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Supplementary Information

Influence of the Spacer Length on the Phase Behaviors of Mesogen-Jacketed Liquid Crystalline Polymers with Bulk Side-Chain

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2-triphenylmethoxy-1-ethanol:^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.57 (s, 1H, -O*H*), 3.26 (s, 2H, -OCH_2-), 3.74 (s, 2H, -OCH_2-), 7.18-7.64 (m, 15H, Ar-*H*).

2,5-bis[(triphenylmethoxy-ethyl)oxycarbonyl]styrene (Mv-2-Tr):^{1}H NMR (δ, ppm, $CDC1_3$): δ=3.42 (s, 4H, -OCH_2-), 4.45-4.62 (m, 4H, -OCH_2-), 5.35-5.43 (d, 1H, =CH_2), 5.73-5.83 (d, 1H, =CH_2), 7.17-7.58 (m, 30H, Ar-*H* and 1H, –C*H*=), 7.95-8.13 (m, 2*H*, Ar-*H*), 8.27-8.40 (s, 1H, Ar-*H*). Mass Spectrometry (MS) (m/z) $[M + Na]^+$ Calcd for $C_{52}H_{44}O_6Na$, 787.304.; found, 787.544.

4-triphenylmethoxy-1-butanol:^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.69 (m, 4H, -CH_2-, and 1H, -O*H*), 2.96-3.07 (m, 2H, -OCH_2-), 3.58-3.76 (m, 2H, -OCH_2-), 7.16-7.50 (m, 15H, Ar-*H*).

2,5-bis[(triphenylmethoxy-butyl)oxycarbonyl]styrene (Mv-4-Tr):^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.69-1.82 (m, 4H, -CH_2-), 1.83-1.97 (m, 4H, -CH_2-), 3.08-3.21 (m, 4H, -OCH_2-), 4.27-4.42 (m, 4H, -OCH_2-), 5.36-5.46 (d, 1H, =CH_2), 5.69-5.80 (d, 1H, =CH_2), 7.16-7.52 (m, 30H, Ar-*H* and 1H, –C*H*=), 7.83-7.97 (m, 2H, Ar-*H*), 8.18-8.27 (s, 1H, Ar-*H*). Mass Spectrometry (MS) (m/z) $[M + Na]^+$ Calcd for $C_{56}H_{52}O_6Na$, 843.366.; found, 843.619.

8-triphenylmethoxy-1-octanol:^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.15-1.45 (m, 8H, -CH_2-), 1.45-1.68 (m, 4H, -CH_2-, and 1H, -O*H*), 2.99-3.08 (m, 2H, -OCH_2-), 3.59-3.68 (m, 2H, -OCH_2-), 7.16-7.52 (m, 15H, Ar-*H*).

2,5-bis[(triphenylmethoxy-octyl)oxycarbonyl]styrene (Mv-8-Tr):^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.19-1.50 (m, 16H, -CH_2-), 1.52-1.69 (m, 4, -CH_2-), 1.69-1.86 (m, 4H, -CH_2-), 2.98-3.14 (t, 4H, -OCH_2-), 4.26-4.40 (m, 4H, -OCH_2-), 5.36-5.46 (d, 1H, =CH_2), 5.69-5.80 (d, 1H, =CH_2), 7.15-7.58 (m, 30H, Ar-*H* and 1H, –C*H*=), 7.84-8.03 (m, 2H, Ar-*H*), 8.20-8.30 (s, 1H, Ar-*H*). Mass Spectrometry (MS) (m/z) $[M + Na]^+$ Calcd for $C_{64}H_{68}O_6Na$, 955.491.; found, 955.784.

10-triphenylmethoxy-1-decanol:^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.00-1.42 (m, 12H, -CH_2-), 1.46-1.70 (m, 4H, -CH_2-, and 1H, -O*H*), 2.98-3.09 (m, 2H, -OCH_2-), 3.58-3.68 (m, 2H, -OCH_2-), 7.16-7.52 (m, 15H, Ar-*H*).

2,5-bis[(triphenylmethoxy-decyl)oxycarbonyl]styrene (Mv-10-Tr):^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.15-1.50 (m, 24H, -CH_2-), 1.51-1.67 (m, 4, -CH_2-), 1.70-1.84 (m, 4H, -CH_2-), 2.98-3.08 (t, 4H, -OCH_2-), 4.25-4.38 (m, 4H, -OCH_2-), 5.35-5.46 (d, 1H, =CH_2), 5.69-5.80 (d, 1H, =CH_2), 7.15-7.56 (m, 30H, Ar-*H* and 1H, –C*H*=), 7.84-7.99 (m, 2H, Ar-*H*), 8.19-8.27 (s, 1H, Ar-*H*). Mass Spectrometry (MS) (m/z) $[M + Na]^+$ Calcd for $C_{68}H_{76}O_6Na$, 1011.554.; found, 1011.894.

12-triphenylmethoxy-1-dodecanol: ^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.05-1.41 (m, 16H, -CH_2-), 1.47-1.68 (m, 4H, -CH_2-, and 1H, -O*H*), 2.98-3.09 (m, 2H, -OCH_2-), 3.59-3.68 (m, 2H, -OCH_2-), 7.16-7.52 (m, 15H, Ar-*H*).

2,5-bis[(triphenylmethoxy-dodecyl)oxycarbonyl]styrene (Mv-12-Tr):^{1}H NMR (δ, ppm, $CDC1_3$): δ=1.15-1.48 (m, 32H, -CH_2-), 1.49-1.67 (m, 4, -CH_2-), 1.70-1.85 (m, 4H, -CH_2-), 2.96-3.10 (t, 4H, -OCH_2-), 4.26-4.40 (m, 4H, -OCH_2-), 5.36-5.46 (d, 1H, =CH_2), 5.69-5.81 (d, 1H, =CH_2), 7.15-7.54 (m, 30H, Ar-*H* and 1H, –C*H*=), 7.8-7.99 (m, 2H, Ar-*H*), 8.19-8.28 (s, 1H, Ar-*H*). Mass Spectrometry (MS) (m/z) $[M + Na]^+$ Calcd for $C_{72}H_{84}O_6Na$, 1067.617.; found, 1068.020.

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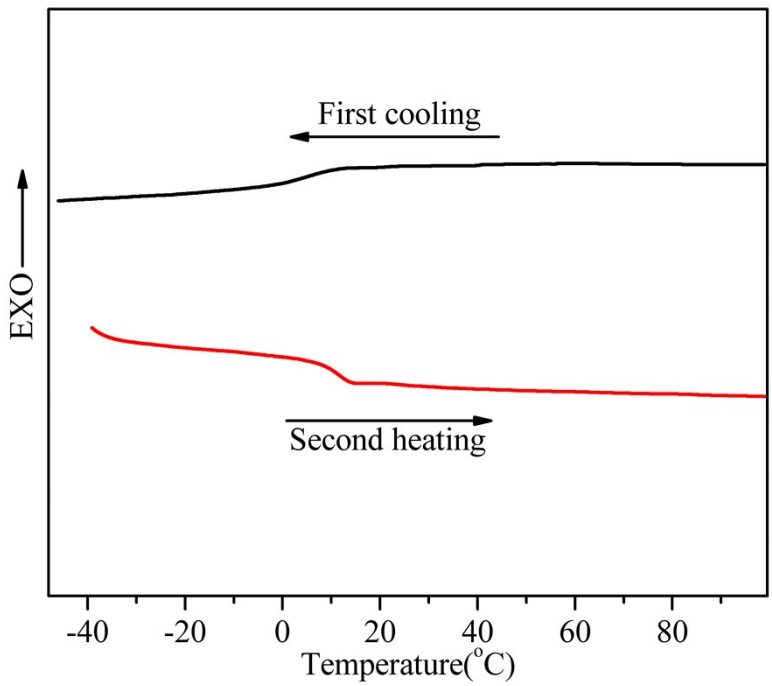

Figure.S1 DSC curves of Pv-12-Tr during the second heating scan and the first cooling scan at a rate of 10 °C/min under nitrogen atmosphere.

5