

Supporting Information

Table 1: Elemental analysis^(a) of Schiff base ligand and their complexes by x-ray (1-4).

Ligand/complex	C	H	N
$\alpha, \acute{\alpha}$ -Me ₂ -salen	72.81(72.95)	7.01(6.80)	9.85(9.45)
Ni($\alpha, \acute{\alpha}$ -Me ₂ -salen) (1)	61.03(61.24)	5.23(5.14)	7.97(9.45)
Cu($\alpha, \acute{\alpha}$ -Me ₂ -salen) (2)	60.38(60.41)	5.12(5.07)	7.48(7.83)
Co($\alpha, \acute{\alpha}$ -Me ₂ -salen) (3)	62.08(62.20)	5.53(5.32)	8.12(8.65)
Mn($\alpha, \acute{\alpha}$ -Me ₂ -salen) (4)	62.90(63.00)	5.84(5.63)	8.45(8.73)

a) Calculated values are in parentheses

Table 2: Physical properties of salen Schiff base complexes.

Compound	Color	m.p. (°C)	Yields (%)
$\alpha, \acute{\alpha}$ -Me ₂ -salen	yellow	89	75
[Ni($\alpha, \acute{\alpha}$ - Me ₂ -salen)]	orange	>250	87
[Cu($\alpha, \acute{\alpha}$ - Me ₂ -salen)]	purple	>250	70
[Co($\alpha, \acute{\alpha}$ - Me ₂ -salen)]	green	>250	82
[Mn($\alpha, \acute{\alpha}$ - Me ₂ -salen)]	brown	>250	79

Table 3: ¹H NMR of Ligand/Complex(1) in CDCl₃.

Ligand/Complex	OH	Ar-H	CH ₂	C(CH ₃)=N
$\alpha, \acute{\alpha}$ -Me ₂ -salen	16.0	6.7-7.6	3.9	2.3
Ni($\alpha, \acute{\alpha}$ -Me ₂ -salen) (1)	-	6.4-7.5	3.4	2.2

Table 4: IR bands (cm⁻¹) of the Schiff base ligand and their complexes (1-4).

Ligand/complex	O-H	C-O	C=N	C=C	C-H
$\alpha, \acute{\alpha}$ -Me ₂ -salen	3432.3	1366.0	1610.1	1445.6-1506.3	2934.8
Ni($\alpha, \acute{\alpha}$ -Me ₂ -salen) (1)		1342.7	1599.8	1444.9-1532.5	2924.8
Cu($\alpha, \acute{\alpha}$ -Me ₂ -salen) (2)		1346.2	1603.2	1438.5-1534.1	2925.2
Co($\alpha, \acute{\alpha}$ -Me ₂ -salen) (3)		1339.0	1591.1	1440.3-1533.0	2922.7
Mn($\alpha, \acute{\alpha}$ -Me ₂ -salen) (4)		1330.8	1588.3	1445.1-1536.5	2919.3

Table 5: Mass spectral data of the Schiff bases ligand and their complexes (1-4).

Ligand/complex	m/z
$\alpha, \acute{\alpha}$ -Me ₂ -salen	161, 107, 91, 57
Ni($\alpha, \acute{\alpha}$ -Me ₂ -salen) (1)	352, 218, 176, 146, 127, 11, 91, 57
Cu($\alpha, \acute{\alpha}$ -Me ₂ -salen) (2)	375, 239, 148, 181, 162, 146, 107, 91, 57
Co($\alpha, \acute{\alpha}$ -Me ₂ -salen) (3)	358, 227, 194, 178, 149, 62, 91, 57
Mn($\alpha, \acute{\alpha}$ -Me ₂ -salen) (4)	354, 221, 190, 146, 122, 161, 107, 91, 57

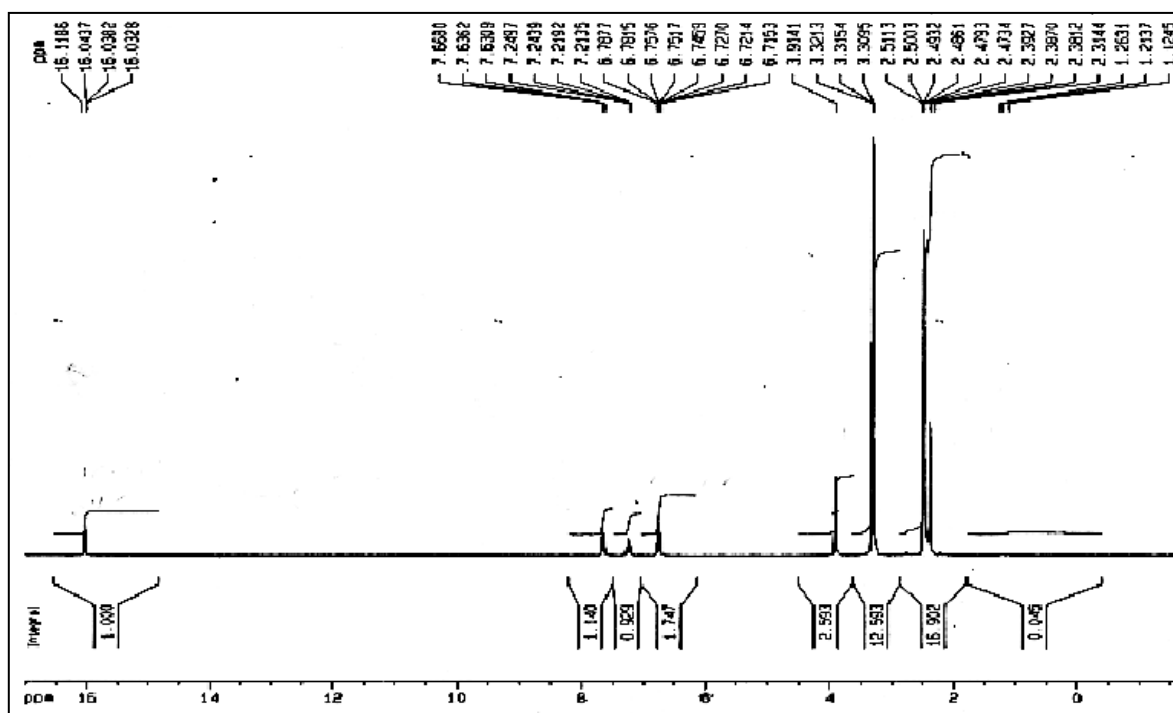


Fig. 1: ¹H NMR spectra of α,α' -Me₂-salen in DMSO.

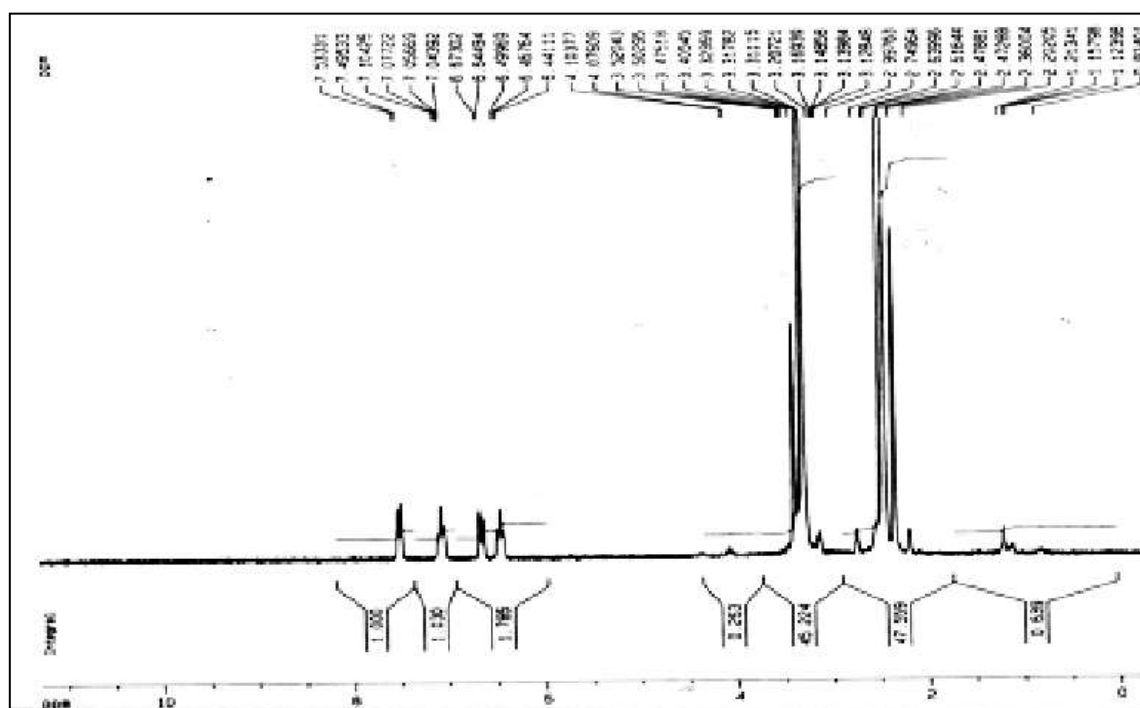


Fig. 2: ¹H NMR spectra of [Ni(α,α' -Me₂-salen)].

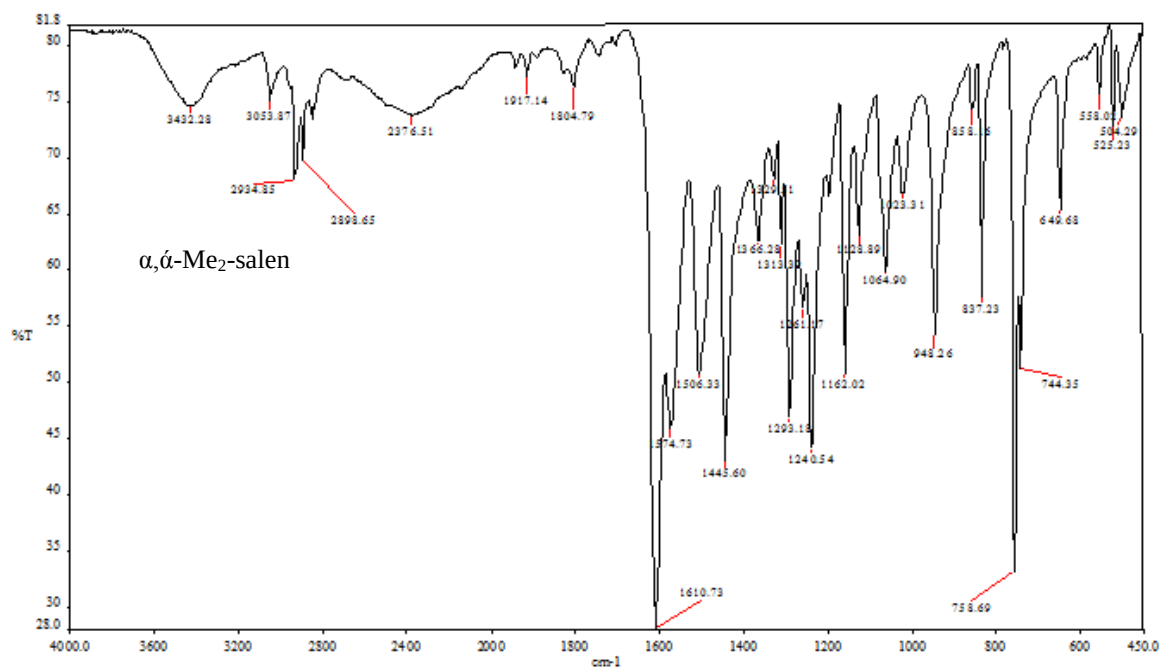


Fig. 4: IR spectra of ($\alpha,\alpha\text{-Me}_2\text{-salen}$).

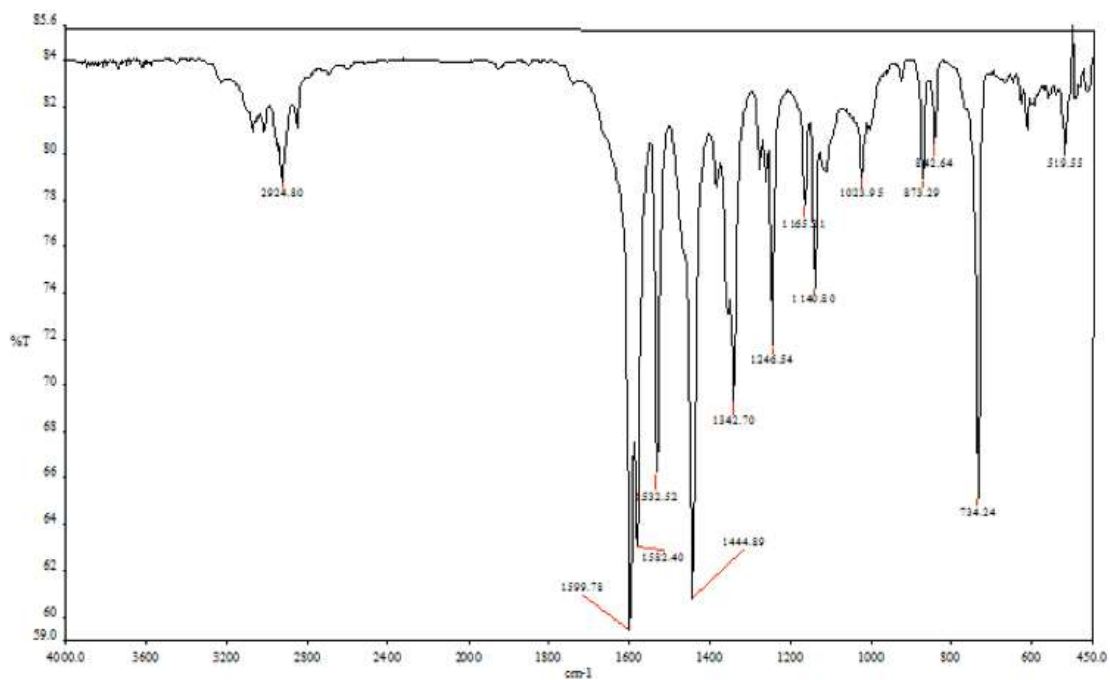
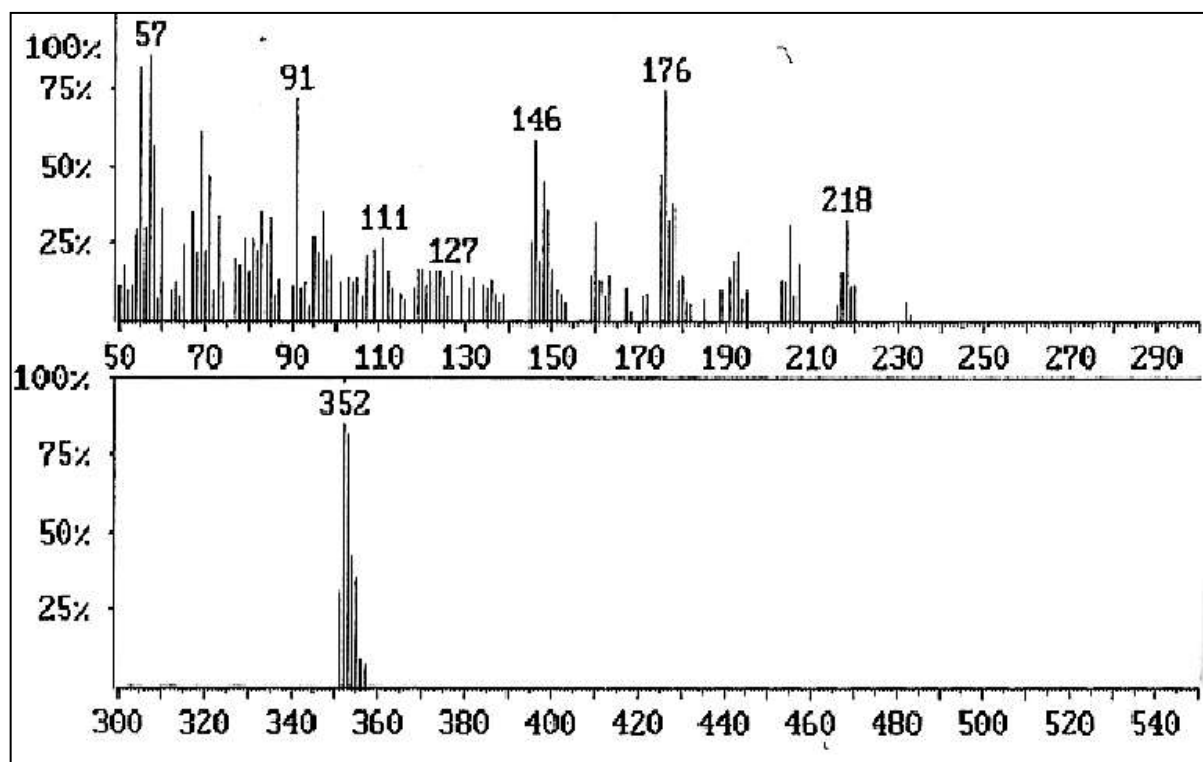


Fig. 5: IR spectra of $\text{Ni}(\alpha,\alpha\text{-Me}_2\text{-salen})$.



Appendix 5. Mass spectra of $[\text{Ni}(\alpha, \alpha\text{-Me}_2\text{-salen})]$ Figure 3.120. Mass spectra of $[\text{Ni}(\alpha, \alpha\text{-Me}_2\text{-salen})]$ and $[\text{Ni}(\alpha, \alpha\text{-Ph}_2\text{-salen})]$.