Electronic Supporting Information

Anisotropic Dye Adsorption by Templated Smectic Nanoporous Polymer Films: Pore Size *vs* Pore Charges Affecting the Adsorption

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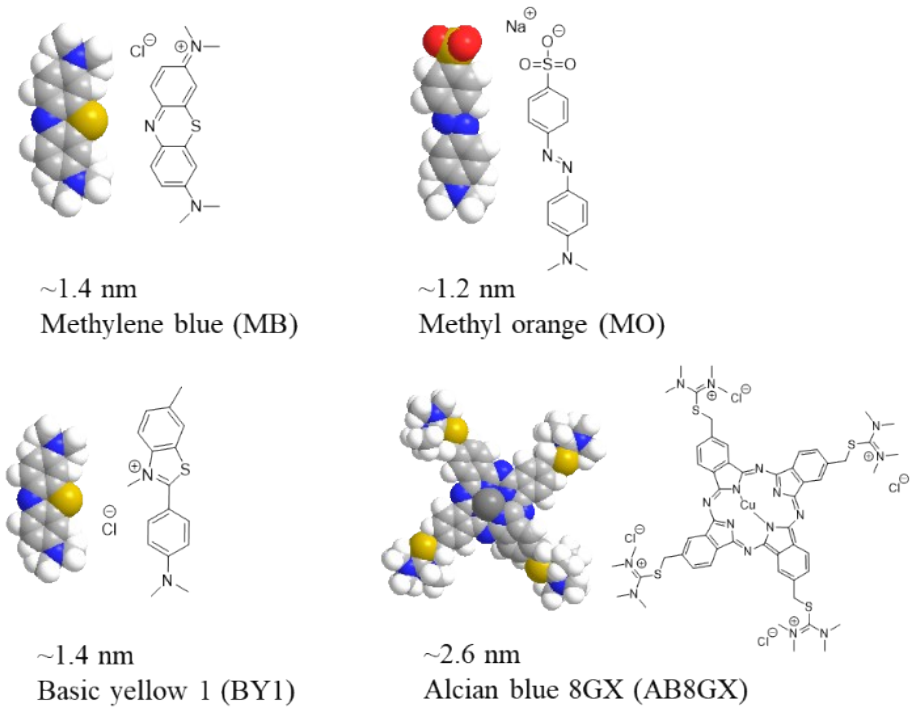

Fig. S1 Molecular structures and space-filling models of methylene blue (MB), methyl orange (MO), basic yellow 1 (BY1), and alcian blue 8GX (AB8GX).

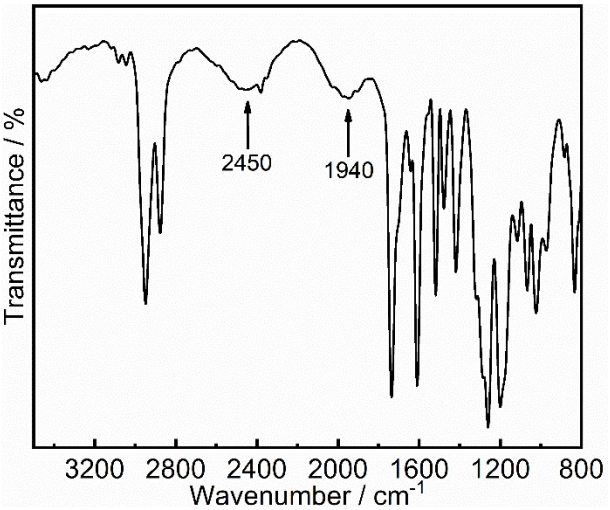

Fig. S2 FT-IR spectrum of the monomer **6OBA·NC6** (1:1).

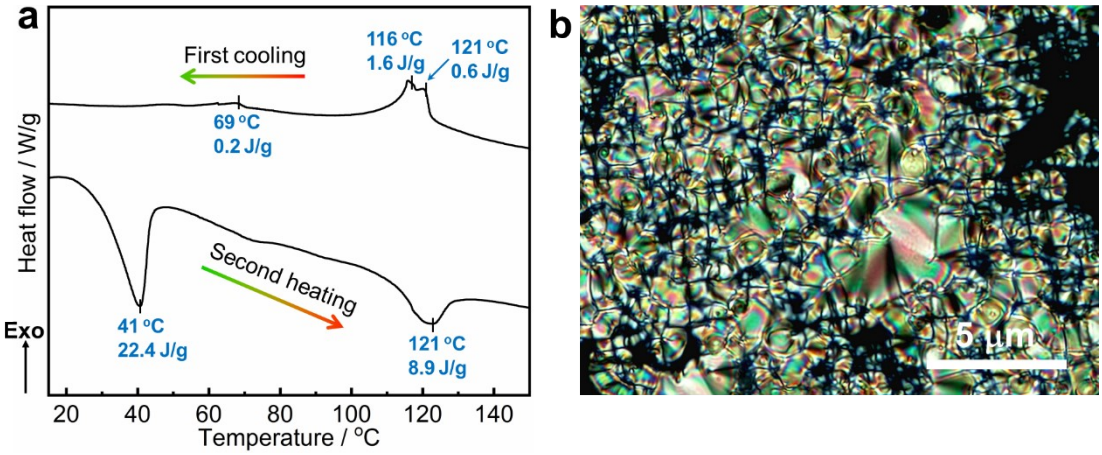

Fig. S3 DSC spectrum (a) and POM picture (b) of the monomer **6OBA·NC6** (1:1) at 110 °C during the first cooling and second heating process.

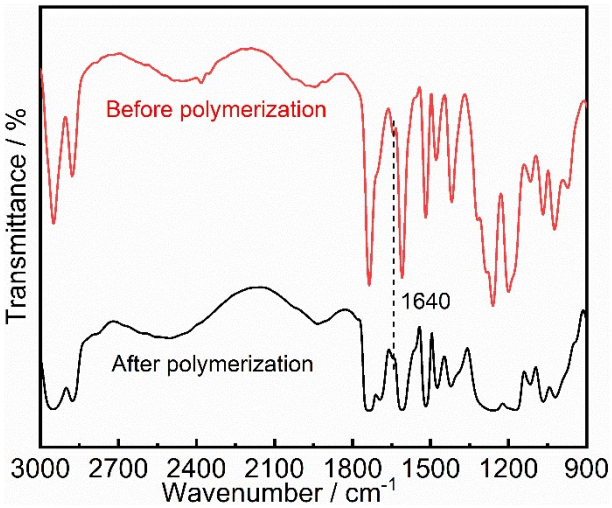

Fig. S4 FT-IR spectra of the **6OBA·NC6·C6H** before and after photopolymerization.

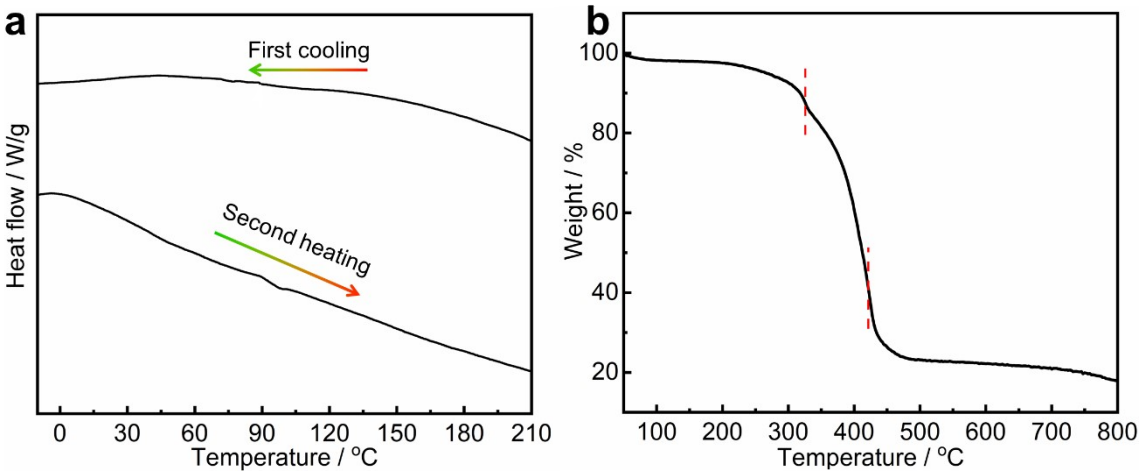

Fig. S5 DSC (a) and TGA (b) spectrum of the pristine film.

Table S1 The calculated and measured weight loss of the NC6-removal film with different alignment.

Film	Weight loss (%)	
	Calculated value	Weight
Planar alignment	37.76	37.98
Perpendicular alignment	37.76	38.84

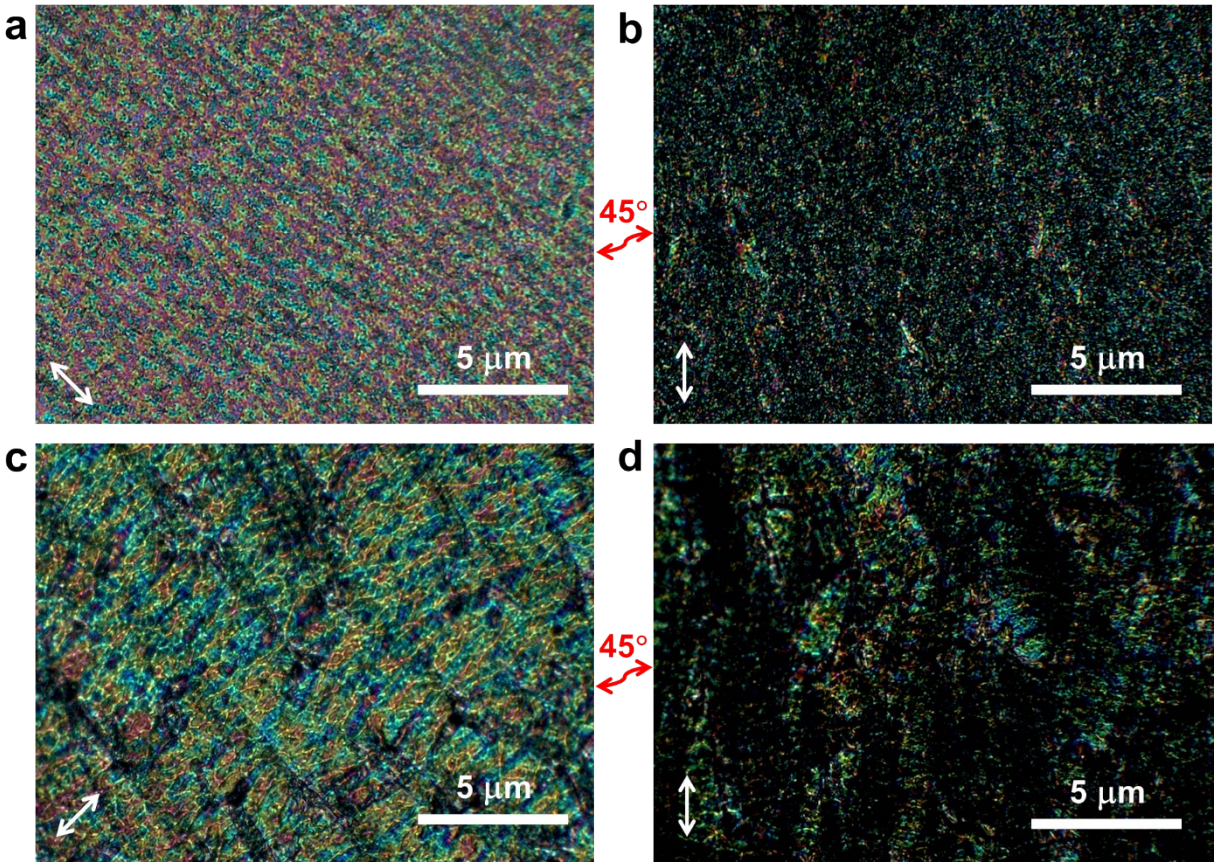

Fig. S6 POM pictures of the planar alignment pristine film (a, b) and the **NC6**-removal film (c, d). The arrow represents the direction of alignment.

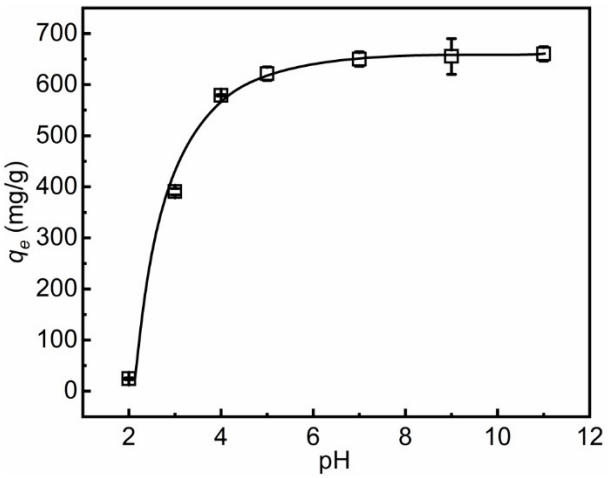

Fig. S7 Effect of the solution pH on MB adsorption by the **NC6**-removal film.

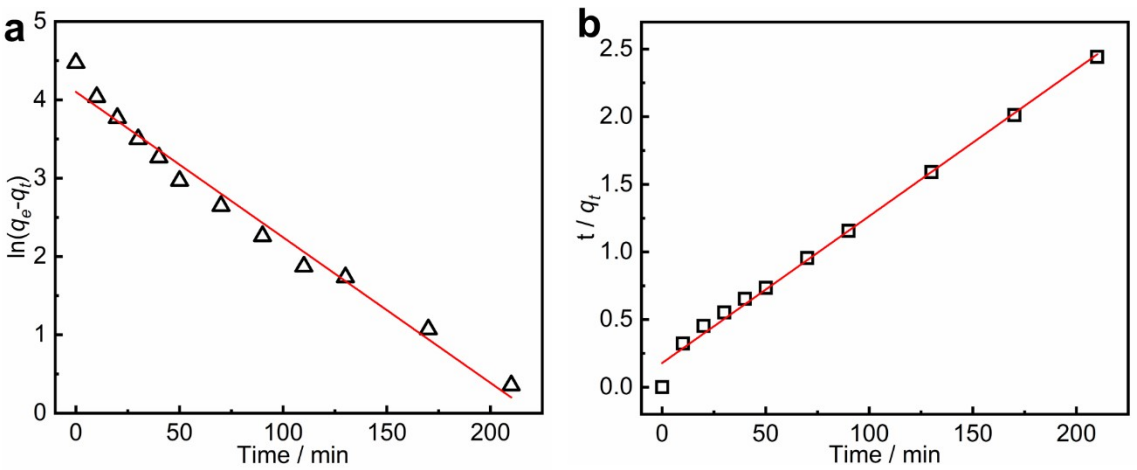

Fig. S8 (a) Fitting of the Pseudo-first-order kinetics and (b) the Pseudo-second-order kinetics of MB adsorption onto the planar **NC6**-removal film.

Langmuir adsorption isotherm:

$$C_e / q_e = C_e / q_m + 1/(K_L \times q_m) \quad (1)$$

where C_e (mg·L^{-1}) is the equilibrium concentration of MB, q_e and q_m (mg·g^{-1}) are the adsorption capacity at equilibrium and the maximum adsorption capacity, K_L is the Langmuir adsorption constant (L·mg^{-1}).

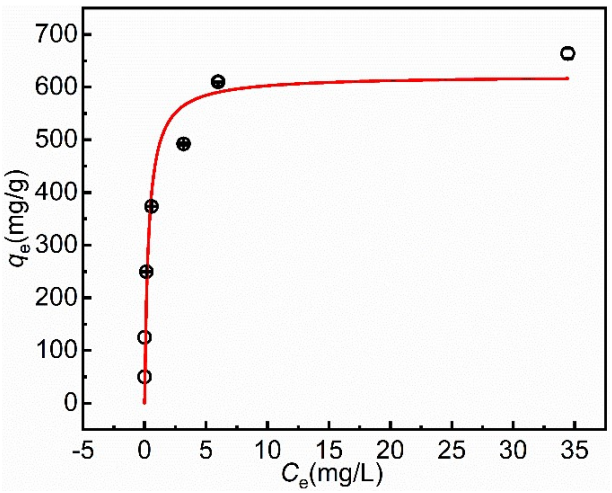

Fig. S9 Comparison of experimental equilibrium values (marks) with predicted adsorption isotherm (line). Condition: pH = 5.5, V = 5 ml, m = 2 mg, and T = 25 °C.

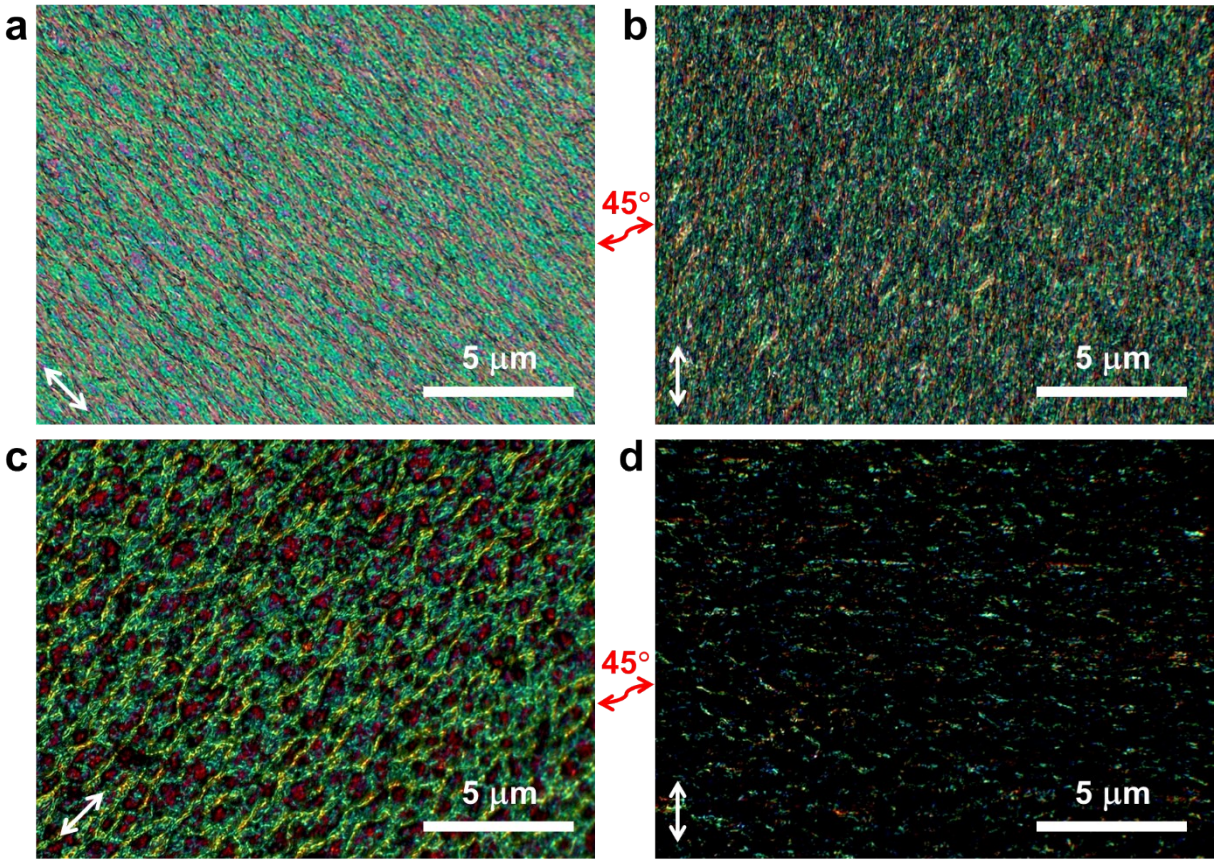

Fig. S10 POM pictures of the planar aligned pristine film with **5CB** (a, b) and the **NC6/5CB** removal film (c, d). The arrow represents the direction of alignment.

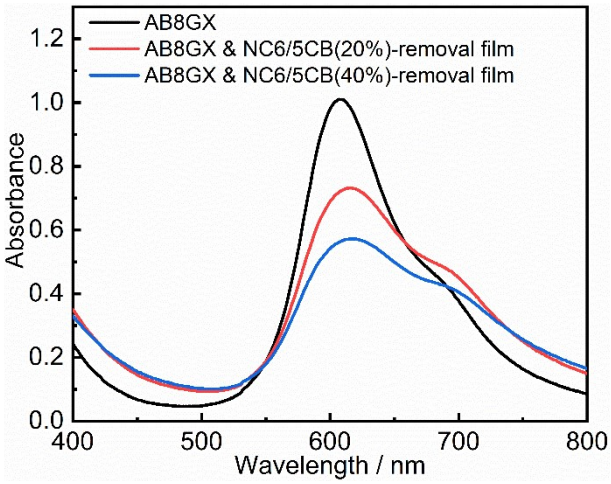

Fig. S11 UV-vis spectra of AB8GX aqueous solutions before and after adsorption by **NC6/5CB** (20, 40%) removal film. Adsorption condition: pH = 4.28, V_{AB8GX} = 5 ml, m = 2 mg, and T = 25 °C.