

Electronic Supplementary Information for

**Di-butyltin(IV) complexes with azo-carboxylates:
Synthesis, characterization, crystal structures and their anti-
diabetic assay**

Paresh Debnath¹, Keisham Surjit Singh^{1*}, Khaidem Kennedy Singh², S.Suresh
kumar Singh², Lesław Sieroń³, Waldemar Maniukiewicz^{3*}

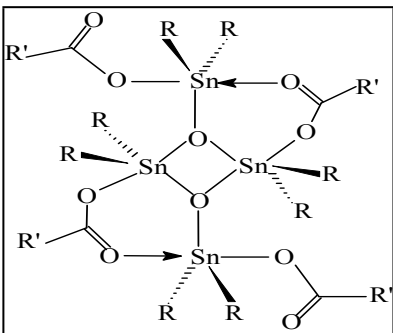
¹ Department of Chemistry, National Institute of Technology Agartala, Jirania, Tripura (west)-
799046, India.

² Department of Forestry, North Eastern Regional Institute of Science And Technology, Nirjuli,
Arunachal Pradesh -791109, India.

³ Institute of General and Ecological Chemistry, Lodz University of Technology, 90-924 Lodz,
Zeromskiego 116, Poland

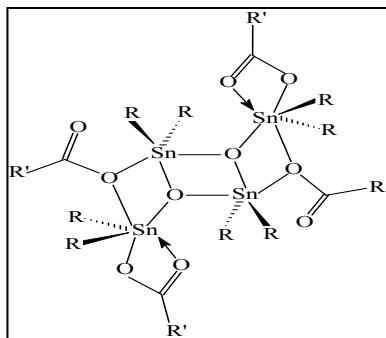
*Corresponding authors:

E-mail address: keisham.chem@nita.ac.in, surjitkeisham@yahoo.co.in (KSS)
waldemar.maniukiewicz@p.lodz.pl (WM)



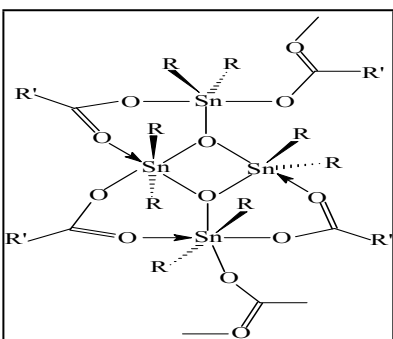
Endo. Sn: distorted trigonal bipyramidal
Exo. Sn: distorted trigonal bipyramidal

(I)



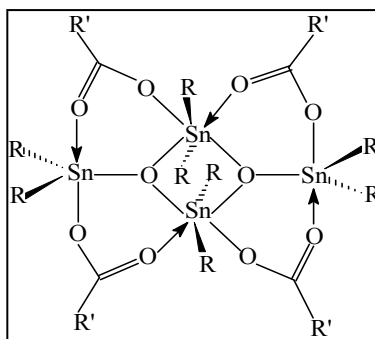
Endo. Sn: distorted trigonal bipyramidal
Exo. Sn: distorted octahedral

(II)



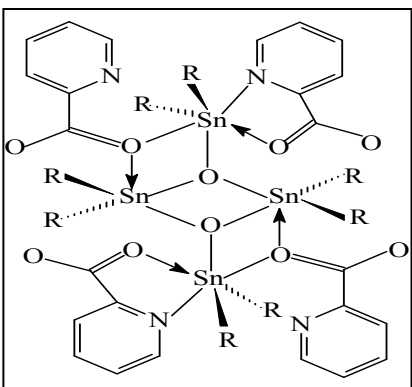
Sn: Polymeric distorted octahedral and
distorted trigonal bipyramidal

(III)



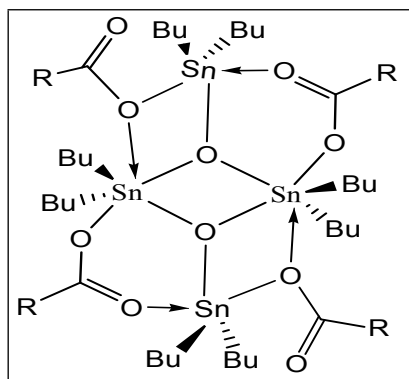
Endo. Sn: distorted octahedral
Exo. Sn: distorted trigonal bipyramidal

(IV)



Endo. Sn: distorted trigonal bipyramidal
Exo. Sn: distorted octahedral

(V)



Endo. Sn: distorted octahedral
Exo. Sn: distorted trigonal bipyramidal

(Structural motif adopted by complex 2)

Scheme S1. Structural motifs shown by diorganotin, $\{[R_2 Sn(O_2CR')]_2O\}_2$ type complexes.

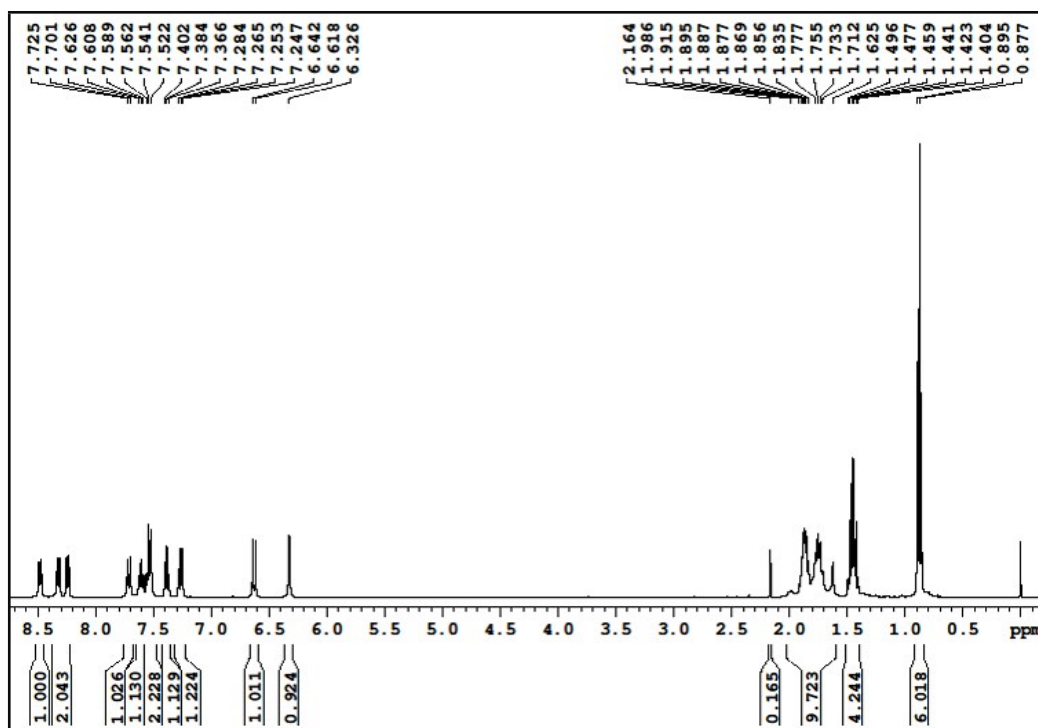


Fig.S1(a): ¹H-NMR spectrum of complex [Bu₂SnHL¹O]₂(1)

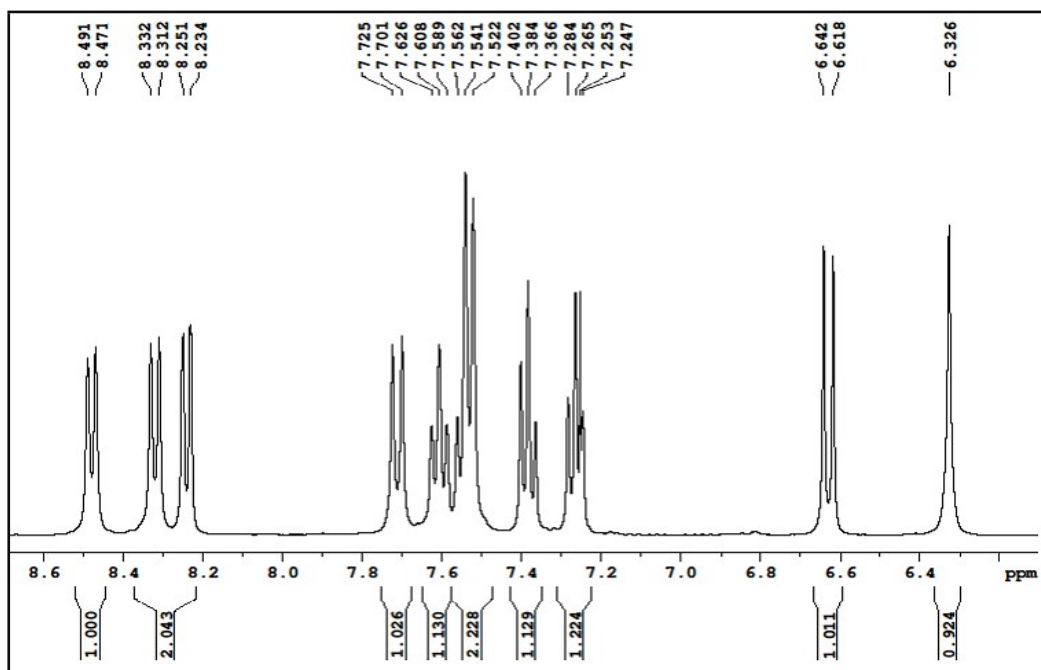


Fig.S1(b): ¹H-NMR spectrum of complex [Bu₂SnHL¹O]₂(1) (Expansion near down field region showing various multiplicity pattern)

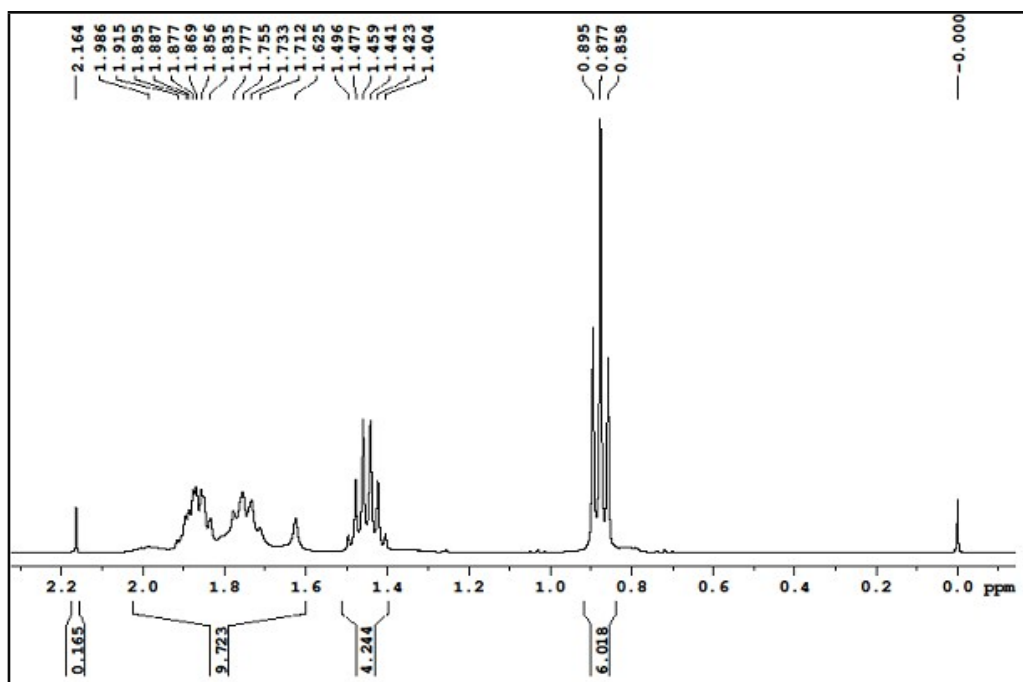


Fig. S1(c): ^1H -NMR spectrum of complex $[\text{Bu}_2\text{SnHL}^1\text{O}]_2(\mathbf{1})$ (Expansion near upfield region showing various multiplicity pattern)

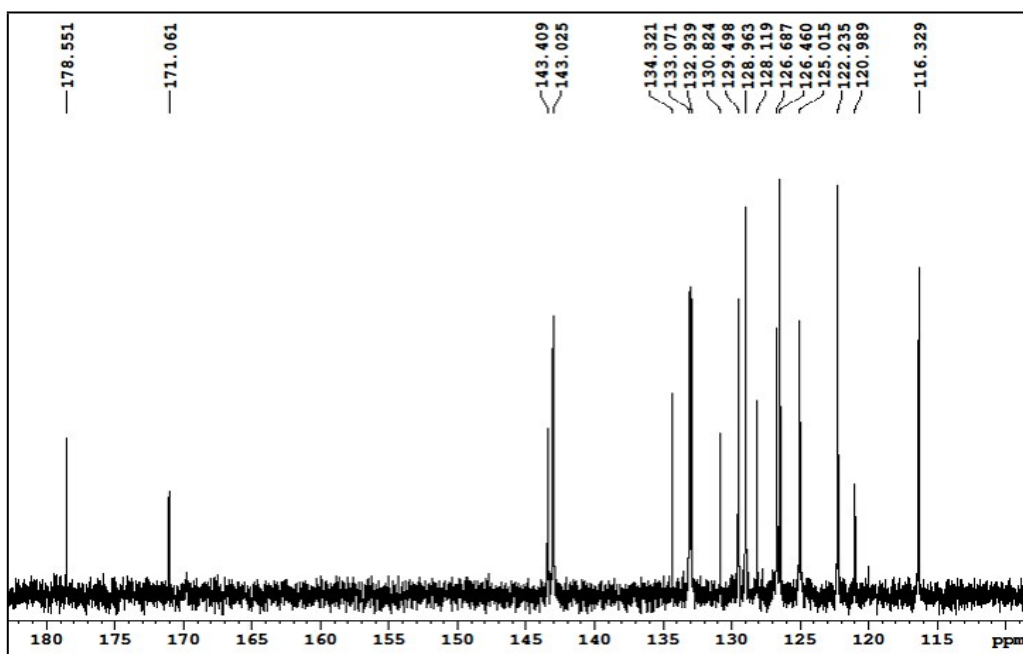


Fig.S1(d): ^{13}C -NMR spectrum of complex $[\text{Bu}_2\text{SnHL}^1\text{O}]_2(\mathbf{1})$ (Expansion)

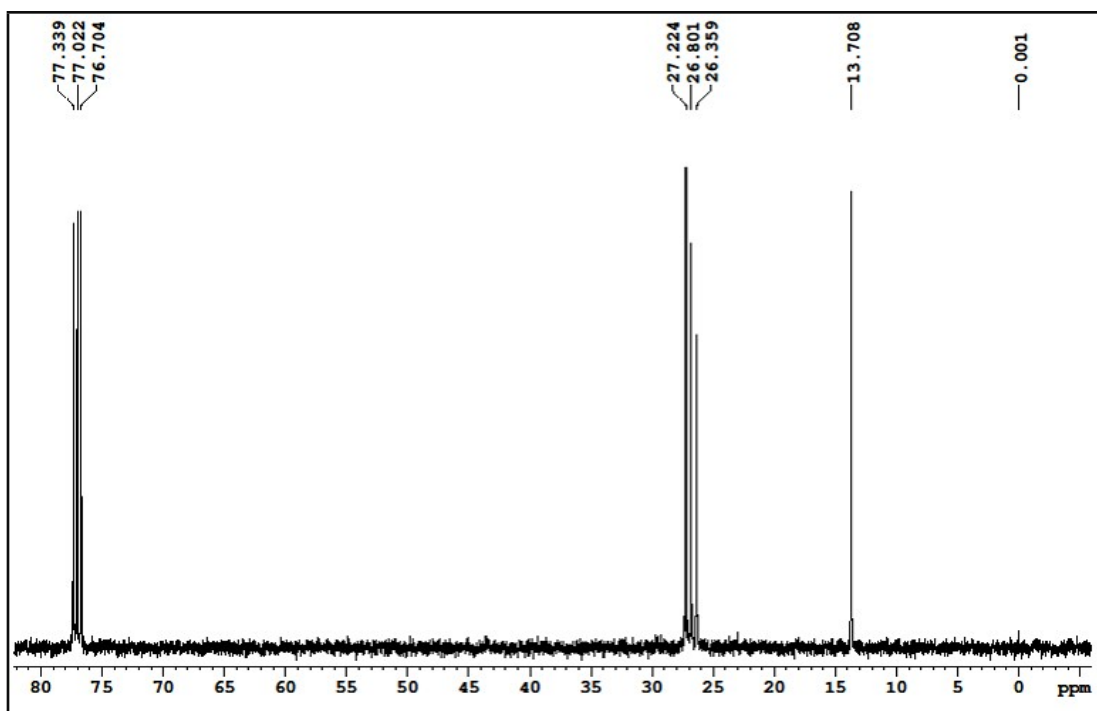


Fig.S1(e): ^{13}C -NMR spectrum of complex $[\text{Bu}_2\text{SnHL}^1\text{O}]_2(\mathbf{1})$ (Expansion in the upfield region)

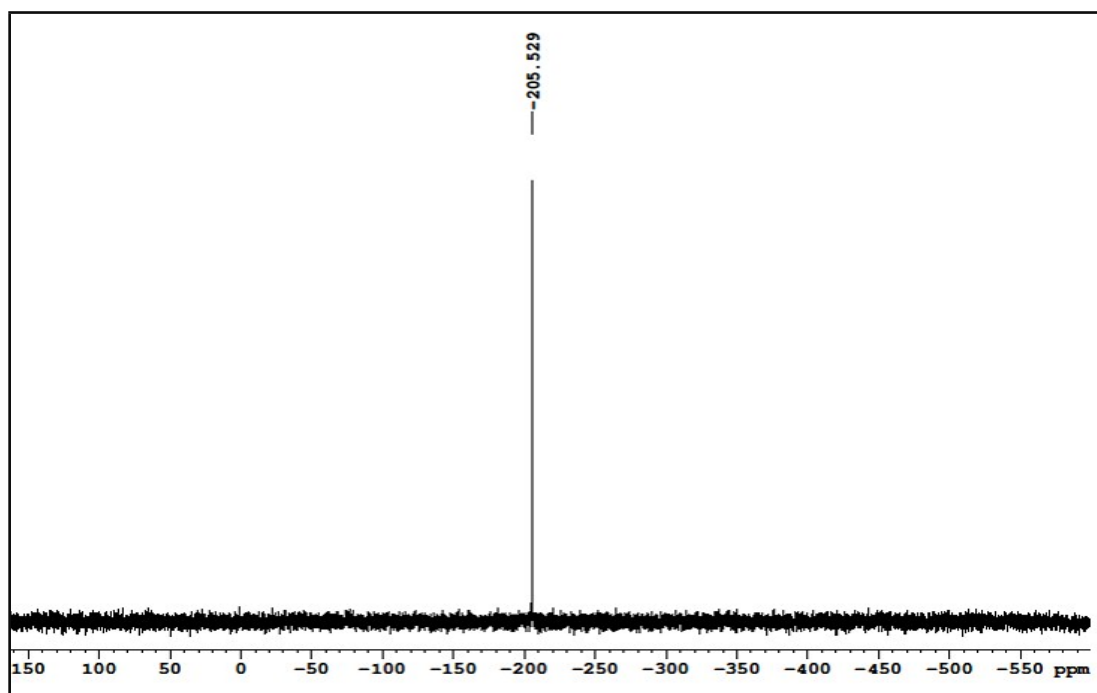


Fig.S1(f): ^{119}Sn -NMR spectrum of complex $[\text{Bu}_2\text{SnHL}^1\text{O}]_2(\mathbf{1})$

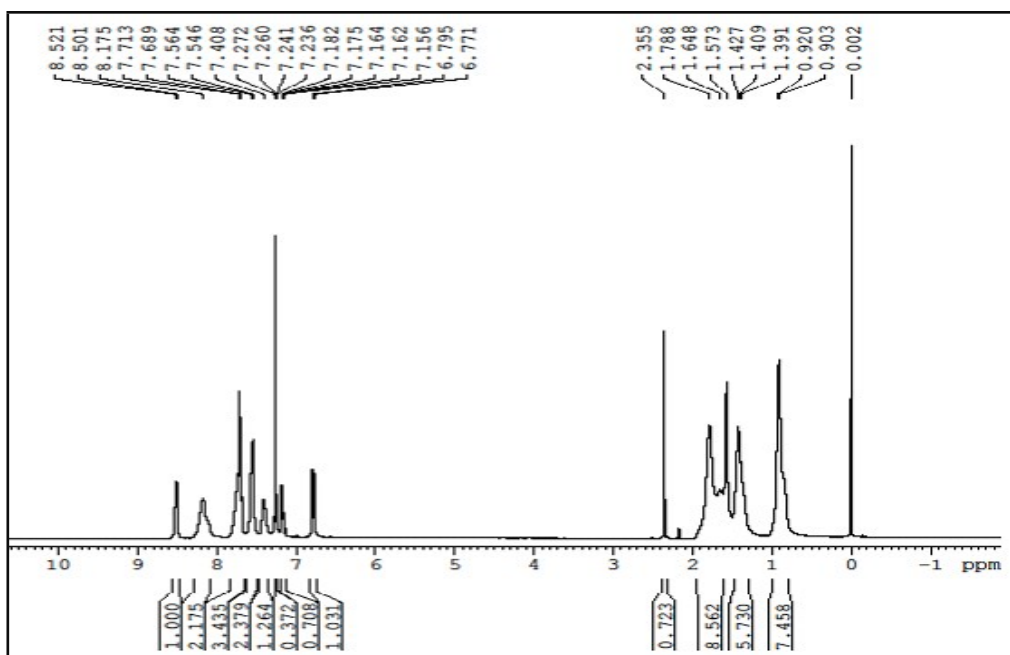


Fig.S2(a): $^1\text{H-NMR}$ spectrum of complex $\{[\text{Bu}_2\text{SnHL}^2]_2\text{O}\}_2(\mathbf{2})$

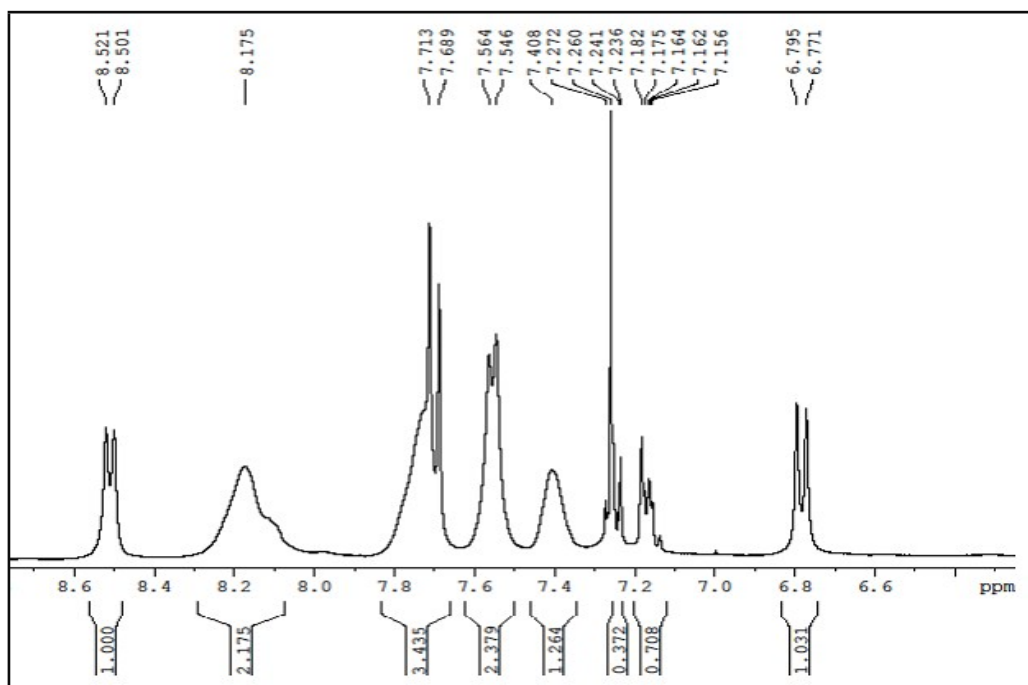


Fig.S2(b): $^1\text{H-NMR}$ spectrum of complex $\{[\text{Bu}_2\text{SnHL}^2]_2\text{O}\}_2(\mathbf{2})$ (Expansion near down field region showing various multiplicity pattern)

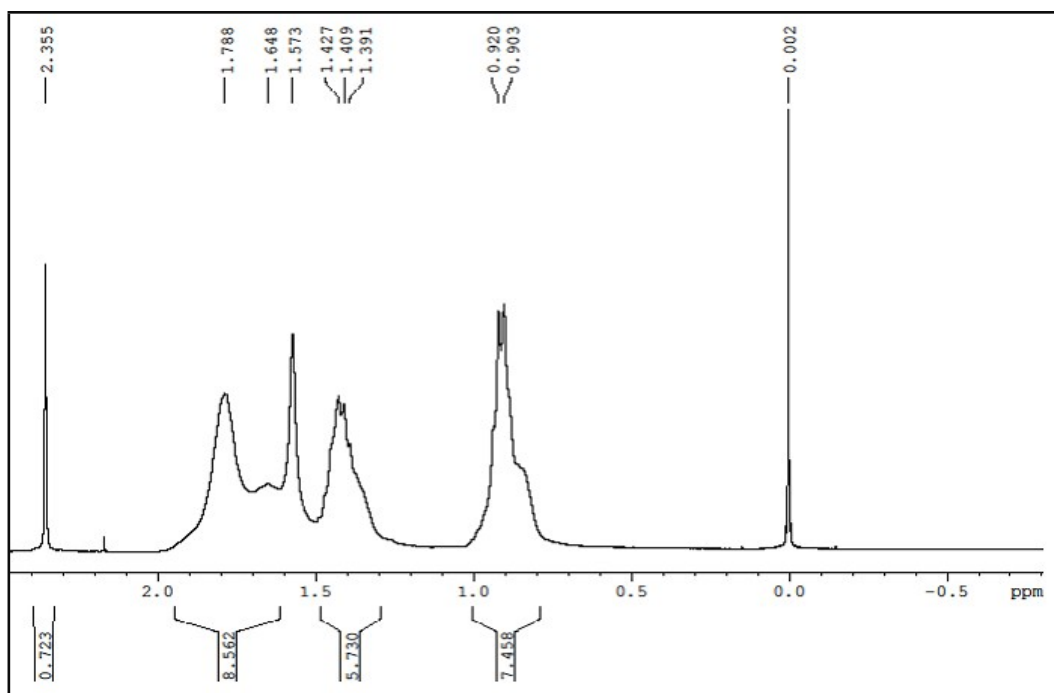


Fig. S2(c): ¹H-NMR spectrum of complex $\{[Bu_2SnHL^2]_2O\}_2(\mathbf{2})$ (Expansion near upfield region)

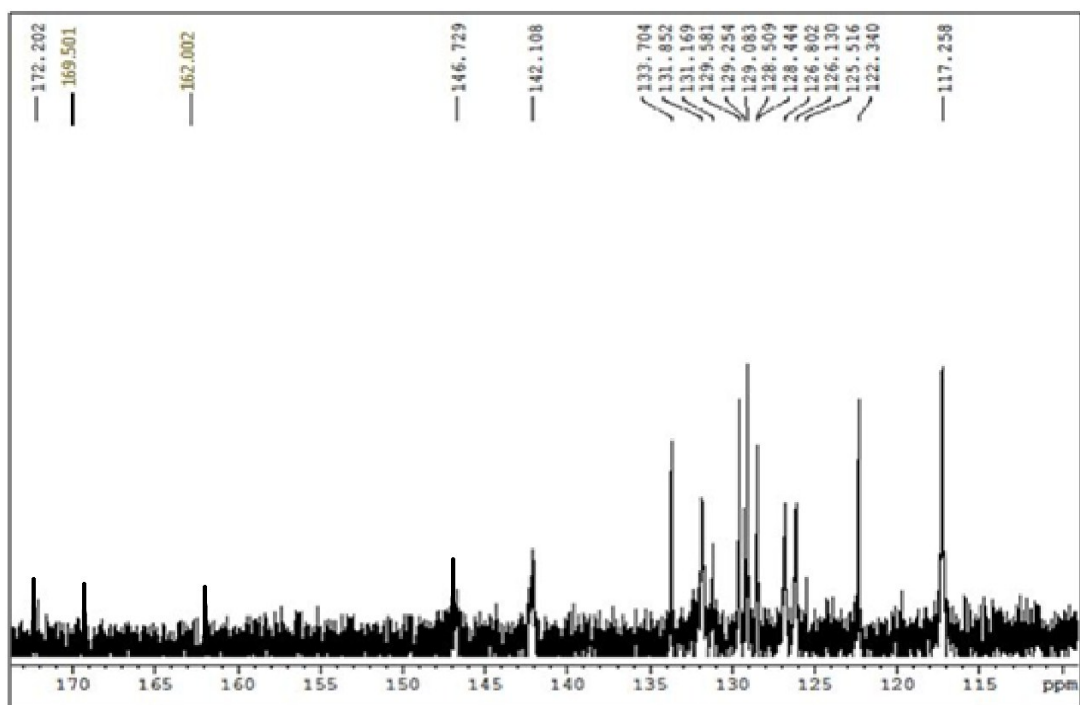


Fig.S2(d): ¹³C-NMR spectrum of complex $\{[Bu_2SnHL^2]_2O\}_2(\mathbf{2})$ (Expansion)

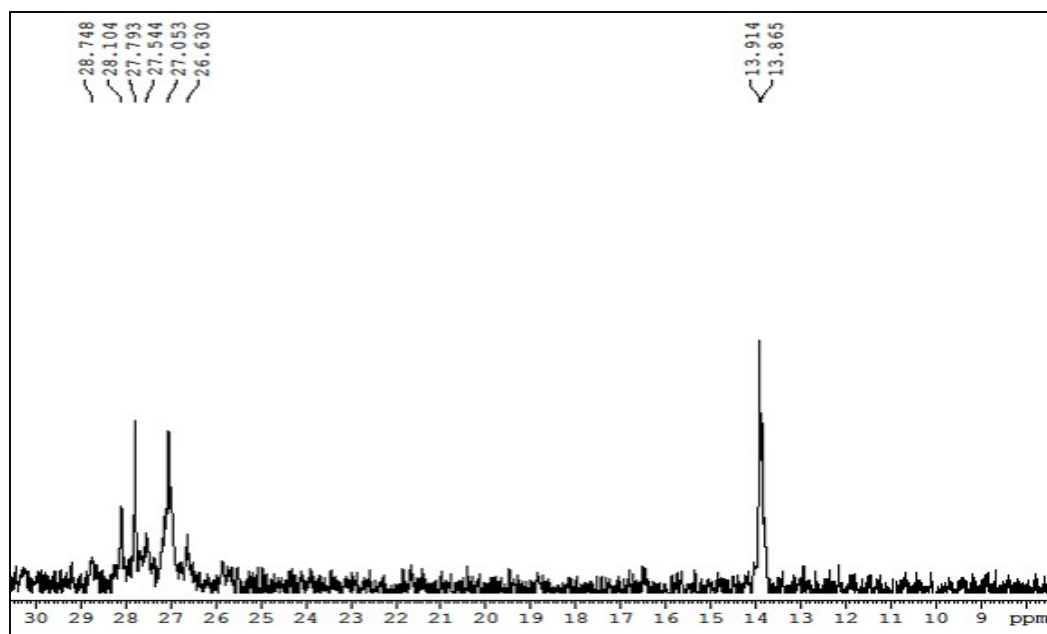


Fig.S2(e): ^{13}C -NMR spectrum of complex $\{[\text{Bu}_2\text{SnHL}^2]_2\text{O}\}_2(\mathbf{2})$ (Expansion near the upfield region)

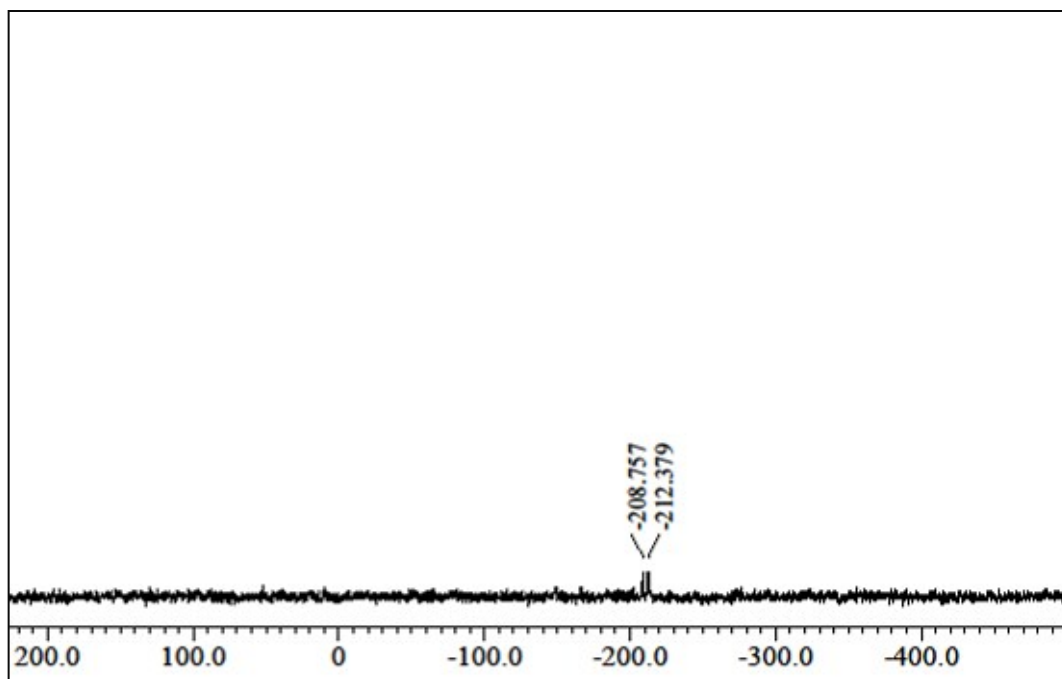


Fig.S2(f): ^{119}Sn -NMR spectrum of complex $\{[\text{Bu}_2\text{SnHL}^2]_2\text{O}\}_2(\mathbf{2})$

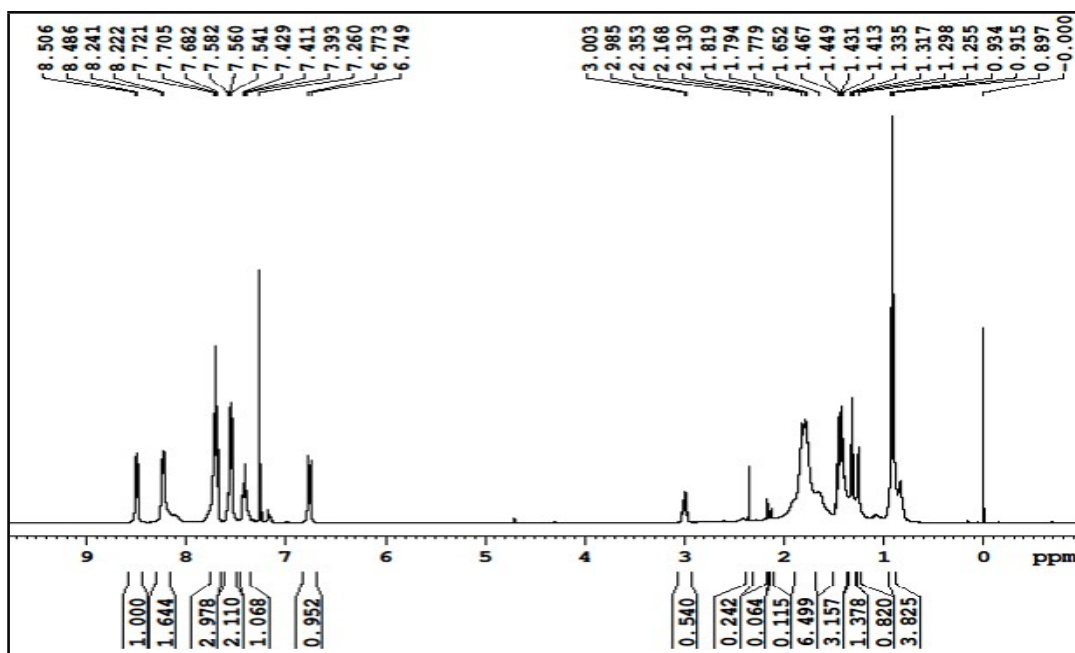


Fig.S3(a): $^1\text{H-NMR}$ spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$

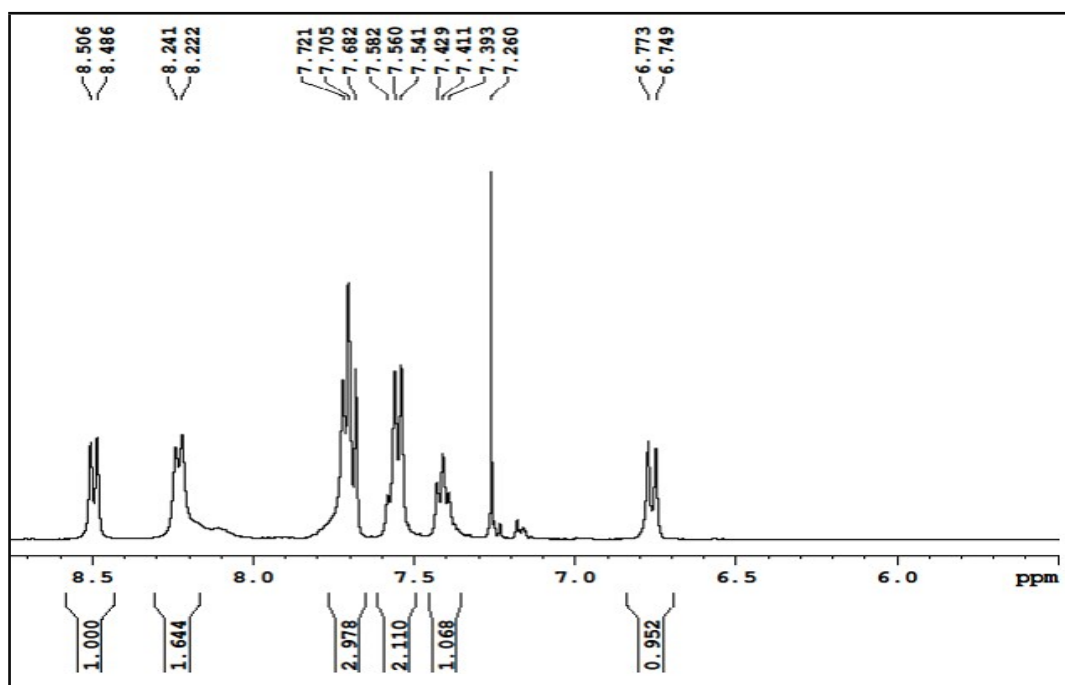


Fig.S3(b): $^1\text{H-NMR}$ spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$ (Expansion near down field region showing various multiplicity pattern)

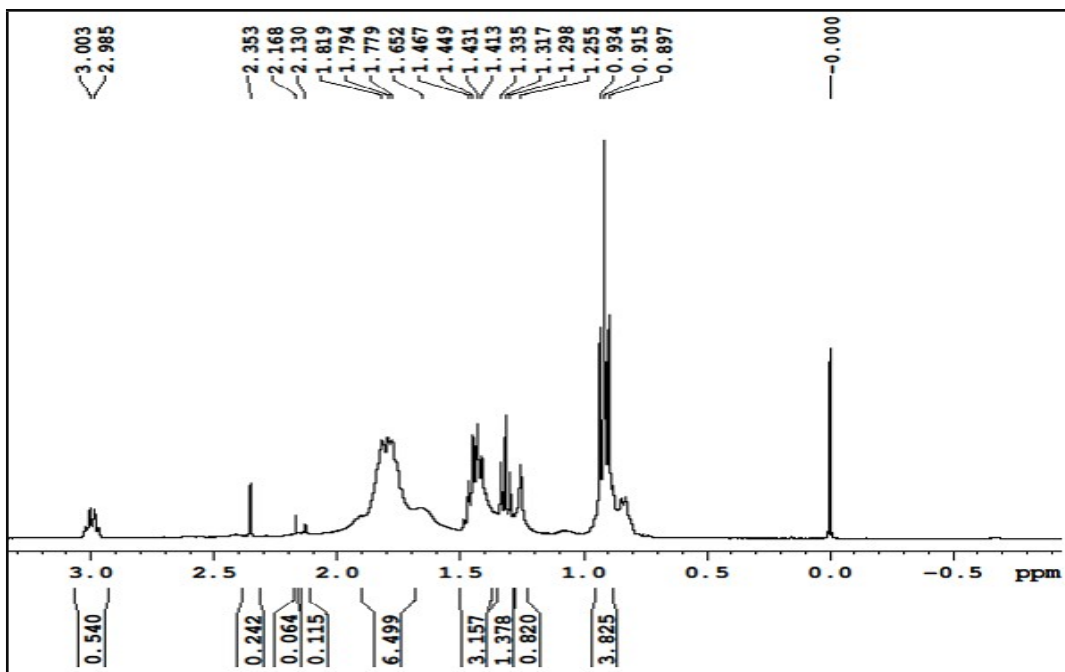


Fig. S3(c): ^1H -NMR spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$ (Expansion near up field region showing splitting of the tin-butyl skeleton)

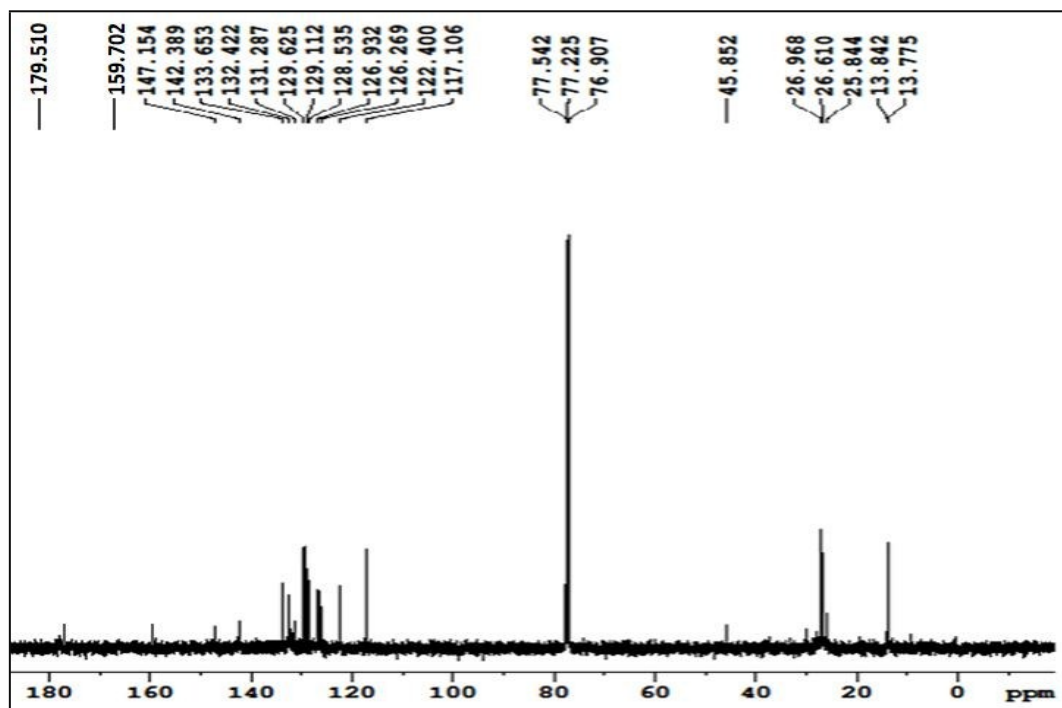


Fig.S3(d): ^{13}C -NMR spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$

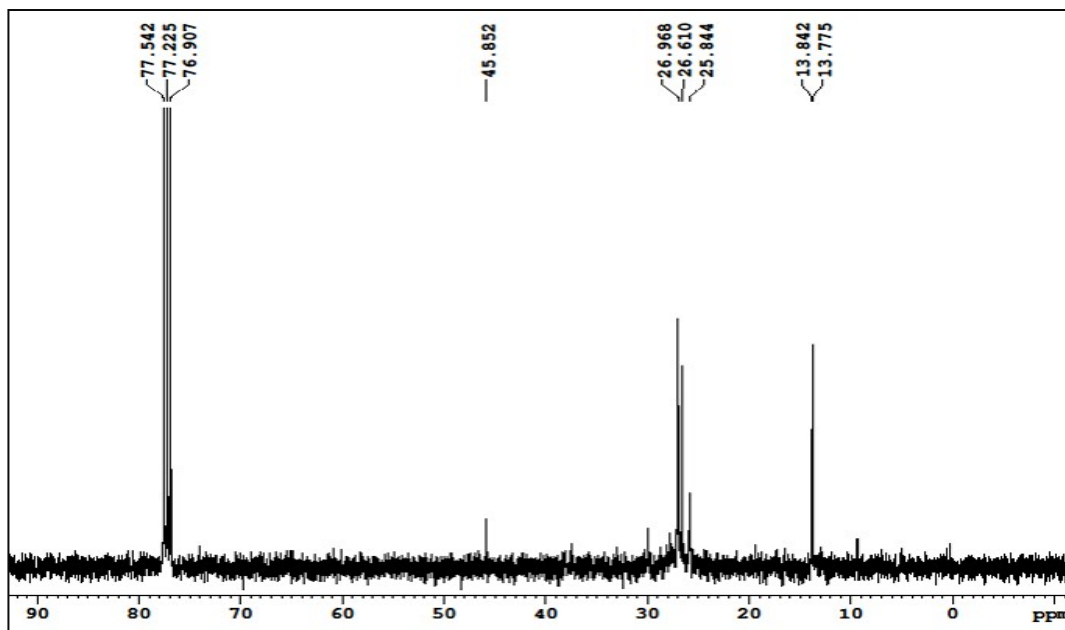


Fig.S3(e): ^{13}C -NMR spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$ (Expansion in the upfield region)

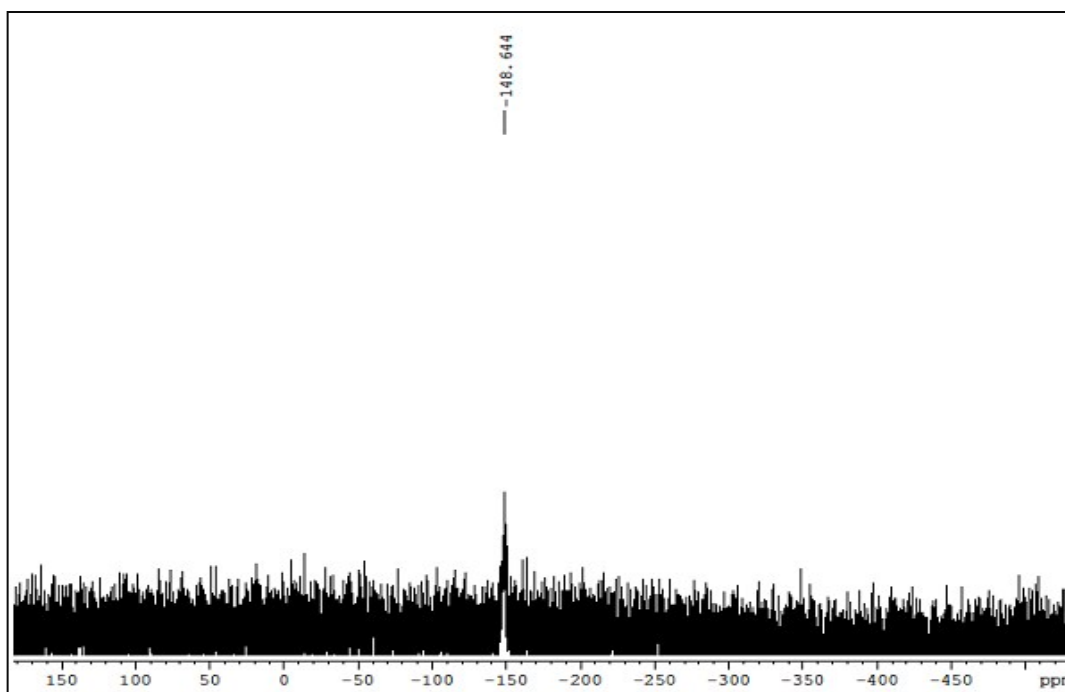


Fig.S3(f): ^{119}Sn -NMR spectrum of complex $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$

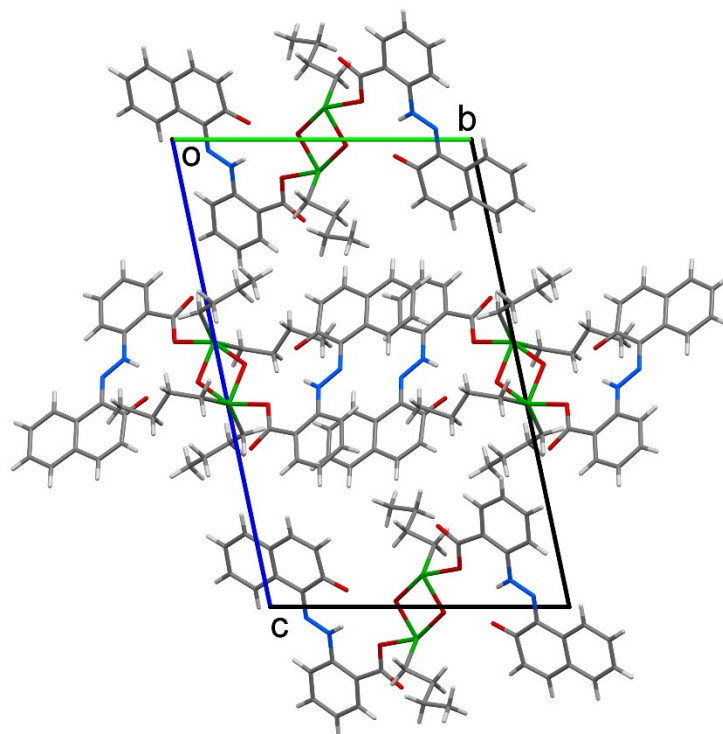


Fig. S4 Packing diagram of $[\text{Bu}_2\text{SnHL}^1\text{O}]_2(\mathbf{1})$

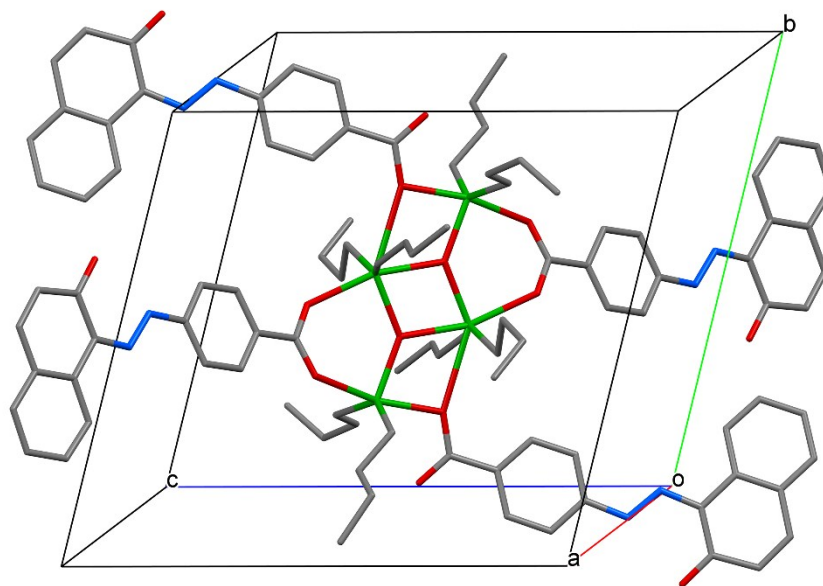


Fig. S5 Packing diagram of $\{[\text{Bu}_2\text{SnHL}^2]_2\text{O}\}_2(\mathbf{2})$. The hydrogen atoms omitted for clarity.

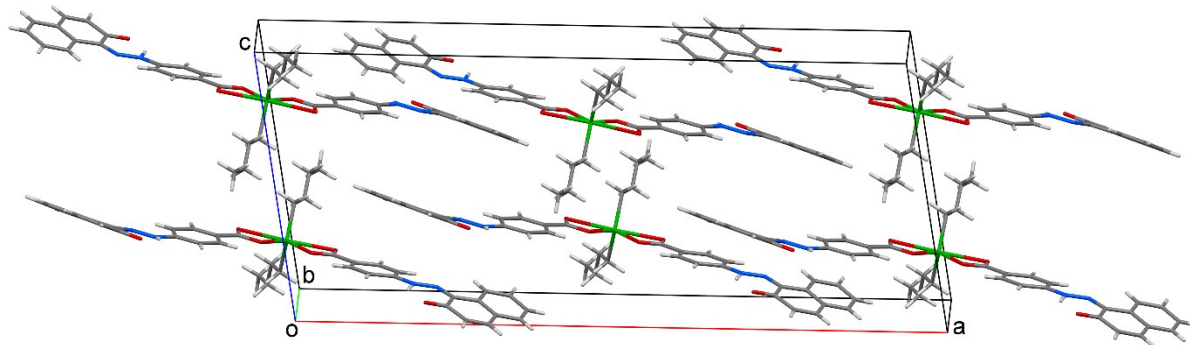


Fig. S6 Packing diagram of $\text{Bu}_2\text{Sn}[\text{HL}^2]_2(\mathbf{3})$