Supporting Information

Oligoindenopyrenes: A New Class of Polycyclic Aromatics

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Synthesis, purification, and characterization of new compounds. ^1H -NMR spectra were recorded at ambient temperature in CDCl_3 , using CHCl_3 (δ 7.26) or tetramethylsilane (δ 0.00) as internal standard unless specified otherwise; for most compounds of low solubility, spectra were recorded at 125 °C in $\text{CDCl}_2\text{CDCl}_2$. Chemical shifts (δ) are quoted in parts per million, and coupling constants (J) are given in absolute values in Hertz to the nearest 0.1 Hz. The following abbreviations are used for the signal multiplicities: s (singlet), d (doublet), dd (doublet of doublets), m (multiplet). ^{13}C -NMR spectra were recorded at ambient temperature in CDCl_3 , with δ (CDCl_3) 77.0 as internal standard unless specified otherwise. Mass spectra were recorded using a direct insertion probe and electron-impact ionization at 70 eV. High-resolution mass spectroscopy (HRMS) was performed using preselected ion peak matching at $R \approx 10000$ to be within ± 2 ppm. Chromatography: for standard chromatography, silica gel of 230-400 mesh (0.063-0.200 mm) and for flash chromatography, silica gel of 70-230 mesh (0.040-0.063 mm) was used. Unless specified otherwise, solutions of NaHCO_3 were saturated aqueous solutions. All solvents were distilled before use. Anhydrous solvents were prepared according to standard laboratory procedures. All reactions with organometallic reagents were performed under argon. All chemicals were used as commercially available, unless otherwise noted.

1,8-Bis(2-hydroxyphenyl)pyrene (7b): Analogous to **7a**, compound **7b** (300 mg, 0.776 mmol) was obtained in 96% yield as a yellow solid. - mp 196 °C (Decomposition); IR (KBr) ν 3403, 3048, 1583, 1482, 1447, 1328, 1282, 1194, 1101, 1076, 854, 758 cm^{-1} ; ^1H NMR (300 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C) δ 4.75 (bs, 2H), 7.10–7.20 (m, 4H), 7.38–7.50 (m, 4H), 7.96 (s, 2H), 8.09 (d, $^3J = 8.0$ Hz, 2H), 8.21 (s, 2H), 8.38 (d, $^3J = 8.0$ Hz, 2H); ^{13}C

NMR (75.5 MHz, C₂D₂Cl₄, 125 °C, additional APT) δ 115.7 (+), 120.5 (+), 125.0 (–), 125.3 (+), 125.4 (+), 126.7 (–), 127.6 (+), 128.3 (+), 129.2 (2 C), 129.4 (+), 131.36 (+), 131.39 (–), 131.9 (–), 153.1 (–); MS (70 eV, EI), m/z (%): 386 (100) [M], 366 (10) [M – OH], 292 (17) [M – Phenyl-OH]; C₂₈H₁₈O₂: calcd. 386.1307 (correct HRMS).

1,8-Bis(2-trifluoromethylsulfonylphenyl)pyrene (**8b**): Analogous to **8a** compound **8b** (387 mg, 0.587 mmol) was obtained in 92% yield as pale a yellow solid: mp 82 °C; IR (KBr) ν 3060, 1610, 1481, 1422, 1247, 1214, 1140, 1094, 894, 853, 768 cm^{–1}; ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 7.72–7.50 (m, 8H), 7.80 (s, 2H), 8.03 (d, ³*J* = 8.0 Hz, 2H), 8.21 (s, 2H), 8.37 (d, ³*J* = 8.0 Hz, 2H); ¹³C NMR (300 MHz, C₂D₂Cl₄, 125 °C, additional APT) δ 121.4 (+), 124.6 (+), 125.0 (+), 127.7 (+), 127.8 (+), 128.0 (+), 128.9 (–), 129.3 (+), 130.5 (–), 131.6 (–), 133.4 (+), 134.2 (–), 147.4 (–), (C-11, C-12 are missing because of rotational isomers, O₃SCF₃ is missing because of coupling with F); MS (70 eV, EI), m/z (%): 650 (100) [M], 517 (16) [M – SO₂CF₃], 384 (80) [M – 2×SO₂CF₃], 325 (17), 183 (8); C₃₀H₁₆O₆S₂F₆: calcd. 650.0293 (correct HRMS).

Diindeno[1,2,3-cd:1',2',3'-fg]pyrene (**3b**): Analogous to **3a**, compound **3b** (11 mg, 31.4 μ mol) was obtained in 20% yield as a red solid by purification with preparative TLC (plate 20 x 20 cm, CH₂Cl₂/*n*-pentane 1 : 4): mp 240 °C (Decomposition); IR (KBr) ν 3048, 2964, 2924, 2853, 1734, 1448, 1377, 1261, 1093, 1029, 803, 721 cm^{–1}; UV λ_{max} (CHCl₃) nm (log ϵ) 551 (0.06), 512 (0.15), 454 (0.37), 411 (1.24), 388 (1.08), 366 (0.62), 332 (2.33), 327 (2.22), 316 (2.56), 282 (2.01), 264 (3.01); ¹H NMR (300 MHz, CDCl₃) δ 7.01 (s, 2H), 7.39 (m, 2H), 7.40 (m, 2H), 7.85 (m, 2H), 8.01 (d, ³*J* = 7.8 Hz, 2H), 8.09 (d, ³*J* = 7.8 Hz, 2H), 8.26 (m, 2H); ¹³C NMR (150 MHz, CDCl₃, additional APT) δ 105.2

(–), 120.0 (+), 121.4 (–121.9 (+), 126.5 (+), 126.6 (+), 126.7 (+), 127.6 (–), 127.7 (+), 129.0 (+), 130.1 (–), 133.5 (–), 139.3 (–), 143.3 (–); C₂₈H₁₄: calcd. 350.1096 (correct HRMS).

1,3,6-Tris(5-tert-butyl-2-methoxyphenyl)pyrene (6c): Analogous to **6a** and **6b**, compound **6c** (0.790 g, 1.15 mmol) was obtained in 82% yield as a pale yellow solid: mp 154–157 °C; IR (KBr) ν 3042, 2960, 2867, 2832, 1604, 1495, 1462, 1393, 1362, 1241, 1181, 1143, 1105, 1082, 1038, 893, 846, 811 cm^{–1}; ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 1.42 (s, 9H), 1.43 (s, 9H), 1.45 (s, 9H), 3.71 (s, 3H), 3.73 (s, 3H), 3.77 (s, 3H), 7.05–7.15 (m, 3H), 7.44–7.59 (m, 6H), 7.81–7.90 (m, 2H), 7.97–8.06 (m, 4H), 8.21 (d, ³*J* = 9.2 Hz, 1H); ¹³C NMR (75.5 MHz, C₂D₂Cl₄, 125 °C, additional APT) δ 31.30 (+), 31.33 (+), 33.86 (–), 33.89 (–), 55.87 (+), 55.94 (+), 111.8 (+), 123.8 (+), 125.0 (+), 125.06 (+), 125.08 (+), 125.11 (+), 125.3 (+), 125.7 (+), 126.3 (+), 128.0 (+), 128.3 (–), 128.71 (–), 129.3 (–), 129.54 (+), 129.7 (+), 129.79 (–), 129.82 (–), 130.4 (–), 130.6 (+), 134.0 (–), 134.2 (–), 134.8 (–), 143.4 (–), 143.4 (–), 143.5 (–), 155.25 (–), 155.32 (–), (C-11, C-12 are missing because of rotational isomers); MS (70 eV, EI), *m/z* (%): 688 (100) [M], 601 (2) [M⁺ – OMe – *t*Bu], 564 (14) [M – 4 × OMe], 526 (17) [M⁺ – *t*Bu-phenyl-OMe], 329 (24) [M – 2 × *t*Bu-phenyl-OMe – OMe]; C₄₉H₅₂O₃: calcd. 688.3916 (correct HRMS).

1,3,6-Tris(5-tert-butyl-2-hydroxyphenyl)pyrene (7c): Analogous to **7a**, compound **7c** (543 mg, 0.839 mmol) was obtained in 82% yield as a yellow solid: mp 179–183 °C; IR (KBr) ν 3556, 3053, 2961, 2868, 1653, 1607, 1493, 1462, 1364, 1279, 1256, 1238, 1208, 1170, 895, 823 cm^{–1}; ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 1.42 (s, 9H), 1.43 (s, 9H),

1.45 (s, 9H), 7.03–7.13 (m, 3H), 7.42 – 7.55 (m, 6H), 8.01 (s, 1H), 8.06–8.12 (m, 5H), 8.35 (d, $^3J = 9.2$ Hz, 1 H); ^{13}C NMR (75.5 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C, additional APT) δ 31.31 (+), 31.33 (+), 33.88 (–), 33.89 (–), 33.92 (–), 115.2 (+), 115.4 (+), 115.37 (+), 125.2 (+), 125.3 (+), 125.5 (+), 125.8 (+), 125.9 (–), 126.0 (–), 126.2 (+), 126.3 (+), 128.0 (+), 128.27 (+), 128.30 (+), 128.4 (+), 128.6 (+), 129.1 (–), 129.5 (–), 130.6 (+), 131.1 (–), 132.8 (–), 132.9 (–), 143.6 (–), 143.7 (–), 150.66 (–), 150.71 (–), (C-11, C-12 are missing because of rotational isomers); MS (70 eV, EI), m/z (%): 646 (100) [$\text{M} - \text{H}$], 631 (4) [$\text{M}^+ - \text{OH}$], 498 (8) [$\text{M} - t\text{Bu-phenyl-OH}$], 308 (20), 200 (2) [$\text{M} - 3 \times t\text{Bu-phenyl-OH}$]; $\text{C}_{46}\text{H}_{46}\text{O}_3$ (646.9).

1,3,6-Tris(5-tert-butyl-2-trifluoromethylsulfonylphenyl)pyrene (**8c**): Analogous to **8a** compound **8c** (316 mg, 0.303 mmol) was obtained in 55% yield as a pale yellow solid: mp 125–129 °C; IR (KBr) ν 3056, 2966, 2873, 1605, 1486, 1464, 1424, 1366, 1250, 1214, 1172, 1141, 1119, 1081, 1030, 874, 826, 730, 620 cm^{-1} ; ^1H NMR (300 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C) δ 1.44 (s, 9H), 1.46 (s, 9H), 1.50 (s, 9H), 7.43–7.58 (m, 3H), 7.59–7.78 (m, 6H), 7.85 (s, 1H), 7.87 (d, $^3J = 9.2$ Hz, 1H), 7.85 (d, $^3J = 8.0$ Hz, 1 H), 8.04 (d, $^3J = 8.0$ Hz, 1H), 8.07 (d, $^3J = 8.0$ Hz, 1H), 8.18 (d, $^3J = 8.0$ Hz, 1H), 8.35 (d, $^3J = 9.2$ Hz, 1H); ^{13}C NMR (75.5 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C, additional APT) δ 30.9 (+), 31.0 (+), 34.48 (–), 34.52 (–), 120.8 (+), 124.7 (+), 124.8 (+), 124.9 (+), 125.5 (+), 126.2 (+), 126.27 (+), 126.31 (+), 128.0 (+), 128.3 (+), 129.1 (–), 129.2 (–), 130.3 (+), 130.6 (+), 130.7 (+), 131.1 (–), 131.6 (–), 145.1 (–), 151.5 (–), (C-11, C-12 are missing because of rotational isomers, O_3SCF_3 are missing because of coupling with F); MS (70 eV, EI), m/z (%): 1042 (100) [MI], 909 (7) [$\text{M}^+ - \text{O}_2\text{SCF}_3$], 776 (2) [$\text{M}^+ - 2 \times \text{O}_2\text{SCF}_3$], 650 (12) [$\text{M}^+ - 2 \times t\text{Bu} - t\text{Bu-phenyl-O}_3\text{SCF}_3$], 643 (10) [$\text{M}^+ - 3 \times \text{O}_2\text{SCF}_3$], 514 ($\text{M}^+ - 2 \times t\text{Bu} - t\text{Bu-phenyl-O}_3\text{SCF}_3$).

O₃SCF₃ – O₂SCF₃]; C₄₉H₄₃O₉S₃F₉ (1043.1): calcd. C 56.42, H 4.16; found C 56.13, H 3.94.

2,7,11-Tri-tert-butyltriindenof[1,2,3-cd:1',2',3'-fg:1'',2'',3''-jk]pyrene (3c): Analogous to **3b**, compound **3c** (10 mg, 16.9 μmol) was obtained in 7% yield as a dark red solid: mp > 325 °C; UV λ_{max} (CHCl₃) nm (log ε) 259 (1.18), 276 (1.43), 298 (1.41), 312 (1.92), 325 (1.00), 354 (0.60), 371 (0.42), 413 (0.34), 438 (0.48), 451 (0.32), 487 (0.11); ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 1.52 (s, 9H), 1.54 (s, 9H), 1.58 (s, 9H), 7.22-7.41 (m, 3H), 7.43-7.58 (m, 1H), 7.68-7.85 (m, 2H), 7.88-7.95 (m, 2H), 7.96-8.05 (m, 2H), 8.07-8.22 (m, 3H); ¹³C NMR (75.5 MHz, C₂D₂Cl₄, 125 °C, additional APT) δ 31.0 (+), 31.16 (+), 31.21 (+), 34.7 (–), 34.75 (–), 34.82 (–), 112.4 (+), 118.9 (+), 119.05 (+), 119.13 (+), 119.3 (+), 119.9 (+), 122.3 (+), 123.9 (+), 124.9 (+), 125.8 (+), 125.9 (+), 128.0 (+), 129.0 (+), 131.28 (–), 131.32 (–), 131.68 (–), 131.73 (–), 131.8 (–), 131.9 (–), 135.5 (–), 136.6 (–), 136.7 (–), 136.8 (–), 137.8 (–), 138.1 (–), 138.3 (–), 143.1 (–), 143.3 (–), 144.1 (–), 152.0 (–), 152.49 (–), 152.54 (–); MS (70 eV, EI), m/z (%): 595 (7), 594 (20), 593 (46), 592 (100) [M⁺], 579 (3), 578 (13), 577 (25) [M⁺ – CH₃], 465 (4), 464 (13), 563 (40), 462 (90) [M⁺ – 2 × *t*Bu – CH₃ – H], 449 (3), 448 (11), 447 (32) [M⁺ – 2 × *t*Bu – 2 CH₃ – H]; C₄₆H₄₀: calcd. 592.3130 (correct HRMS).

1,3,6,8-Tetrakis(5-tert-butyl-2-methoxyphenyl)pyrene (6d): Analogous to **6a** and **6b**, compound **6d** (0.940 mg, 1.10 mmol) was obtained in 74% yield as a pale yellow solid: mp 195–198 °C; IR (KBr) ν 3058, 2953, 2902, 2870, 2832, 1605, 1496, 1563, 1440, 1394, 1362, 1246, 1181, 1142, 1087, 1035, 894, 835, 811 cm^{–1}; ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 1.41 (s, 36H), 3.78 (s, 12H), 7.08 (d, ³*J* = 8.0 Hz, 4H), 7.45 (dd,

$^3J = 8.0$, $^4J = 2.0$ Hz, 4H), 7.55 (bs, 4H), 7.87 (s, 4H), 8.00 (s, 2H); ^{13}C NMR (75.5 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C, additional APT) δ 31.3 (+), 33.9 (–), 56.0 (+), 112.01 (+), 124.99 (+), 125.02 (+), 125.1 (–), 128.5 (–), 129.7 (+), 129.9 (–), 130.5 (+), 133.9 (–), 143.4 (–), 155.3 (–); MS (70 eV, EI), m/z (%): 851 (58) [M], 526 (2) [$\text{M}^+ - 2 \times t\text{Bu-phenyl-OMe}$], 410 (17) [$\text{M}^+ - 2 \times t\text{Bu-phenyl-OMe} - 2 \times t\text{Bu}$], 363 (10) [$\text{M}^+ - 3 \times t\text{Bu-phenyl-OMe}$] 201 (73) [$\text{M}^+ - 4 \times t\text{Bu-phenyl-OMe}$]; $\text{C}_{60}\text{H}_{66}\text{O}_4$: calcd. 850.4961 (correct HRMS).

1,3,6,8-Tetrakis(5-tert-butyl-2-hydroxyphenyl)pyrene (**7d**): Analogous to **7a**, compound **7d** (447 mg, 0.561 mmol) was obtained in 79% yield as a yellow solid: mp > 250 °C; IR (KBr) ν 3459, 3038, 2962, 2862, 1627, 1499, 1463, 1364, 1073, 891, 825 cm^{-1} ; ^1H NMR (300 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C) δ 1.35 (s, 36H), 4.64 (bs, 4H), 7.00 (d, $^3J = 8.0$ Hz, 4H), 7.40 (d, $^3J = 8.0$ Hz, 4H), 7.41 (s, 4H), 7.99 (s, 4H), 8.09 (s, 2H); ^{13}C NMR (75.5 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C, additional APT) δ 31.4 (+), 33.9 (–), 115.4 (+), 125.7 (+), 125.8 (–), 126.3 (+), 128.3 (+), 129.4 (–), 130.8 (+), 133.2 (–), 143.7 (–), 150.7 (–), (C11 and C12 are missing because of rotational isomers); MS (70 eV, EI), m/z (%): 795 (62) [M], 794 (100) [M – H], 646 (28) [M – $t\text{Bu-phenyl-OH}$], 382 (30) [$\text{M}^+ - 2 \times t\text{Bu-phenyl-OH} - 2 \times t\text{Bu}$]; $\text{C}_{56}\text{H}_{58}\text{O}_4$ (795.1).

1,3,6,8-Tetrakis(5-tert-butyl-2-trifluoromethylsulfonylphenyl)pyrene (**8d**): Analogous to **8a**, compound **8d** (501 mg, 0.379 mmol) was obtained in 82% yield as a pale yellow solid: mp > 250 °C; IR (KBr) ν 3063, 2964, 2871, 1607, 1485, 1466, 1423, 1366, 1250, 1208, 1172, 1143, 1117, 1086, 897, 867, 830, 622 cm^{-1} ; ^1H NMR (300 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 100 °C) δ 1.43 (s, 36H), 7.48 (d, $^3J = 8.0$ Hz, 4H), 7.61 (dd, $^3J = 8.0$, $^4J = 2.0$ Hz, 4H), 7.70 (bs, 4H), 7.90 (s, 4H), 8.05 (bs, 2H); ^{13}C NMR (75.5 MHz, $\text{C}_2\text{D}_2\text{Cl}_4$, 125 °C,

additional APT) δ 30.9 (+), 34.5 (–), 120.7 (+), 124.5 (–), 125.4 (+), 126.3 (+), 129.3 (–), 130.6 (+), 131.0 (–), 133.1 (–), 145.1 (–), 151.7 (–); MS (70 eV, EI), m/z (%): 1322 (100) [M – H], 1189 (12) [M – SO₂CF₃], 1042 (80) [M – OSO₂CF₃ – SO₂CF₃], 983 (4) [M – *t*Bu – OSO₂CF₃ – SO₂CF₃], 790 (16) [M – 3 $\times$ SO₂CF₃]; C₆₀H₅₄O₁₂F₁₂S₄ (1323.3): calcd. C 45.46, H 4.11; found C 45.32, H 3.94.

2,7,11,16-Tetra-tert-butyltetraindeno[1,2,3-cd:l',2',3'-fg:l'',2'',3''-jk:l''',2''',3'''-mn]pyrene (3d): Analogous to **3b**, compound **3d** (< 1 mg, <1 μ mol) was obtained from **8d** in <1% as a dark red solid: mp > 325°C; UV λ_{max} (CHCl₃) nm (log ϵ) 278 (1.55), 288 (1.38), 298 (1.44), 312 (1.72), 333 (1.16), 363 (0.82), 397 (0.35), 419 (0.43), 437 (0.24), 467 (0.25), 545 (0.21); ¹H NMR (300 MHz, C₂D₂Cl₄, 125 °C) δ 1.57 (s, 36H), 7.27 (dd, ³*J* = 8.0, ⁴*J* = 1.5 Hz, 4H), 7.39 (s, 2H), 7.58 (d, ³*J* = 8.0, 4H), 7.62 (d, ⁴*J* = 1.5 Hz, 4H); ¹³C NMR (75 MHz, C₂D₂Cl₄, 125 °C) δ 31.1, 34.7, 118.9, 119.0, 124.2, 125.65, 125.72, 133.1, 137.6, 139.4, 143.6, 152.1, 153.8; MS (70 eV, EI), m/z (%): 723 (3) [M⁺], 708 (3) [M⁺ – CH₃], 481 (10), 421 (22), 393 (15), 309 (28), 268 (14), 222 (16), 167 (18), 153 (19), 139 (26), 125 (37), 111 (55), 97 (98), 57 (100); C₅₆H₅₀: calcd. 722.39125 (correct HRMS).

1,6-Bis(2-methoxyphenyl)pyrene (**6a**)

1,6-Bis(2-hydroxyphenyl)pyrene (**7a**)

1,6-Bis(2-trifluoromethylsulfonylphenyl)pyrene (**8a**)

Diindeno[1,2,3-cd:1',2',3'-jk]pyrene (**3a**)

1,8-Bis(2-methoxyphenyl)pyrene (**6b**)

1,8-Bis(2-hydroxyphenyl)pyrene (**7b**)

1,8-Bis(2-trifluoromethylsulfonylphenyl)pyrene (**8b**)

Diindeno[1,2,3-cd:1',2',3'-fg]pyrene (**3b**)

1,3,6-Tris(5-*tert*-butyl-2-methoxyphenyl)pyrene (**6c**)

1,3,6-Tris(5-*tert*-butyl-2-hydroxyphenyl)pyrene (**7c**)

1,3,6-Tris(5-*tert*-butyl-2-trifluoromethylsulfonylphenyl)pyrene (**8c**)

2,7,11-Tri-*tert*-butyltriindeno[1,2,3-*cd*:1',2',3'-*fg*:1'',2'',3''-*jk*]pyrene (**3c**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-methoxyphenyl)pyrene (**6d**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-hydroxyphenyl)pyrene (**7d**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-trifluoromethylsulfonylphenyl)pyrene (**8d**)

2,7,11,16-Tetra-*tert*-butyl-tetraindeno[1,2,3-*cd*:1',2',3'-*fg*:1'',2'',3''-*jk*:1''',2''',3'''-*mn*]pyrene (**3d**)

1-Bromo-2-iodo-4-*tert*-butyl-benzene (**15**)

2-(2-bromo-5-*tert*-butylphenyl)-4,4,5,5-tetramethyl-[1,3,2]-dioxaborolane

1,6-Bis(2-methoxyphenyl)pyrene (**6a**)

1,6-Bis(2-hydroxyphenyl)pyrene (**7a**)

1,6-Bis(2-trifluoromethylsulfonylphenyl)pyrene (**8a**)

Diindeno[1,2,3-*cd*:1',2',3'-*jk*]pyrene (**3a**)

1,8-bis(2-methoxyphenyl)pyrene (**6b**)

1,8-Bis(2-hydroxyphenyl)pyrene (**7b**)

1,8-Bis(2-trifluoromethylsulfonylphenyl)pyrene (**8b**) Diindeno[1,2,3-*cd*:1',2',3'-*fg*]pyrene (**3b**)

1,3,6-Tris(5-*tert*-butyl-2-methoxyphenyl)pyrene (**6c**)

1,3,6-Tris(5-*tert*-butyl-2-hydroxyphenyl)pyrene (**7c**)

1,3,6-Tris(5-*tert*-butyl-2-trifluoromethylsulfonylphenyl)pyrene (**8c**)

2,7,11-Tri-*tert*-butyltriindeno[1,2,3-*cd*:1',2',3'-*fg*:1'',2'',3''-*jk*]pyrene (**3c**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-methoxyphenyl)pyrene (**6d**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-hydroxyphenyl)pyrene (**7d**)

1,3,6,8-Tetrakis(5-*tert*-butyl-2-trifluoromethylsulfonylphenyl)pyrene
(**8d**)

2,7,11,16-Tetra-*tert*-butyl-tetraindeno[1,2,3-*cd*:1',2',3'-*fg*:1'',2'',3''-*jk*:1''',2''',3'''-*mn*]pyrene
(**3d**)

1-Bromo-2-iodo-4-*tert*-butylbenzene (**15**)

2-(2-bromo-5-*tert*-butylphenyl)-4,4,5,5-tetramethyl-[1,3,2]-dioxaborolane