Electronic Supplementary Material (ESI) for Soft Matter.
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# Supplementary Information

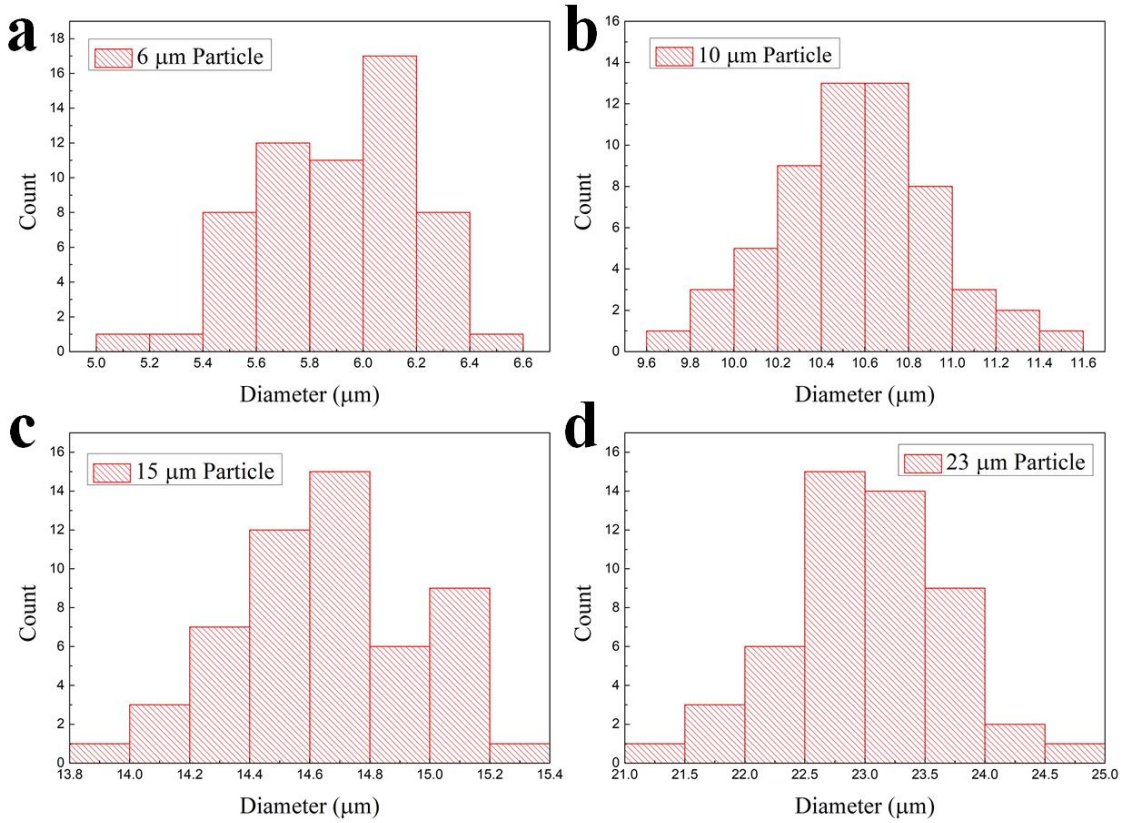


**Fig. S1.** Size distribution of microparticles with average diameters (a) 6 μm, (b) 10 μm, (c) 15 μm, and (d) 23 μm.

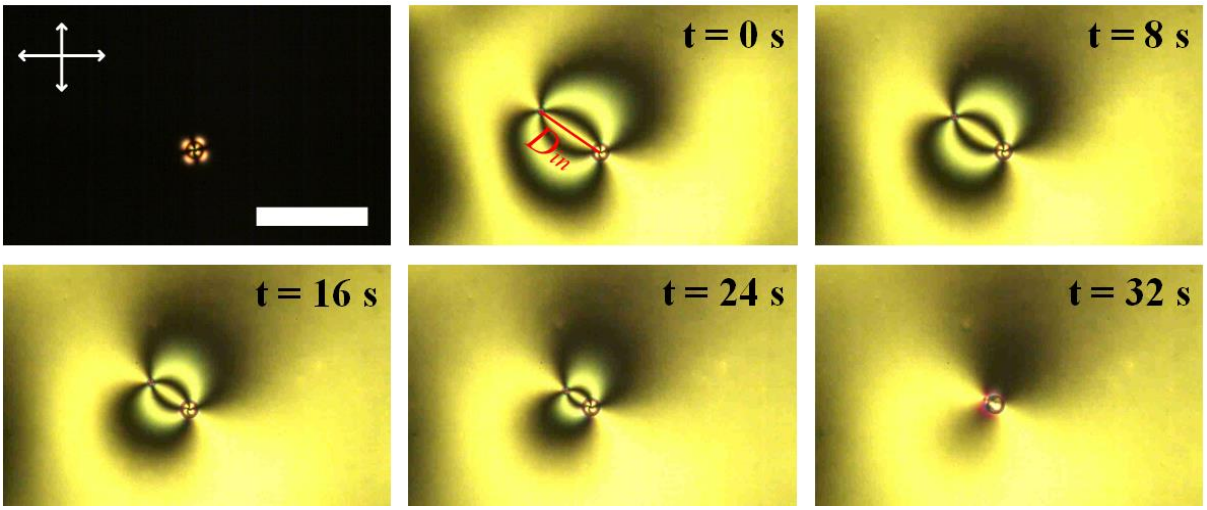


**Fig. S2.** Exemplary texture series illustrating the time evolution of a particle (s = +1) and defect (s = -1) pair during the annihilation process. $E$ = 0.5 V/μm, $f$ = 1 KHz, $R$ = 15 μm, $d$ = 21 μm, $T$ = 26 °C, scale bar

100 µm.

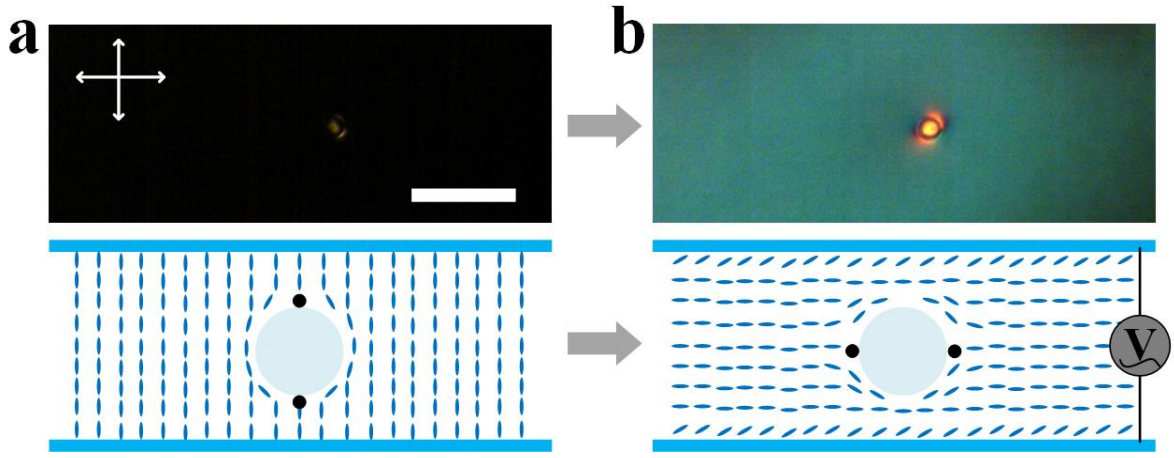


**Fig. S3.** Polarised optical microscopic (POM) images (upper) of the particle (R = 10 µm) without DMOAP (Dimethyloctadecyl[3-(trimethoxysilyl)propyl]ammonium chloride) coating and the corresponding sketch of the LC director distribution (bottom). (a) Without applying electric field. (b) $E$ = 0.3 V/µm, $f$ = 1 KHz. $d$ = 21 µm, $T$ = 26 °C, scale bar 50 µm.

| Cell gap $d$ (µm) | Particle diameter $R$ (µm) | Initial separation distance $D_{in}$ (µm) |
|---|---|---|
| 11 | 6 | 40 ± 5 |
| 21 | 10 | 55 ± 5 |
| 21 | 15 | 65 ± 5 |
| 32 | 10 | 70 ± 5 |
| 32 | 15 | 90 ± 10 |
| 32 | 23 | 110 ± 10 |
| 43 | 15 | 140 ± 20 |

**Table S1.** The dependence of the initial separation distance $D_{in}$ on the cell gap $d$ and particle size $R$.

**Supplementary Movie 1.** Annihilation dynamics of a particle ($s$ = +1) and a defect ($s$ = -1). $E$ = 0.5 V/µm, $f$ = 1 KHz, $R$ = 15 µm, $d$ = 21 µm, $T$ = 26 °C. The original movie is taken at a frame rate of 10.38 fps. The playback speed is 29.97 fps.