Supporting information

Fabrication of optomicrofluidics for real-time bioassays based on hollow sphere colloidal photonic crystals with wettability patterns

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The sequence of two complementary single-stranded DNA used in this work as shown below:

Probe ss-DNA1: 5'-NH_2 -C_6H_{12} -AAA AAA ACC CCT GCA GCC CAT GTA TAC CCC CGA ACC-3'

Target ss-DNA2: 5'- Cy3 -C_9H_{18} -GGT TCG GGG GTA TAC ATG GGC TGC AGG GG -3'

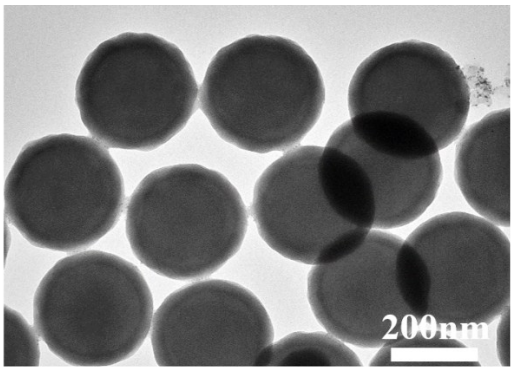

Fig. S1 TEM image of the PS@SiO_2 core-shell spheres used to produce the hollow spheres, which corresponds to the TEM image of the hollow spheres as shown in Fig.2A.

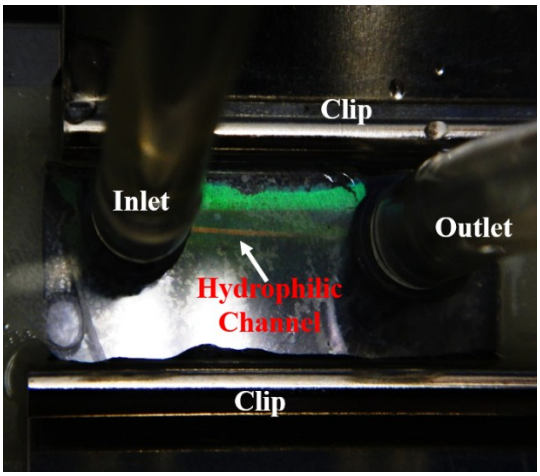

Fig. S2 Photography of the device contructed from the superhydrophobic HSCPCs with a superhydrophilic channel filled with water for visualization

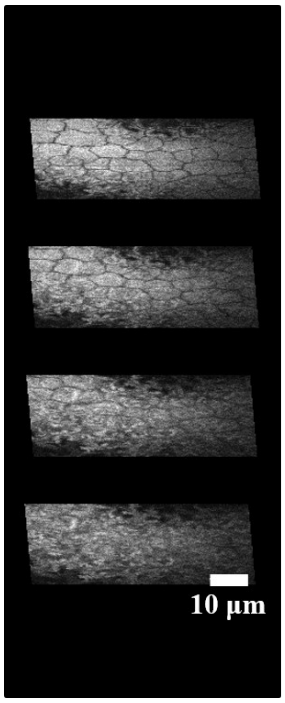

Fig. S3 Sliced two-photon fluorescence 3D images of the hydrophilic channel in the HSCPCs. The interval is 1μm

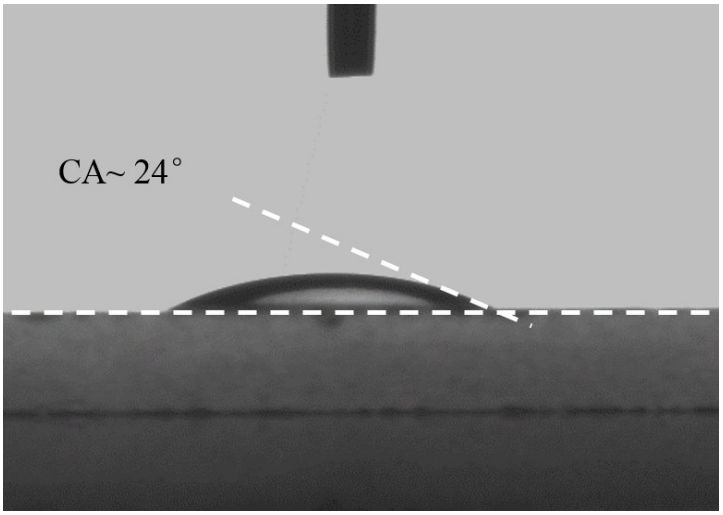

Fig. S4 The CA measurement of water droplets on sample surface of the ss-DNA1 modified channel region.

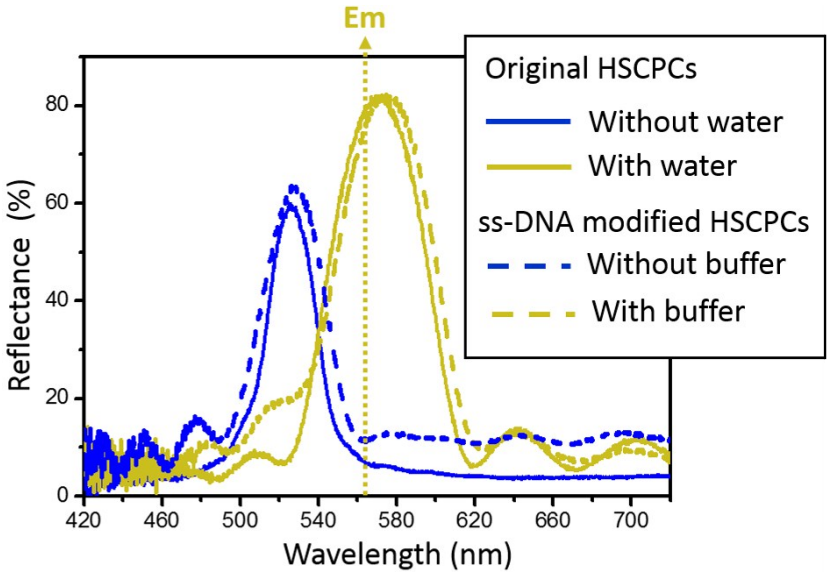

Fig. S5 The reflectance spectra of the HSCPCs with (dashed lines) and without (solid lines) ss-DNA modification before (blue color) and after (yellow color) solution infitration. The yellow arrow indicates the emission spectrum of the fluorophore (Cy3)

1. Z.-F. Liu, T. Ding, G. Zhang, K. Song, K. Clays and C.-H. Tung, *Langmuir*, 2008, **24**, 10519.
2. W. Stober, A. Fink and E. Bohn, *J. Colloid Interface Sci.*, 1968, **26**, 62.