Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Novel luminescent chiral network liquid-crystalline polymers containing Sm(III) ions

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M_1 was prepared according to previously reported synthesis method. Yield: 76%. IR (KBr): 3070 cm^{-1} (=CH), 2974, 2856 cm^{-1} (–CH_3, –CH_2–), 1706 cm^{-1} (C=O), 1642 cm^{-1} (C=C), 1604, 1498 cm^{-1} (Ar–), 1274, 1172 cm^{-1} (C–O–C). Found: C, 81.18, H, 9.87%. Calc. for $C_{37}H_{54}O_3$: C, 81.27, H, 9.95%. ^{1}H NMR (600 MHz, $CDCl_3$, δ): 7.99–7.98 (d, J=9 Hz, 2H, Ar–H), 6.92 (d, J=9 Hz, 2H, Ar–H), 6.05 (m, 1H, CH_2=C***H***–), 5.44–5.41 (t, 2H, C***H***$_2$=CH–), 5.32–5.31 (m, 1H, =CH–in cholesteryl), 4.59–4.58 (d, J=4.8 Hz, 2H, –CH_2O–), 2.03–0.67 (m, 44H, cholesteryl–H).

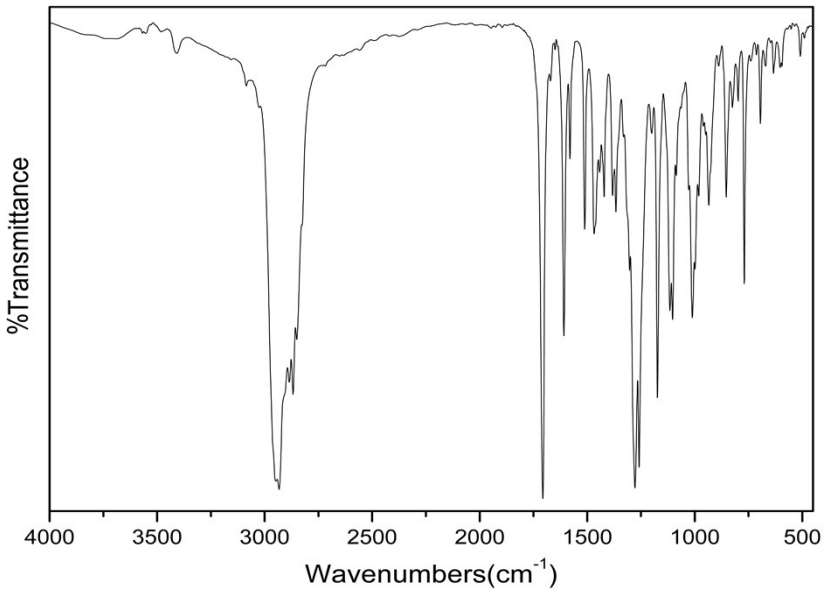

Figure S1. FT-IR spectrum of M_1

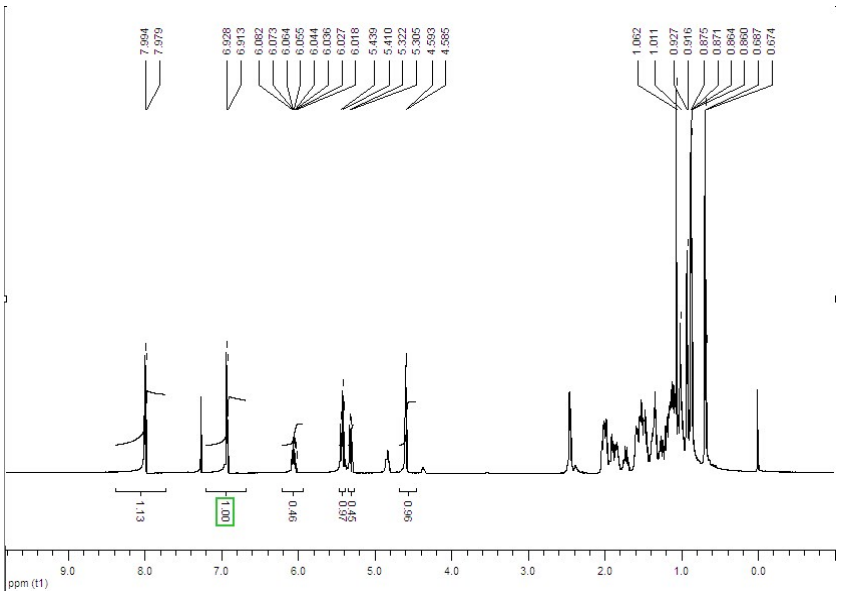

Figure S2. ^{1}H NMR spectrum of M_1 (600 MHz, $CDCl_3$).

M_2 was prepared according to a previously reported synthetic method. Yield: 78%. IR (KBr): 3076(=CH), 2975–2851(–CH_3, –CH_2–), 1758, 1717(C=O), 1642 (C=C), 1603, 1502(Ar–). Anal. Calcd for $C_{42}H_{54}O_{10}$: C 70.17, H 7.57, O 22.26; Found: C 70.06, H 7.53, O 22.21. ^{1}H NMR (600 MHz, $CDCl_3$, δ): 8.18–7.15 (m, 8H, Ar–H), 5.86–5.78 (m, 2H, CH_2=C**H**–), 5.06–4.92 (t, 4H, C**H**$_2$=CH–), 4.67–4.04 (m, 8H, isosorbide), 2.61–2.55 (m, 4H, –C**H**$_2$COO–), 2.07–2.02 (m, 4H, CH_2=CHC**H**$_2$(CH_2)$_6$$CH_2$COO–), 1.77–1.33 (m, 24H, CH_2=$CHCH_2$(C**H**$_2$)$_6$$CH_2$COO–)

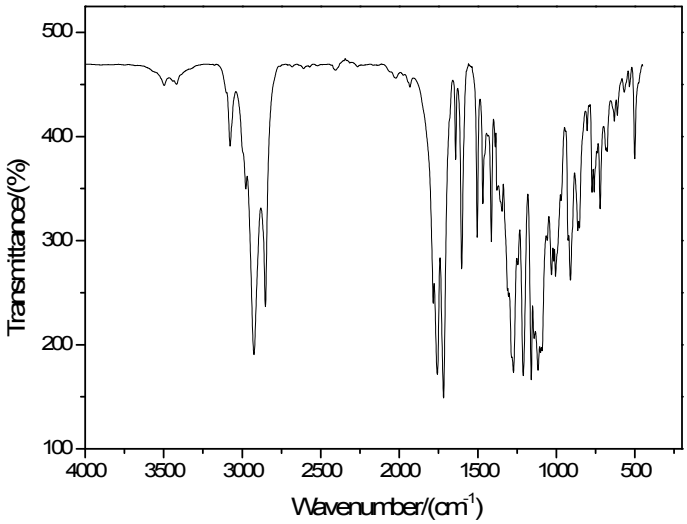

Figure S3. FT-IR spectrum of M_2

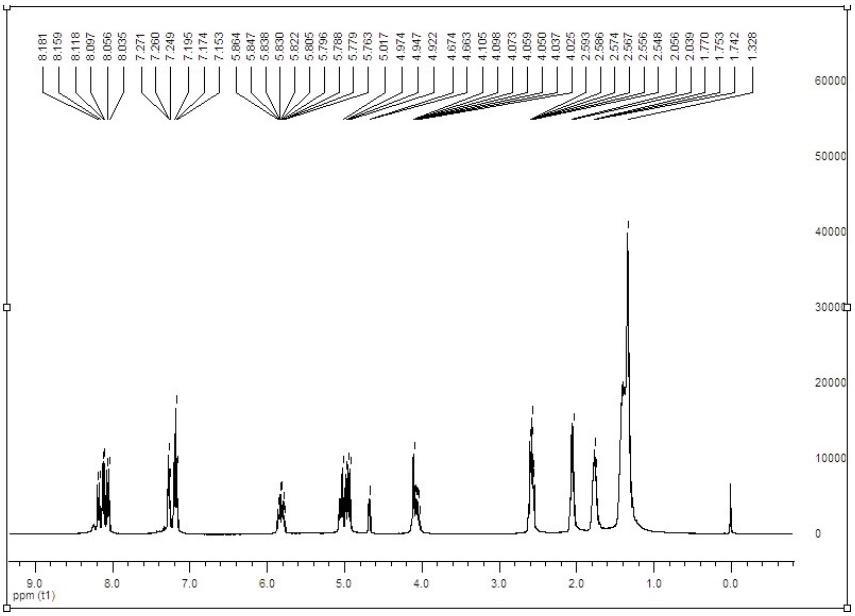

Figure S4. ^{1}H NMR spectrum of M_2 (600 MHz, $CDCl_3$)

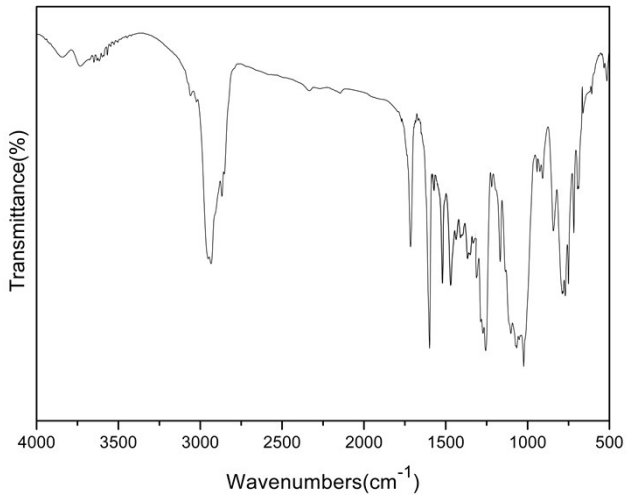

Figure S5. FT-IR spectrum of M_3

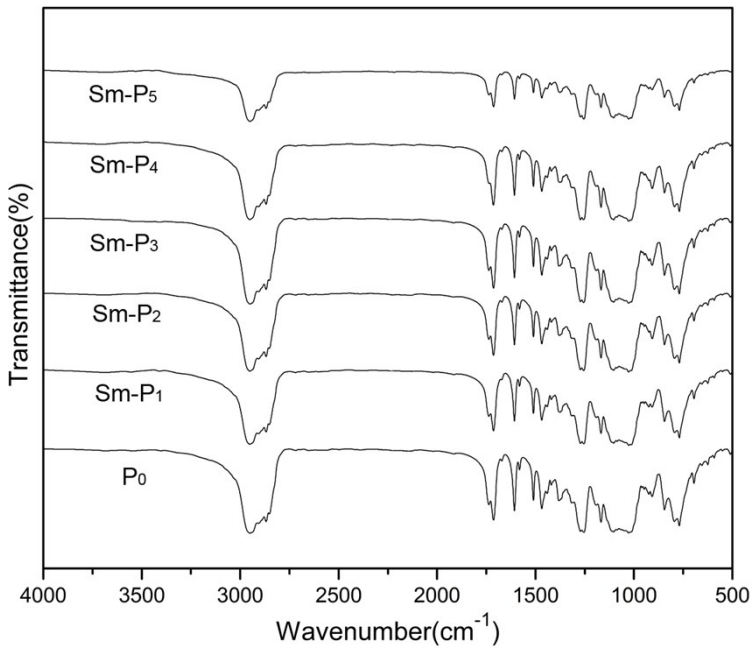

Figure S6. FT-IR spectra of P_0 and Sm-LCPs