Supporting Information

Photo- and thermal switching of blue phase film reflecting both right- and left-circularly polarized light

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Fig. S1 shows the POM image at different temperature on the cooling process, as shown in Fig. S1, the POM texture of BPIII is like foggy at 54 ^{o}C; while from 53 ^{o}C to 49 ^{o}C, the POM texture of BPI are platelet texture with a continuous color change and fine stripes as shown in Figure S1, in which no obvious fluctuation of the POM textures was observed during the cooling process. We note that, if the existence of the BPI–BPII transition, the temperature dependence of the Bragg reflection wavelength exhibits a discontinuous change and the wavelength will shift approximately 50-80 nm from BPI to BPII based on the previous studies.[1,2] However, according to the temperature dependence of the reflection band in Fig. S2, it clearly shows that the reflection band of this sample exhibited a continuous and a little change as the temperature decreases. Therefore, we confirm that there is just BP I and BPIII in our sample due to the highly chirality together with bent dopant similar to our previous studies. And the absence of BPII has been commonly observed in the cases with a strong twist force. [3,4]

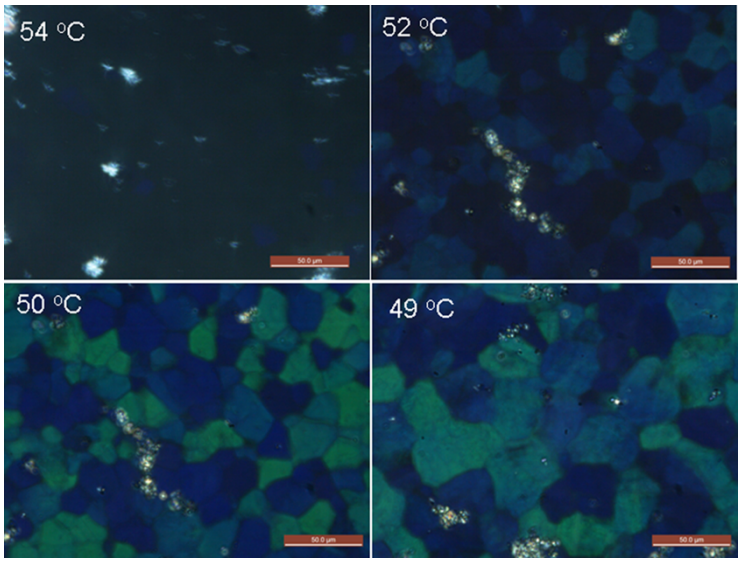

Fig. S1 POM images of LH BP sample at different temperature on the cooling process

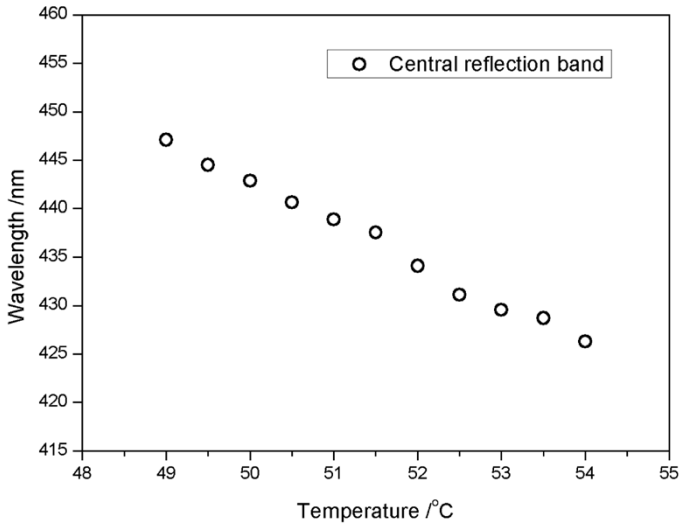

Fig. S2 Temperature dependence of the reflection wavelength of LH BP sample

References

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