

Supplemental Information

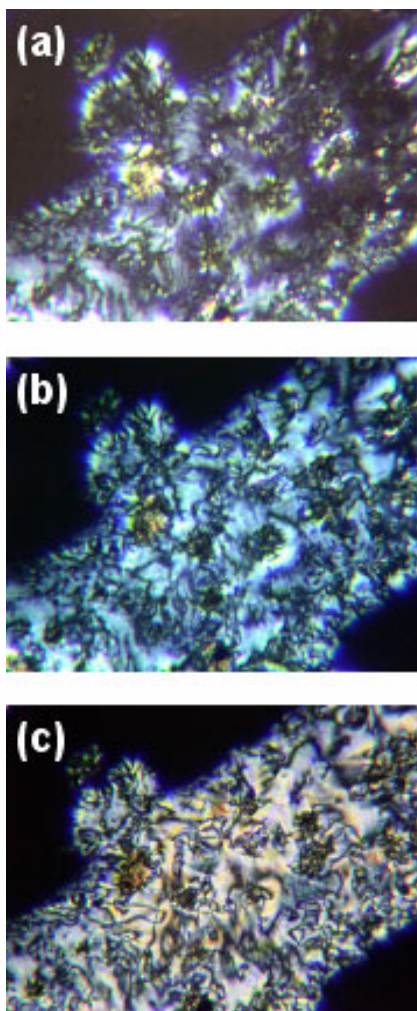


Fig. 2 Polarized optical microphotographs of **2b** on cooling: (a) smectic C_y phase at 240 °C; (b) smectic C_y phase at 220 °C; (c) smectic C_x phase at 200 °C.

Spectral Data

The spectral data of **5a**, **5c**, **6a**, **6c**, **1a**, **1c**, **1g**, and **1i** were reported in our previous paper. (*Chem. Mater.* 2004, **16**, 2329)

5b: yield 70.6 %; mp 111.2-111.8 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2915, 2848, 1647, 1599, 1507, 1468, 1247, 1173, 777; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.4\text{Hz}$), 1.29-1.38 (m, 8H), 1.45 (t, 2H, $J = 7.9\text{Hz}$), 1.78 (t, 2H, $J = 8.0\text{Hz}$), 3.98 (t, 2H, $J = 6.8\text{Hz}$), 5.13 (s, 2H), 6.68 (d, 1H, $J = 8.8\text{Hz}$), 7.04 (d, 3H, $J = 8.8\text{Hz}$), 7.23 (t, 1H, $J = 8.3\text{Hz}$), 7.35 (d, 1H, $J = 7.0\text{Hz}$), 7.40 (d, 2H, $J = 7.7\text{Hz}$), 7.42 (d, 2H, $J = 7.7\text{Hz}$), 7.43 (t, 1H, $J = 7.7\text{Hz}$), 7.72 (s, 1H), 7.82 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.11, 22.67, 26.06, 29.26, 29.28, 29.37, 31.83, 68.12, 70.20, 106.33, 110.98, 111.98, 114.93, 127.46, 127.50, 128.25, 128.72, 128.90, 129.68, 136.29, 139.29, 159.87, 161.67, 165.15; Elemental analysis found: C% 78.18, H% 7.60, N% 3.25, calcd for $\text{C}_{28}\text{H}_{33}\text{NO}_3$: C% 77.93, H% 7.71, N% 3.25.

7b: yield 40.2 %; mp 172.8-173.5 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2921, 2853, 1646, 1597, 1514, 1474, 1248, 1179, 744; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.0\text{Hz}$), 1.29-1.34 (m, 8H), 1.45 (t, 2H, $J =$

7.3Hz), 1.77 (t, 2H, $J = 7.4$ Hz), 3.95 (t, 2H, $J = 6.8$ Hz), 5.14 (s, 2H), 6.89 (d, 2H, $J = 8.9$ Hz), 7.04 (d, 2H, $J = 8.9$ Hz), 7.35 (d, 1H, $J = 7.9$ Hz), 7.41 (d, 2H, $J = 7.0$ Hz), 7.44 (d, 2H, $J = 7.0$ Hz), 7.49 (d, 2H, $J = 8.9$ Hz), 7.62 (s, 1H), 7.82 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.41, 22.98, 26.37, 29.57, 29.63, 29.70, 32.15, 68.70, 70.50, 115.20, 115.25, 122.34, 127.81, 127.88, 128.55, 129.03, 129.16, 131.31, 136.66, 161.86; Elemental analysis found: C% 77.87, H% 8.01, N% 3.06, calcd for $\text{C}_{28}\text{H}_{33}\text{NO}_3$: C% 77.93, H% 7.71, N% 3.25.

9a: yield 82.7%; mp 119.1-119.7 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2932, 2872, 1735, 1625, 1499, 1242, 1178, 772; δ_{H} (500 MHz, CDCl_3 , TMS) 0.93 (t, 3H, $J = 7.3$ Hz), 1.38 (q, 2H, $J = 7.3$ Hz), 1.57 (t, 2H, $J = 7.0$ Hz), 3.41 (t, 2H, $J = 7.0$ Hz), 5.08 (s, 2H), 6.30 (s, 1H), 6.95 (d, 2H, $J = 8.9$ Hz), 7.33 (d, 1H, $J = 6.7$ Hz), 7.37 (d, 2H, $J = 8.3$ Hz), 7.41 (d, 2H, $J = 8.3$ Hz), 7.72 (d, 2H, $J = 8.6$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 13.71, 20.09, 31.72, 39.68, 69.98, 114.50, 127.36, 127.38, 128.07, 128.57, 136.34, 161.08, 167.00; Elemental analysis found: C% 76.12, H% 7.52, N% 4.93, calcd for $\text{C}_{18}\text{H}_{21}\text{NO}_2$: C% 76.30, H% 7.47, N% 4.94.

9b: yield 68.5%; mp 101.6-102.1 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2918, 2849, 1631, 1610, 1505, 1468, 1248, 1176, 767; δ_{H} (500 MHz, CDCl_3 , TMS) 0.88 (t, 3H, $J = 7.0$ Hz), 1.27-1.38 (m, 10H), 1.58 (t, 2H, $J = 7.9$ Hz), 3.42 (t, 2H, $J = 7.0$ Hz), 5.11 (s, 2H), 6.02 (s, 1H), 6.99 (d, 2H, $J = 8.9$ Hz), 7.34 (d, 1H, $J = 7.0$ Hz), 7.38 (d, 2H, $J = 7.6$ Hz), 7.41 (d, 2H, $J = 7.6$ Hz), 7.71 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.09, 22.65, 27.04, 29.23, 29.31, 29.76, 31.81, 40.08, 70.12, 114.66, 127.48, 128.18, 128.62, 128.68, 136.43, 161.21, 167.00; Elemental analysis found: C% 77.87, H% 8.66, N% 4.12, calcd for $\text{C}_{22}\text{H}_{29}\text{NO}_2$: C% 77.84, H% 8.61, N% 4.13.

9c: yield 67.5%; mp 106.2-107.0 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2918, 2848, 1631, 1610, 1505, 1466, 1249, 1176, 767; δ_{H} (500 MHz, CDCl_3 , TMS) 0.88 (t, 3H, $J = 7.0$ Hz), 1.26-1.38 (m, 18H), 1.57 (t, 2H, $J = 7.7$ Hz), 3.43 (t, 2H, $J = 7.2$ Hz), 5.11 (s, 2H), 5.99 (s, 1H), 6.99 (d, 2H, $J = 8.8$ Hz), 7.34 (d, 1H, $J = 7.1$ Hz), 7.38 (d, 2H, $J = 7.6$ Hz), 7.42 (d, 2H, $J = 7.6$ Hz), 7.71 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.12, 22.69, 27.03, 29.35, 29.65, 29.76, 31.92, 40.08, 70.12, 114.67, 127.48, 128.18, 128.61, 128.68, 136.38, 161.15, 167.18; Elemental analysis found: C% 79.11, H% 9.53, N% 3.54, calcd for $\text{C}_{26}\text{H}_{37}\text{NO}_2$: C% 78.94, H% 9.43, N% 3.54.

11: yield 81.4 %; mp 111.6-112.1 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2922, 2853, 1725, 1605, 1509, 1456, 1281, 1245, 1193, 1170, 764; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.0$ Hz), 1.29-1.36 (m, 8H), 1.46 (t, 2H, $J = 7.1$ Hz), 1.78 (t, 2H, $J = 7.0$ Hz), 3.95 (t, 2H, $J = 6.7$ Hz), 5.17 (s, 2H), 6.91 (d, 2H, $J = 9.2$ Hz), 7.04 (d, 2H, $J = 8.9$ Hz), 7.08 (d, 2H, $J = 8.9$ Hz), 7.35 (d, 1H, $J = 7.4$ Hz), 7.40 (d, 2H, $J = 8.6$ Hz), 7.44 (d, 2H, $J = 7.0$ Hz), 8.13 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.10, 22.66, 26.06, 29.25, 29.30, 29.37, 31.83, 68.47, 70.19, 114.52, 115.11, 122.28, 122.45, 127.50, 128.26, 128.72, 132.26, 136.20, 144.38, 156.84, 162.97, 165.24; Elemental analysis found: C% 77.94, H% 7.30, N% 0.03, calcd for $\text{C}_{28}\text{H}_{32}\text{O}_4$: C% 77.75, H% 7.46.

6b: yield 80.8 %; mp 131.6-132.3 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2924, 2854, 1727, 1655, 1604, 1511, 1472, 1275, 1171, 777; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.0$ Hz), 1.29-1.37 (m, 8H), 1.44 (t, 2H, $J = 7.0$ Hz), 1.78 (t, 2H, $J = 7.0$ Hz), 3.98 (t, 2H, $J = 6.6$ Hz), 5.17 (s, 2H), 6.70 (d, 1H, $J = 8.3$ Hz), 7.07 (d, 3H, $J = 9.2$ Hz), 7.24 (t, 1H, $J = 8.3$ Hz), 7.31 (d, 2H, $J = 8.3$ Hz), 7.36 (d, 1H, $J = 7.3$ Hz), 7.40 (d, 2H, $J = 7.7$ Hz), 7.42 (t, 1H, $J = 7.6$ Hz), 7.44 (d, 2H, $J = 7.7$ Hz), 7.87 (s, 1H), 7.90 (d, 2H, $J = 8.3$ Hz), 8.16 (d, 2H, $J = 8.6$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.11, 22.68, 26.06, 29.26, 29.28, 29.38, 31.83, 68.16, 70.27, 106.42, 111.23, 112.09, 114.86, 121.56, 122.24, 127.51, 128.34, 128.52, 128.76, 129.73, 132.47, 132.54, 136.07, 139.11, 153.77, 159.88, 163.34, 164.51, 165.01; Elemental analysis found: C% 76.32, H% 6.76, N% 2.55, calcd for $\text{C}_{35}\text{H}_{37}\text{NO}_5$: C% 76.20, H% 6.76, N% 2.54.

8b: yield 63.9 %; mp 188.2-189.1 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2922, 2852, 1730, 1650, 1604, 1514, 1475, 1254, 1173, 762; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.0$ Hz), 1.26-1.33 (m, 8H), 1.44 (t, 2H, $J = 7.5$ Hz), 1.78 (t, 2H, $J = 7.4$ Hz), 3.96 (t, 2H, $J = 6.6$ Hz), 5.17 (s, 2H), 6.91 (d, 2H, $J = 8.9$ Hz), 7.07 (d, 2H, $J = 8.9$ Hz), 7.33 (d, 2H, $J = 8.6$ Hz), 7.37 (d, 1H, $J = 7.1$ Hz), 7.41 (d, 2H, $J = 7.6$ Hz), 7.43 (d, 2H, $J = 8.9$ Hz), 7.51 (d, 2H, $J = 8.6$ Hz), 7.68 (s, 1H), 7.92 (d, 2H, $J = 8.9$ Hz) 8.16 (d, 2H, $J = 9.15$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.31, 22.88, 26.27, 29.46, 29.60, 32.05, 68.49, 70.48, 115.05, 122.31, 122.43, 127.73, 128.67, 128.97, 131.01, 132.67, 132.75, 136.29, 156.21, 161.70, 163.52; Elemental analysis found: C% 76.28, H% 6.96, N% 2.37, calcd for $\text{C}_{35}\text{H}_{37}\text{NO}_5$: C% 76.20, H% 6.76, N% 2.54.

10a: yield 58.2%; mp 187.1-188.0 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2927, 2871, 1720, 1639, 1608, 1511, 1456, 1280, 1167, 764; δ_{H} (500 MHz, CDCl_3 , TMS) 0.97 (t, 3H, $J = 7.4$ Hz), 1.42 (q, 2H, $J = 7.7$ Hz), 1.61 (t, 2H, $J = 7.4$ Hz), 3.45 (t, 2H, $J = 7.3$ Hz), 5.16 (s, 2H), 6.13 (s, 1H), 7.06 (d, 2H, $J = 8.9$ Hz), 7.26 (d, 2H, $J = 8.6$ Hz), 7.36 (d, 1H, $J = 7.1$ Hz), 7.40 (d, 2H, $J = 7.6$ Hz), 7.44 (d, 2H, $J = 7.6$ Hz), 7.81 (d, 2H, $J = 8.6$ Hz), 8.14 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 13.79, 20.18, 31.77, 39.89, 70.25, 114.82, 121.67, 121.97, 127.51, 128.30, 128.33, 128.76, 132.44, 136.09, 153.42, 163.27, 164.50, 166.77; Elemental analysis found: C% 74.27, H% 6.27, N% 3.45, calcd for $\text{C}_{25}\text{H}_{25}\text{NO}_4$: C% 74.42, H% 6.25, N% 3.47.

10b: yield 60.4%; mp 171.4-172.1 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2918, 2850, 1720, 1637, 1607, 1510, 1464, 1279, 1169, 764; δ_{H} (500 MHz, CDCl_3 , TMS) 0.88 (t, 3H, $J = 7.1$ Hz), 1.28-1.38 (m, 10H), 1.62 (t, 2H, $J = 7.0$ Hz), 3.44 (t, 2H, $J = 7.0$ Hz), 5.16 (s, 2H), 6.18 (s, 1H), 7.06 (d, 2H, $J = 8.9$ Hz), 7.26 (d, 2H, $J = 8.6$ Hz), 7.35 (d, 1H, $J = 7.0$ Hz), 7.40 (d, 2H, $J = 7.7$ Hz), 7.45 (d, 2H, $J = 7.7$ Hz), 7.81 (d, 2H, $J = 8.5$ Hz), 8.14 (d, 2H, $J = 8.9$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.09, 22.65, 27.02, 29.23, 29.30, 29.69, 31.81, 40.20, 70.24, 114.81, 121.66, 121.95, 127.51, 128.31, 128.75, 132.42, 136.08, 153.40, 163.26, 164.51, 166.77; Elemental analysis found: C% 75.56, H% 7.27, N% 3.05, calcd for $\text{C}_{29}\text{H}_{33}\text{NO}_4$: C% 75.79, H% 7.24, N% 3.05.

10c: yield 48.3%; mp 163.8-164.2 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2917, 2849, 1744, 1636, 1606, 1511, 1471, 1257, 1167, 764; δ_{H} (500 MHz, CDCl_3 , TMS) 0.88 (t, 3H, $J = 7.1$ Hz), 1.26-1.39 (m, 18H), 1.62 (t, 2H, $J = 7.8$ Hz), 3.45 (t, 2H, $J = 7.1$ Hz), 5.17 (s, 2H), 6.10 (s, 1H), 7.06 (d, 2H, $J = 8.9$ Hz), 7.27 (d, 2H, $J = 8.8$ Hz), 7.36 (d, 1H, $J = 7.0$ Hz), 7.40 (d, 2H, $J = 7.7$ Hz), 7.45 (d, 2H, $J = 7.7$ Hz), 7.82 (d, 2H, $J = 8.9$ Hz), 8.15 (d, 2H, $J = 9.2$ Hz); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.12, 22.69, 27.02, 29.36, 29.57, 29.60, 29.64, 29.66, 31.92, 40.21, 70.25, 114.82,

121.67, 121.98, 127.51, 128.30, 128.33, 128.76, 132.43, 136.08, 153.42, 163.26, 164.50, 166.76; Elemental analysis found: C% 76.73, H% 8.05, N% 2.68, calcd for C₃₃H₄₁NO₄: C% 76.86, H% 8.01, N% 2.72.

12: yield 52.4 %; mp 125.2-126.0 °C; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2924, 2853, 1725, 1605, 1510, 1455, 1282, 1253, 1194, 1171, 765; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 3H, $J = 7.0\text{Hz}$), 1.29-1.38 (m, 8H), 1.46 (t, 2H, $J = 7.3\text{Hz}$), 1.78 (t, 2H, $J = 7.3\text{Hz}$), 3.95 (t, 2H, $J = 6.8\text{Hz}$), 5.15 (s, 2H), 6.92 (d, 2H, $J = 9.2\text{Hz}$), 7.06 (d, 2H, $J = 8.9\text{Hz}$), 7.11 (d, 2H, $J = 9.2\text{Hz}$), 7.34 (d, 2H, $J = 8.6\text{Hz}$), 7.36 (d, 1H, $J = 7.9\text{Hz}$), 7.39 (d, 2H, $J = 7.0\text{Hz}$), 7.42 (d, 2H, $J = 8.3\text{Hz}$), 8.15 (d, 2H, $J = 9.2\text{Hz}$), 8.25 (d, 2H, $J = 8.5\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.11, 22.66, 26.05, 29.25, 29.28, 29.37, 31.83, 68.45, 70.23, 114.84, 115.13, 121.53, 122.03, 122.37, 127.10, 127.50, 128.20, 128.74, 131.82, 132.46, 136.05, 144.20, 155.24, 156.97, 163.31, 164.24, 164.84; Elemental analysis found: C% 76.32, H% 6.43, N% 0.06, calcd for C₃₅H₃₆O₆: C% 76.06, H% 6.57.

1b: yield 76.5 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2926, 2871, 1733, 1657, 1604, 1510, 1474, 1271, 1163, 762; δ_{H} (500 MHz, CDCl₃, TMS) 0.90 (t, 3H, $J = 7.3\text{Hz}$), 0.98 (t, 3H, $J = 7.4\text{Hz}$), 1.30-1.39 (m, 8H), 1.45-1.49 (m, 4H), 1.77 (t, 2H, $J = 7.7\text{Hz}$), 1.83 (t, 2H, $J = 7.2\text{Hz}$), 4.00 (t, 2H, $J = 6.6\text{Hz}$), 4.06 (t, 2H, $J = 6.6\text{Hz}$), 6.71 (d, 1H, $J = 8.3\text{Hz}$), 6.99 (d, 2H, $J = 9.2\text{Hz}$), 7.08 (d, 1H, $J = 9.2\text{Hz}$), 7.25 (t, 1H, $J = 8.3\text{Hz}$), 7.35 (d, 2H, $J = 8.6\text{Hz}$), 7.38 (d, 2H, $J = 8.8\text{Hz}$), 7.43 (t, 1H, $J = 7.2\text{Hz}$), 7.84 (s, 1H), 7.93 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 8.9\text{Hz}$), 8.28 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 13.87, 14.10, 19.26, 22.66, 26.00, 29.10, 29.23, 29.33, 31.33, 31.82, 67.84, 68.44, 106.43, 111.26, 112.08, 114.48, 120.90, 122.20, 122.26, 126.40, 128.58, 129.74, 131.93, 132.47, 132.78, 139.05, 153.63, 155.69, 159.90, 163.92, 164.12, 164.34, 164.88; Elemental analysis found: C% 73.58, H% 5.99, N% 2.18, calcd for C₃₉H₄₃NO₇: C% 73.45, H% 6.80, N% 2.20.

1d: yield 68.2 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2925, 2854, 1736, 1657, 1604, 1510, 1470, 1266, 1165, 759; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 3H, $J = 7.3\text{Hz}$), 1.00 (t, 3H, $J = 7.3\text{Hz}$), 1.30-1.37 (m, 8H), 1.46 (t, 2H, $J = 7.9\text{Hz}$), 1.51 (q, 2H, $J = 7.6\text{Hz}$), 1.81 (t, 4H, $J = 7.7\text{Hz}$), 3.99 (t, 2H, $J = 6.6\text{Hz}$), 4.07 (t, 2H, $J = 6.6\text{Hz}$), 6.71 (d, 1H, $J = 8.2\text{Hz}$), 6.99 (d, 2H, $J = 8.9\text{Hz}$), 7.08 (d, 1H, $J = 8.0\text{Hz}$), 7.25 (t, 1H, $J = 8.2\text{Hz}$), 7.36 (d, 2H, $J = 7.3\text{Hz}$), 7.39 (d, 2H, $J = 8.9\text{Hz}$), 7.42 (t, 1H, $J = 7.2\text{Hz}$), 7.83 (s, 1H), 7.94 (d, 2H, $J = 8.6\text{Hz}$), 8.15 (d, 2H, $J = 8.9\text{Hz}$), 8.28 (d, 2H, $J = 8.6\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.04, 14.34, 19.44, 22.90, 26.29, 29.49, 29.51, 29.61, 31.36, 32.06, 68.35, 68.40, 106.68, 111.50, 112.32, 114.71, 121.15, 122.45, 122.49, 126.63, 128.81, 129.98, 132.16, 132.70, 133.01, 139.28, 153.88, 155.92, 160.13, 164.15, 164.38, 164.57, 165.06; Elemental analysis found: C% 73.46, H% 6.79, N% 2.19, calcd for C₃₉H₄₃NO₇: C% 73.45, H% 6.80, N% 2.20.

1e: yield 59.7 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2924, 2854, 1656, 1604, 1509, 1470, 1265, 1165, 779; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 3H, $J = 7.0\text{Hz}$), 0.90 (t, 3H, $J = 7.0\text{Hz}$), 1.29-1.38 (m, 16H), 1.46 (t, 4H, $J = 7.3\text{Hz}$), 1.81 (t, 4H, $J = 8.0\text{Hz}$), 3.99 (t, 2H, $J = 6.6\text{Hz}$), 4.06 (t, 2H, $J = 6.7\text{Hz}$), 6.71 (d, 1H, $J = 7.9\text{Hz}$), 6.99 (d, 2H, $J = 8.6\text{Hz}$), 7.08 (d, 1H, $J = 7.9\text{Hz}$), 7.25 (t, 1H, $J = 7.9\text{Hz}$), 7.36 (d, 2H, $J = 8.6\text{Hz}$), 7.39 (d, 2H, $J = 8.6\text{Hz}$), 7.43 (t, 1H, $J = 7.0\text{Hz}$), 7.82 (s, 1H), 7.94 (d, 2H, $J = 8.9\text{Hz}$), 8.16 (d, 2H, $J = 8.9\text{Hz}$), 8.28 (d, 2H, $J = 8.6\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.12, 22.67, 26.00, 26.07, 29.11, 29.23, 29.27, 29.28, 29.34, 29.39, 31.82, 31.84, 68.17, 68.45, 106.45, 111.24, 112.09, 114.48, 120.91, 122.22, 122.27, 126.40, 128.59, 129.76, 131.94, 132.47, 132.79, 139.04, 153.65, 155.65, 159.91, 163.93, 164.13, 164.36, 164.87; Elemental analysis found: C% 74.53, H% 7.35, N% 2.00, calcd for C₄₃H₅₁NO₇: C% 74.43, H% 7.41, N% 2.02.

1f: yield 48.2 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2921, 2852, 1736, 1655, 1604, 1509, 1441, 1264, 1165, 762; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 3H, $J = 7.0\text{Hz}$), 0.89 (t, 3H, $J = 7.0\text{Hz}$), 1.27-1.38 (m, 24H), 1.45 (t, 4H, $J = 7.6\text{Hz}$), 1.81 (t, 4H, $J = 7.3\text{Hz}$), 3.99 (t, 2H, $J = 6.6\text{Hz}$), 4.06 (t, 2H, $J = 6.7\text{Hz}$), 6.71 (d, 1H, $J = 8.2\text{Hz}$), 6.99 (d, 2H, $J = 8.9\text{Hz}$), 7.08 (d, 1H, $J = 8.9\text{Hz}$), 7.25 (t, 1H, $J = 8.2\text{Hz}$), 7.35 (d, 2H, $J = 8.9\text{Hz}$), 7.39 (d, 2H, $J = 8.9\text{Hz}$), 7.43 (t, 1H, $J = 7.0\text{Hz}$), 7.83 (s, 1H), 7.94 (d, 2H, $J = 8.8\text{Hz}$), 8.15 (d, 2H, $J = 9.2\text{Hz}$), 8.29 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.12, 22.68, 22.70, 25.99, 26.07, 29.10, 29.27, 29.37, 29.57, 29.60, 29.65, 29.67, 31.84, 31.93, 68.16, 68.44, 106.43, 111.26, 112.08, 114.48, 120.89, 122.21, 122.26, 126.40, 128.59, 129.75, 131.93, 132.47, 132.78, 139.04, 153.63, 155.69, 159.89, 163.92, 164.12, 164.35, 164.88; Elemental analysis found: C% 75.50, H% 8.00, N% 1.95, calcd for C₄₇H₅₉NO₇: C% 75.27, H% 7.93, N% 1.87.

1h: yield 38.5 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2922, 2853, 1654, 1605, 1508, 1473, 1269, 1164, 762; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 6H, $J = 7.0\text{Hz}$), 1.27-1.38 (m, 24H), 1.46 (t, 4H, $J = 7.4\text{Hz}$), 1.81 (t, 4H, $J = 8.0\text{Hz}$), 3.99 (t, 2H, $J = 6.7\text{Hz}$), 4.06 (t, 2H, $J = 6.8\text{Hz}$), 6.71 (d, 1H, $J = 8.3\text{Hz}$), 6.99 (d, 2H, $J = 8.9\text{Hz}$), 7.08 (d, 1H, $J = 8.2\text{Hz}$), 7.24 (t, 1H, $J = 8.0\text{Hz}$), 7.36 (d, 2H, $J = 8.9\text{Hz}$), 7.39 (d, 2H, $J = 8.6\text{Hz}$), 7.43 (t, 1H, $J = 6.9\text{Hz}$), 7.81 (s, 1H), 7.95 (d, 2H, $J = 8.6\text{Hz}$), 8.16 (d, 2H, $J = 8.9\text{Hz}$), 8.29 (d, 2H, $J = 8.6\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.11, 14.13, 22.67, 22.70, 26.00, 26.07, 29.10, 29.23, 29.28, 29.34, 29.37, 29.43, 29.61, 29.63, 29.65, 29.69, 31.82, 31.94, 68.16, 68.44, 106.41, 111.26, 112.07, 114.48, 120.89, 122.22, 122.27, 126.39, 128.58, 129.76, 131.94, 132.47, 132.77, 139.02, 153.64, 155.68, 159.90, 163.92, 164.11, 164.35, 164.87; Elemental analysis found: C% 75.10, H% 8.07, N% 1.73, calcd for C₄₇H₅₉NO₇: C% 75.27, H% 7.93, N% 1.87.

2b: yield 62.0 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2922, 2853, 1648, 1603, 1519, 1473, 1259, 1171, 760; δ_{H} (500 MHz, CDCl₃, TMS) 0.89 (t, 3H, $J = 7.1\text{Hz}$), 0.90 (t, 3H, $J = 7.4\text{Hz}$), 1.25-1.38 (m, 16H), 1.46 (m, 4H), 1.79 (t, 2H, $J = 7.3\text{Hz}$), 1.83 (t, 2H, $J = 7.3\text{Hz}$), 3.96 (t, 2H, $J = 6.5\text{Hz}$), 4.06 (t, 2H, $J = 6.5\text{Hz}$), 6.91 (d, 2H, $J = 8.9\text{Hz}$), 6.99 (d, 2H, $J = 9.2\text{Hz}$), 7.35 (d, 2H, $J = 8.6\text{Hz}$), 7.39 (d, 2H, $J = 8.9\text{Hz}$), 7.52 (d, 2H, $J = 8.9\text{Hz}$), 7.71 (s, 1H), 7.95 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 8.9\text{Hz}$), 8.29 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl₃, TMS) 14.01, 14.12, 19.58, 20.01, 22.82, 25.95, 26.01, 26.07, 29.15, 29.20, 29.22, 29.26, 29.35, 29.39, 31.61, 31.82, 68.02, 68.21, 113.72, 114.64, 114.92, 121.08, 122.12, 122.20, 128.48, 130.78, 132.35, 132.50, 134.42, 138.59, 139.06, 153.74, 156.35, 163.83, 164.60, 164.85, 171.60; Elemental analysis found: C% 74.56, H% 7.58, N% 1.85, calcd for C₄₃H₅₁NO₇: C% 74.43, H% 7.41, N% 2.02.

3a: yield 95.2%; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2956, 2869, 1744, 1637, 1604, 1511, 1458, 1275, 1172, 761; δ_{H} (500 MHz, CDCl_3 , TMS) 0.97 (t, 3H, $J = 7.3\text{Hz}$), 1.00 (t, 3H, $J = 7.3\text{Hz}$), 1.43 (q, 2H, $J = 7.3\text{Hz}$), 1.52 (q, 2H, $J = 7.3\text{Hz}$), 1.62 (t, 2H, $J = 7.3\text{Hz}$), 1.82 (t, 2H, $J = 6.6\text{Hz}$), 3.47 (t, 2H, $J = 7.0\text{Hz}$), 4.07 (t, 2H, $J = 6.4\text{Hz}$), 6.14 (s, 1H), 6.99 (d, 2H, $J = 8.9\text{Hz}$), 7.29 (d, 2H, $J = 8.6\text{Hz}$), 7.38 (d, 2H, $J = 8.9\text{Hz}$), 7.84 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 9.2\text{Hz}$), 8.27 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl_3 , TMS) 13.80, 13.83, 19.21, 20.18, 31.13, 31.76, 39.91, 68.10, 114.47, 120.91, 121.92, 122.22, 126.49, 128.38, 131.90, 132.46, 132.64, 153.23, 155.61, 163.90, 164.15, 164.35, 166.73; Elemental analysis found: C% 71.15, H% 6.39, N% 2.90, calcd for $\text{C}_{29}\text{H}_{31}\text{NO}_6$: C% 71.15, H% 6.38, N% 2.86.

3b: yield 90.8%; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2923, 2852, 1745, 1635, 1605, 1512, 1471, 1279, 1172, 761; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 3H, $J = 7.4\text{Hz}$), 0.90 (t, 3H, $J = 7.3\text{Hz}$), 1.28-1.48 (m, 20H), 1.63 (t, 2H, $J = 7.4\text{Hz}$), 1.83 (t, 2H, $J = 7.6\text{Hz}$), 3.46 (t, 2H, $J = 7.4\text{Hz}$), 4.06 (t, 2H, $J = 6.6\text{Hz}$), 6.11 (s, 1H), 6.99 (d, 2H, $J = 8.5\text{Hz}$), 7.30 (d, 2H, $J = 8.9\text{Hz}$), 7.38 (d, 2H, $J = 8.9\text{Hz}$), 7.84 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 8.9\text{Hz}$), 8.27 (d, 2H, $J = 8.8\text{Hz}$); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.11, 22.65, 25.99, 27.02, 29.09, 29.23, 29.30, 29.33, 29.69, 31.81, 40.22, 68.42, 114.45, 120.88, 121.93, 122.22, 126.49, 128.37, 131.90, 132.46, 132.65, 153.22, 155.60, 163.90, 164.15, 164.35, 166.70; Elemental analysis found: C% 73.89, H% 7.92, N% 2.33, calcd for $\text{C}_{37}\text{H}_{47}\text{NO}_6$: C% 73.85, H% 7.87, N% 2.33.

3c: yield 74.0%; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2918, 2850, 1743, 1637, 1604, 1510, 1471, 1281, 1171, 760; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 6H, $J = 6.6\text{Hz}$), 1.26-1.51 (m, 36H), 1.63 (t, 2H, $J = 7.0\text{Hz}$), 1.83 (t, 2H, $J = 8.0\text{Hz}$), 3.47 (t, 2H, $J = 7.0\text{Hz}$), 4.06 (t, 2H, $J = 6.6\text{Hz}$), 6.09 (s, 1H), 6.99 (d, 2H, $J = 8.9\text{Hz}$), 7.30 (d, 2H, $J = 8.5\text{Hz}$), 7.38 (d, 2H, $J = 8.9\text{Hz}$), 7.84 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 8.9\text{Hz}$), 8.28 (d, 2H, $J = 8.6\text{Hz}$); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.13, 22.69, 27.02, 29.09, 29.36, 29.56, 29.60, 29.64, 29.66, 29.69, 31.92, 39.95, 68.24, 114.45, 120.90, 121.93, 122.22, 126.48, 128.36, 131.90, 132.45, 132.63, 153.21, 155.61, 163.88, 164.11, 164.34, 166.73; Elemental analysis found: C% 75.52, H% 8.99, N% 1.86, calcd for $\text{C}_{45}\text{H}_{63}\text{NO}_6$: C% 75.70, H% 8.89, N% 1.96.

4: yield 40.8 %; white solid (methanol-ethyl acetate); ν/cm^{-1} (KBr) 2922, 2852, 1744, 1604, 1514, 1473, 1279, 1196, 1165, 757; δ_{H} (500 MHz, CDCl_3 , TMS) 0.89 (t, 6H, $J = 7.3\text{Hz}$), 1.29-1.37 (m, 16H), 1.48 (t, 4H, $J = 7.4\text{Hz}$), 1.82 (t, 4H, $J = 6.5\text{Hz}$), 3.97 (t, 2H, $J = 7.0\text{Hz}$), 4.06 (t, 2H, $J = 6.8\text{Hz}$), 6.93 (d, 2H, $J = 9.2\text{Hz}$), 6.99 (d, 2H, $J = 9.2\text{Hz}$), 7.12 (d, 2H, $J = 9.2\text{Hz}$), 7.38 (d, 2H, $J = 8.9\text{Hz}$), 7.39 (d, 2H, $J = 8.9\text{Hz}$), 8.15 (d, 2H, $J = 9.2\text{Hz}$), 8.28 (d, 2H, $J = 8.9\text{Hz}$), 8.29 (d, 2H, $J = 8.9\text{Hz}$); δ_{C} (125.65 MHz, CDCl_3 , TMS) 14.11, 22.67, 26.00, 26.07, 29.11, 29.23, 29.26, 29.34, 29.38, 31.82, 31.84, 68.43, 68.50, 72.68, 114.48, 115.18, 118.75, 121.99, 122.27, 122.38, 131.77, 131.86, 132.44, 135.19, 143.32, 144.23, 153.82, 155.70, 159.97, 164.10, 164.42, 164.55, 165.19; Elemental analysis found: C% 74.50, H% 7.17, N% 0.05, calcd for $\text{C}_{43}\text{H}_{50}\text{O}_8$: C% 74.33, H% 7.25.