

## Electronic Supplementary Information

### **Stamping colloidal photonic crystals: A facile way towards complex pixel colour patterns for sensing and displays**

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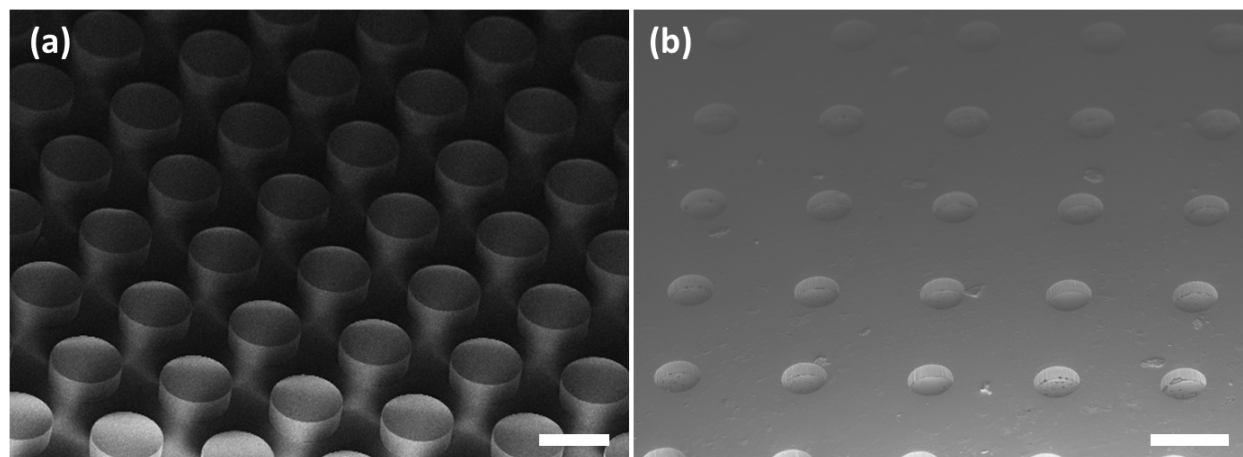


Fig. S1. SEM images of epoxy resin stamps used in this work showing (a) relief stamp, (b) engraved stamp. Scale bars are 100  $\mu\text{m}$ .

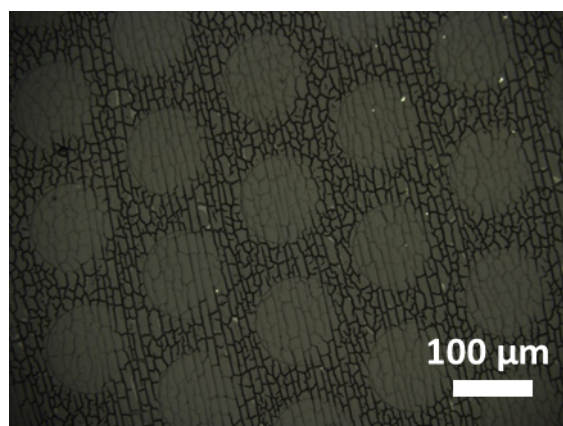


Fig. S2. Optical image of imprinted micropatterns of Poly(St-MMA-AA) CPCs under conditions of 110  $^{\circ}\text{C}$ , 30 bar for 60 s.

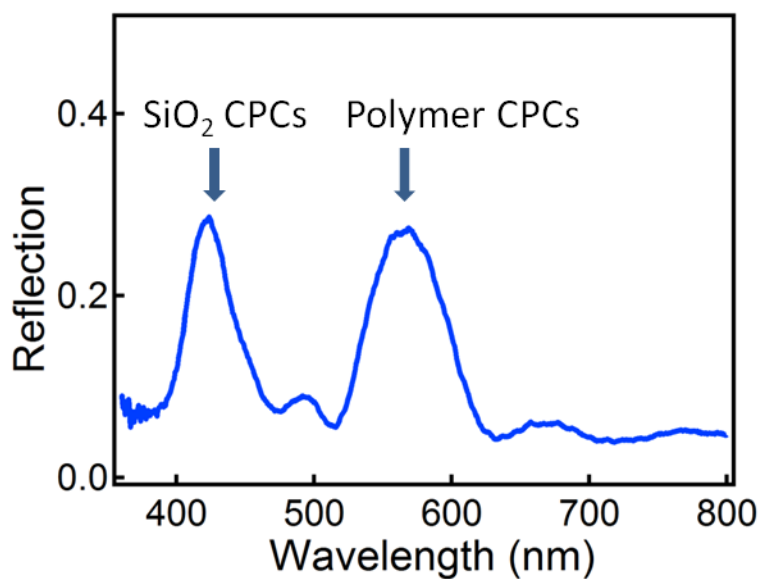


Fig. S3. Reflection spectra of the dual patterned CPCs made of SiO<sub>2</sub> and Poly(St-MMA-AA) over a large area.

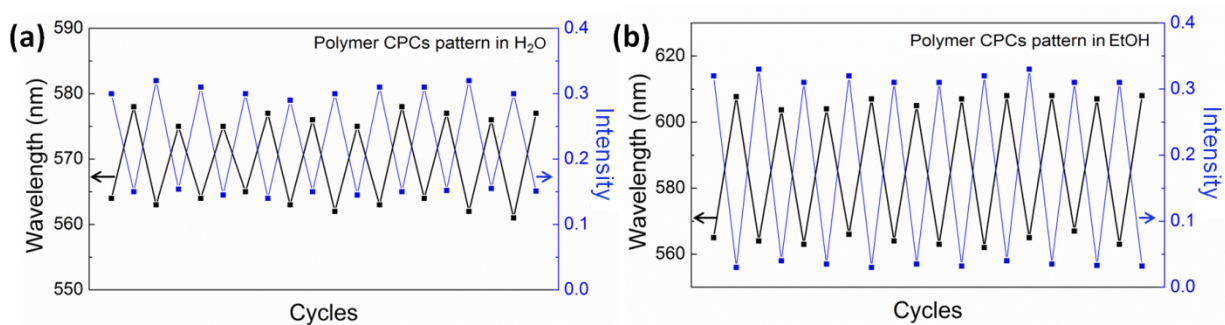


Fig. S4. Reversible response of the reflection peaks and intensities to liquid infiltration and drying, using (a) H<sub>2</sub>O, and (b) EtOH.

Table S1. Theoretical estimates of the wavelength and intensity of the Bragg peaks of the CPCs and comparison with the experimental values.

Volume fraction of EtOH (%)	Average refractive index	Intensity (%) (Theor. value/Exp. Value <sup>a</sup> )		Bragg reflection peak (nm) (Theor. value/Exp. Value <sup>b</sup> )	
		PS/MMA/AA CPCs	SiO <sub>2</sub> CPCs	PS/MMA/AA CPCs	SiO <sub>2</sub> CPCs
0	1.330	100 / 100	100 / 100	605.5/575	442.5/462
20	1.336	97 / 79	95 / 44	606.0/588	442.9/464
50	1.345	94 / 52	88 / 36	606.9/605	443.6/465
80	1.354	91 / 32	81 / -	607.7/607	444.4/ -
100	1.360	89 / 23	75 / -	608.3/611	444.8/ -

a. The experimental reflection intensity is expected to be smaller than the theoretical estimate even when they are fully infiltrated due to the existence of defects within the CPCs. These intensity values are normalized to the case when only H<sub>2</sub>O is used as the solvent.

b. The wavelength is expected to be larger than the experimental value because the packing of the CPC is not as large as 74% set by theory due to the stacking faults. Therefore, the overall refractive index of the CPC films is larger than the theoretical prediction after liquid infiltration.