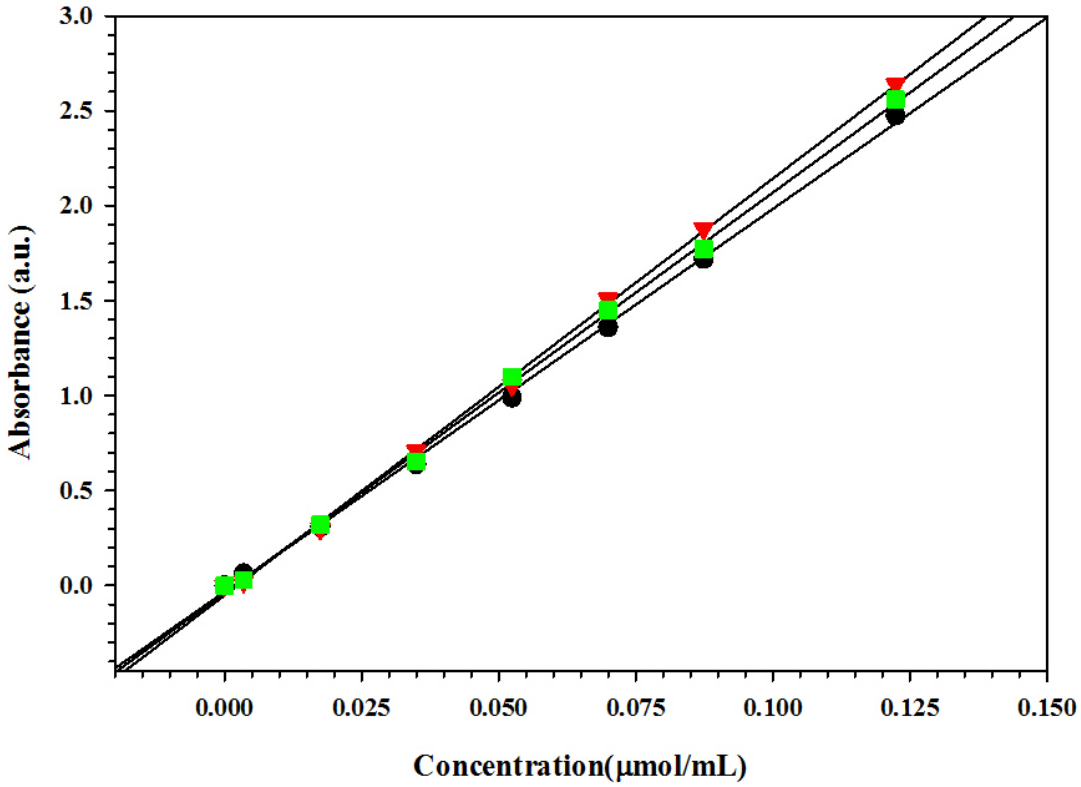


Figure SI 4. UV/visible absorbance calibration curves for the LSZ solution at pH 2(●), 7(▼), and 12(■).and λ=280 nm.

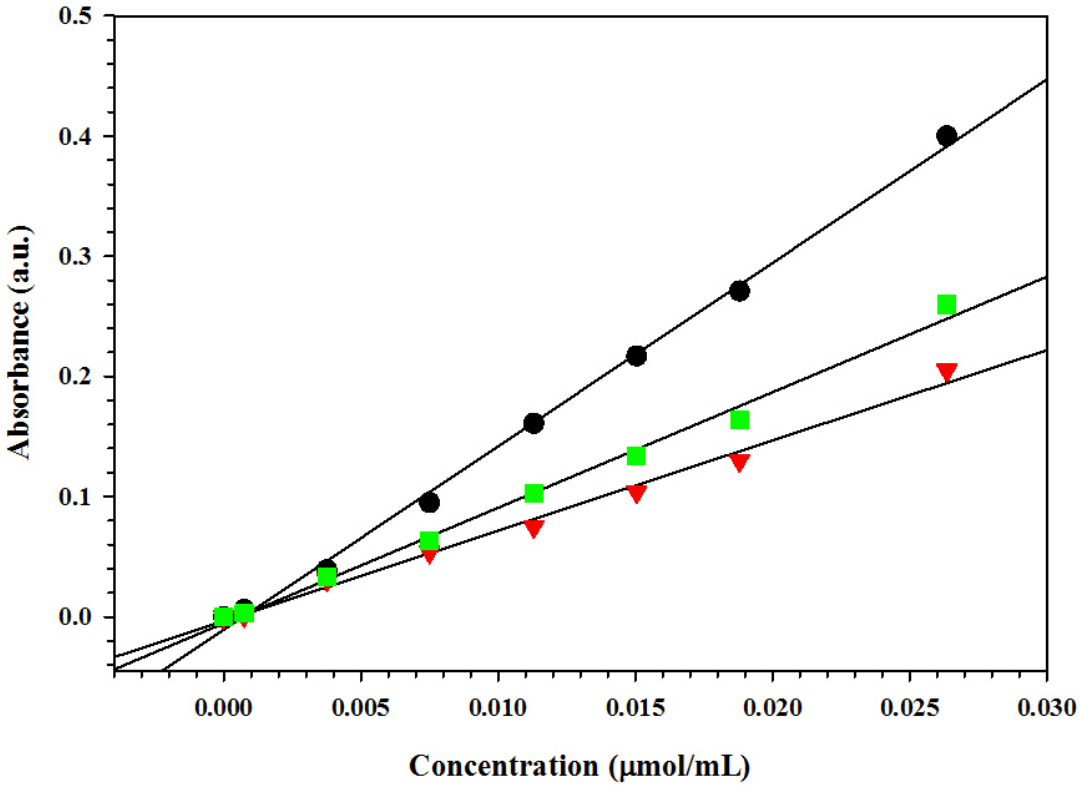


Figure SI 5. UV/visible absorbance calibration curves for the BSA solution at pH 2**(●),** 7**(▼),** and 12**(■).**and λ=277 nm**.**

Movies SI 6: Formation of stable LC_{PAA} droplets at flow rate of 0.03 and 0.5 mL h^{-1} for the dispersed and continuous phases, respectively (corresponding to Fig. SI 1a).