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Electronic Supporting Information

Synthesis, characterization and anti-diabetic assay of diorganotin(IV) azo-carboxylates: Crystal structure and topological studies of azo-dicarboxylic acid ligand and its cyclic tetranuclear dimethyltin(IV) complex

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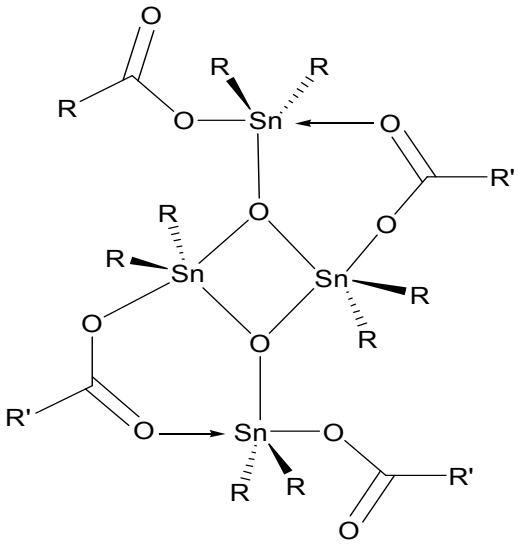

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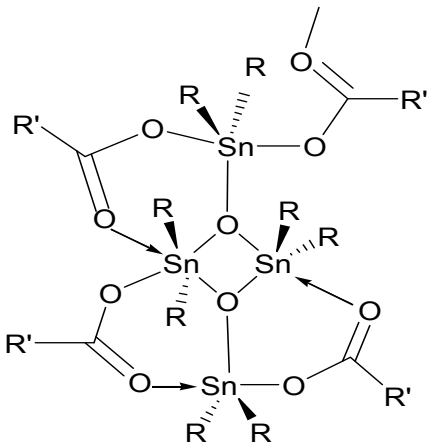

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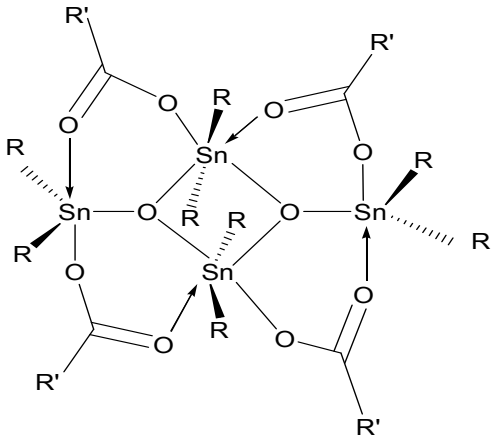

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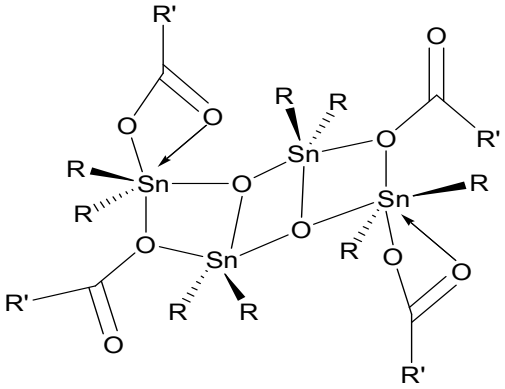

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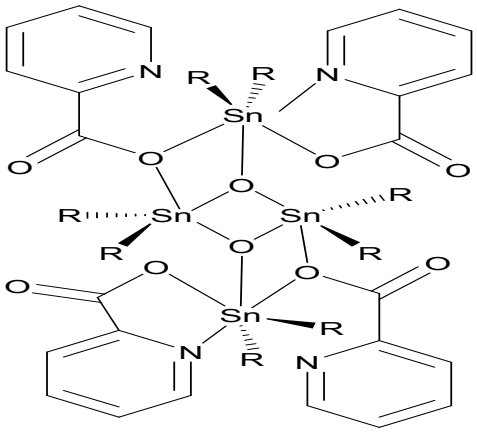

V

Scheme S1. Various structural motifs shown by $\{[R_2Sn(O_2CR')]_2O\}_2$ type complexes.

Table S1. Compounds with **KIa** topology

Reference code in CSD	Composition	Name	Space group
ACABUD	C12 H11 F1 N2 O3	4-aminopyridinium 5-fluorosalicylate.	P21/c
ACACUE	C12 H11 N3 O5	4-aminopyridinium 5-nitrosalicylate.	P212121
AHCNPI	C13 H7 N7	Ammonium 1,1,2,6,7,7-hexacyanoheptatrienide.	P21/c
DAJMEI	C16 H18 O6· H2O	10-Hydroxy-2,6,14-trimethyl-8,12-dioxatetracyclo[9.3.1.0^1,5^.0^6,10^]pentadec-4-ene-3,9,13-trione monohydrate.	P212121
KENROM	C6 H8 O3 S1· H2O	6-Hydroxytetrahydrothieno[3,2-b]furan-2(3H)-one monohydrate.	P212121
OCAVOD	C18 H20 O3· H2O	(-)-Gibbericacidmonohydrate.	P21
PAPGIW	C30 H50 O2	3\b,29-Dihydroxyolean-12-ene.	C2221
TITLIR	C15 H18 O5· H2O	Tanaparthin-\a-peroxidemonohydrate.	P21
UFUQES	C9 H6 N2 O2 · H2O	3-Hydroxy-6-methoxyphthalonitrile monohydrate.	P21
UKEPUW	C13 H13 N1 O5 · H2O	(-)-9-Hydroxy-10-nitro-6a,7,8,9,10,10a-hexahydro-6H-benzo[c]chromen-6-onemonohydrate.	P21
VAYXID	C18 H19 N3 O2· H2O	t-3-methyl-N-nitroso-r-2,c-6-diphenylpiperidin-4-one oxime monohydrate.	P21
MUBPOP	C11 H10 N2 O4 · H2O	3-Carboxymethyl-1,3-benzimidazolium-1-acetate monohydrate.	C2/c
FADFUL01	C29 H29 N3 O7	25-Methoxycarbonyl-26,34-dinorstaurosporine methanolsolvate.	P21
BIZDEU	C10 H13 N1 O2	Ethyl 4-amino-3-methylbenzoate.	P-1
BUSKUV	C8 H10 N2 O2 · H2O	(6S)-1,4-Diazabicyclo(4.4.0)dec-8-ene-2,5-dione monohydrate.	P212121
BUWKUZ	C20 H20 O5	1,7-bis(4-Hydroxyphenyl)-hepta-1,6-diene-3,5-dione methanol solvate.	P21/n
DILLUF	C15 H13 N1 O2	1-Formylamino-2-(2-hydroxyphenyl)-1-phenyl-ethylene.	P-1
FEJTEV	C15 H31 Cl1 N6 O4	N-(5-Isopropyl-4,6-bis(isopropylamino)-1,3,5-triazin-2(5H)-ylidene)propan-1-aminium perchlorate.	P21/n
GAWROM	C18 H15 N3 O4	4-(4-Pyridylamino)pyridiniumisophthalate.	P21/n
WAJWEL	C19 H15 N5 O5	3-Aminobenzoicacid 4,4'-(1,3,4-oxadiazole-2,5-diylidene)dipyridin-1(4H)-ol.	P21
AXABUX	C26 H31 F1 N1 O5.5	(9S,13R,14S)-7,8-Didehydro-4-(4-fluorobenzyloxy)-3,7-dimethoxy-17-methylmorphinan-6-one sesquihydrate.	C2
HUGJUP	C26 H31 N2 O10.5	Methyl1,16-diacetoxy-12-oxo-4-(2-oxopyrrolidin-1-yl)-18-oxa-11-azapentacyclo[13.2.1.0^2,11^.0^5,10^.0^13,17^]octadeca-5,7,9-triene-14-carboxylate sesquihydrate.	C2/c
PIHLIC	C14 H16 Cl1 N3 O5· H2O	N-(2,4-Dimethylphenyl)-N'-(3-pyridinio)urea perchlorate monohydrate.	P212121
QERHOL	C15 H18 N2 O1· H2O	(6R,10R,14E)-6-Amino-12-ethylidene-8-methyl-6,7,10,12-tetrahydro-6,10-methanocycloocta(b)pyridin-2(1H)-onemonohydrate.	C2
ESATOH	C14 H9 F5 N2 O2	Benzamidepentafluorobenzamide.	P21
QIMKEC	C30 H48 O3	3\a-hydroxytirucalla-7,24-dien-21-oic acid.	P3121

REPZIW	C8 H15 N1 O2	(5R,6S)-5-Hydroxy-6-isopropylpiperidin-2-one.	P41
SAVXUK	C13 H14 N2 O2	4-Hydroxy-N,N-dimethyl-5-phenyl-1H-pyrrole-2-carboxamide.	Pbcn
SESYUL	C27 H28 N2 O5	Cinchoninium 3-carboxybenzoate.	P212121
UPAFIB	C30 H48 O3	3\a-Hydroxytirucalla-8,24-dien-21-oic acid.	P3121
QEGXUV	C28.5 H27 O11.5	Sarosideacetonesolvate.	P212121
MAXDUL	C12 H14 O6 · H2O	1,2-bis(Carboxyethoxy)benzenemonohydrate.	Pbca
NEQWEN	C8 H11 N3 O4	2,3-Diaminopyridinium hydrogenmalonate.	P21
DIXLAX	C20 H24 O8	Iacenonemethanolsolvate.	C2
NEDNUF	C4 H9 N2 O2.5	(4S,5R)-4-Amino-5-methyl-3-isoxazolidinone hemihydrate.	C2
BILJIR	C18 H21 N5 O2	2-((6-[(3R)-3-Aminopiperidin-1-yl]-3-methyl-2,4-dioxo-1,2,3,4-tetrahydropyrimidin-1-yl)methyl)benzonitrile.	P1
DIGCOM	C17 H18 N4 O5	N-(pyridinium-3-yl)-N-(3-pyridyl)urea 1-carboxycyclobutane-1-carboxylate.	P21/c
FACLOM	C17 H18 N2 O5	2-[(([(naphthalen-1-yloxy)acetyl]amino)acetyl)amino]propanoic acid.	P212121
KUVLAP	C11 H9 N5 O7	4-Aminopyridinium picrate.	P21/c
KUVLAP01	C11 H9 N5 O7	4-aminopyridinium 2,4,6-trinitrophenolate.	P21/c
MOGMAW	C9 H11 N5 O4	5-Methyl-2,4-dioxo-1-(4-azido-3-hydroxo-tetrahydrofuran-2-yl)-1,2,3,4-tetrahydropyrimidine.	P21
POWMIY	C19 H22 Br1 N1 O6 S1 · H2O	4-Bromo-3-(N-(2-(3,4-dimethoxyphenyl)ethyl)-N-methylsulfamoyl)-5-methylbenzoicacidmonohydrate.	P212121
PETTIS	C34 H53 Cl1 F2 N4 O10 P2	1-(2-(1-(N-Acetyl-N-isopropylamino)ethyl)-5-chloro-4-methylphenyl)-4-((N-t-butyl-3-(2,4-difluorphenyl)-1-piperidinio-4-yl)carbonyl)piperazine phosphatephosphoricacid.	P21
DICDAW	C17 H17 N5 O6	2,3-Diaminopyridinium 4-nitrophenol 4-nitrophenolate.	P21
BIFYOE	C9 H11 N7 O1 S1	9-Methyladenine 2-thiohydantoin.	C2/c
DAKBAS	C19 H22 N4 O4 S1	Morpholinium5-acetyl-3-cyano-1,4-dihydro-6-methyl-4-(2-nitrophenyl)-2-pyridinethiolate.	C2/c
GOLMOJ	C16 H26 O4	7,12-Dihydroxy-9,12-dimethyltetracyclo(8.2.1.0^1,5^.0^7,11^)tridecan-13-onemethanol solvate.	C2/c
BAGLUR	C9 H13 N1 O4	(3S,1'R)-3-(1-Hydroxyethyl)-4-(2-ethoxycarbonyl-(Z)-methylidene)-azetidin-2-one.	P21
BIVXEJ	C10 H15 N5 O1	2,2,8,9-Tetramethyl-1,2-dihydropurine-6-carboxamide.	C2/c
DEZQEE	C26 H20 N4 O1	5-Cyano-4-(4-methoxyphenyl)-3,6-diphenyl-4,7-dihydro-2H-pyrazolo-(3,4-b)pyridine.	C2/c
DOPDAN	C9 H11 N3 O2	N,N'-2,6-Pyridinediyl-bis(acetamide).	Pbcn
GANBAA	C9 H9 F3 N2 O5 S1	Methyl5-amino-3-methyl-6-(((trifluoromethyl)sulfonyl)oxy)pyridine-2-carboxylate.	C2/c
GIMQID	C10 H14 N2 O3	5-Hydroxymethyl-4-((2-hydroxyethyl)iminomethyl)-2-	C2/c

		methylpyridin-3-ol.	
GOLKIB	C20 H20 O6	(-)-\a-Conidendrin.	C2
IJUTIQ	C20 H30 O4	Jatrowediol.	P212121
JUPWUM	C32 H54 O7	21-Deacetyl-raspacionin A.	P21
KOFGUH	C9 H12 N2 O5	1-((2R,6R)-6-Hydroxymethyl-1,4-dioxan-2-yl)uracil.	P3121
KOFGUH10	C9 H12 N2 O5	1-(R)-(6-(R)-Hydroxymethyl-1,4-dioxan-2-yl)-uracil.	P3121
KONQOT	C18 H23 N1 O5	exo-(Methyl(1S,2S,3R,4R)-2-benzamido-3-(1,2-dihydroxyethyl)bicyclo(2.2.1)heptane-2-carboxylate).	P21
LIXDAY	C10 H10 N4 O2	1-(2'-Aminophenyl)-2-methyl-4-nitroimidazole.	P21/c
LIXDAY01	C10 H10 N4 O2	2-(2-Methyl-4-nitro-1H-imidazol-1-yl)aniline.	P21/c
NIPGUP	C15 H22 F3 N1 O6 S2	(8S,9R,10S,11R,12R)-8-Hydroxy-10,11-methylenedioxy-9-methoxymethoxy-12-trifluoroacetamido-1,5-dithiaspiro[5.6]dodecane.	P41212
PATNAZ01	C25 H38 O4	(-)-(1S,11S,15R,23S)-Terpestacin.	C2
PONTOB	C16 H19 N5 O3	6-Carbamoyl-2,2-dimethyl-9-(2,4-dimethoxyphenyl)-1,2-dihydropurine.	C2/c
QADHIN	C15 H24 O3	Illudiolone.	C2
QITKOU	C11 H12 F2 N2 O3	1-((1R,5S)-4,4-Difluoro-5-(hydroxymethyl)cyclopent-2-en-1-yl)-5-methylpyrimidine-2,4(1H,3H)-dione.	P3121
RIFBOY	C12 H17 N1 O2	2-(2-Hydroxycyclohexylamino)phenol.	Pbcn
DUXZAX	C8 H12 N6 O3	Theophyllineurea.	C2/c
HUSVEX	C8 H13.5 N3 O1.25	6-(Isobutylamino)pyrimidin-4(3H)-one hydrate.	C2/c
EWEPIF	C34 H37 Cl2 N3 O10	(8S,11S,14S)-8-(N-((t-Butoxy)carbonyl)amino)-11-(3,5-dichloro-4-methoxy-phenyl)-5-hydroxy-4-methoxy-13-methyl-9,12-dioxo-2-oxa-10,13-diazatricyclo(14.2.2.1^0,0^)heneicosa-1(19),3(21),4,6,16(20),17-hexaene-14-carboxylicacidmethylester.	C2
TIFJAV	C22 H28 N2 O6	4-((N-(t-Butoxycarbonyl)phenylalanyl)amino)benzoic acid methanol solvate.	P21
OPEHOH	C16 H16 N2 O4 S2	N,N'-Dimethylanthracene-1,8-disulfonamide.	P-421c
FAMHUY	C32 H42 N4 O5	t-Butyl(3-((3-(cyclohexyl(cyclohexylcarbamoyl)carbamoyl)phenyl)carbamoyl)phenyl)carbamateunknownsolvate.	Pbcn
OTAZIT	C3 H9 N9 O2	Guanidinium 2-methyl-5-nitraminotetrazolate.	P21
QATWIS	C12 H28 Cl1 N4 O2.5	1,5,8,12-Tetraazabicyclo(10.2.2)hexadecan-13-one hydrochloride sesquihydrate.	C2/c

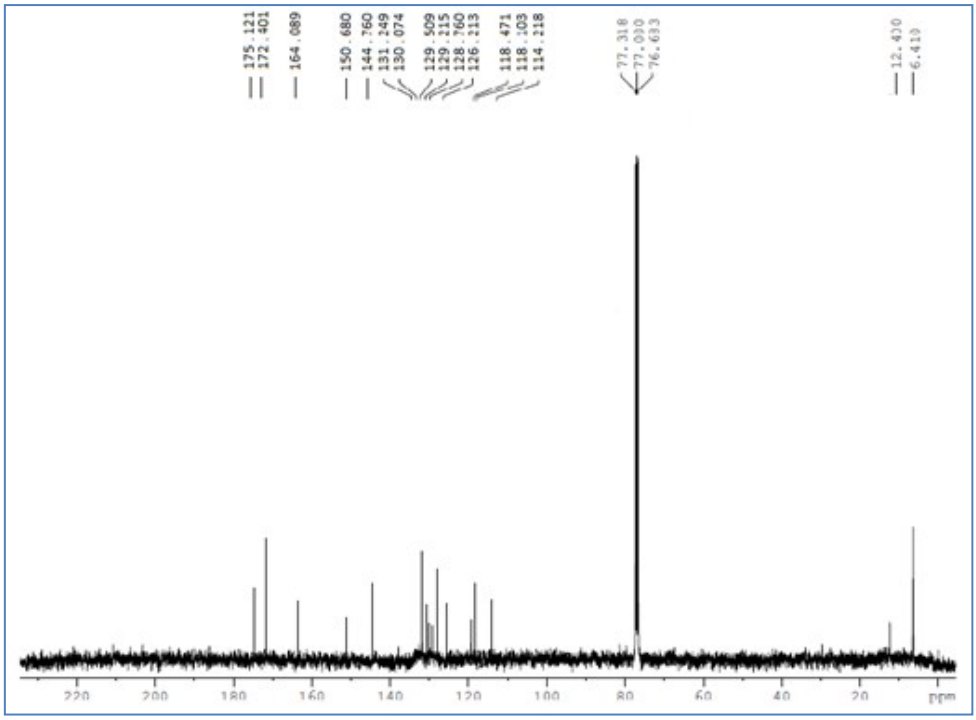

Fig. 1(a). ^{13}C NMR spectrum of compound **1**.

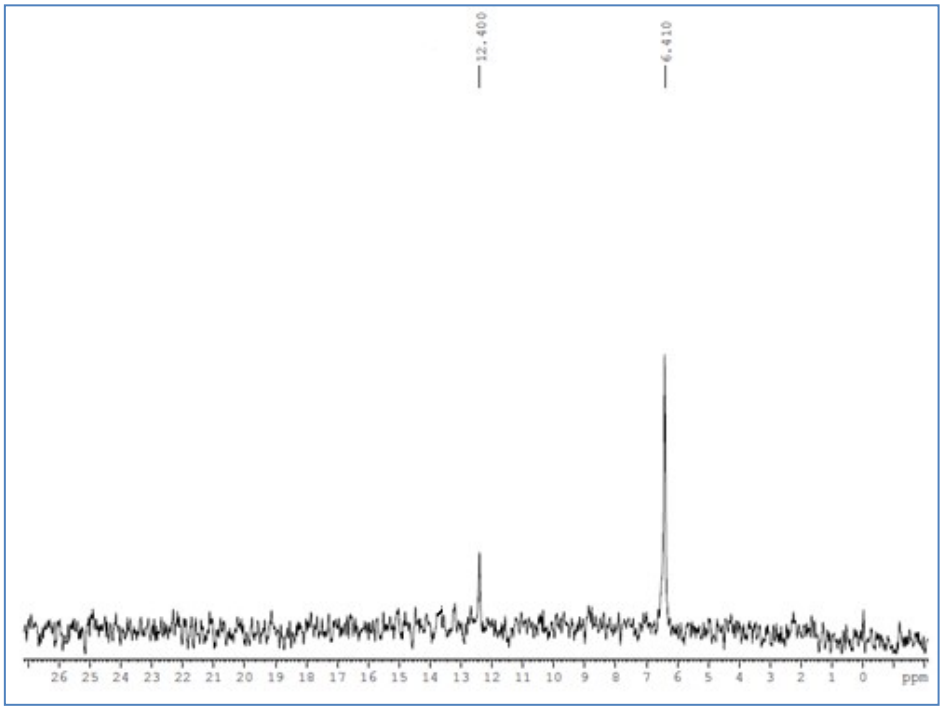

Fig. 1(b). ^{13}C NMR spectrum of compound **1**(Expansion near upfield region).

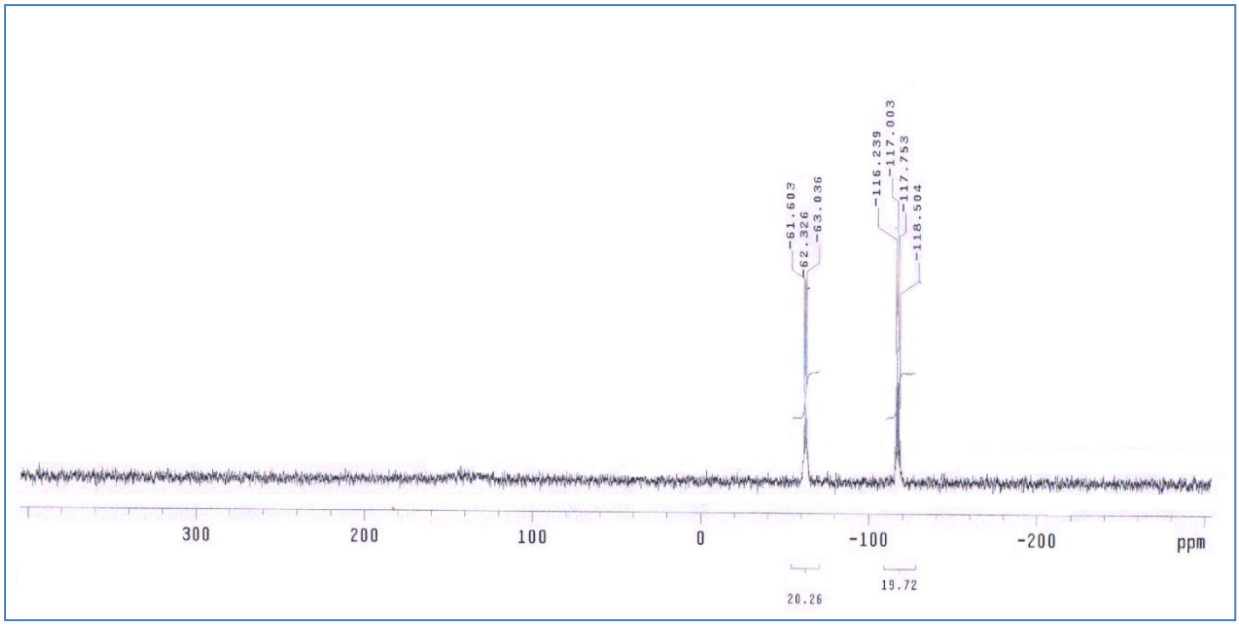

Fig. 1(c). ^{119}Sn NMR spectrum for compound **1** showing two ^{119}Sn NMR resonances for the *endo*- and *exo*-cyclic tin atoms.

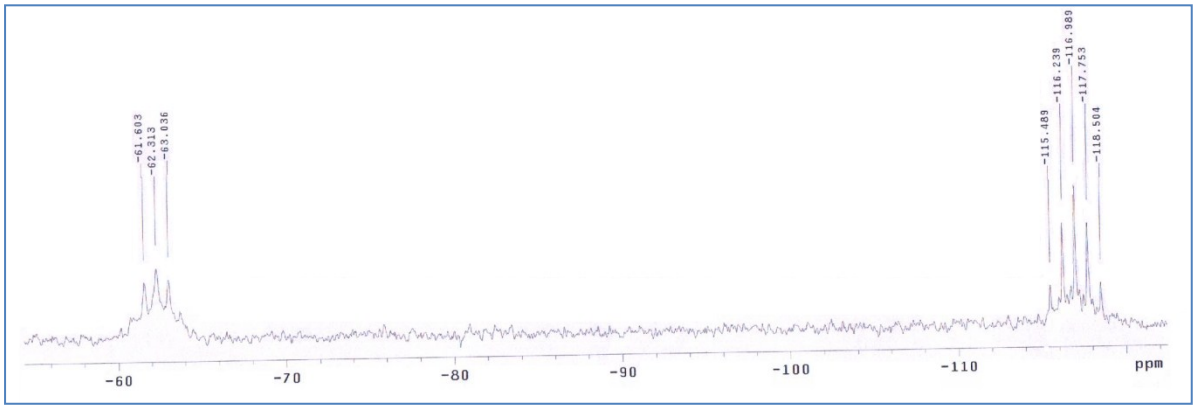

Fig. 1(d). ^{119}Sn NMR spectrum for compound **1** showing two ^{119}Sn NMR resonances for the *endo*- and *exo*-cyclic tin atoms **(**expansion).

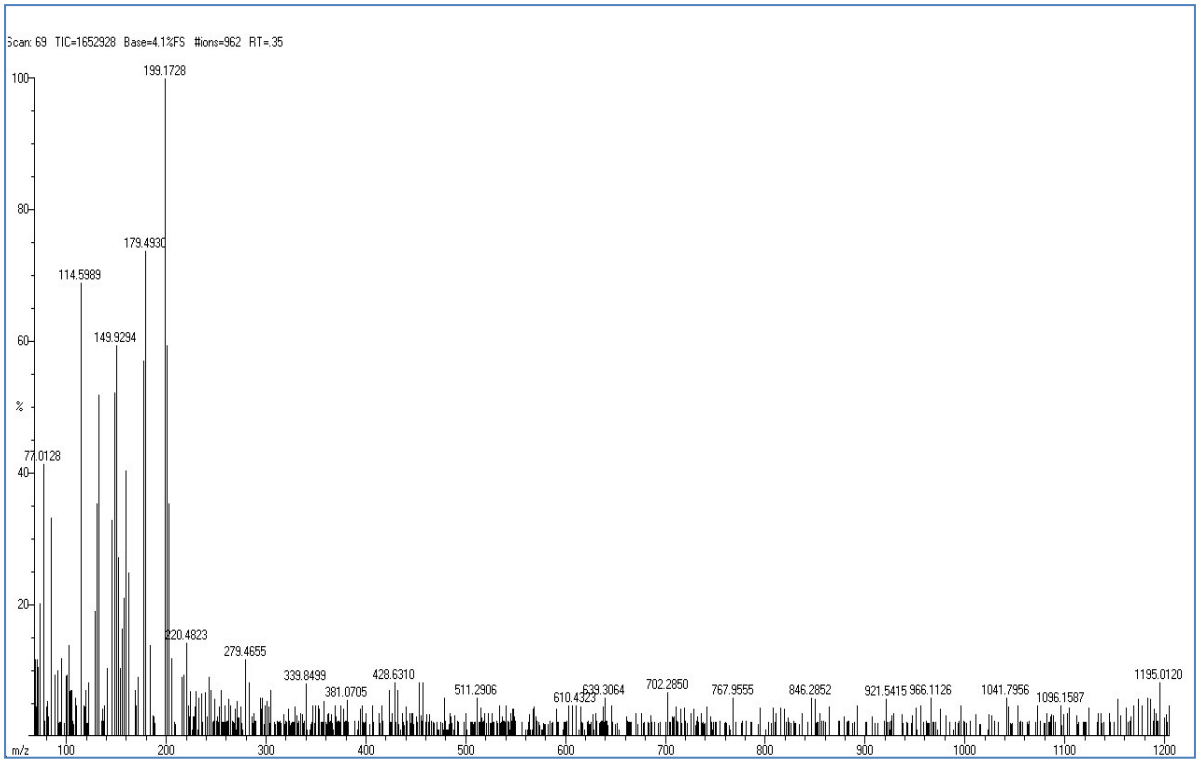

Fig. 1(e). EI-MS of compound **1** showing various fragmentation peaks along with molecular ion peak and base peak.

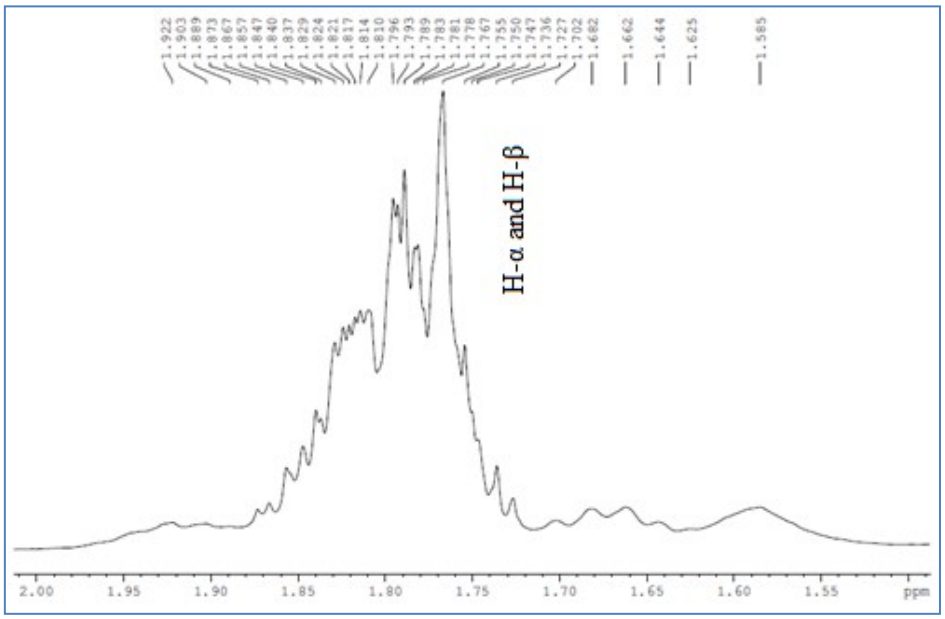

Fig. 2(a). ^{1}H NMR spectrum of compound **2** (Expansion near upfield region).

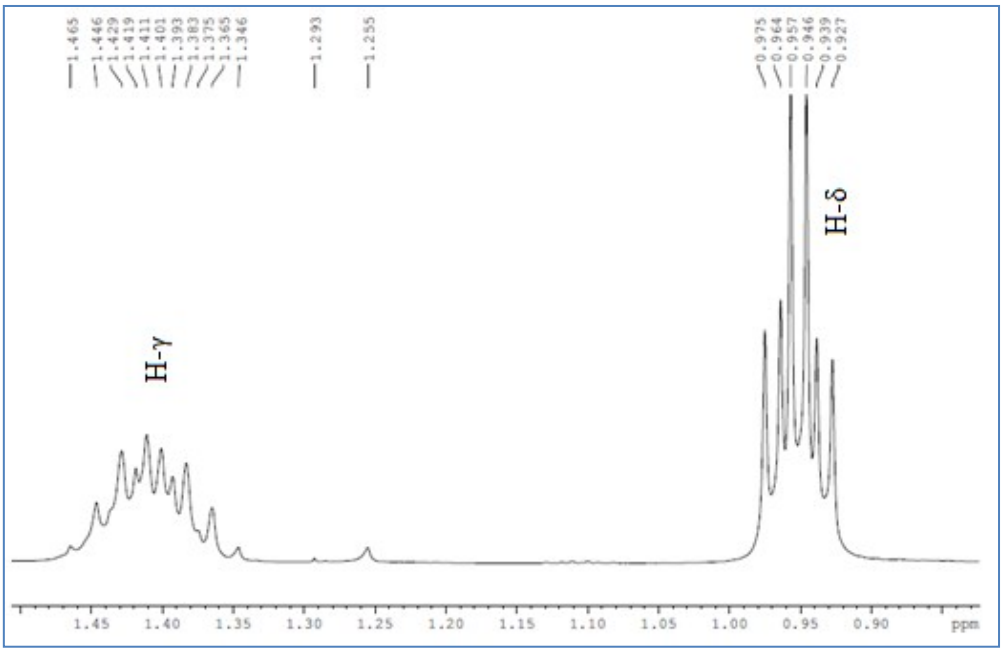

Fig. 2(b). ^{1}H NMR spectrum of compound **2** (Expansion near upfield region).

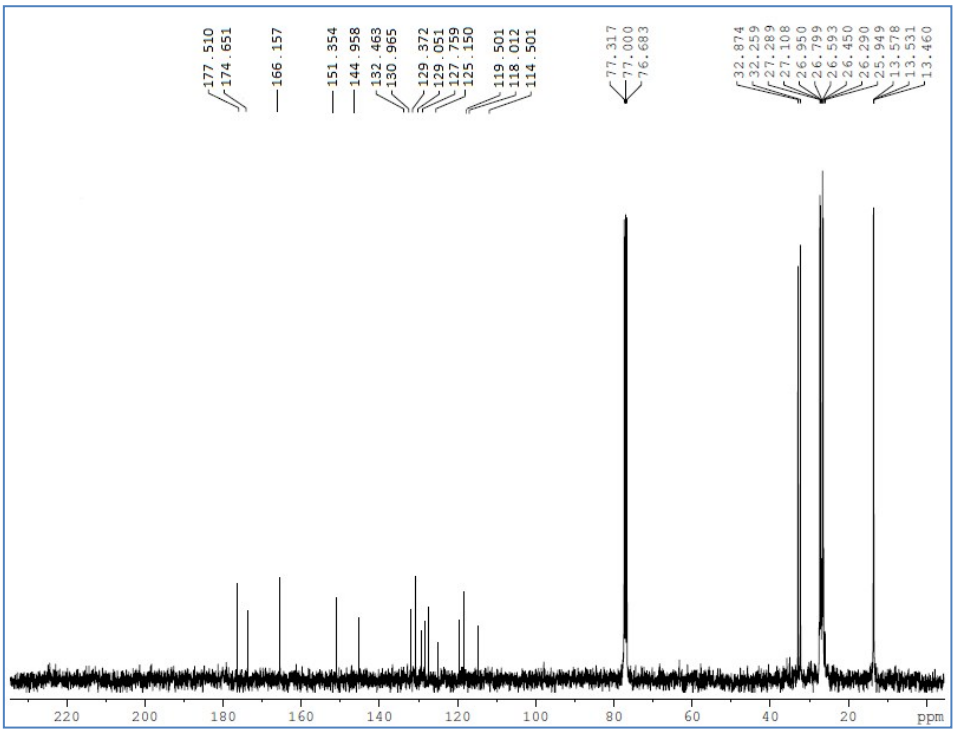

Fig. 2(c). ^{13}C NMR spectrum of compound **2.**

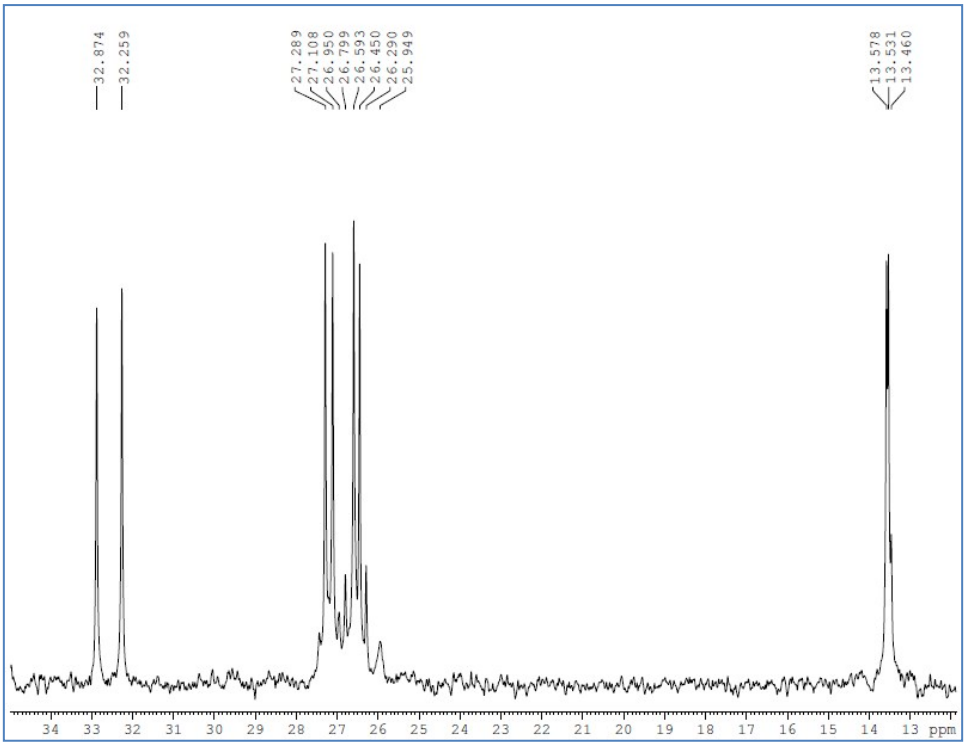

Fig. 2(d). ^{13}C NMR spectrum of compound **2** (Expansion near upfield region).

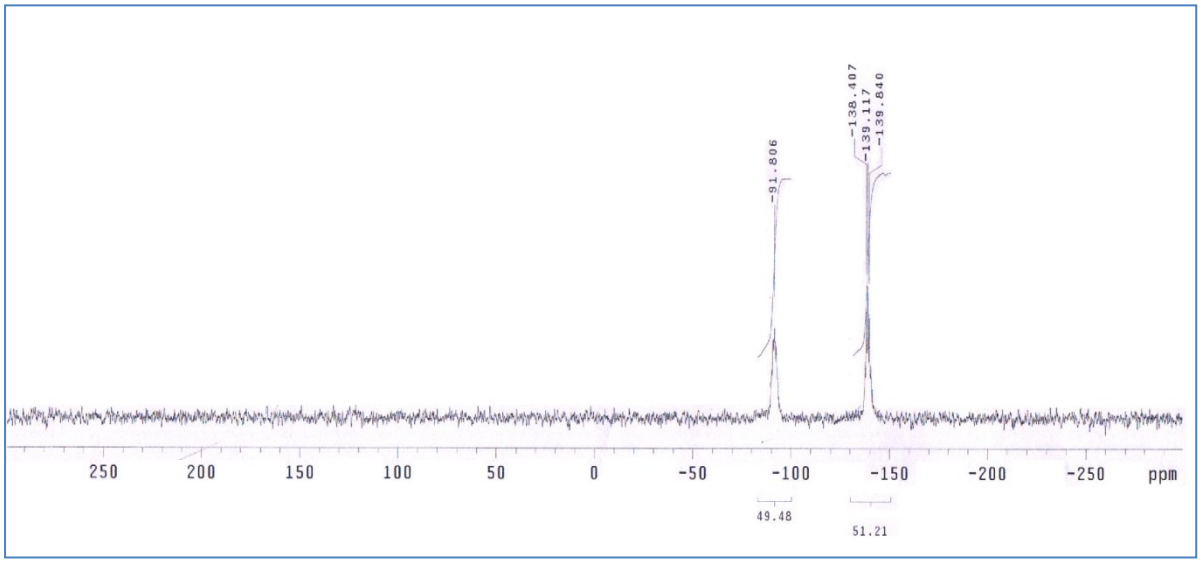

Fig. 2(e). ^{119}Sn NMR spectrum for compound **2** showing two ^{119}Sn NMR resonances for the *endo*- and *exo*-cyclic tin atoms.

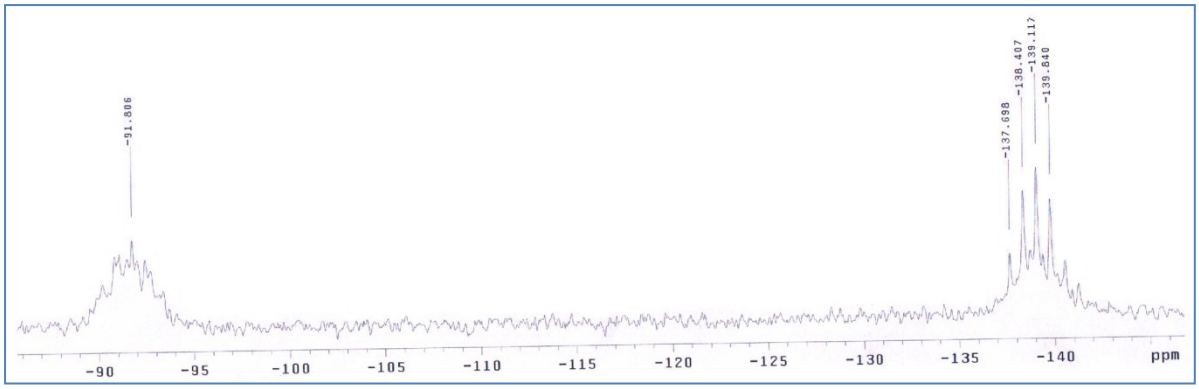

Fig. 2(f). ^{119}Sn NMR spectrum for compound **2** showing two ^{119}Sn NMR resonances for the *endo*- and *exo*-cyclic tin atoms (expansion).

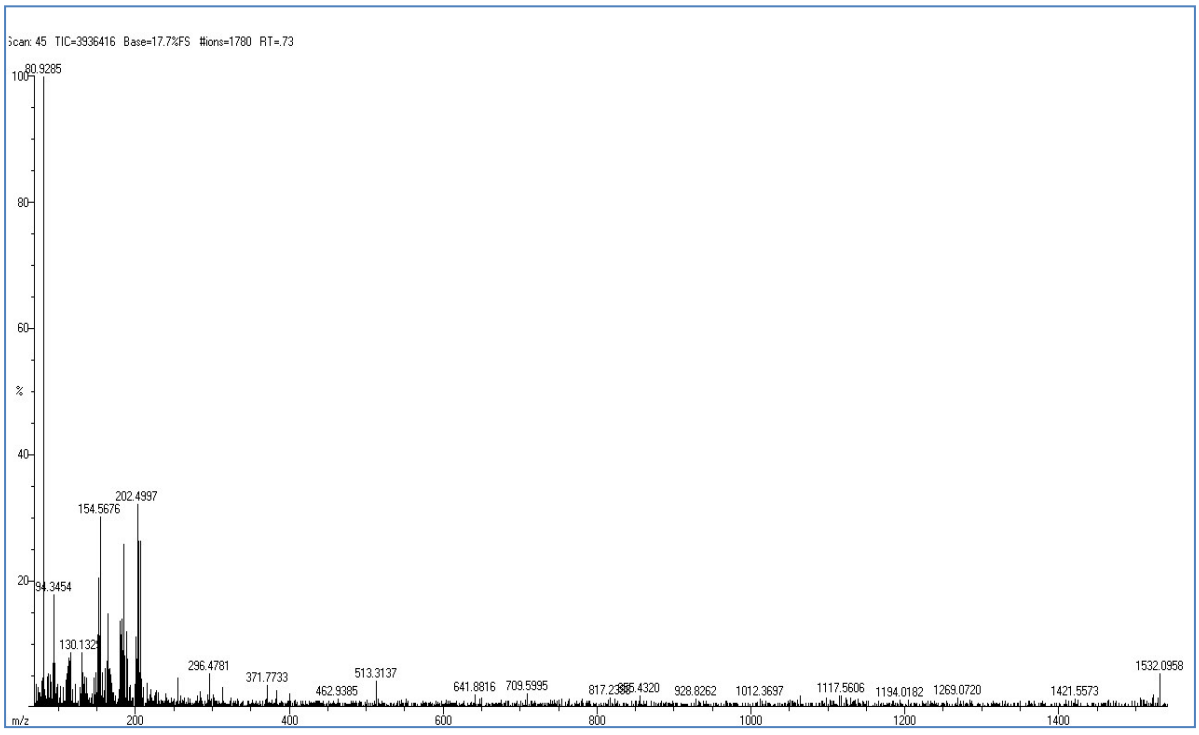

Fig. 2(g). EI-MS of compound **2** showing various fragmentation peaks along with molecular ion peak and base peak.

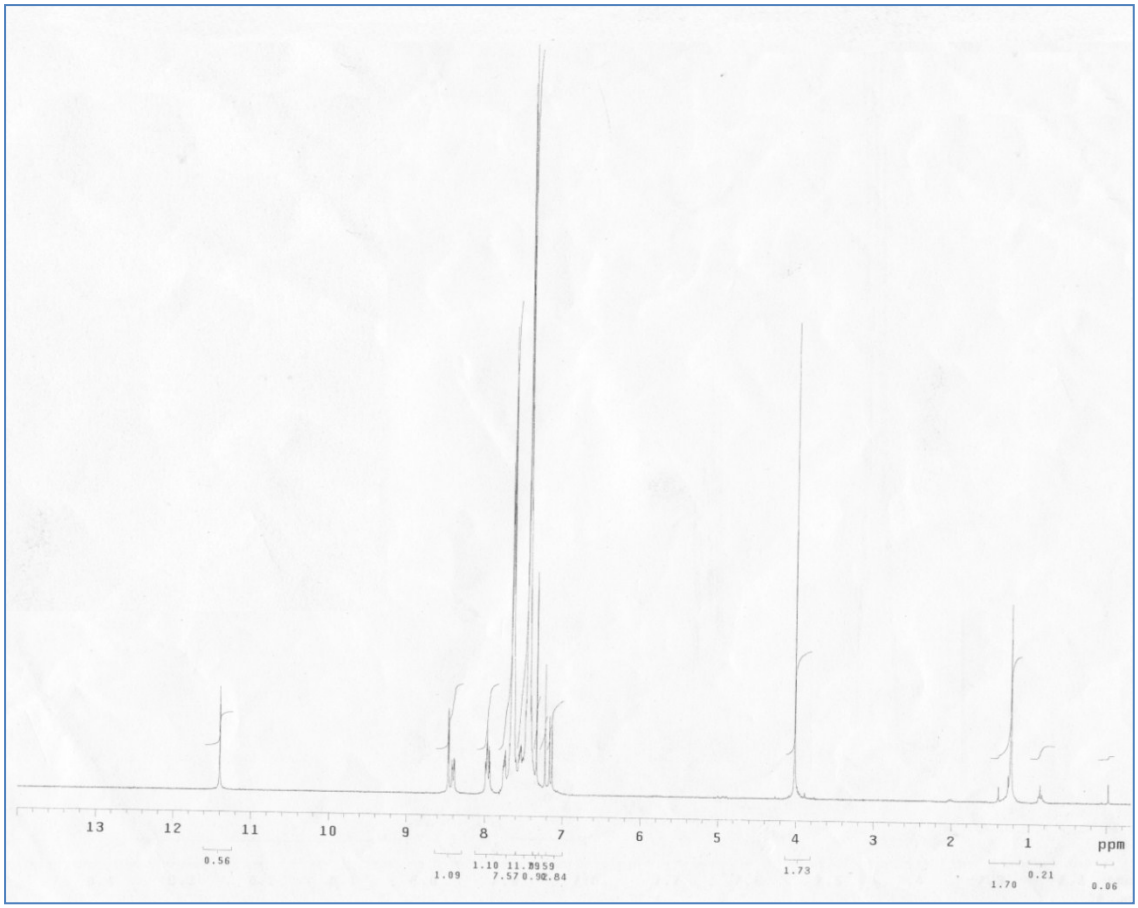

Fig. 3(a). [1]H NMR spectra of compound **3**.

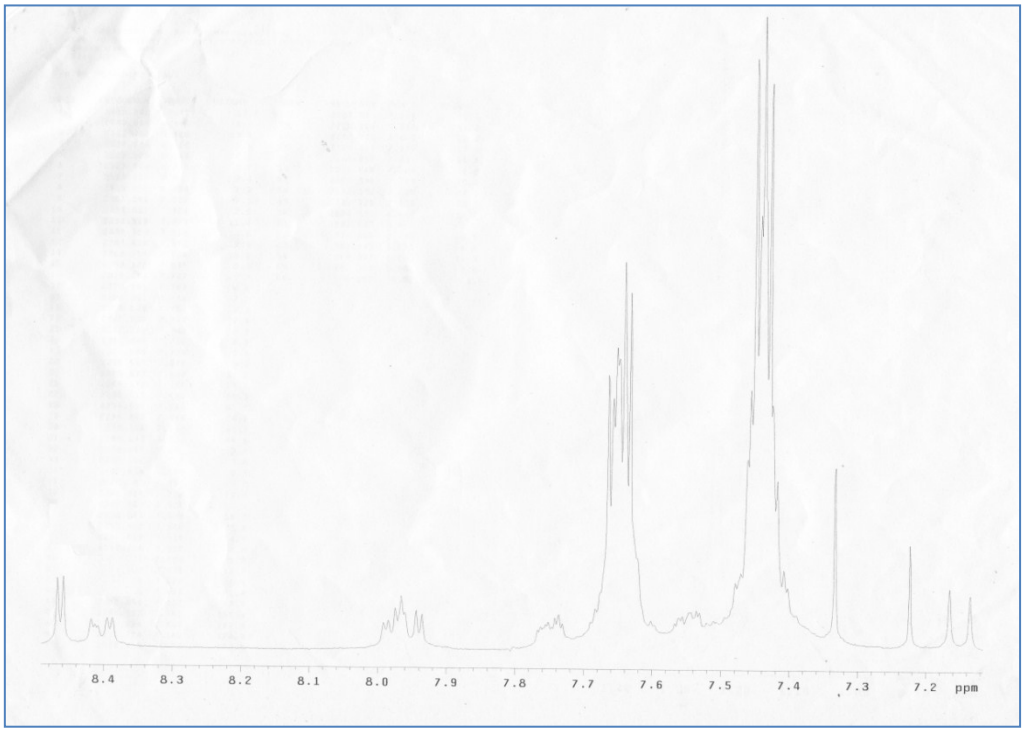

Fig. 3(b). [1]H NMR spectra of compound **3** (showing multiplicity pattern).

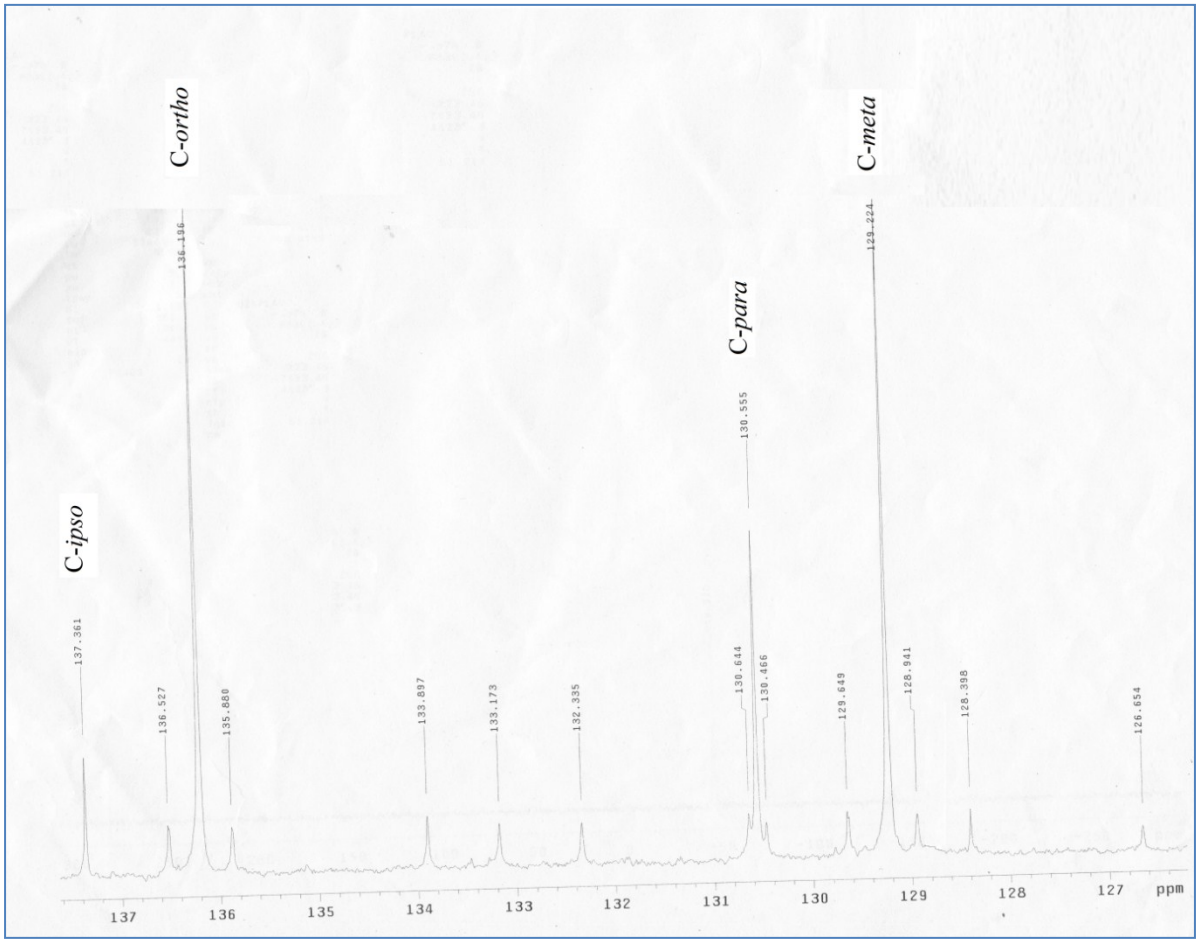

Fig. 3(c). ^{13}C NMR spectrum of compound **3**.

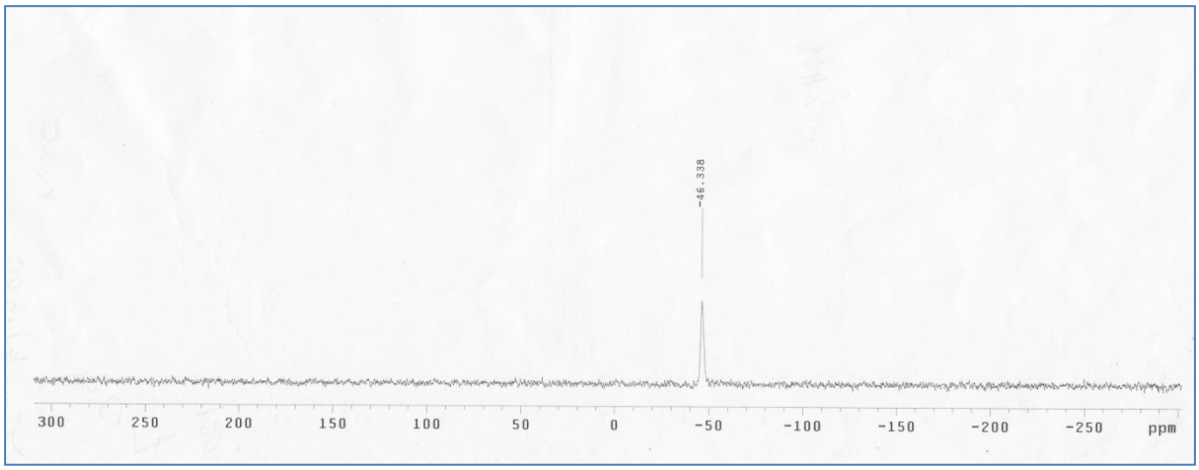

Fig. 3(d). ^{119}Sn NMR spectrum of compound **3** showing ^{119}Sn resonance peak.

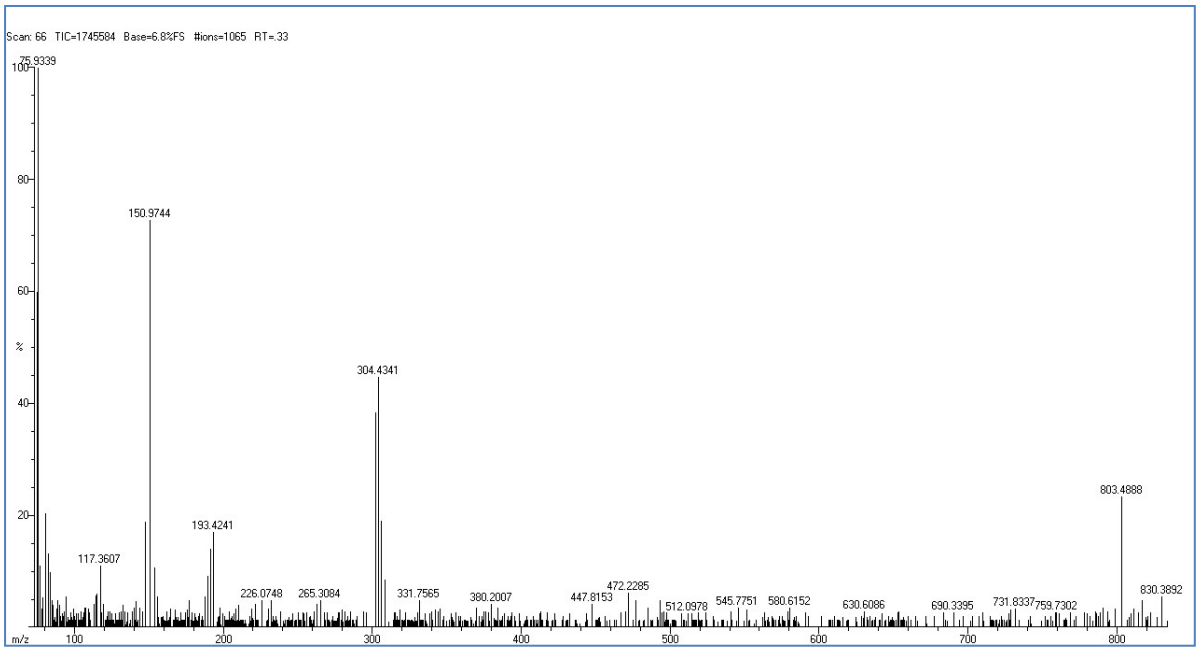

Fig. 3(e). EI-MS of compound **3** showing various fragmentation peaks along with molecular ion peak and base peak.