RSC Advances

PAPER

Electronic Supplementary Information (ESI)

Electrically and Electrohydrodynamically driven Phase Transition and Structural Color Switching of Oligomer Tethered 2D Colloid

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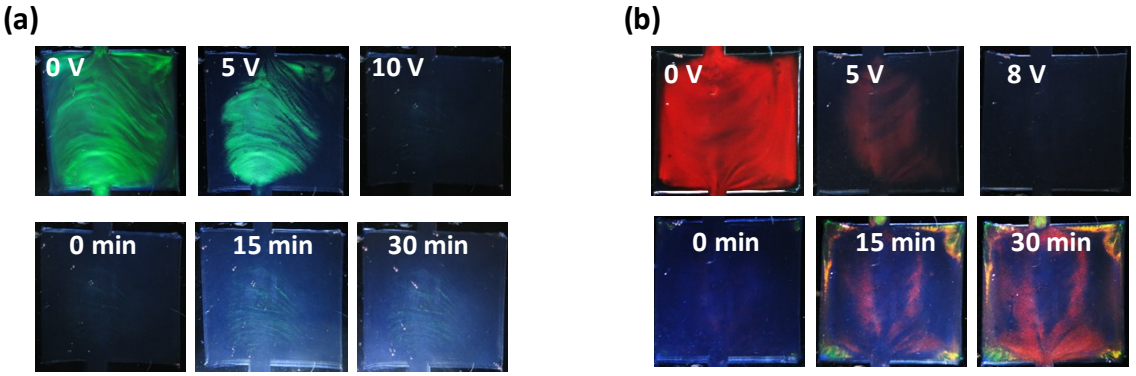

Figure S1: (a) Removal of photonic crystals by applying 10 kHz vertical field (top), and its little recovery after removing the field for a green photonic crystal cell. (b) The same process was tried for a red cell. Its recovery was slighlty better.

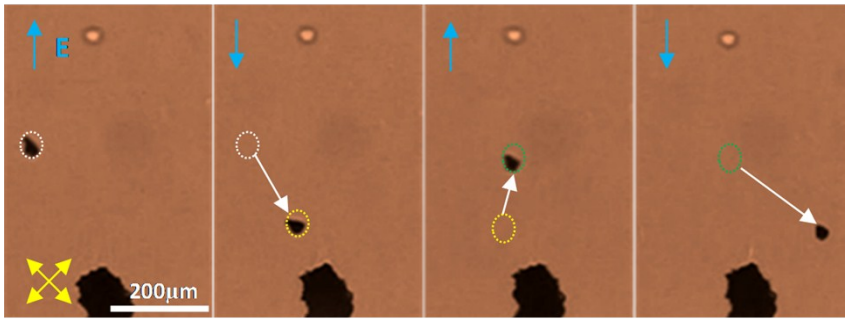

Figure S2: CNT particle motion under 1 Hz electric field application in ZrP colloid added by small amout of CNT. It visualizes better the oscillatory motion of colloid.

Video clip M-1: Microscopic observation of the type-A cell under the application of 1 Hz 10 V and crossed polarizers. It shows steady flow of particles. Its focus is near the top surface of the cell. Approximately 4 mm from the left end to right end of the video clip.

Video clip M-2: Macroscopic observation for the switching of a type-B cell. Initially 10 kHz 10 V signal is applied, and it changes to 1 Hz 10 V signal at 4 seconds, to 10 kHz at 12 seconds, to 1 Hz at 30 seconds, and to 10 kHz at 36 seconds, repeatedly.

Video clip M-3: Microscopic observation of the type-B cell under the crossed polarizers. Initially, 1 Hz 10 V is applied and it shows periodic flow of colloids, leftwards and rightwards. At 6 seconds, the signal changes to 10 kHz 10 V, and no flow motion is observed while the birefringence is large. At 19 seconds, the signal changes to 1 Hz again.