

**Vertical orientation of liquid crystal on  
4-*n*-alkyloxyphenoxymethyl-substituted polystyrene containing liquid crystal precursor**

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## Figure captions

**Figure S1.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PBOP.

**Figure S2.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PHOP.

**Figure S3.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of POOP.

**Figure S4.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP20.

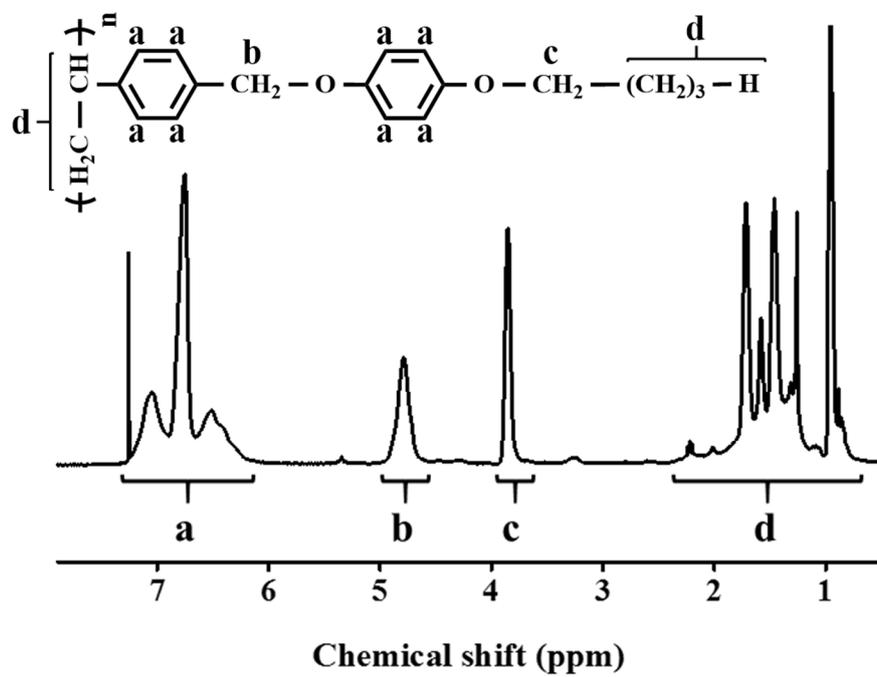
**Figure S5.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP40.

**Figure S6.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP60.

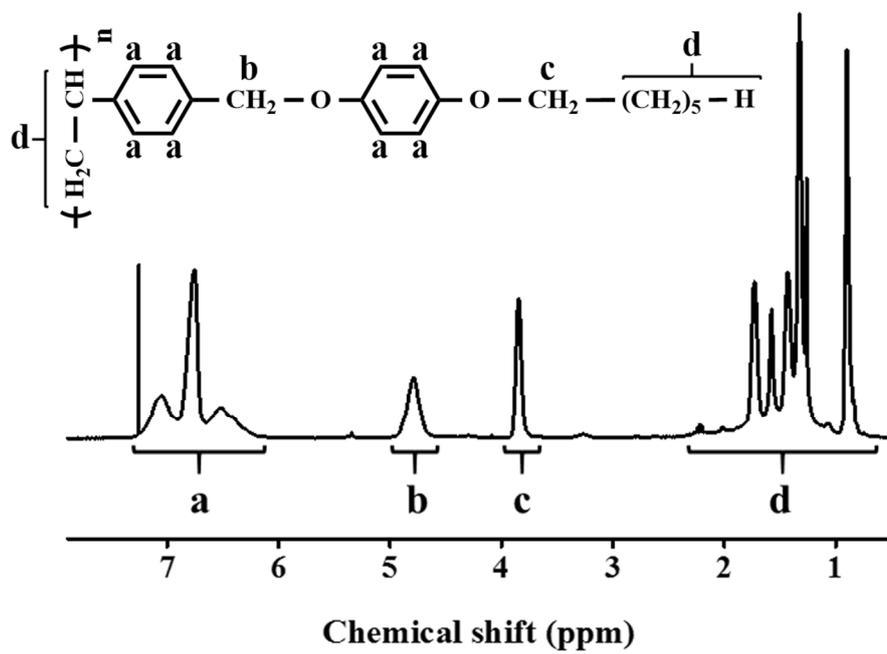
**Figure S7.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP80.

**Figure S8.** Energy dispersive spectroscopy (EDS) mapping images of (a) the bare glass and (b)–(f) PEOP film on the glass substrate observed at different positions.

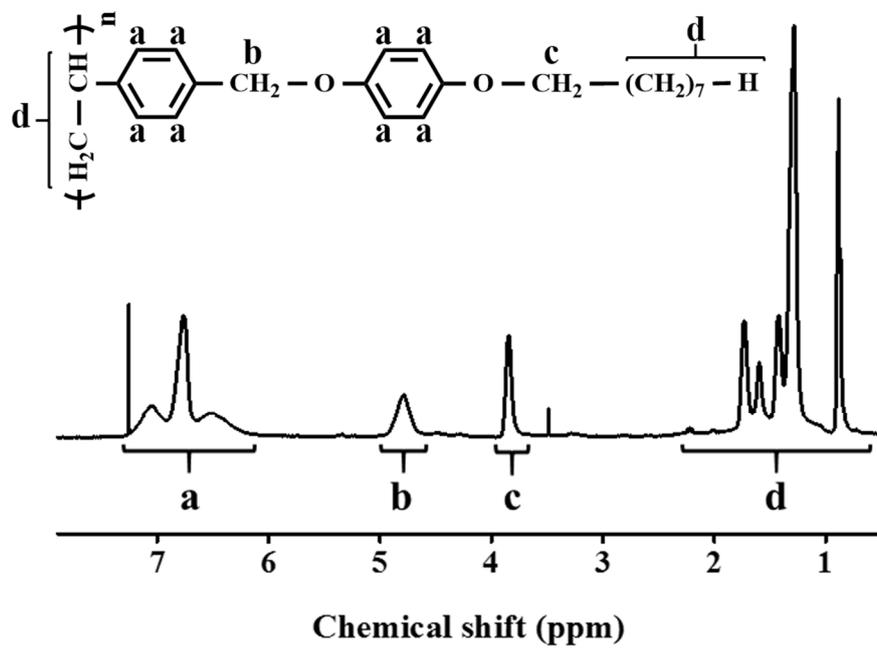
**Figure S9.** Energy dispersive spectroscopy (EDS) mapping images of (a)–(e) PEOP film on the glass substrate after thermal treatment at 200 °C for 10 min observed at different positions.



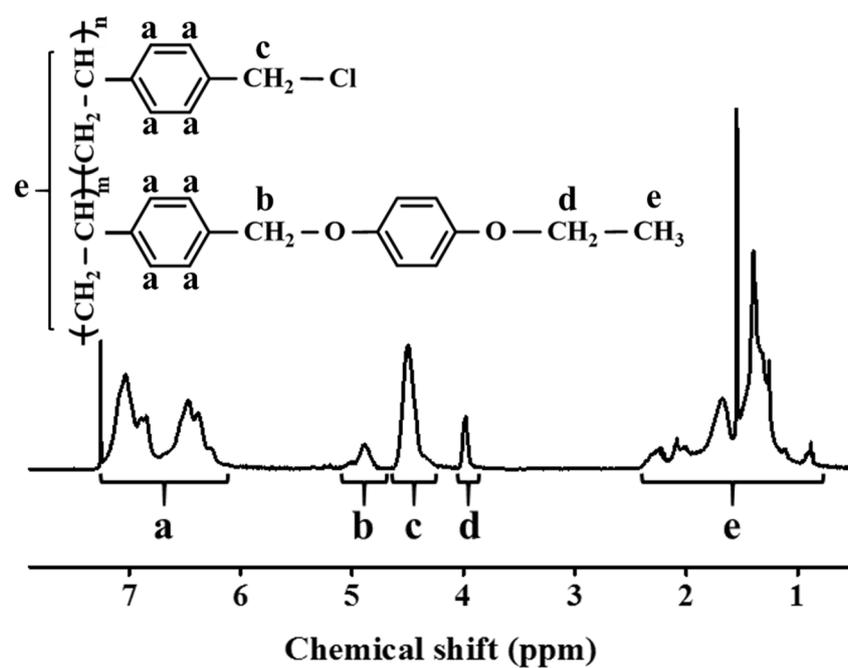
**Figure S1.** <sup>1</sup>H nuclear magnetic resonance (NMR) spectrum of PBOP.



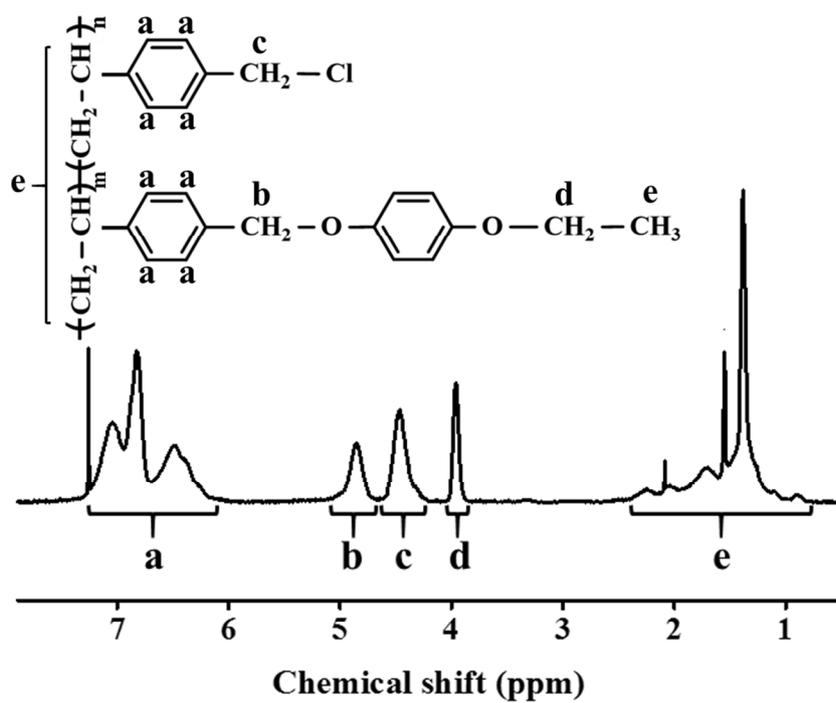
**Figure S2.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PHOP.



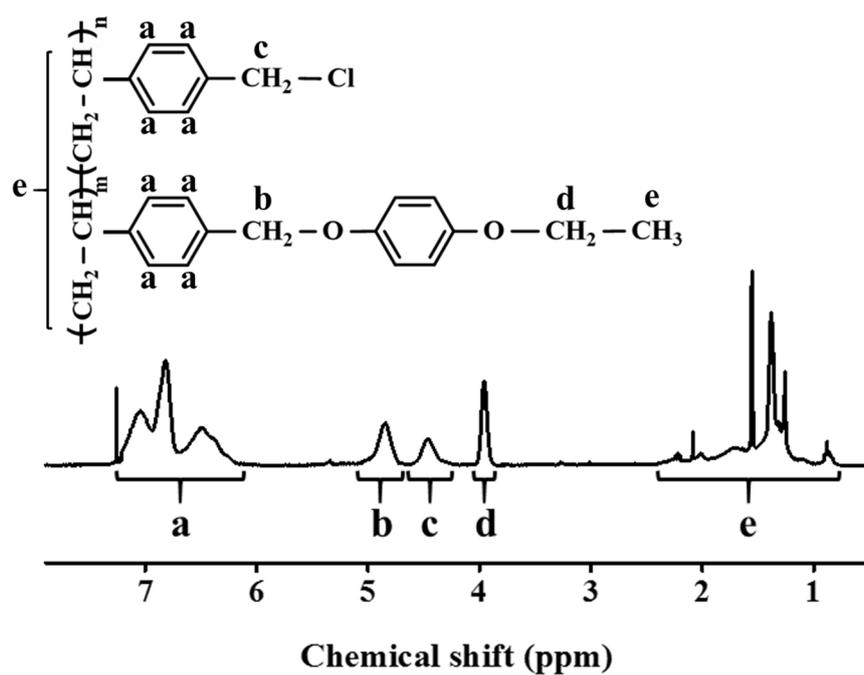
**Figure S3.** <sup>1</sup>H nuclear magnetic resonance (NMR) spectrum of POOP.



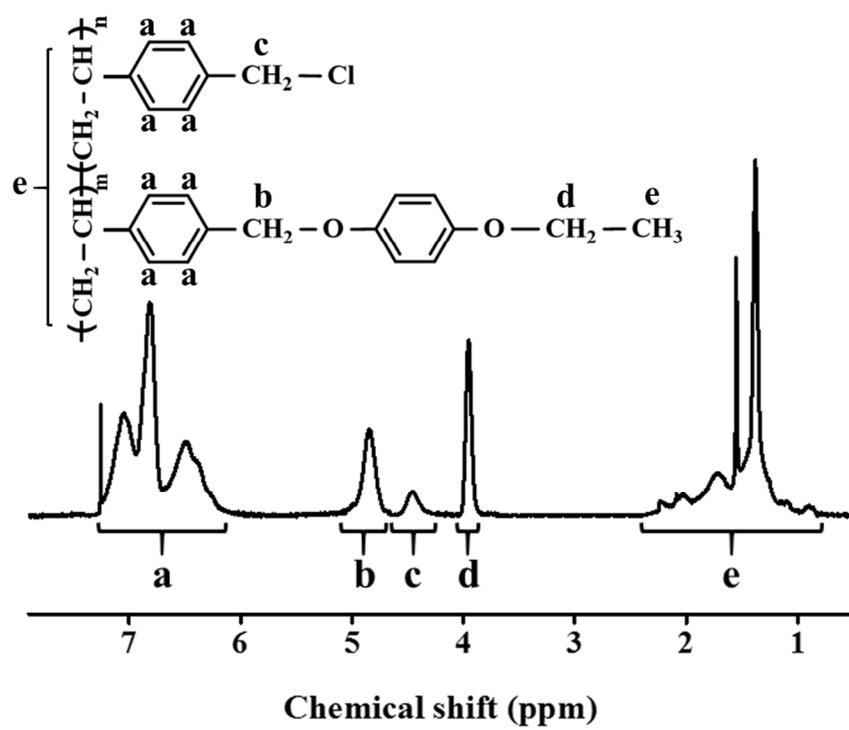
**Figure S4.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP20.



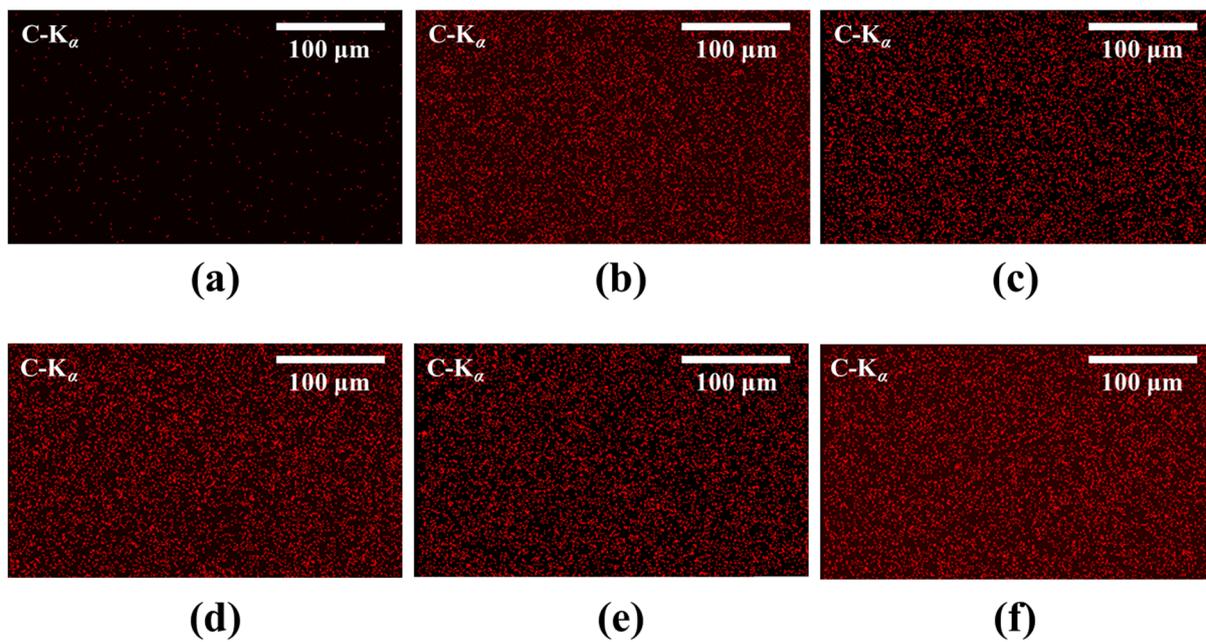
**Figure S5.** <sup>1</sup>H nuclear magnetic resonance (NMR) spectrum of PEOP40.



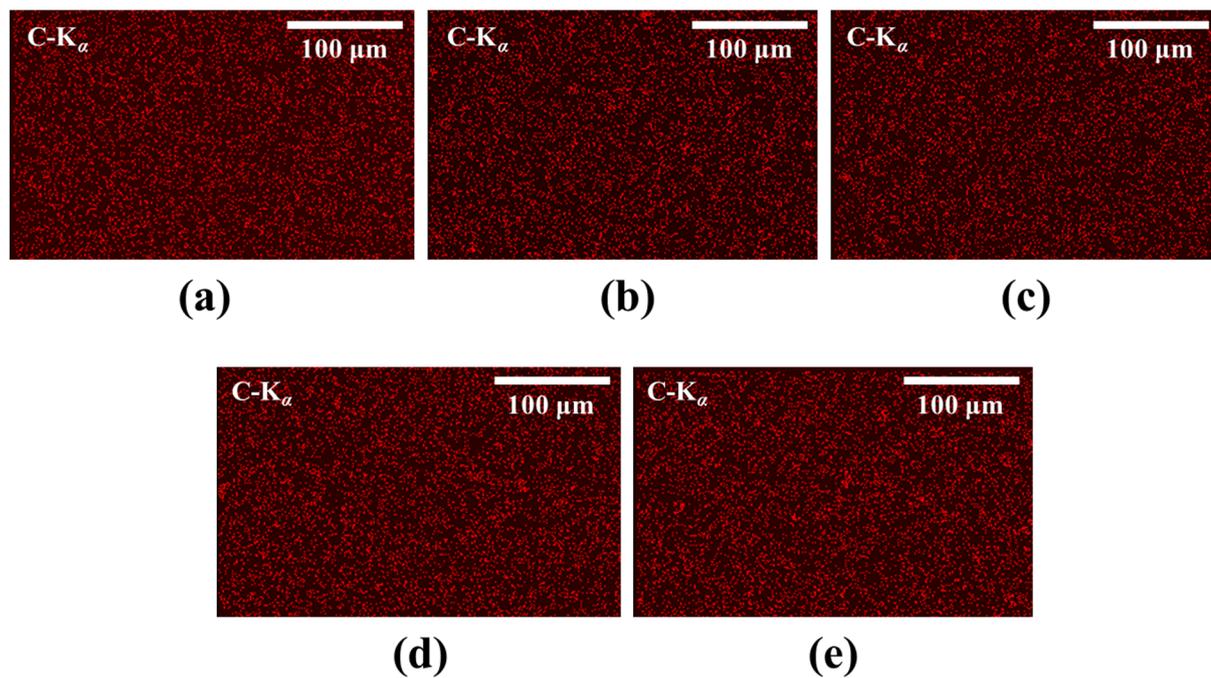
**Figure S6.** <sup>1</sup>H nuclear magnetic resonance (NMR) spectrum of PEOP60.



**Figure S7.**  $^1\text{H}$  nuclear magnetic resonance (NMR) spectrum of PEOP80.



**Figure S8.** Energy dispersive spectroscopy (EDS) mapping images of (a) the bare glass and (b) – (f) PEOP film on the glass substrate observed at different positions.



**Figure S9.** Energy dispersive spectroscopy (EDS) mapping images of (a) – (e) PEOP film on the glass substrate after thermal treatment at 200 °C for 10 min observed at different positions.