

Supporting information

Microfluidic printing directing photonic crystal bead 2D code patterns

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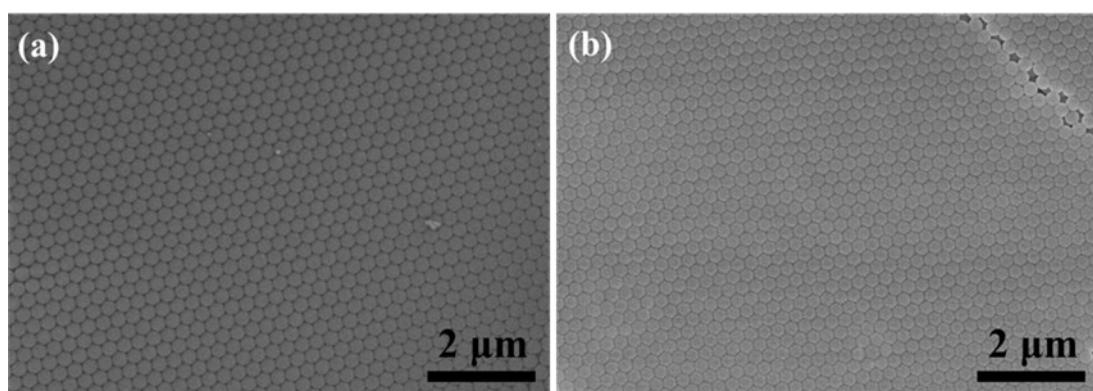


Fig. S1 SEM images of (a) P(St-MMA-AA) microspheres and (b) P(St-MMA-AA)-G2 PAMAM microspheres.

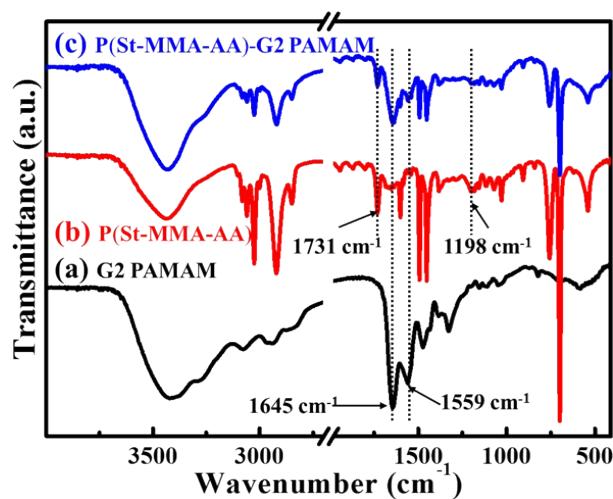


Fig. S2 FT-IR spectra of G2 PAMAM dendrimers (a, black), P(St-MMA-AA) microspheres (b, red) and P(St-MMA-AA)-G2 PAMAM microspheres (c, blue).

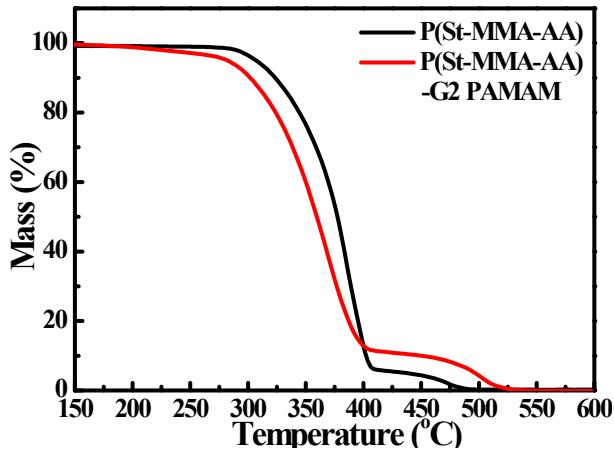


Fig. S3 TGA curves of the P(St-MMA-AA) microspheres (curve 1, black) and P(St-MMA-AA)-G2 PAMAM microspheres (curve 2, red).

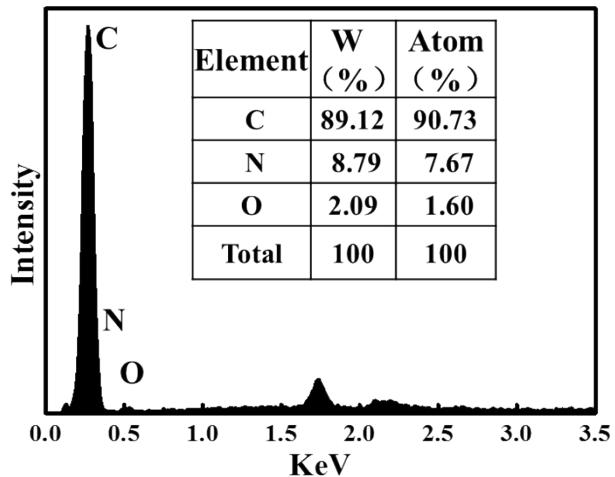


Fig. S4 EDS spectrum of P(St-MMA-AA)-G2 PAMAM microspheres. Inset: a statistical table of all elements and the corresponding content.

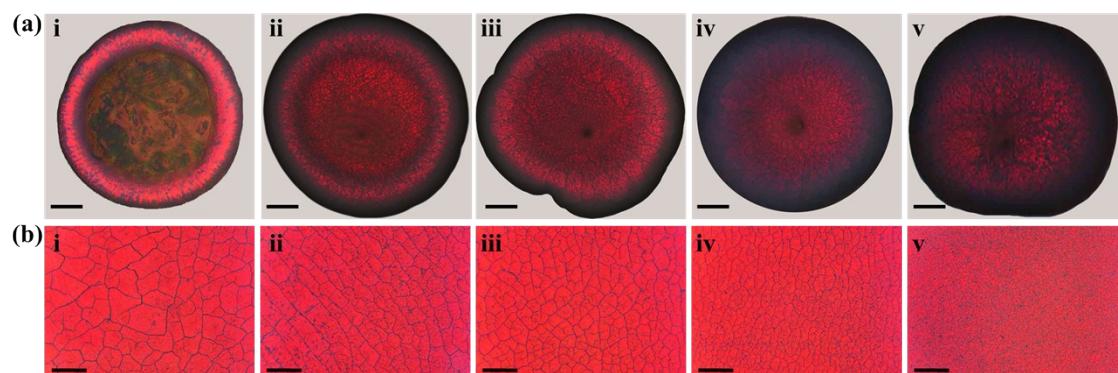


Fig. S5 Optical photographs of (a) PC coffee-ring and (b) PC films under different G2 PAMAM dendrimers content: i) 0 wt%, ii) 5 wt%, iii) 10 wt%, iv) 15 wt%, v) 20 wt%. Scale bars: a) 100 μ m and b) 20 μ m.

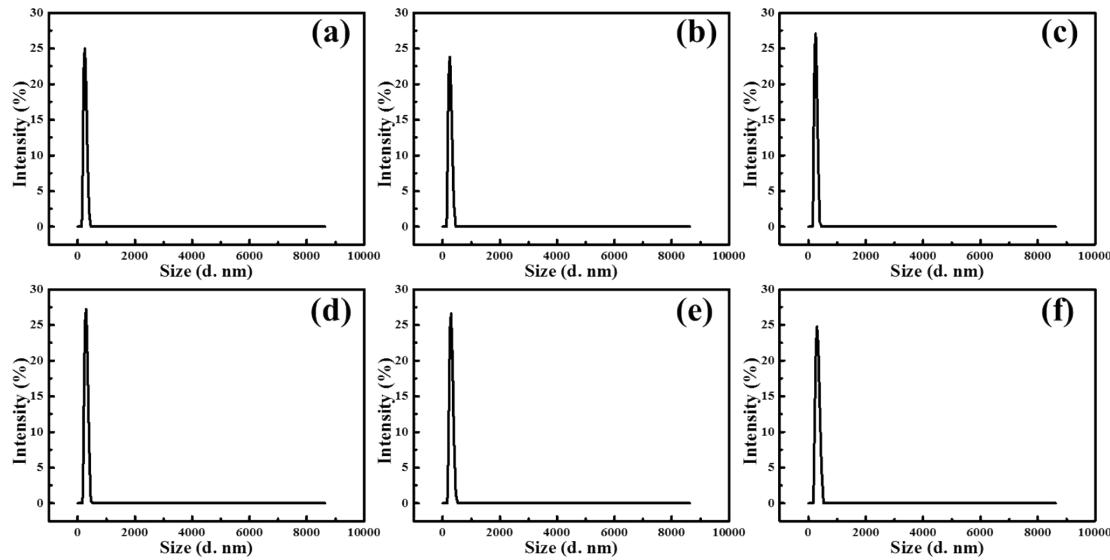


Fig. S6 The dynamic light scattering (DLS) measurements demonstrate P(St-MMA-AA) microspheres with diameter of (a) 241 nm (polydispersity indices (PDI), 0.021) and (d) 282 nm (PDI, 0.025), P(St-MMA-AA) -G2 PAMAM microspheres with diameter of (b) 242 nm (PDI, 0.026) and (e) 284 nm (PDI, 0.028), P(St-MMA-AA)-G2 PAMAM-CdTe/ZnS microspheres with diameter of (c) 244 nm (PDI, 0.038) and (f) 285 nm (PDI, 0.035), respectively.

In this paper, we utilized two kinds of P(St-MMA-AA) microspheres with diameter of 241 and 282 nm for the fabrication of functional 2D PC patterns. The size of these P(St-MMA-AA) microspheres keeps almost unchanged after grafting with G2 PAMAM dendrimers and the subsequent grafting with CdTe/ZnS QDs.

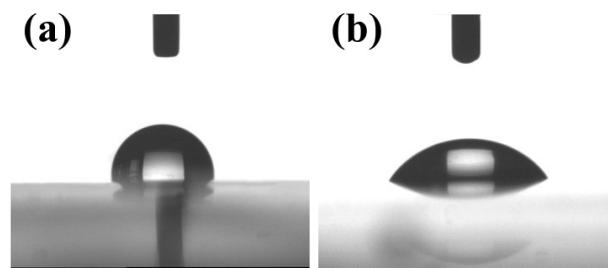


Fig. S7 The contact angles for water (a) and TMPTA (b) on a PE substrate, and the corresponding contact angle are $92.34^\circ \pm 2.3^\circ$ and $52.64^\circ \pm 2.1^\circ$, respectively.