Electronic Supplementary Information

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1. X-ray crystallography

Table S1. Bond lengths (Å) and Bond angles (°) of Complex **1**.

Bond lengths (Å)			
Sn(1)-O(1)	2.335(5)	Sn(1)-C(4)	2.108(8)
Sn(1)-C(3)	2.099(8)	Sn(1)-O(7)	2.075(5)
Sn(1)-O(7A)	2.022(5)	Sn(2)-O(4)	2.209(5)
Sn(2)-O(3)	2.499(5)	Sn(2)-O(1)	2.421(5)
Sn(2)-O(6)	2.321(5)	Sn(2)-C(7)	2.105(8)
Sn(2)-C(6)	2.093(8)	Sn(2)-O(7A)	2.078(5)
O(7)-Sn(1A)	2.022(5)	O(7)-Sn(2A)	2.078(5)
Bond angles (°)			
O(1)-Sn(1)-Sn(1A)	107.96(12)	C(4)-Sn(1)-Sn(1A)	110.2(2)
C(4)-Sn(1)-O(1)	90.9(3)	C(3)-Sn(1)-Sn(1A)	110.4(2)
C(3)-Sn(1)-O(1)	91.6(3)	C(3)-Sn(1)-C(4)	136.3(3)
O(7)-Sn(1)-Sn(1A)	36.71(13)	O(7A)-Sn(1)-Sn(1A)	37.83(13)
O(7)-Sn(1)-O(1)	144.57(17)	O(7A)-Sn(1)-O(1)	70.19(18)
O(7)-Sn(1)-C(4)	99.6(3)	O(7A)-Sn(1)-C(4)	112.7(3)
O(7)-Sn(1)-C(3)	103.2(3)	O(7A)-Sn(1)-C(3)	109.2(3)
O(7A)-Sn(1)-O(7)	74.5(2)	O(4)-Sn(2)-O(3)	147.91(16)
O(4)-Sn(2)-O(1)	142.47(16)	O(4)-Sn(2)-O(6)	76.43(17)
O(1)-Sn(2)-O(3)	69.61(15)	O(6)-Sn(2)-O(3)	71.49(17)
O(6)-Sn(2)-O(1)	141.04(17)	C(7)-Sn(2)-O(4)	94.5(3)
C(7)-Sn(2)-O(3)	84.1(3)	C(7)-Sn(2)-O(1)	87.7(3)
C(7)-Sn(2)-O(6)	86.4(3)	C(6)-Sn(2)-O(4)	96.6(3)
C(6)-Sn(2)-O(3)	81.1(3)	C(6)-Sn(2)-O(1)	89.6(3)
C(6)-Sn(2)-O(6)	86.4(3)	C(6)-Sn(2)-C(7)	165.0(3)
O(7A)-Sn(2)-O(4)	74.94(18)	O(7A)-Sn(2)-O(3)	137.15(17)
O(7A)-Sn(2)-O(1)	67.57(17)	O(7A)-Sn(2)-O(6)	151.36(18)
O(7A)-Sn(2)-C(7)	95.4(3)	O(7A)-Sn(2)-C(6)	97.2(3)
Sn(1A)-O(7)-Sn(2A)	123.4(2)	Sn(1)-O(7)-Sn(2A)	130.9(2)

Symmetry code for complex **1**: A: 1-x, 2-y, 1-z.

Table S2. Bond lengths (Å) and Bond angles (°) of Complex **2**.

Bond lengths (Å)			
Sn(1)-O(1)	2.094(3)	Sn(1)-O(3)	2.199(4)
Sn(1)-O(6)	2.176(4)	Sn(1)-O(4)	2.099(4)
Sn(1)-C(1)	2.146(7)	Sn(1)-C(7)	2.136(6)
Bond angles (°)			
C(7)-Sn(1)-O(6)	162.9(2)	C(7)-Sn(1)-O(3)	87.3(2)
C(7)-Sn(1)-C(1)	105.1(3)	O(1)-Sn(1)-O(4)	163.76(14)
O(6)-Sn(1)-O(3)	76.89(14)	O(1)-Sn(1)-C(7)	99.3(2)
O(1)-Sn(1)-O(6)	84.72(15)	O(1)-Sn(1)-O(3)	81.32(14)
O(1)-Sn(1)-C(1)	91.5(2)	O(4)-Sn(1)-C(7)	91.3(2)
O(4)-Sn(1)-O(3)	87.05(15)	C(1)-Sn(1)-O(3)	166.7(2)
O(4)-Sn(1)-O(6)	81.62(15)	O(6)-Sn(1)-O(3)	87.05(15)
O(4)-Sn(1)-C(1)	97.5(2)	C(1)-Sn(1)-O(6)	91.3(2)
C(8)-C(7)-Sn(1)	120.8(5)	C(12)-C(7)-Sn(1)	122.8(5)
C(30)-O(6)-Sn(1)	123.3(3)	C(13)-O(3)-Sn(1)	125.8(3)
C(44)-O(1)-Sn(1)	134.1(3)	C(28)-O(4)-Sn(1)	133.4(3)
C(6)-C(1)-Sn(1)	119.3(3)	C(2)-C(1)-Sn(1)	123.2(3)

Table S3. Bond lengths (Å) and Bond angles (°) of Complex **3**

Bond lengths (Å)			
Sn(3)-O(13)	2.024(9)	Sn(3)-O(14)	2.065(9)
Sn(3)-C(37)	2.069(19)	Sn(3)-C(38)	2.039(15)
Sn(2)-O(1)	2.353(11)	Sn(2)-O(3)	2.372(12)
Sn(2)-O(7)	2.339(12)	Sn(2)-O(9)	2.420(10)
Sn(2)-O(13)	2.055(8)	Sn(4)-O(14)	2.094(9)
Sn(2)-C(18)	2.071(17)	Sn(2)-C(19)	2.031(14)
Sn(4)-O(4)	2.375(11)	Sn(4)-O(6)	2.346(10)
Sn(4)-O(12)	2.338(12)	Sn(4)-O(10)	2.342(10)
Sn(4)-C(41)	2.011(16)	Sn(4)-C(42)	2.020(18)
Sn(1)-O(13)	2.064(9)	Sn(1)-O(14)	1.991(10)
Sn(1)-C(39)	2.045(17)	Sn(1)-C(40)	2.089(15)
Sn(3)-O(7)	2.575(9)	Sn(3)-O(10)	2.697(9)
Sn(1)-O(1)	2.733(10)	Sn(1)-O(4)	2.607(8)
Bond angles (°)			
O(13)-Sn(3)-O(14)	75.6(4)	O(13)-Sn(3)-C(37)	106.5(7)
O(13)-Sn(3)-C(38)	105.1(6)	O(14)-Sn(3)-C(37)	104.3(6)
C(38)-Sn(3)-O(14)	106.1(5)	C(38)-Sn(3)-C(37)	140.4(8)
O(1)-Sn(2)-O(3)	72.2(4)	O(1)-Sn(2)-O(9)	144.2(4)
O(3)-Sn(2)-O(9)	72.9(4)	O(7)-Sn(2)-O(1)	143.7(4)
O(7)-Sn(2)-O(3)	144.7(4)	O(7)-Sn(2)-O(9)	72.5(4)
O(13)-Sn(2)-O(1)	72.5(4)	O(13)-Sn(2)-O(3)	144.4(4)
O(13)-Sn(2)-O(7)	70.5(4)	O(13)-Sn(2)-O(9)	142.7(4)
O(13)-Sn(2)-C(18)	95.6(5)	C(18)-Sn(2)-O(1)	90.6(7)
C(18)-Sn(2)-O(3)	89.0(6)	C(18)-Sn(2)-O(7)	92.1(6)
C(18)-Sn(2)-O(9)	81.3(6)	C(19)-Sn(2)-O(1)	96.8(6)
C(19)-Sn(2)-O(3)	81.5(5)	C(19)-Sn(2)-O(7)	89.5(6)
C(19)-Sn(2)-O(9)	85.4(5)	C(19)-Sn(2)-O(13)	98.6(5)
C(19)-Sn(2)-C(18)	165.4(6)	O(14)-Sn(4)-O(4)	69.7(3)
O(14)-Sn(4)-O(6)	142.6(4)	O(14)-Sn(4)-O(12)	144.7(4)
O(14)-Sn(4)-O(10)	72.8(4)	O(6)-Sn(4)-O(4)	73.1(3)

O(12)-Sn(4)-O(4)	145.4(3)	O(12)-Sn(4)-O(6)	72.6(4)
O(12)-Sn(4)-O(10)	72.0(4)	O(10)-Sn(4)-O(4)	142.5(4)
O(10)-Sn(4)-O(6)	144.0(4)	C(41)-Sn(4)-O(14)	96.3(5)
C(41)-Sn(4)-O(4)	90.9(5)	C(41)-Sn(4)-O(6)	88.4(6)
C(41)-Sn(4)-O(12)	84.0(5)	C(41)-Sn(4)-O(10)	94.8(5)
C(41)-Sn(4)-C(42)	169.0(7)	C(41)-Sn(4)-O(14)	94.8(5)
C(41)-Sn(4)-O(4)	93.0(6)	C(41)-Sn(4)-O(6)	82.8(6)
C(41)-Sn(4)-O(12)	87.0(6)	C(41)-Sn(4)-O(10)	88.4(6)
O(13)-Sn(1)-C(40)	108.4(5)	O(14)-Sn(1)-O(13)	76.3(4)
O(14)-Sn(1)-C(39)	106.4(6)	O(14)-Sn(1)-C(40)	107.9(6)
C(39)-Sn(1)-O(13)	105.7(6)	C(39)-Sn(1)-C(40)	136.1(6)
C(80)-O(1)-Sn(2)	136.8(11)	C(13)-O(3)-Sn(2)	133.3(11)
C(81)-O(7)-Sn(2)	136.7(14)	C(29)-O(9)-Sn(2)	137.3(11)
Sn(3)-O(13)-Sn(2)	127.2(5)	Sn(3)-O(13)-Sn(1)	103.4(4)
Sn(2)-O(13)-Sn(1)	129.3(5)	Sn(3)-O(14)-Sn(4)	126.6(5)
Sn(1)-O(14)-Sn(3)	104.6(4)	Sn(1)-O(14)-Sn(4)	128.8(4)
C(43)-O(4)-Sn(4)	141.3(11)	C(45)-O(6)-Sn(4)	135.1(10)
C(62)-O(12)-Sn(4)	136.1(11)	C(61)-O(10)-Sn(4)	137.3(11)

Table S4. Bond lengths (Å) and Bond angles (°) of Complex **4**.

Bond lengths (Å)			
Sn(1)-O(1)	2.082(15)	Sn(1)-O(3)	2.143(12)
Sn(1)-O(4)	2.120(2)	Sn(1)-O(6)	2.170(15)
Sn(1)-C(1)	2.140(2)	Sn(1)-C(7)	2.160(19)
Bond angles (°)			
O(1)-Sn(1)-O(3)	83.5(7)	O(1)-Sn(1)-O(4)	160.4(6)
O(1)-Sn(1)-O(6)	81.5(7)	O(1)-Sn(1)-C(1)	96.0(9)
O(1)-Sn(1)-C(7)	95.7(9)	O(3)-Sn(1)-O(6)	77.8(5)
O(3)-Sn(1)-C(1)	89.6(6)	O(3)-Sn(1)-C(7)	168.2(7)
O(4)-Sn(1)-O(3)	81.5(7)	O(4)-Sn(1)-O(6)	83.0(7)
O(4)-Sn(1)-C(1)	96.4(9)	O(4)-Sn(1)-C(7)	96.4(10)
C(1)-Sn(1)-O(6)	167.3(6)	C(1)-Sn(1)-C(7)	102.2(8)
C(7)-Sn(1)-O(6)	90.4(7)	C(80)-O(1)-Sn(1)	130.0(16)
C(13)-O(3)-Sn(1)	127.1(13)	C(31)-O(4)-Sn(1)	129.6(19)
C(33)-O(6)-Sn(1)	122.4(15)	C(2)-C(1)-Sn(1)	118.6(16)
C(6)-C(1)-Sn(1)	123.6(17)	C(8)-C(7)-Sn(1)	116.5(17)
C(12)-C(7)-Sn(1)	124(2)		

Table S5. Comparison of Sn-O bond length of reported organotin(IV) complexes.

Organotin complexes	Bond length of Sn-O	Ref
$[(Me_2Sn)_2(O_2CCH_2S)_2C_2N_2S(I_3\text{-}O)]n$	2.011-2.288 Å	41
$\{[Me_2Sn(cycloCH_2)_2CHCOO]_2O\}_2$	2.224-2.317 Å	42
$[(CH_3)_2Sn(OOCC_6H_4OH)_2]$	2.016-2.557 Å	48
$[(n\text{-}C_4H_9)_2Sn(OOCC_6H_4OH)_2]$	2.104-2.632 Å	
$Bu_2Sn[HL^2]_2$(L=4-(2-hydroxynaphthylazo)benzoic acid)	2.060-2.647 Å	49
$[(Me_2Sn)_4O_2(C_{16}H_{17}FN_3O_3)_4]$	2.075 -2.499Å	Complex **1**
$[Ph_2Sn(C_{16}H_{17}FN_3O_3)_2]$	2.094-2.199 Å	Complex **2**
$[(Me_2Sn)_4O_2(C_{18}H_{19}FN_3O_4)_4]$	1.991-2.420 Å	Complex **3**
$[Ph_2Sn(C_{18}H_{19}FN_3O_4)_2]$	2.082-2.170 Å	Complex **4**

2. Percentage inhibition of complexes 2 and 4

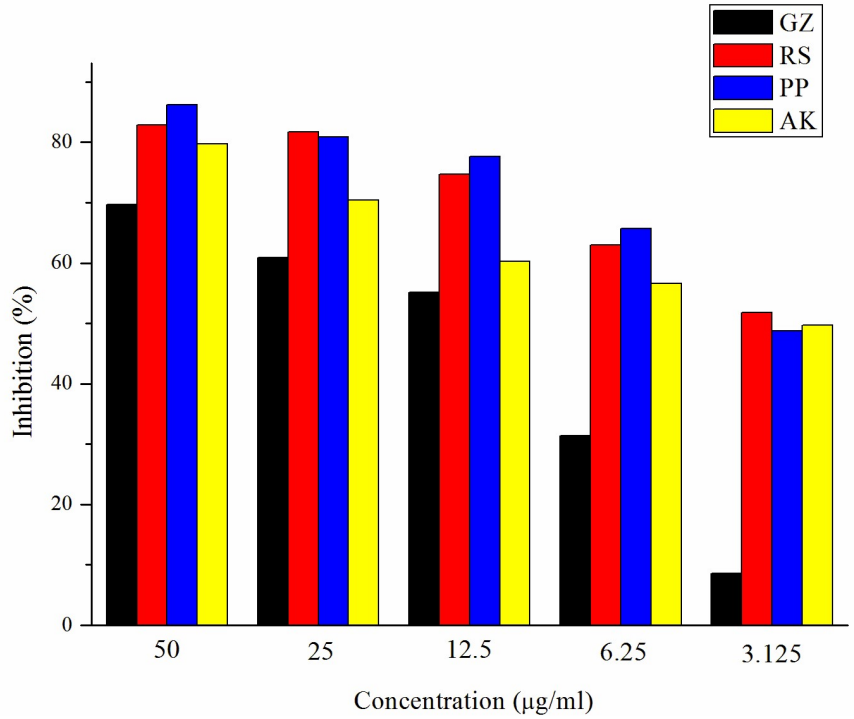

Figure S1. Percentage inhibition of complex **2**

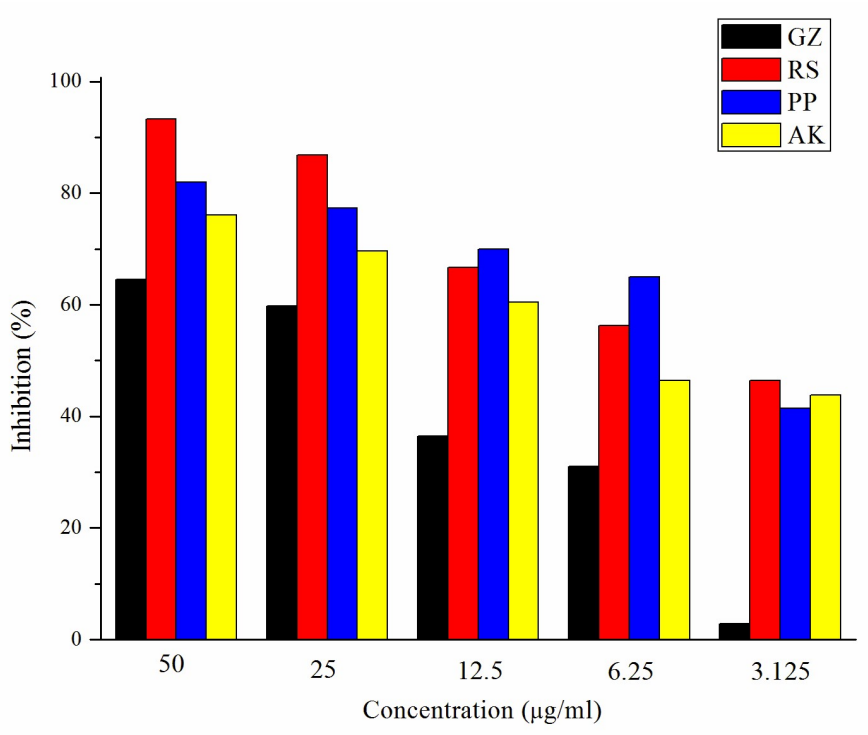

Figure S2. Percentage inhibition of complex **4**

3. ^{1}H NMR spectra

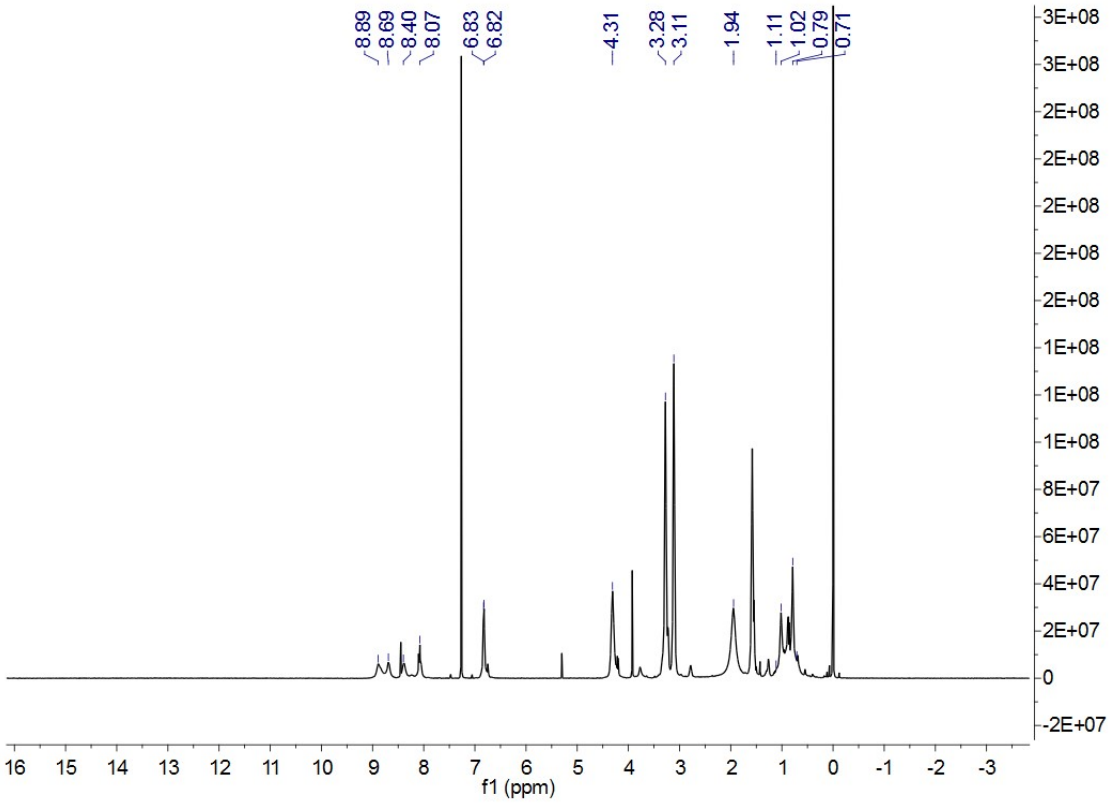

Figure S3. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of complex **1**

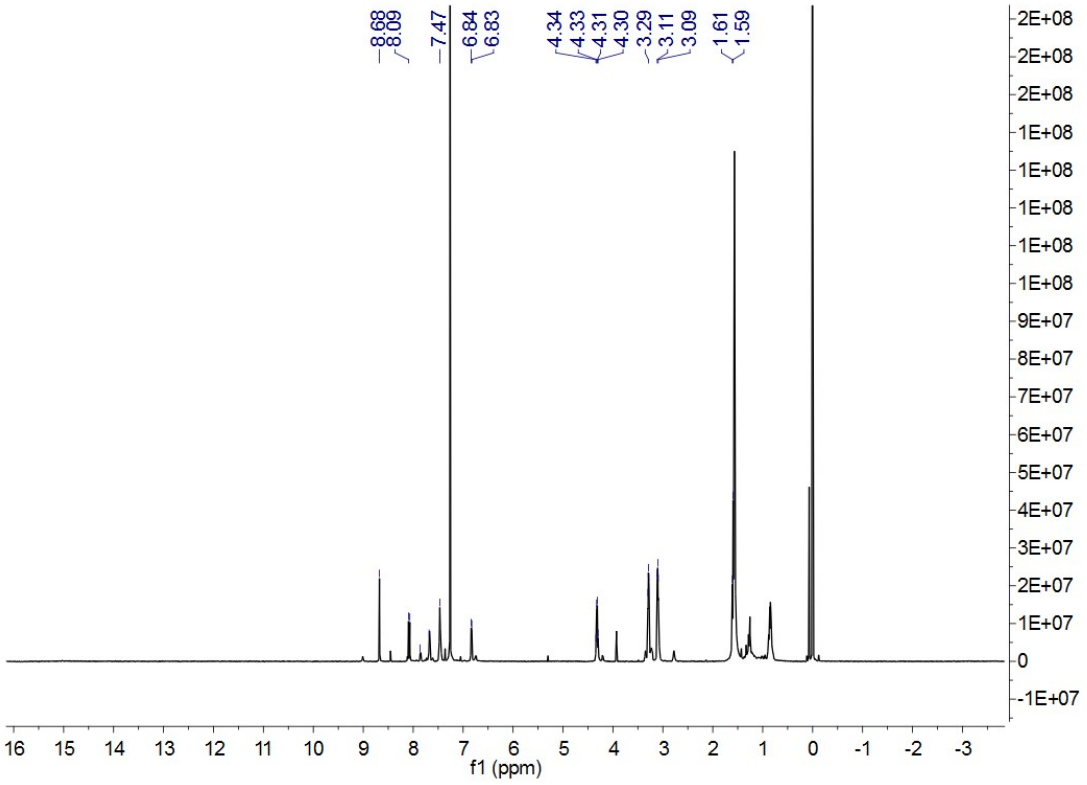

Figure S4. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of complex **2**

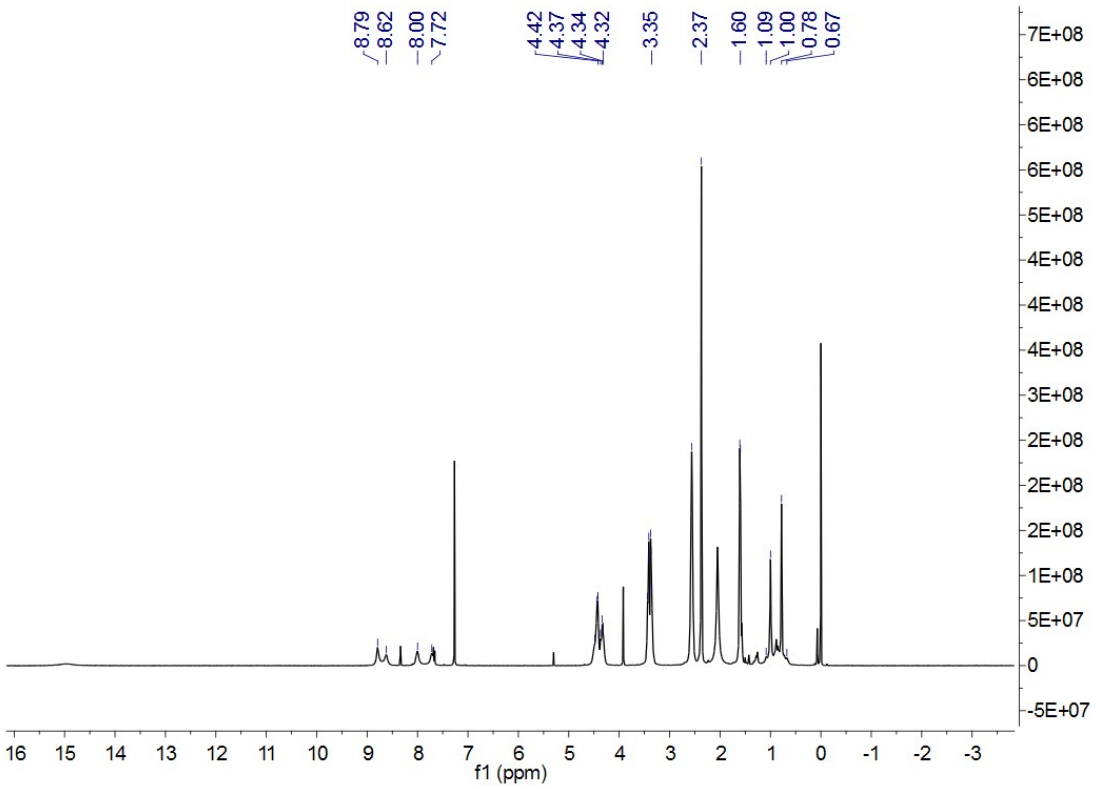

Figure S5. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of complex **3**

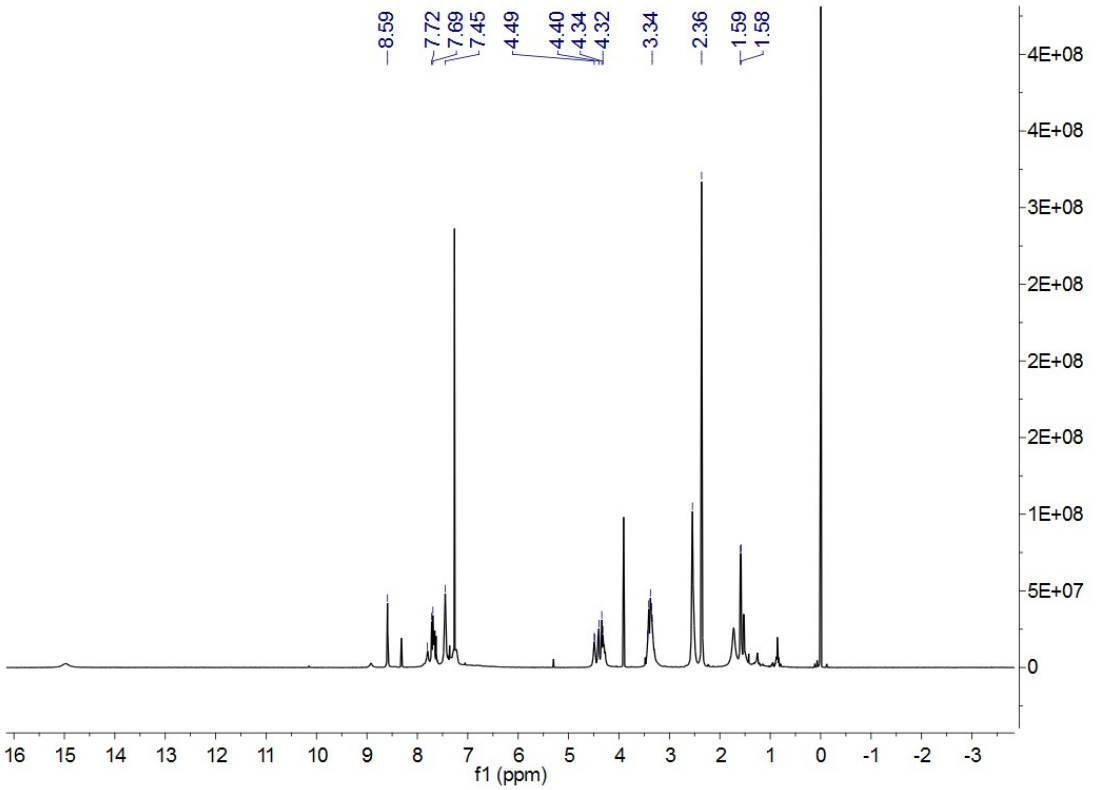

Figure S6. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of complex **4**

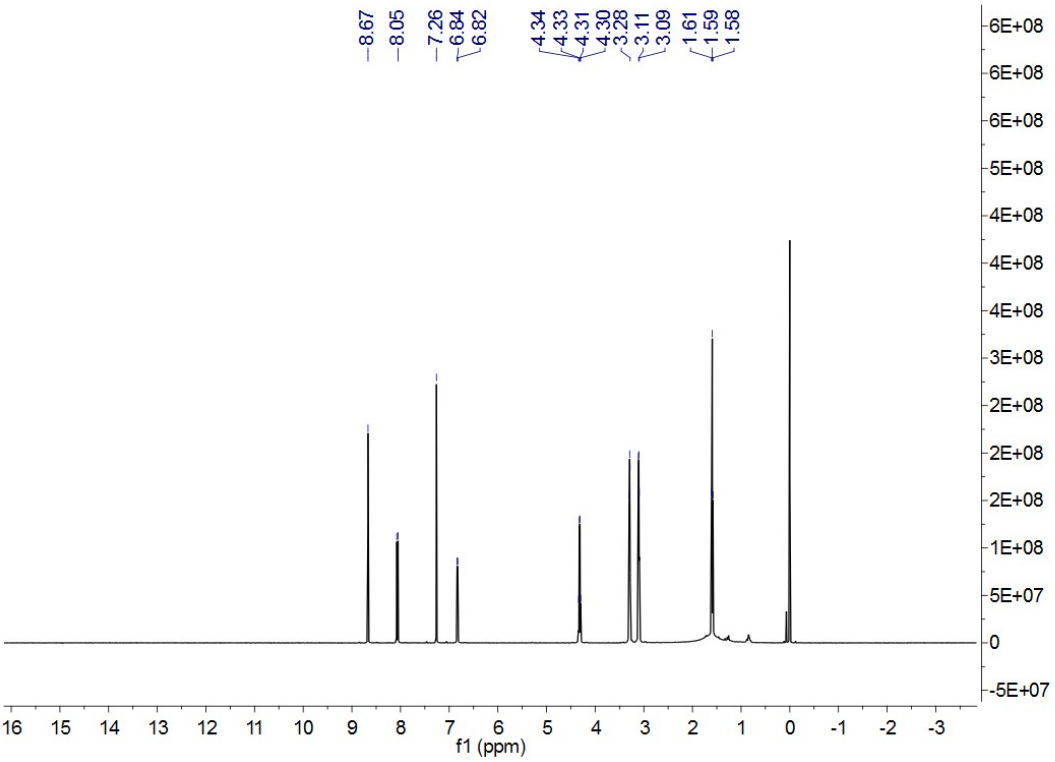

Figure S7. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of HL_1

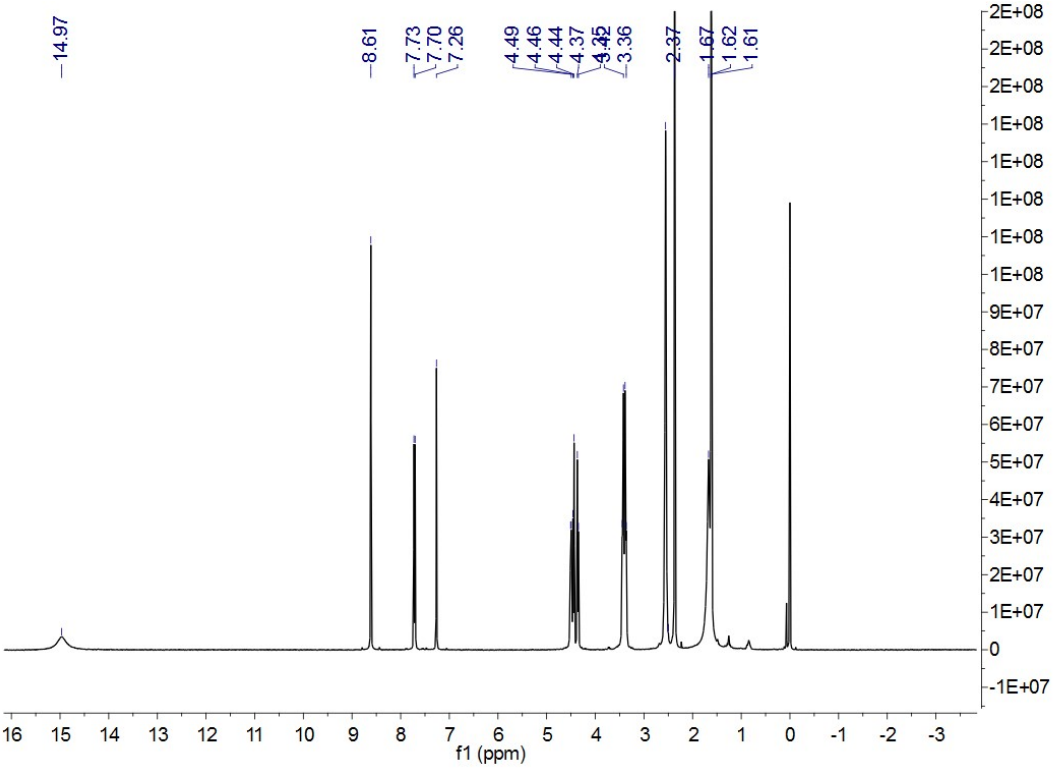

Figure S8. ^{1}H NMR spectra($CDCl_3$, 500.00 MHz, ppm) data of HL_2

4. ^{13}C NMR spectra

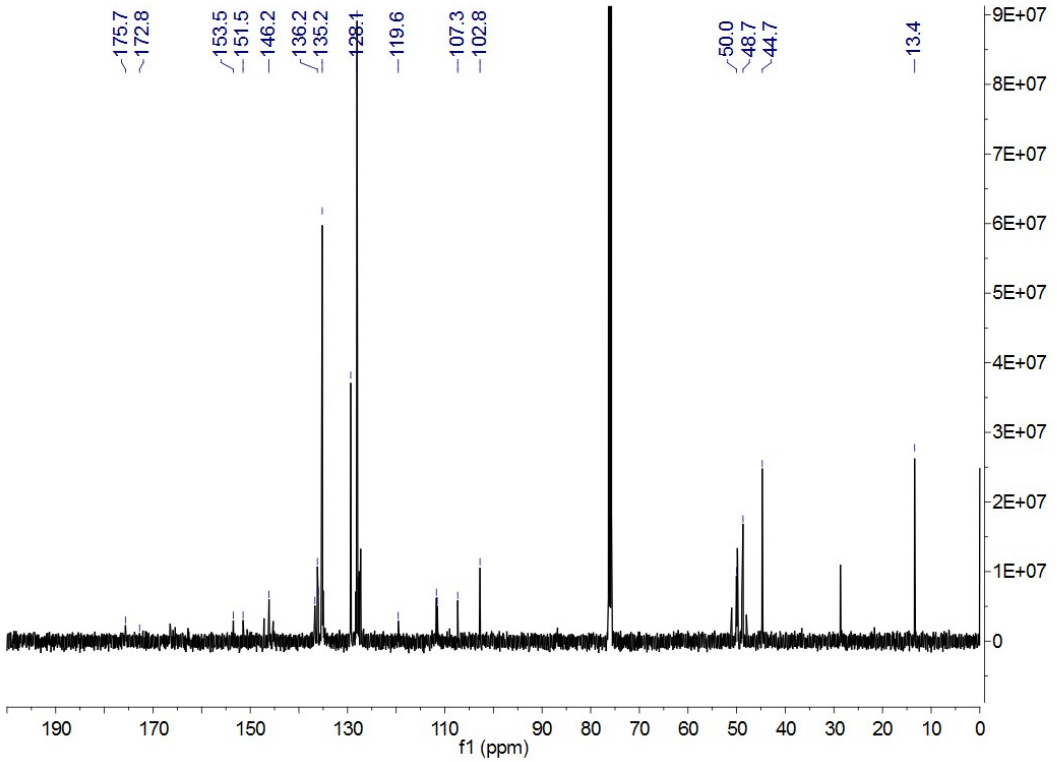

Figure S9. ^{13}C NMR ($CDCl_3$, 125.7 MHz ppm) data of complex **2**

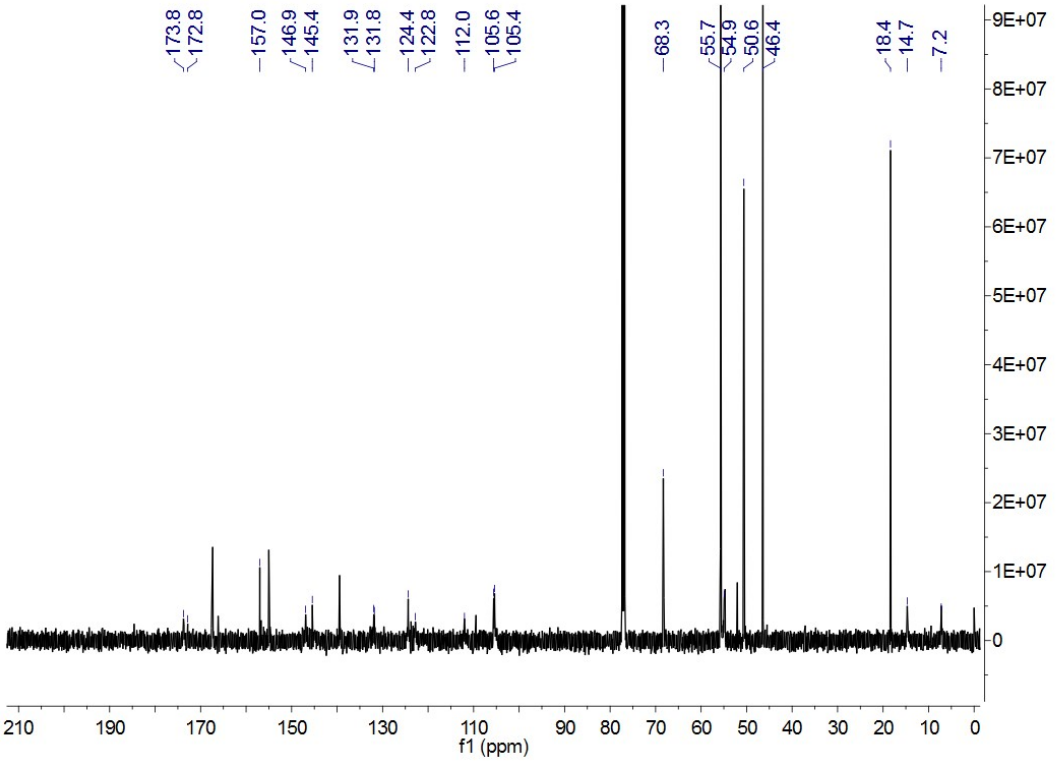

Figure S10. ^{13}C NMR ($CDCl_3$, 125.7 MHz ppm) data of complex **3**

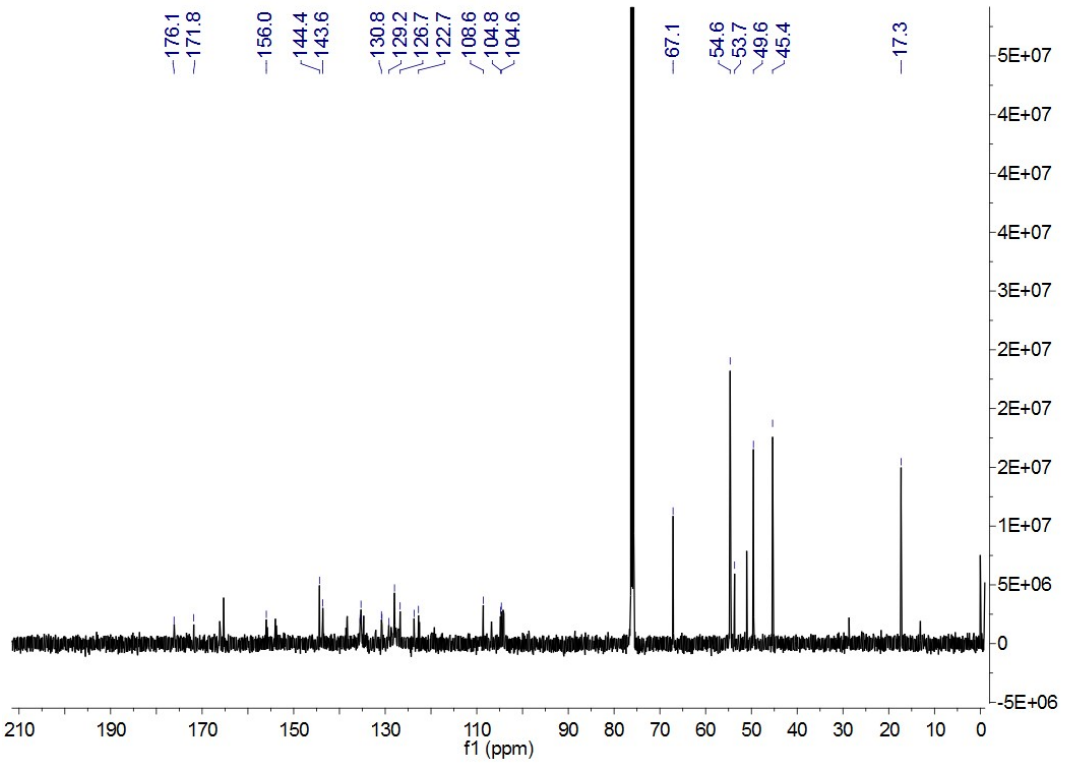

Figure S11. ^{13}C NMR ($CDCl_3$, 125.7 MHz ppm) data of complex **4**

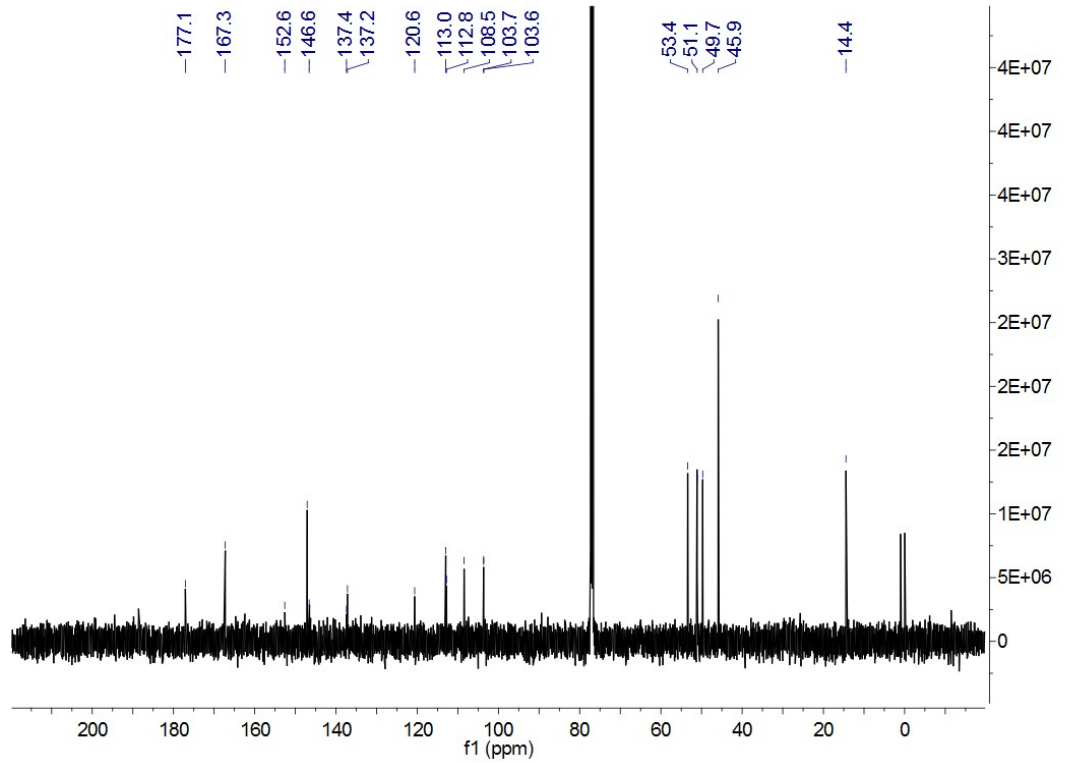

Figure S12. ^{13}C NMR ($CDCl_3$, 125.7 MHz ppm) data of HL_1

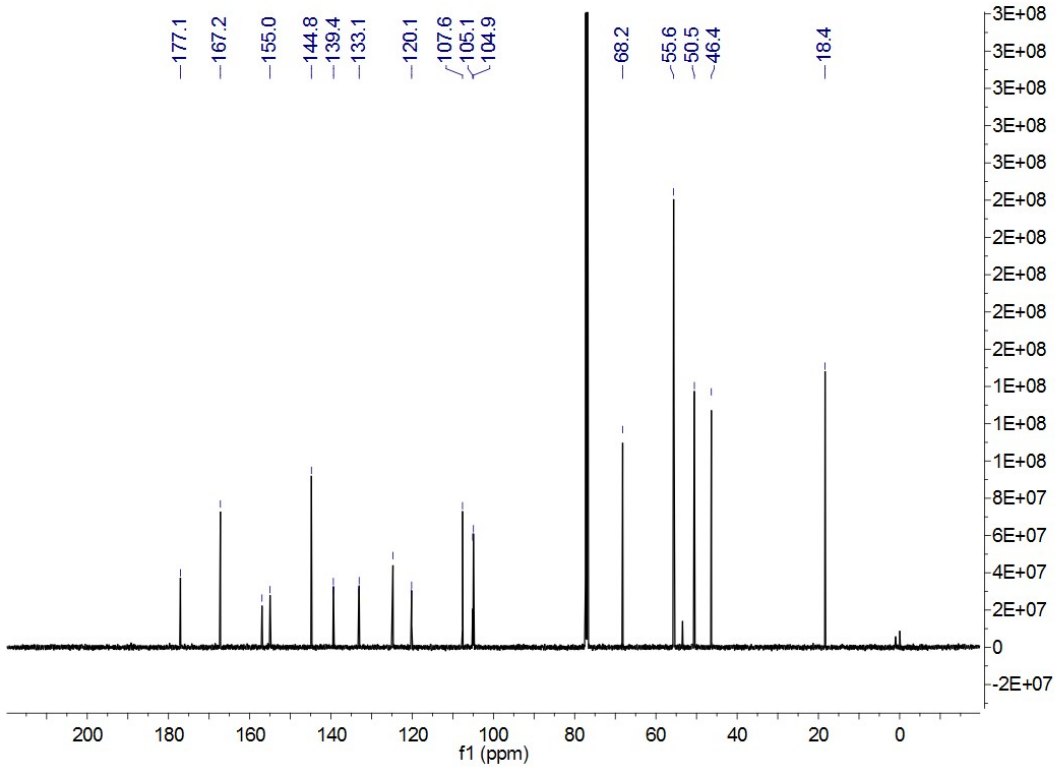

Figure S13. ^{13}C NMR ($CDCl_3$, 125.7 MHz ppm) data of HL_2

5. ^{119}Sn NMR spectra

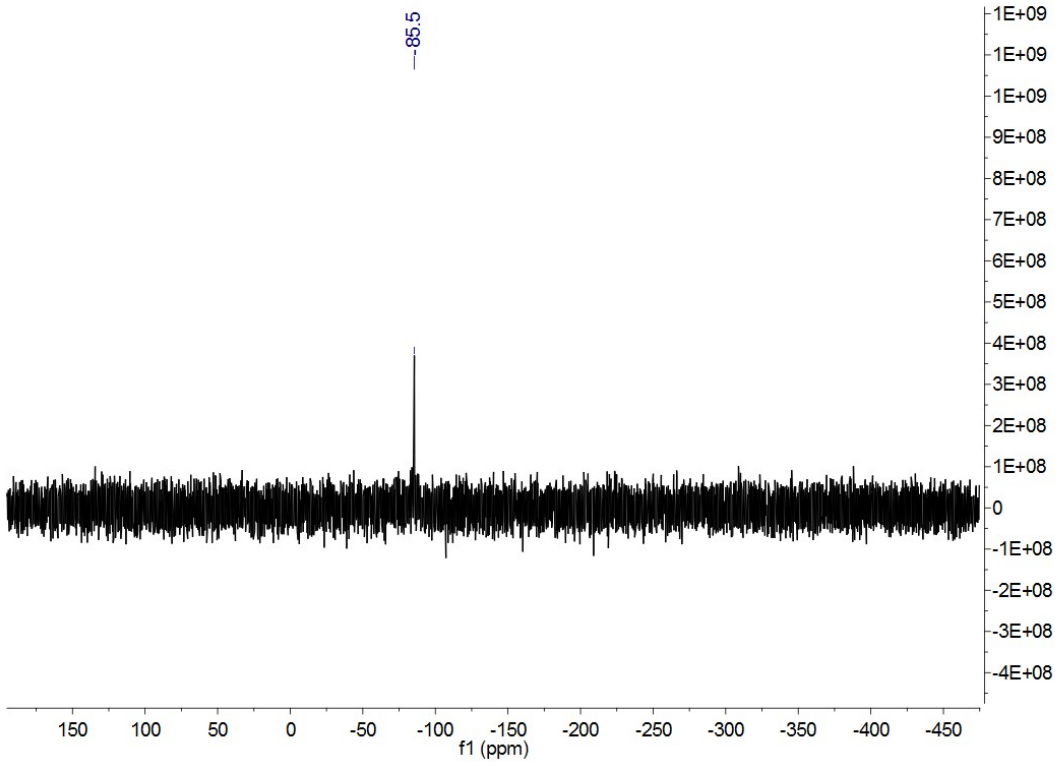

Figure S14. ^{119}Sn NMR (CH_2Cl_2, 186.5 MHz ppm) spectra data of complexes **2**

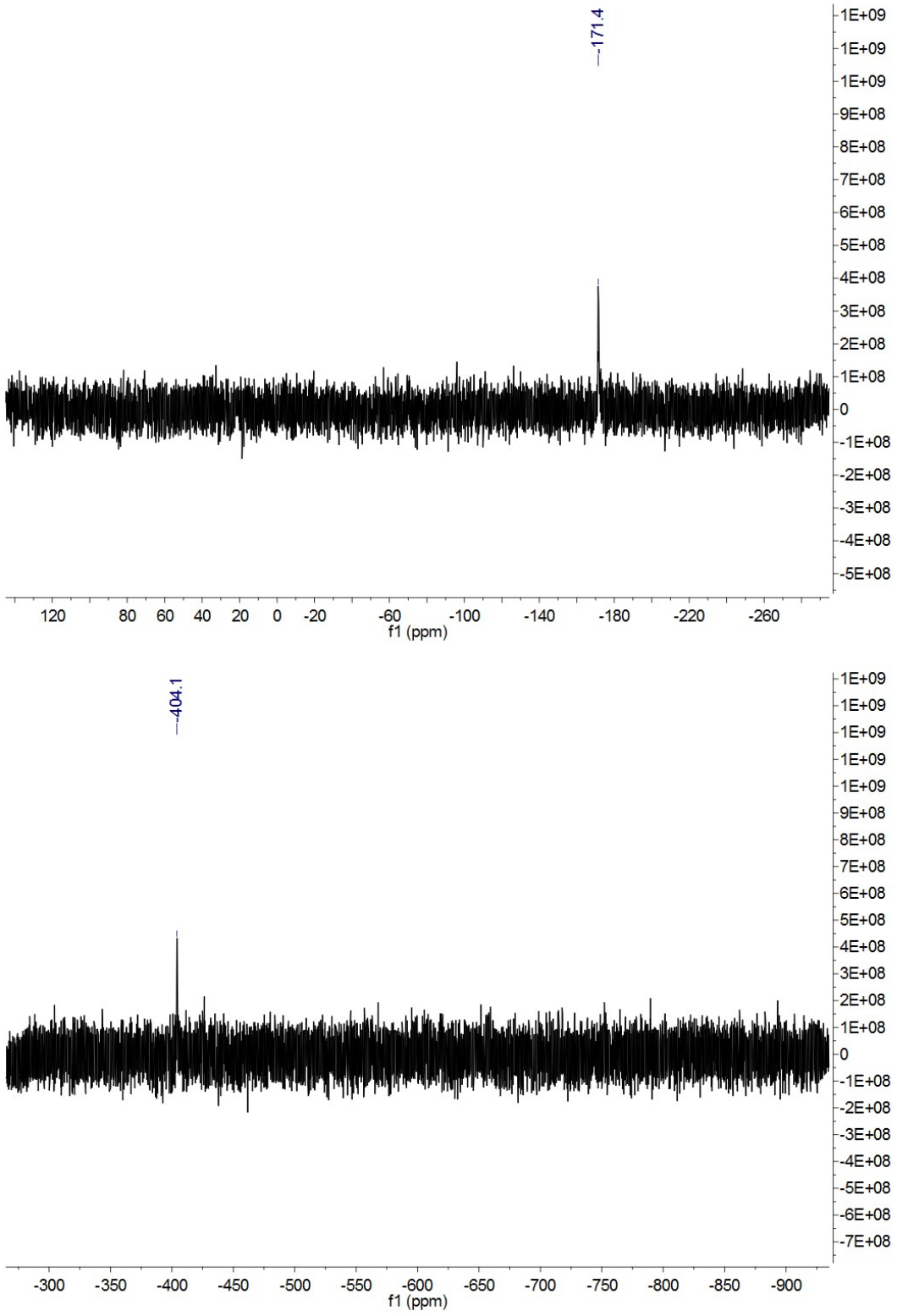

Figure S15. ^{119}Sn NMR (CH_2Cl_2, 186.5 MHz ppm) spectra data of complexes **3**

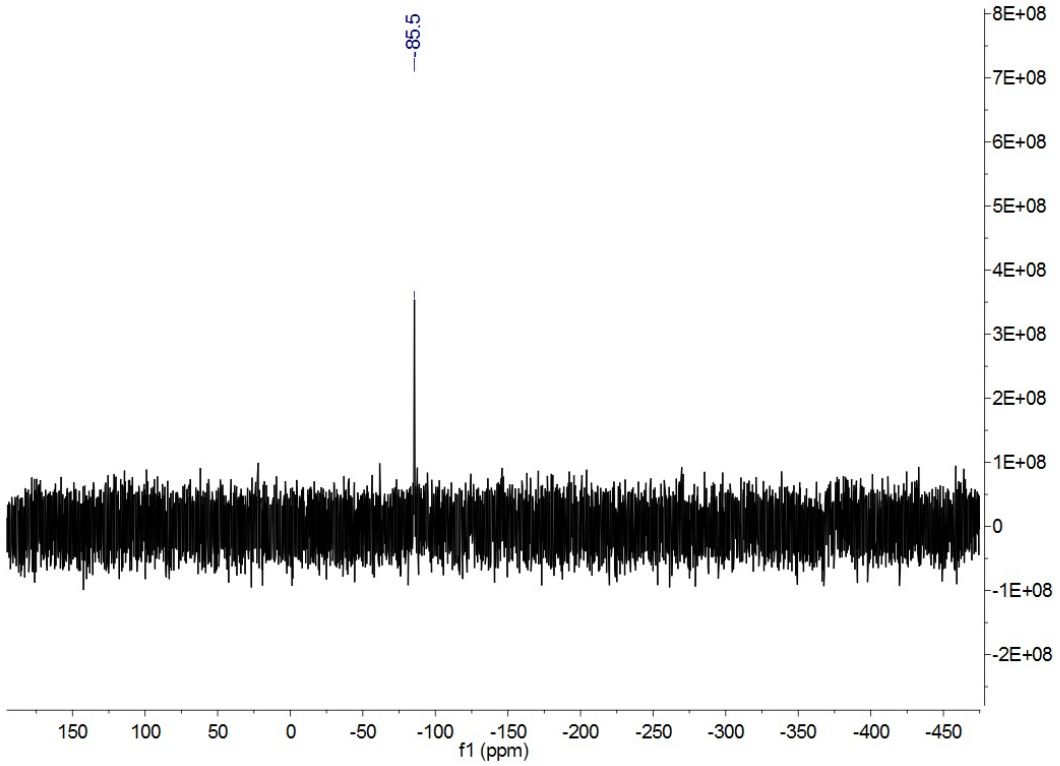

Figure S16. ^{119}Sn NMR (CH_2Cl_2, 186.5 MHz ppm) spectra data of complexes **4**

6. HSQC of HL_1 and complex 2

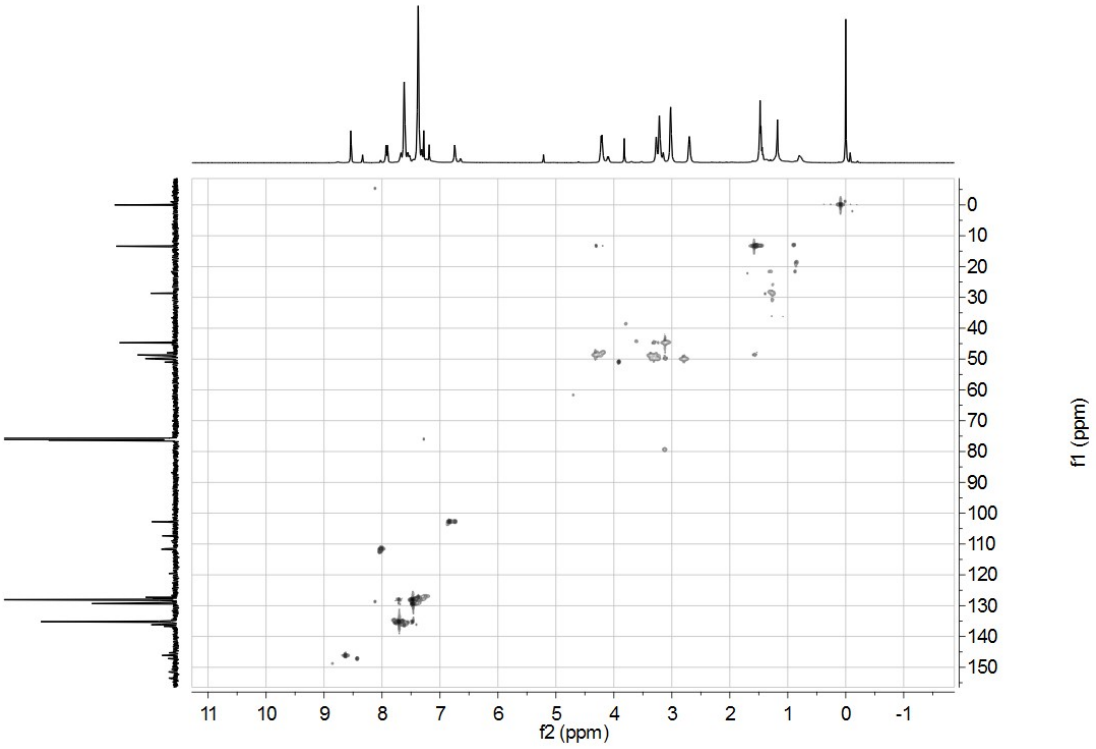

Figure S17. HSQC spectrum for complex **2**

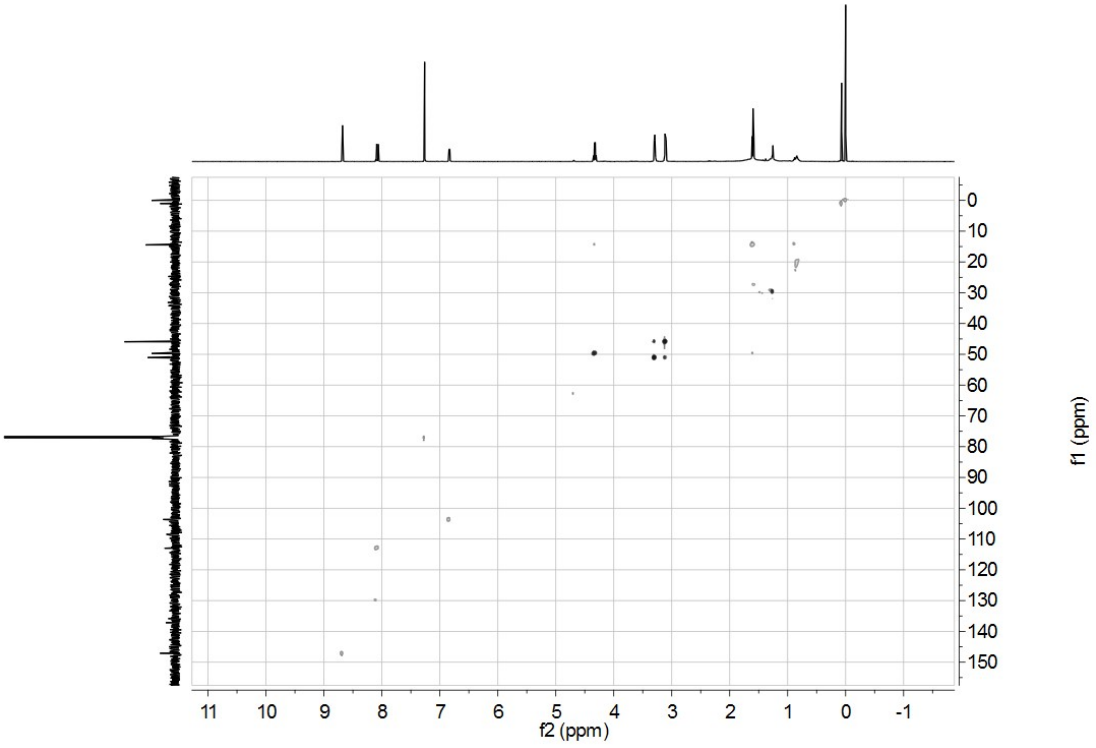

Figure S18. HSQC spectrum for HL_1

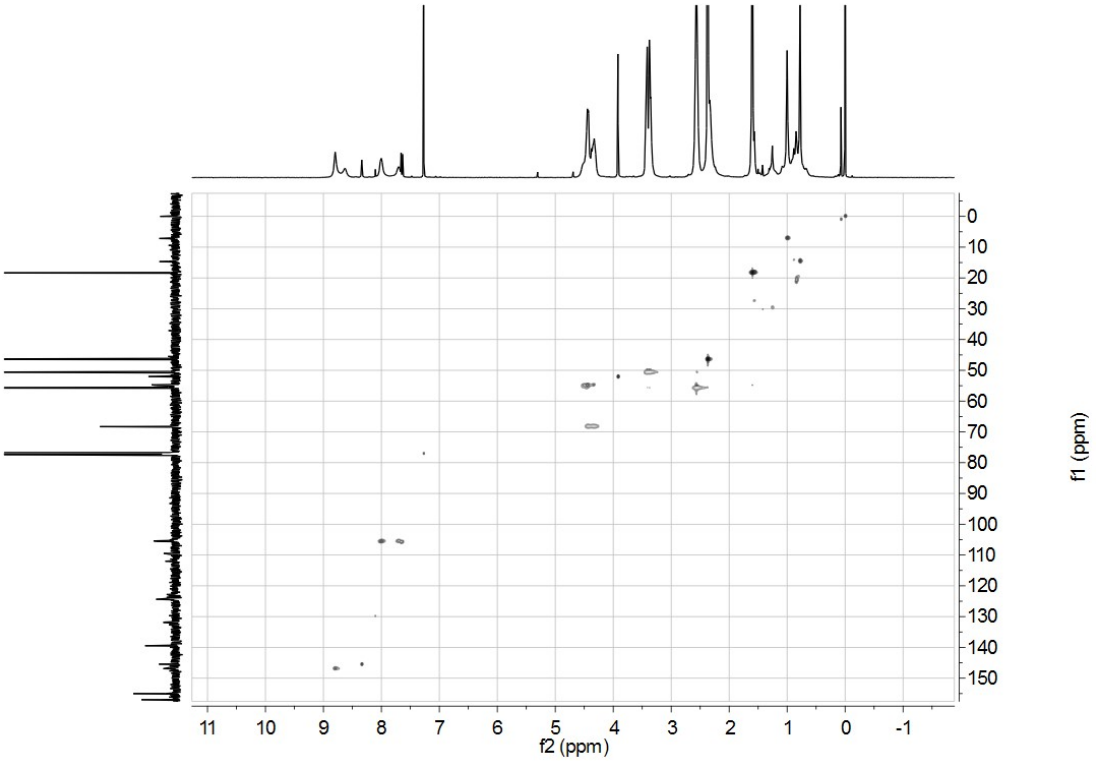

Figure S19. HSQC spectrum for Complex **3**

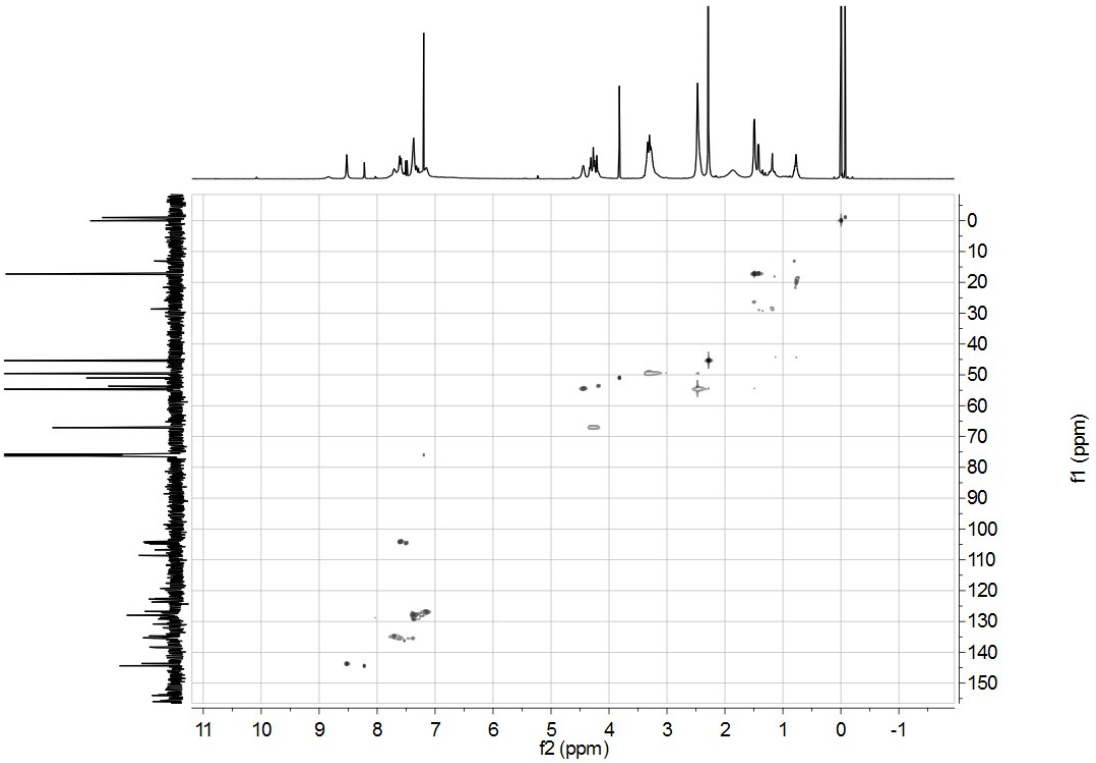

Figure S20. HSQC spectrum for Complex **4**

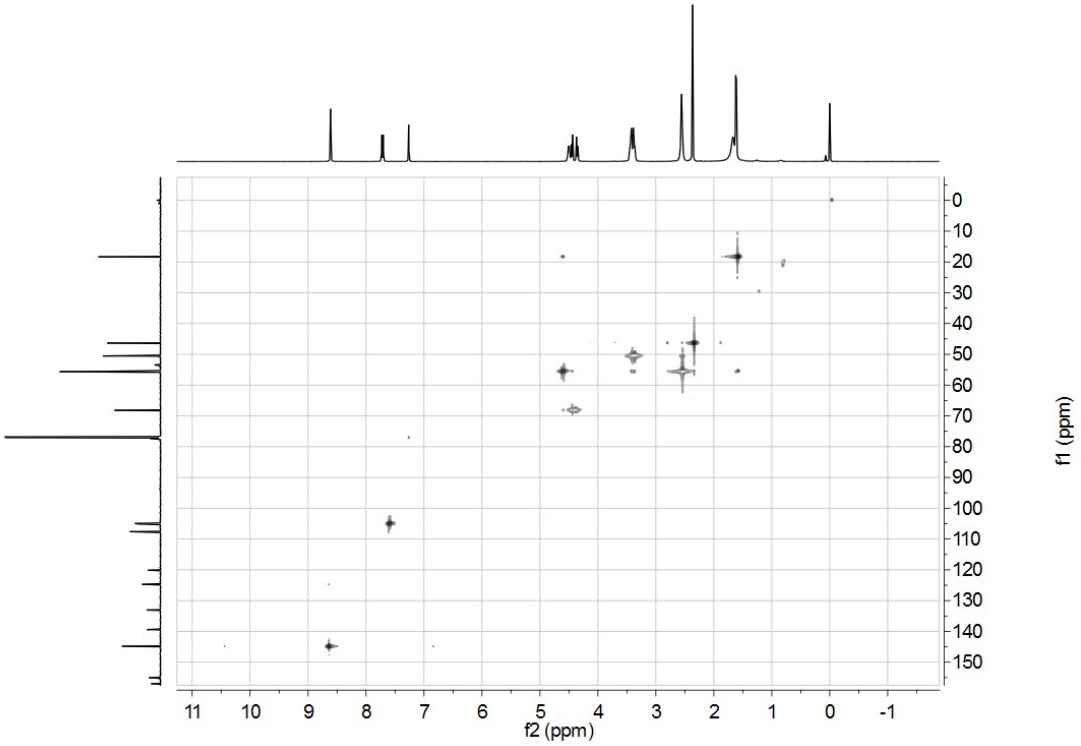

Figure S21. HSQC spectrum for HL_2

7. ADPs of complexes 2-4

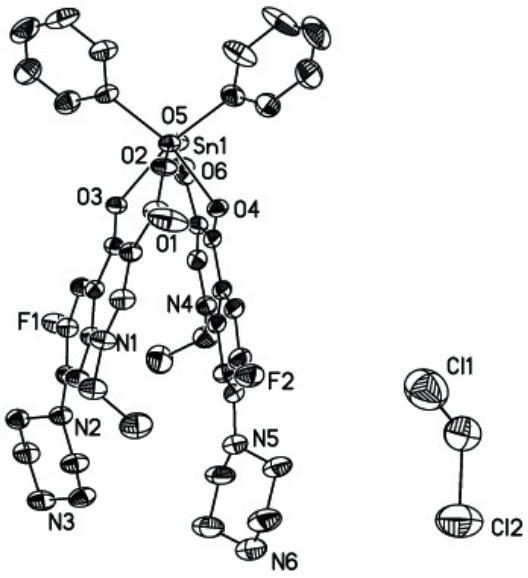

Figure S22. Molecular structure of complex **2** which the ellipsoids are represented at 30% probability

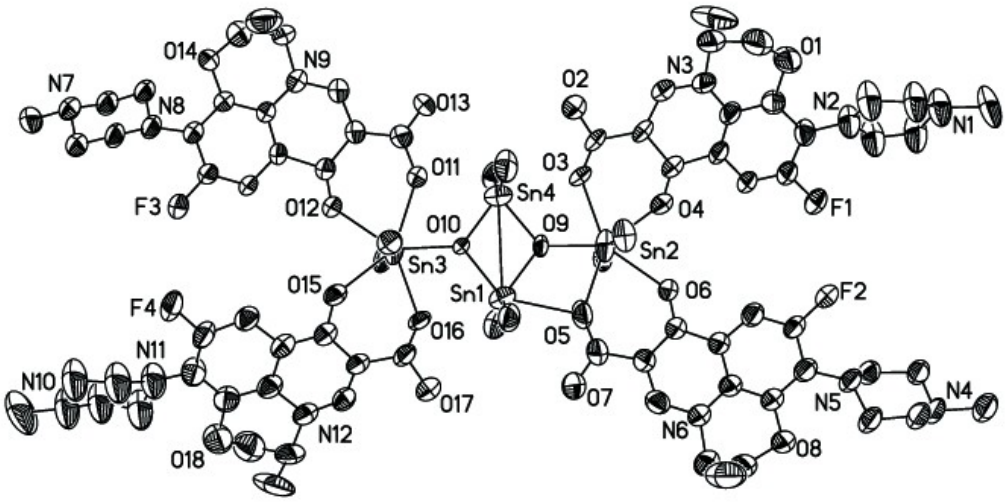

Figure S23. Molecular structure of complex **3** which the ellipsoids are represented at 30% probability

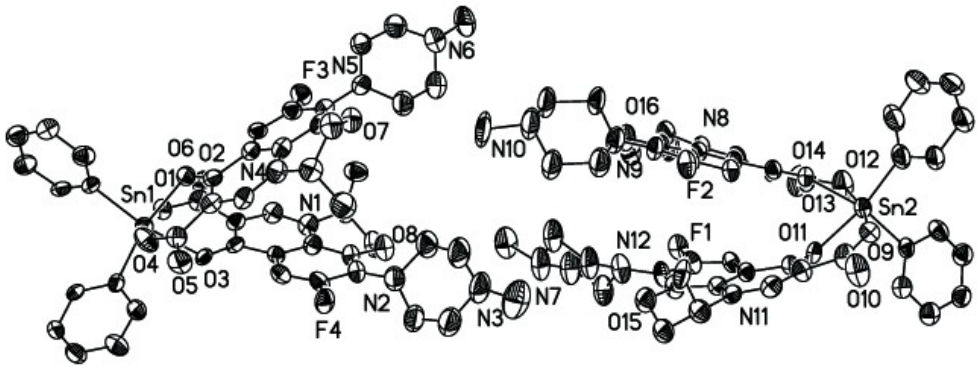

Figure S24. Molecular structure of complex **4** which the ellipsoids are represented at 30% probability