

Supporting Information

Facile fabrication of crack-free photonic crystals with enhanced color contrast and low angle dependence

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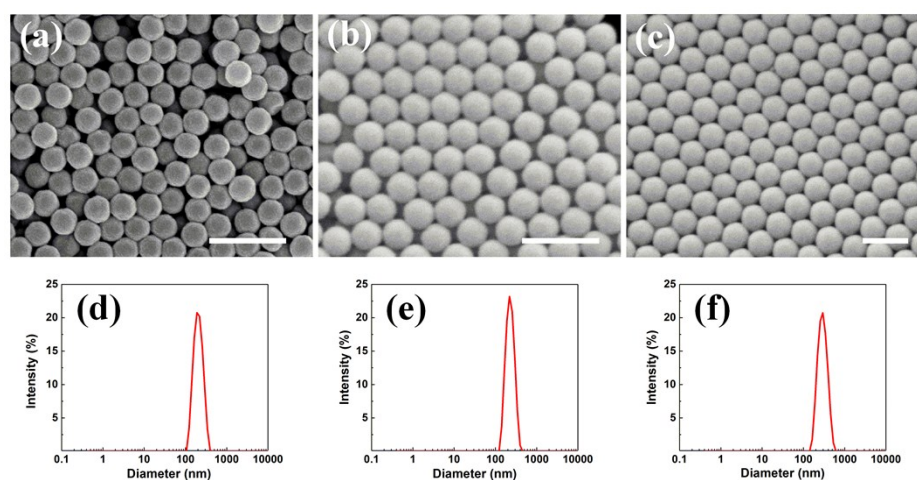


Fig. S1 SEM images and corresponding size distributions of as-prepared PS NPs with different diameters: (a and d) 162 nm, (b and e) 186 nm, (c and f) 252 nm. The scale bar is 500 nm.

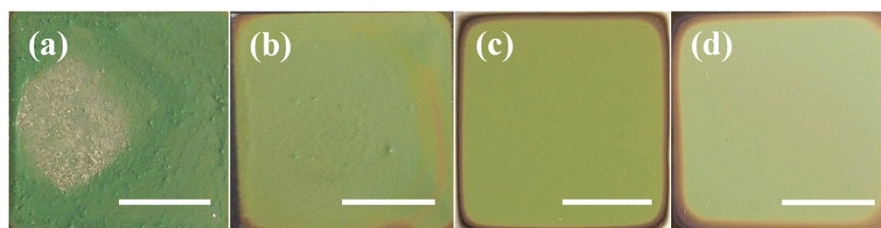


Fig. S2 Photographs of PC films assembled with different mass ratios of APTES to PS@PDA NPs: (a) 0:5, (b) 0.5:5, (c) 1:5, (d) 2:5. The PS core sizes are 186 nm, the scale bar is 1 cm.

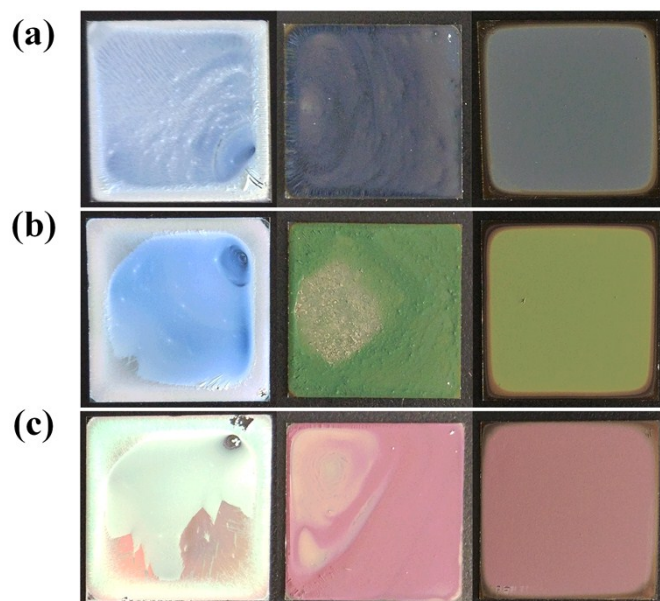


Fig. S3 Digital photographs of PC films fabricated by PS NPs, PS@PDA NPs and PS@PDA/APTES hybrid, the sizes of PS/PS core are (a) 162 nm, (b) 186 nm and (c) 252 nm, respectively.

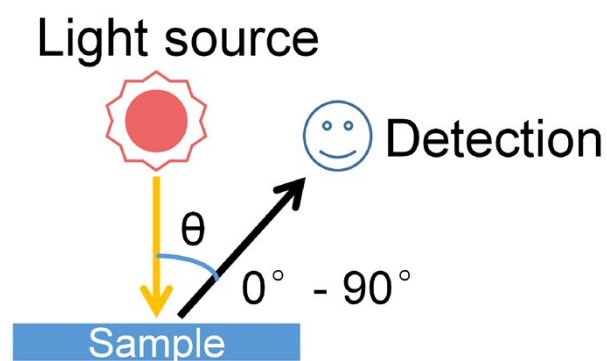


Fig. S4 The schematic drawing of viewing samples under different angles (θ) and the measurement system of angle-resolved reflectance spectrum.

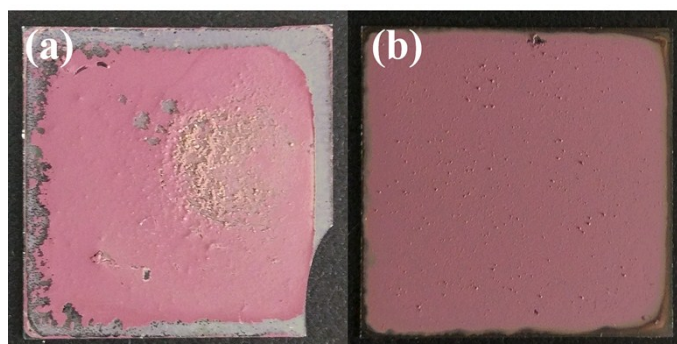


Fig. S5 (a) PS@PDA film and (b) PS@PDA/APTES film after 5 min hose stream test and a followed drying process. The PS core size is 252 nm.

Table S1 The diameters of PS/PS core of PS NPs, PS@PDA NPs and PS@PDA/APTES hybrid with corresponding reflection peak wavelengths (λ_{\max}) of PCs.

Diameters of PS/PS core (nm)	λ_{\max} (nm)		
	PS NPs	PS@PDA NPs	PS@PDA/APTES hybrid
162	400	448	464
186	454	522	538
252	606	652	640