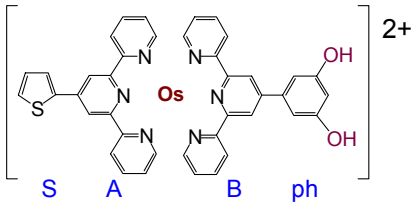
5



Formula: $C_{40}H_{28}F_{12}N_6O_2OsP_2S$

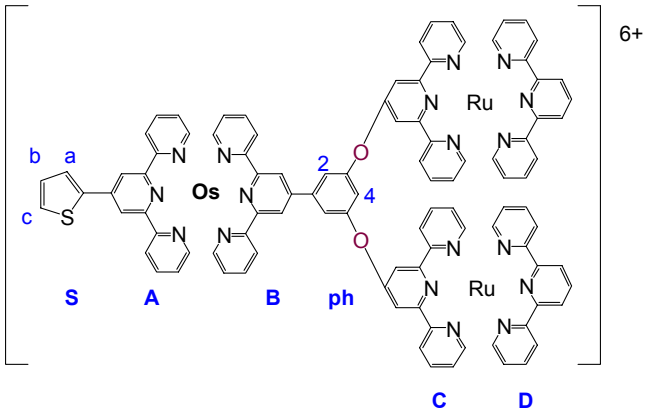
Formula weight: 1136.91

^{1}H-NMR (CD_3CN, 300 MHz): δ = 8.95 (A3'+B3', 4H, s), 8.63 (A3, 2H, d, J=7.35 Hz), 8.61 (B3, 2H, d, J=7.35 Hz), 8.10 (S_a, 1H, dd, J=1.10 Hz, 3.67 Hz), 7.80 (A4, 2H, dt, J=1.47 Hz, 7.72 Hz), 7.79 (B4, 2H, dt, J=1.47 Hz, 8.08 Hz), 7.72 (S_c, 1H, dd, J=1.10 Hz, 5.15 Hz), 7.42 (S_b, 1H, dd, J=3.67 Hz, 5.14 Hz), 7.30 (B6, 2H, d, J=5.14 Hz), 7.29 (A6, 2H, d, J=5.14 Hz), 7.10 (A5+B5, 4H, m), 7.10 (ph2, 2H, d, J=2.20 Hz), 6.52 (ph4, 1H, t, J=2.20 Hz);

ES MS *m/z* (calc.): 992 (992, $[M\text{-}PF_6]^+$), 424 (424, $[M\text{-}2PF_6]^{2+}$);

IR (solid, cm^{-1}): 3066w, 1604m, 1581m, 1523m, 1465m, 1427m, 1396m, 1361m, 1334m, 1284m, 1245m, 1153w, 1076w, 1026w, 825s [PF_6], 783s, 752m, 713m, 651m, 621m, 551m [PF_6];

1



Formula: $C_{100}H_{68}F_{36}N_{18}O_2Os_1P_6Ru_2S_1$

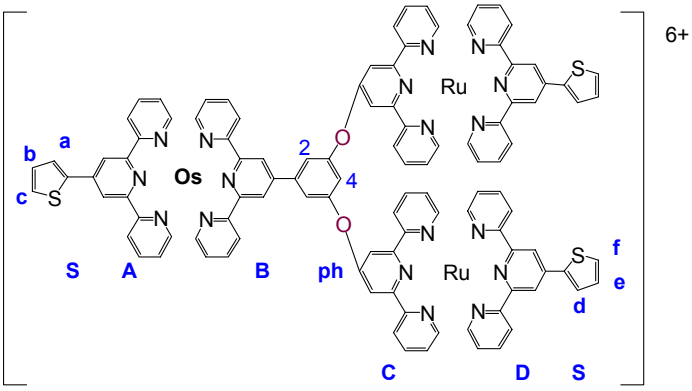
Formula weight: 2847.95

^{1}H-NMR (CD_3CN 300 MHz): δ = 9.30 (B3', 2H, s), 8.96 (A3', 2H, s), 8.75 (B3, 2H, d, J=8.08 Hz), 8.72 (D3', 4H, d, J=8.08), 8.67 (C3', 4H, s), 8.64 (A3, 2H, d, J=8.08 Hz), 8.55 (C3, 4H, d, J=8.08 Hz), 8.46 (D3, 4H, d, J=8.08 Hz), 8.44 (ph2, 2H, d, J=2.20 Hz), 8.38 (D4', 2H, t, J=8.08 Hz), 8.10 (S_a, 1H, dd, J=1.10, 3.67 Hz), 7.95 (ph4, 1H, t, J=1.83 Hz), 7.84 (D4, 4H, dt, J=1.47, 7.72 Hz), 7.80 (A4, 2H, dt, J=1.47, 7.72 Hz), 7.78 (B4, 2H, dt, J=1.47, 8.08 Hz), 7.73 (S_c, 1H, dd, J=1.10, 5.14 Hz), 7.72 (C4, 4H, dt, J=1.47, 7.72 Hz), 7.56 (D6, 4H, d, J=5.51 Hz), 7.42 (S_b, 1H, dd, J=3.67, 5.14 Hz), 7.34 (B6, 2H, d, J=5.51 Hz), 7.33 (A6, 2H, d, J=5.51 Hz), 7.32 (C6, 4H, d, J=5.51 Hz), 7.12 (B5, 2H, dt, J=1.10, 7.33 Hz), 7.10 (A5, 2H, dt, J=1.10, 7.33 Hz), 7.08 (C5, 4H, dt, J=1.10, 7.33 Hz), 7.05 (D5, 4H, dt, J=1.10, 7.33 Hz);

ES MS *m/z* (calc.): 1279 (1279, $[M\text{-}2PF_6]^{2+}$), 804 (804.3, $[M\text{-}3PF_6]^{3+}$), 567 (567, $[M\text{-}4PF_6]^{4+}$);

IR (solid, cm^{-1}): 1604w, 1434w, 1396m, 1357s, 1284m, 1245m, 1199m, 1164w, 1126w, 1029w, 999w, 825s [PF_6^-], 786s, 763s, 651m, 551s [PF_6^-];

2



Formula: $C_{108}H_{72}F_{36}N_{18}O_2OsP_6Ru_2S_3$

Formula weight: 3012.20

^{1}H-NMR (CD_3CN 500 MHz, **COSY**): δ = 9.35 (B3', 2H, s), 8.97 (A3', 2H, s), 8.90 (D3', 4H, s), 8.78 (B3, 4H, d, J=8.07 Hz), 8.72 (C3', 4H, s), 8.64 (A3, 2H, d, J=8.80 Hz), 8.62 (D3, 4H, d, J=8.43), 8.59 (C3, 4H, d, J=8.07 Hz), 8.46 (ph2, 2H, d, J=1.83 Hz), 8.16 (S_d, 2H, dd, J=1.10, 3.66 Hz), 8.10 (S_a, 1H, dd, J=1.10, 3.67 Hz), 7.99 (ph4, 1H, t, J=1.83 Hz), 7.85 (D4, 4H, dt, J=1.46, 8.07 Hz), 7.81 (S_f, 2H, dd, J=1.10, 5.13 Hz), 7.80 (A4, 2H, dt, J=1.47, 7.72 Hz), 7.77 (B4, 2H, dt, J=1.47, 8.08 Hz), 7.73 (S_c, 1H, dd, J=1.10, 5.14 Hz), 7.71 (C4, 4H, dt, J=1.46, 8.43 Hz), 7.59 (D6, 4H, d, J=5.13 Hz), 7.42 (S_b, 1H), 7.41 (S_e, 2H), 7.40 (C6, 4H, d, J=5.13 Hz), 7.34 (A6, 2H, d, J=5.50 Hz), 7.33 (B6, 2H, d, J=5.50 Hz), 7.11 (B5, 2H, ddd), 7.09 (A5, 2H, ddd), 7.08 (C5, 4H, dt, J=1.46, 7.33 Hz), 7.05 (D5, 4H, dt, J=1.10, 7.33 Hz);

ES MS m/z (calc.): 1361 (1361, $[M\text{-}2PF_6]^{2+}$), 859 (859, $[M\text{-}3PF_6]^{3+}$), 608 (608, $[M\text{-}4PF_6]^{4+}$);

IR (solid, cm^{-1}): 1612w, 1454w, 1396m, 1357m, 1288w, 1199m, 1154w, 1026w, 1002w, 825s [PF_6^-], 786s, 752m, 725m, 651m, 5515 [PF_6^-], 528m;