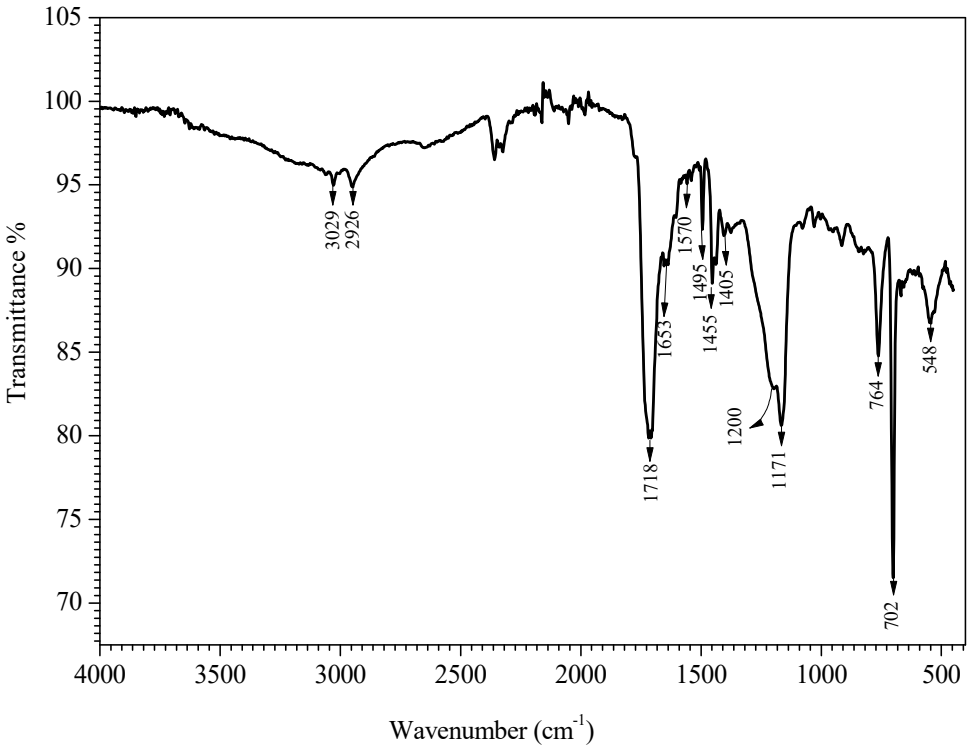


Figure 1S. Vibrational spectra of **PSMAP** ligand.

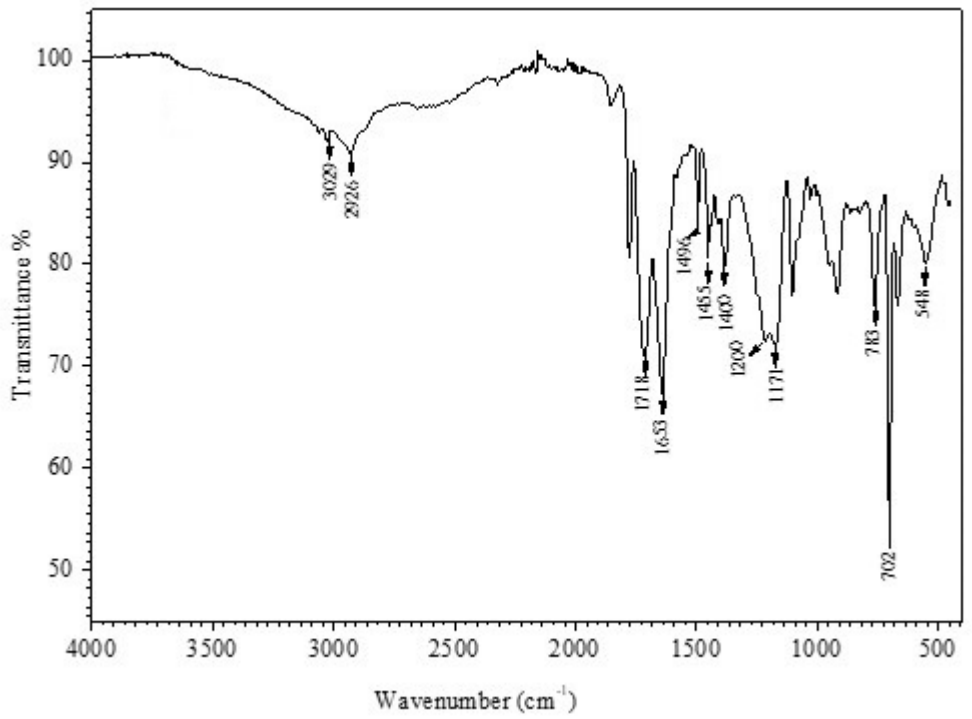


Figure 2S. Vibrational spectra of **PSMAM** ligand.

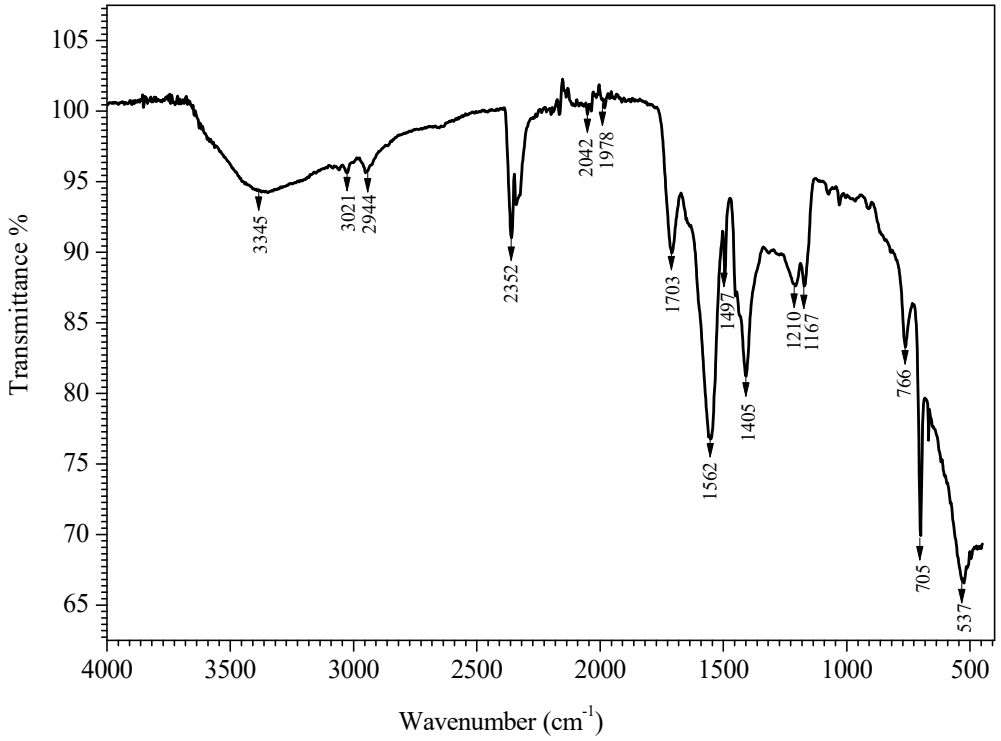


Figure 3S. Vibrational **spectra** of [Mn(**PSMAP**)$_2$Cl$_2$].2H$_2$O complex.

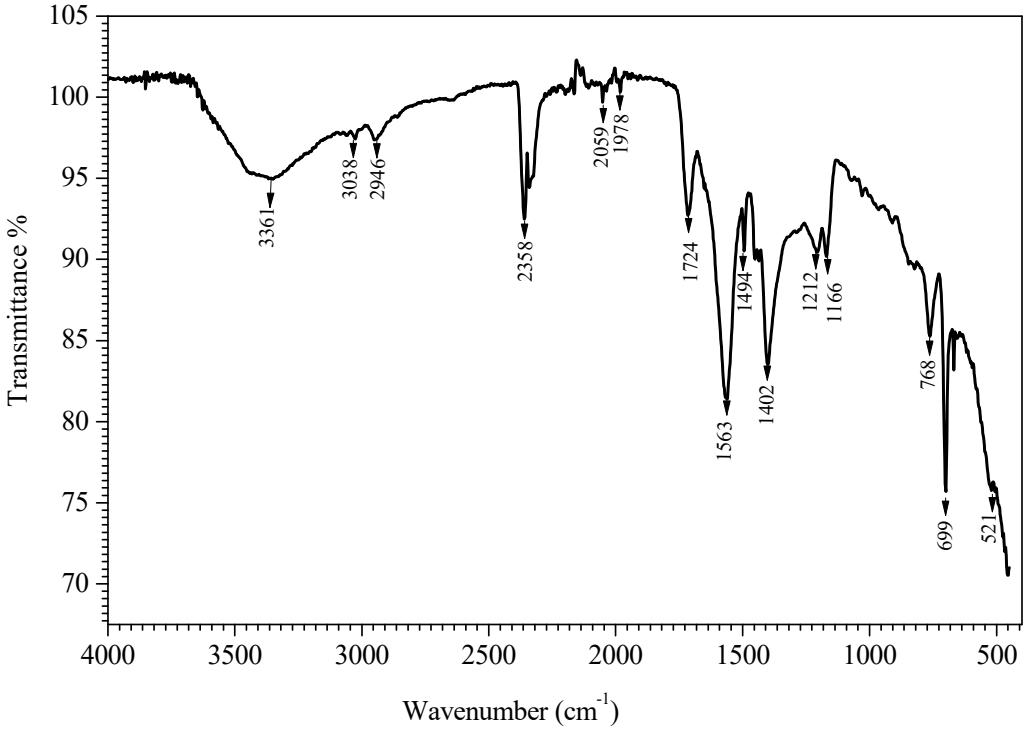


Figure 4S. Vibrational **spectra** of [Mn(**PSMAM**)$_2$Cl$_2$].2H$_2$O complex.

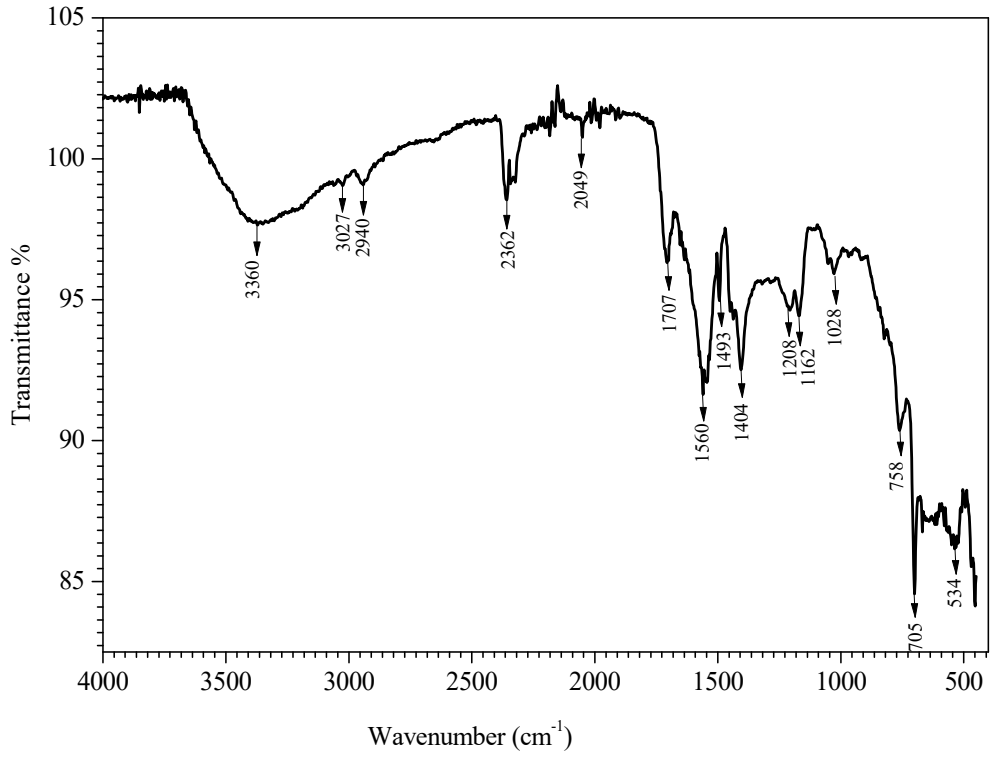


Figure 5S. Vibrational **spectra** of [Ni(**PSMAP**)$_2$Cl$_2$].2H$_2$O complex .

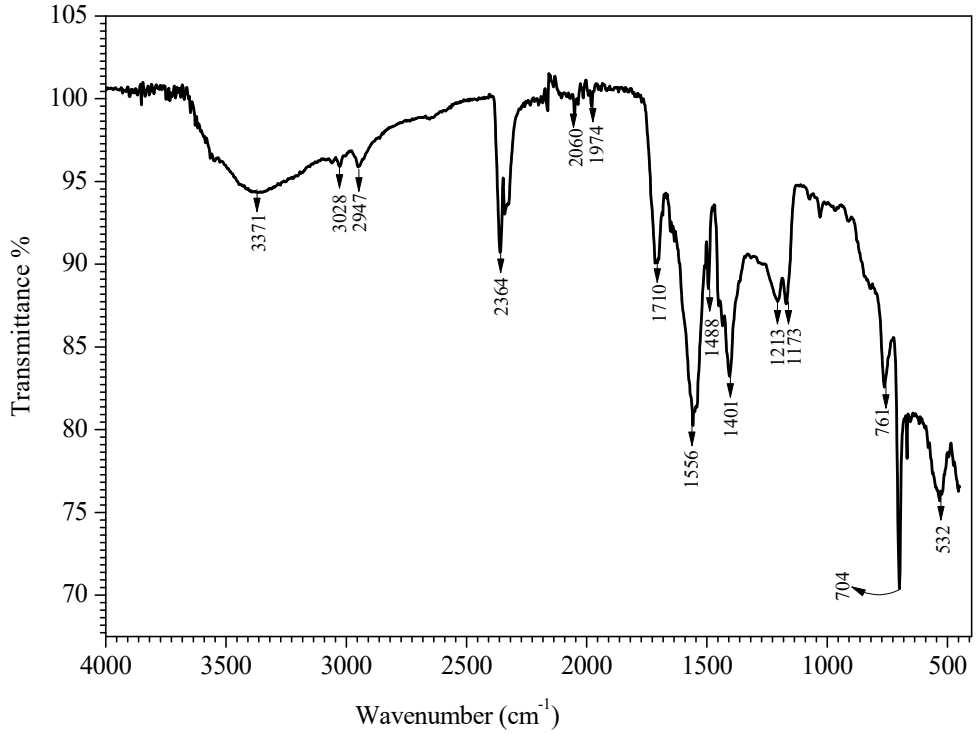


Figure 6S. Vibrational **spectra** of [Ni(**PSMAM**)$_2$Cl$_2$].2H$_2$O complex.

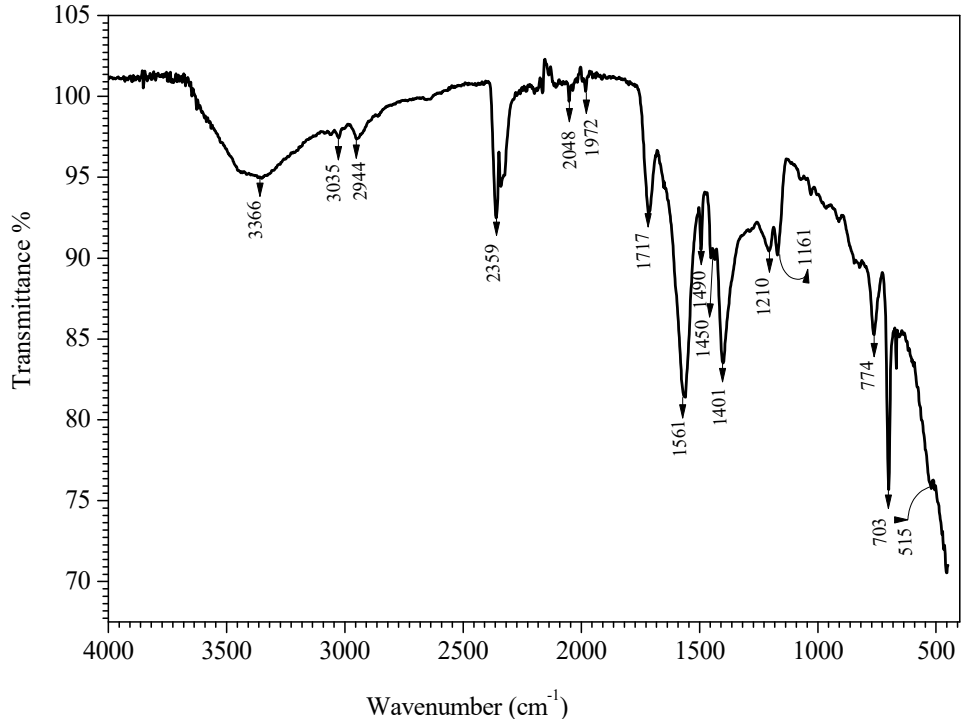


Figure 7S. Vibrational **spectra** of [Co(**PSMAP**)$_2$Cl$_2$].H$_2$O complex.

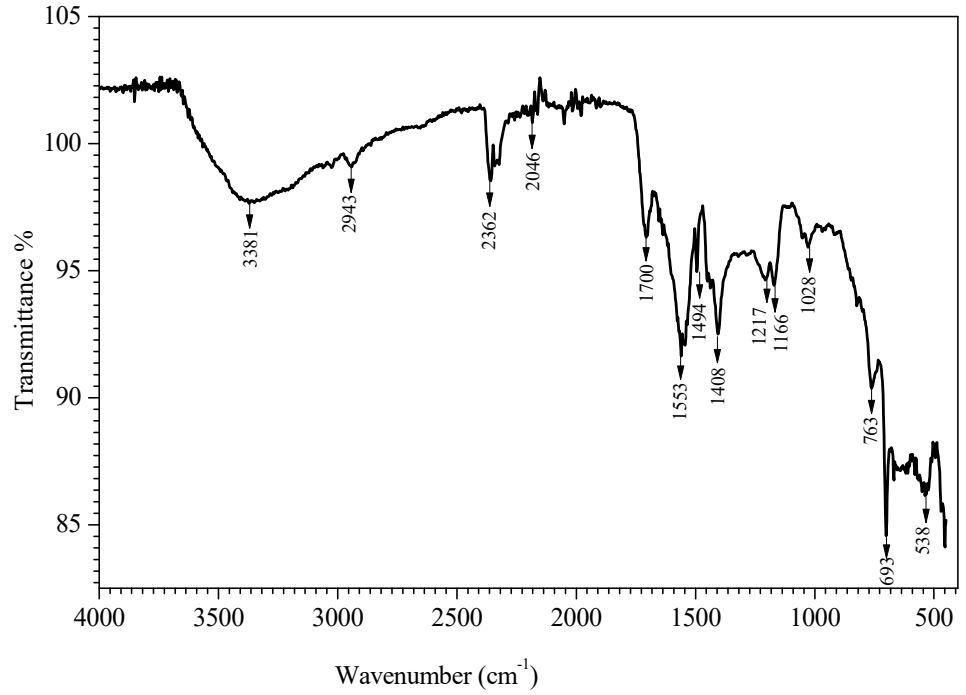


Figure 8S. Vibrational spectra of [Co(**PSMAM**)$_2$Cl$_2$].2H$_2$O complex.

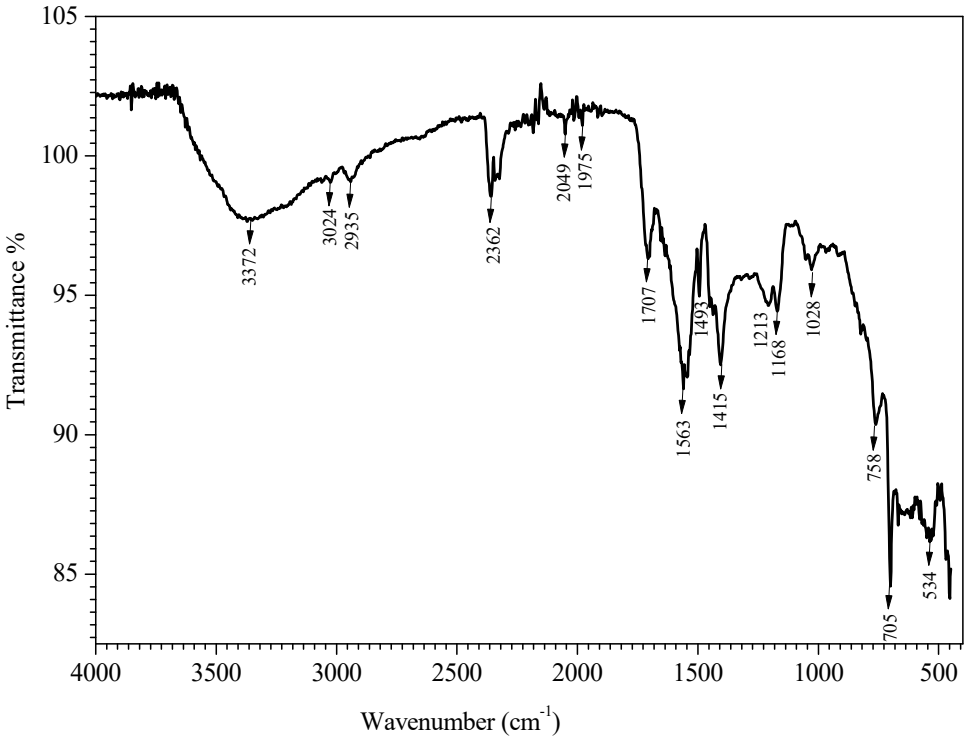


Figure 9S. Vibrational spectra of [Cu(**PSMAP**)$_2$Cl$_2$].H$_2$O complex.

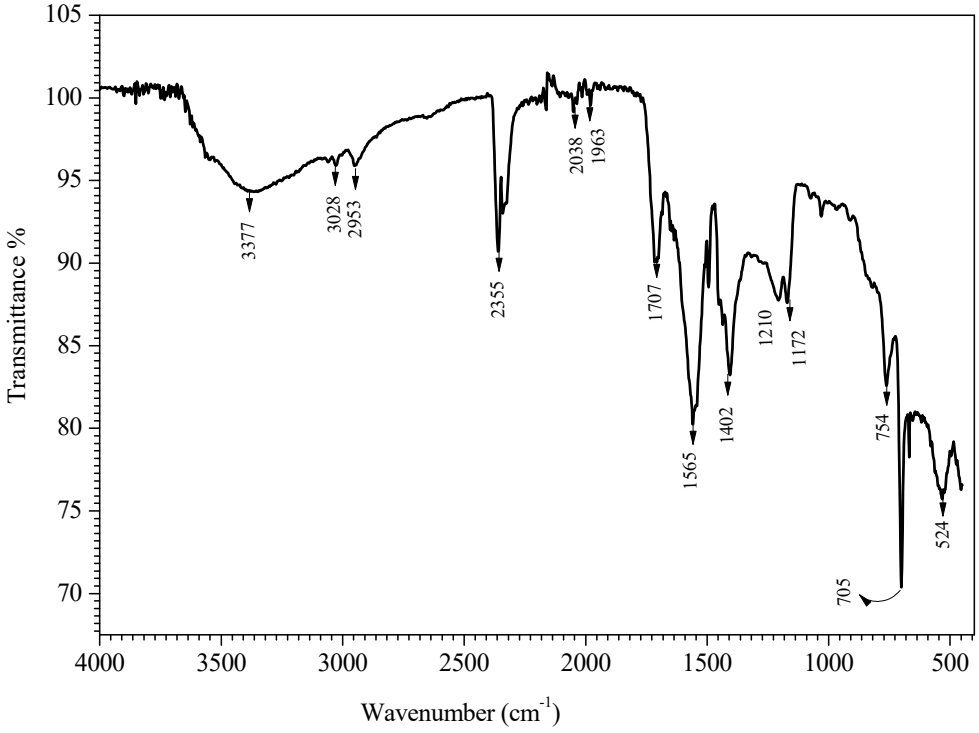


Figure 10S. Vibrational spectra of [Cu(**PSMAM**)$_2$Cl$_2$].2H$_2$O complex.

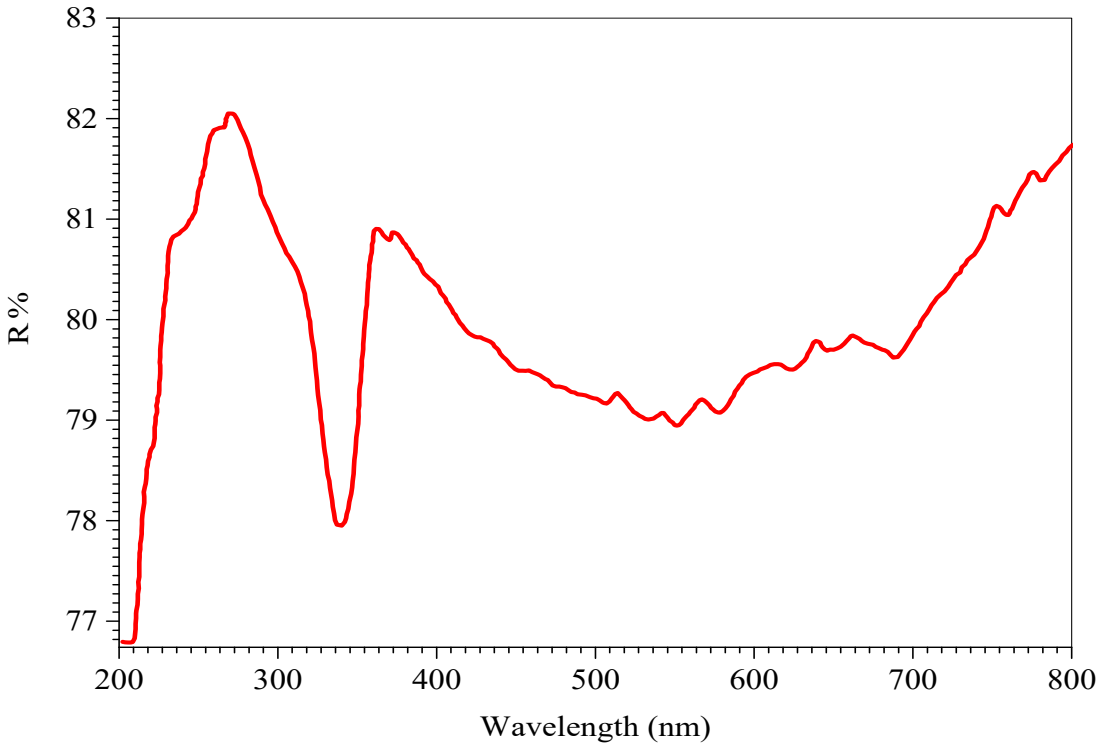


Figure 11S. UV-vis spectra of Mn-**PSMAP** complex.

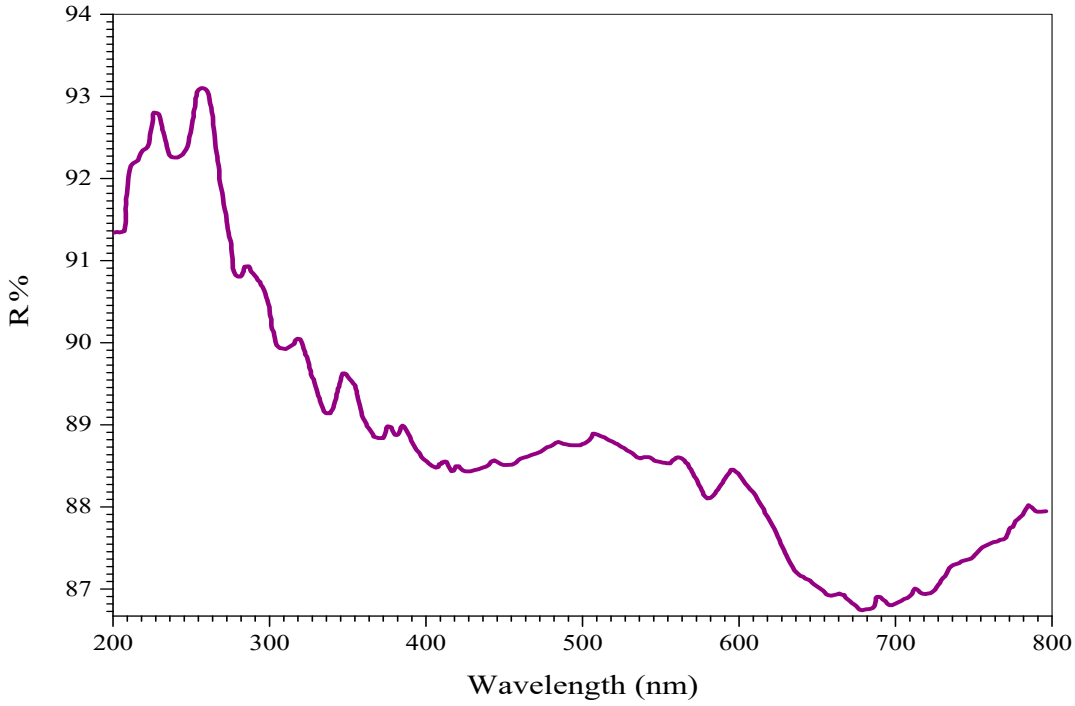


Figure 12S. UV-vis spectra of Mn-**PSMAM** complex.

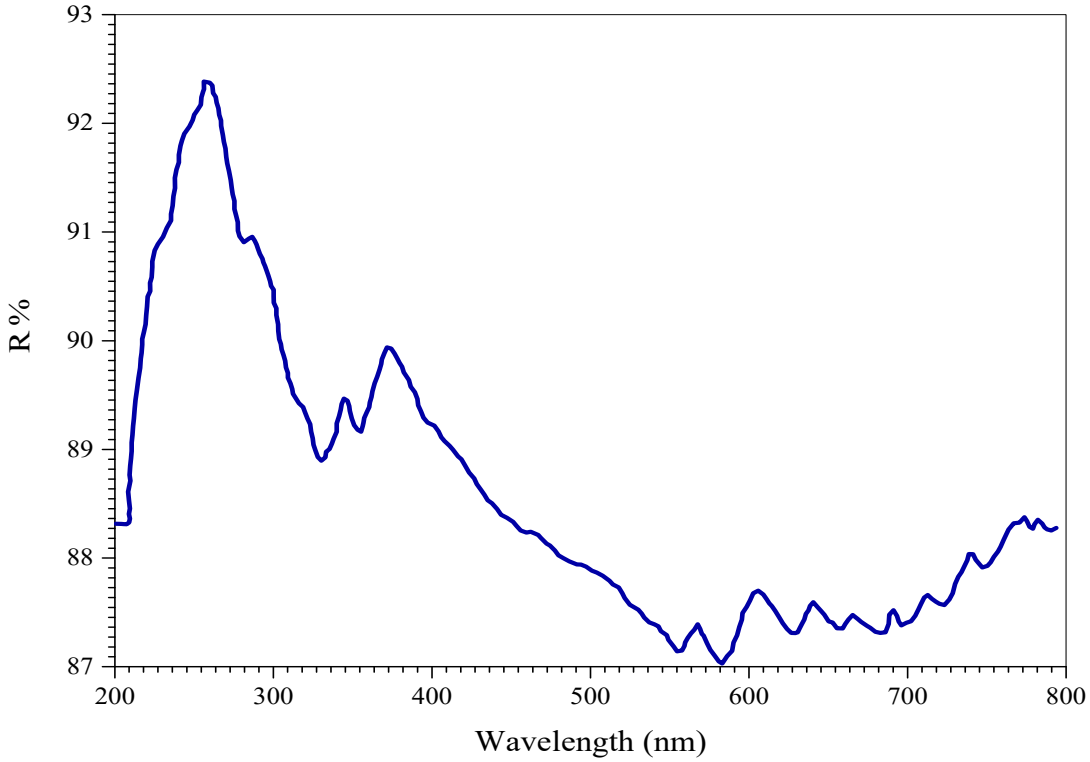


Figure 13S. UV-vis spectra of Ni-**PSMAP** complex.

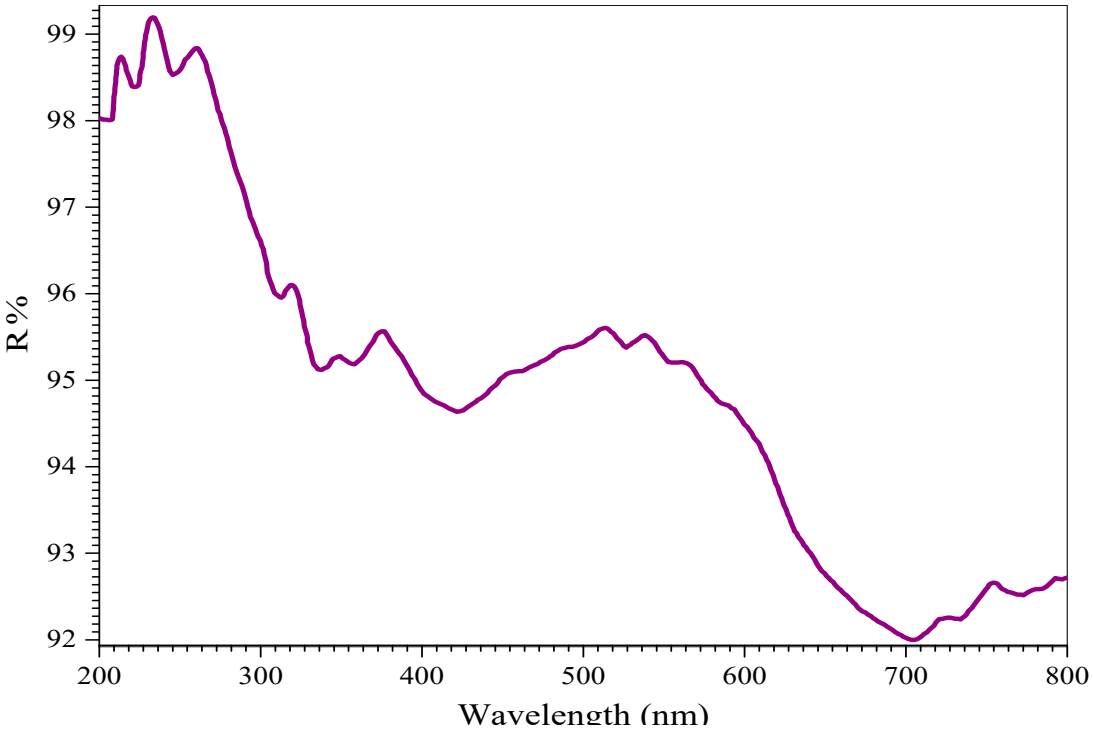


Figure 14S. UV-vis spectra of Ni-**PSMAM** complex.

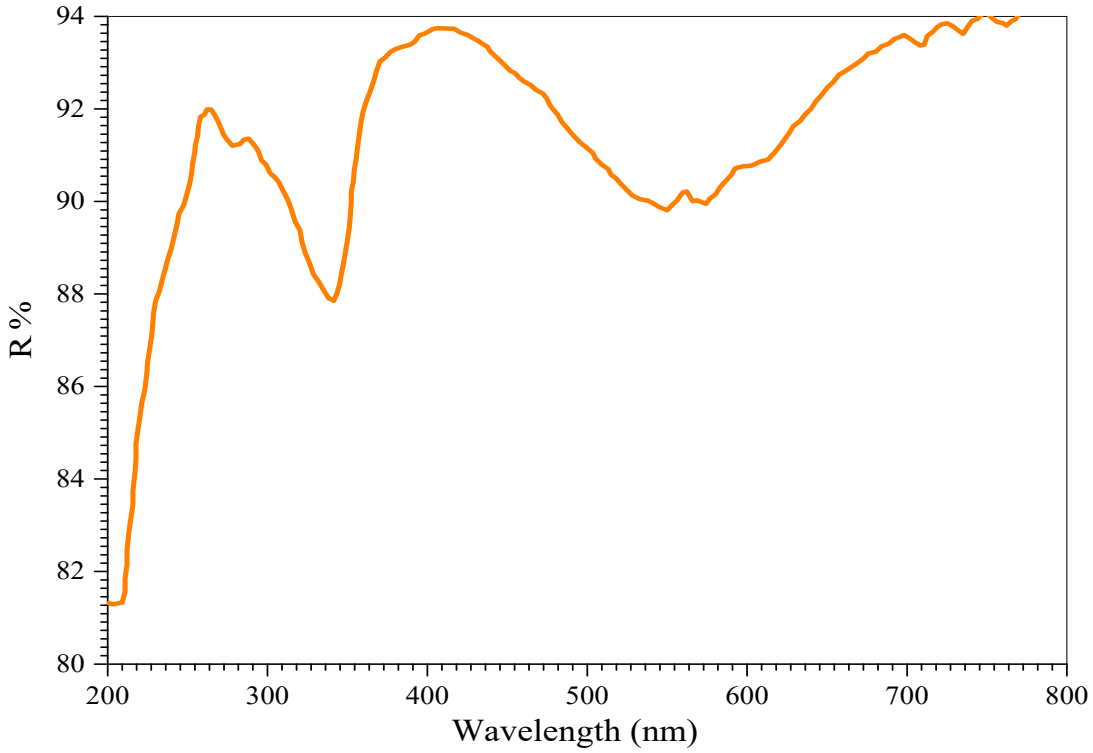


Figure 15S. UV-vis spectra of Co-**PSMAP** complex.

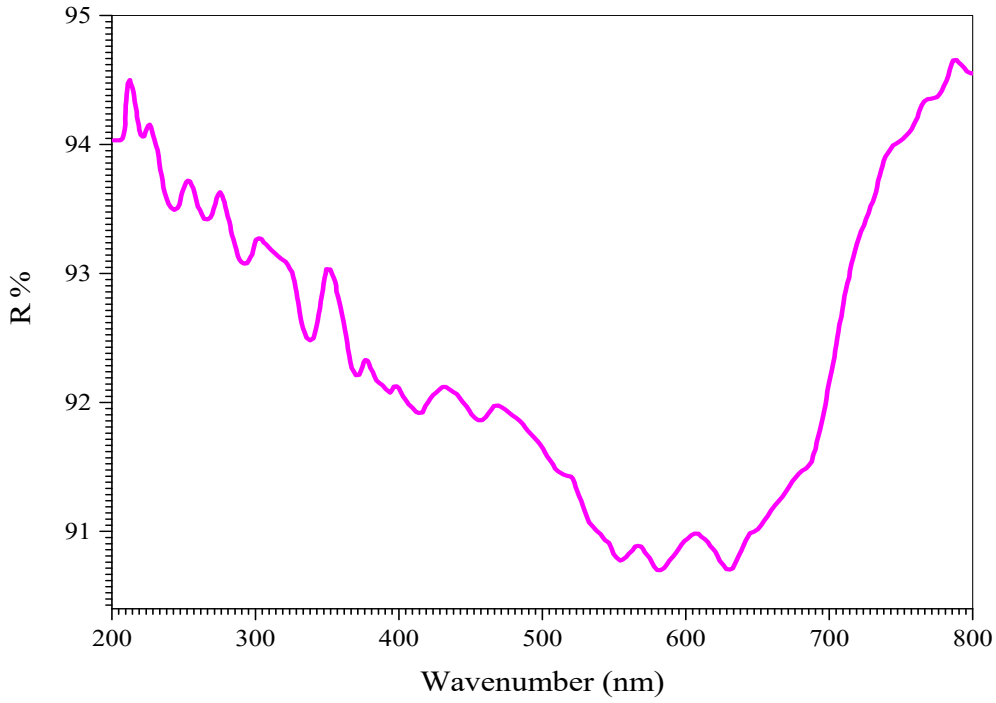


Figure 16S. UV-vis spectra of Co-**PSMAM** complex.

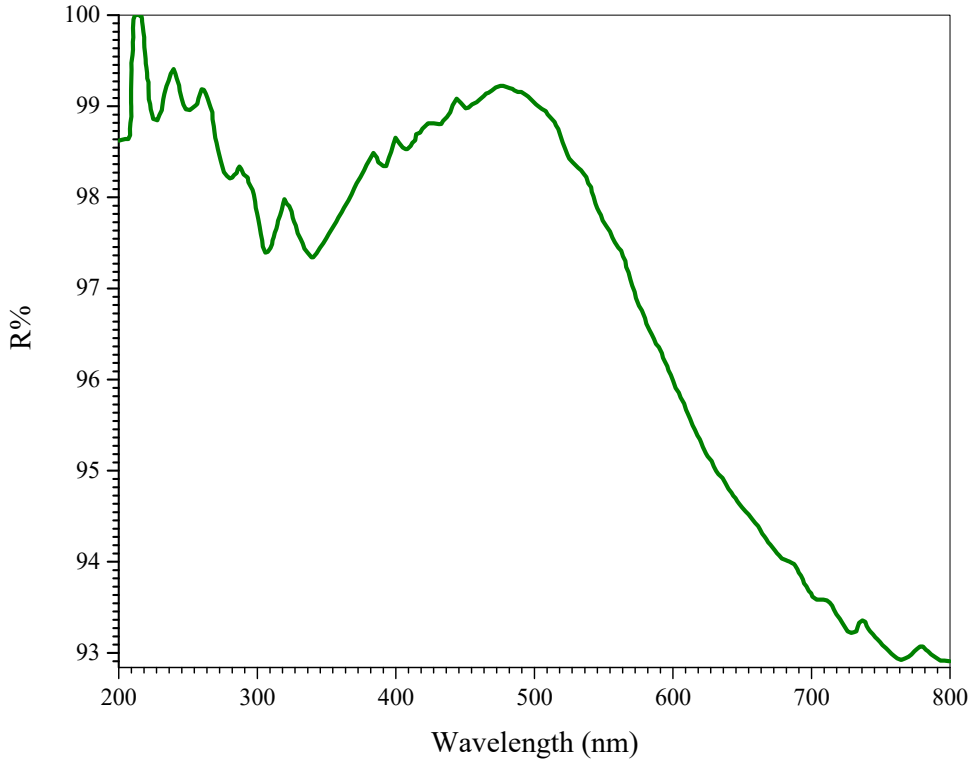


Figure 17S. UV-vis spectra of Cu-**PSMAP** complex.

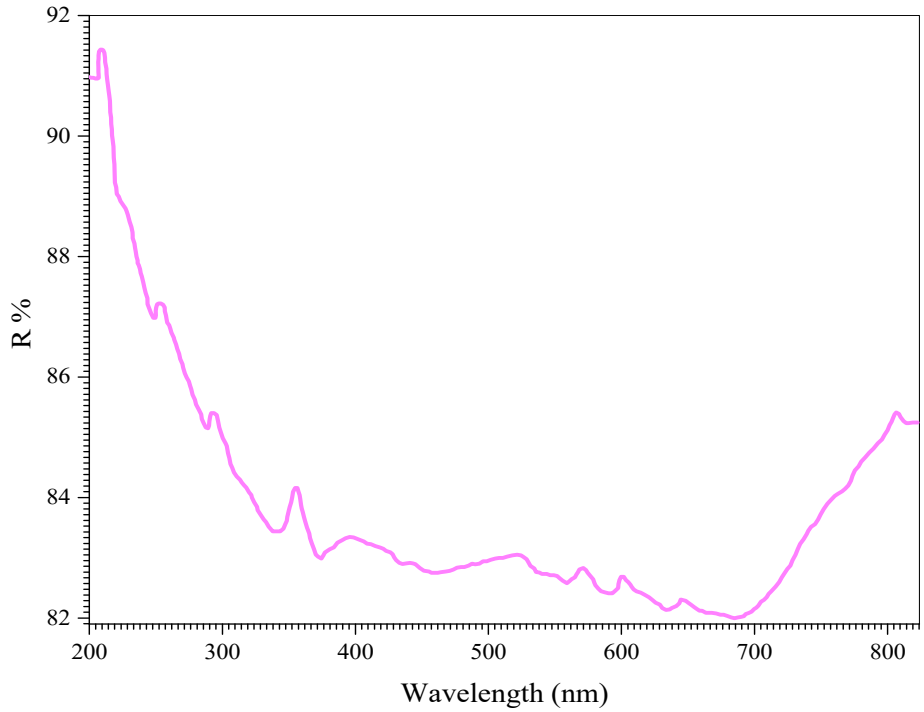


Figure 18S. UV-vis spectra of Cu-**PSMAM** complex.

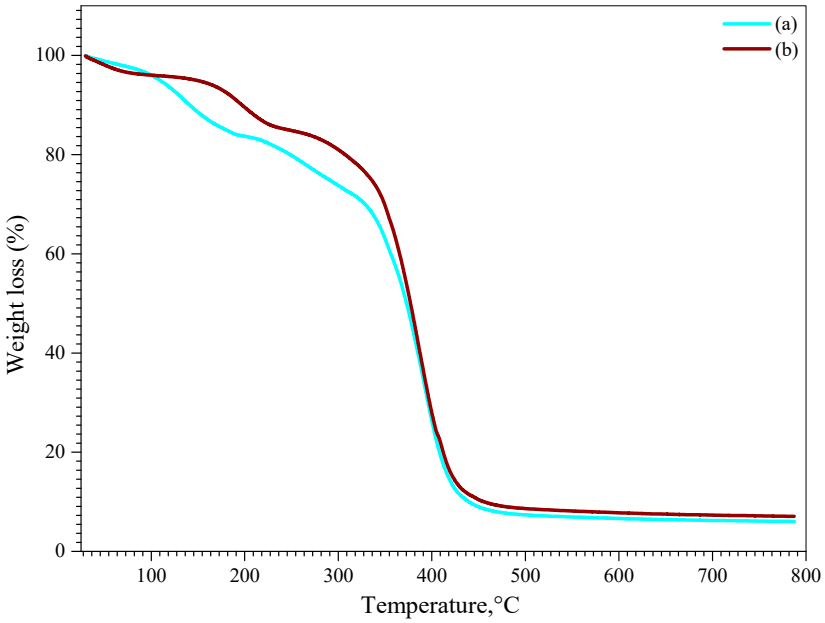


Figure 19S. TGA curves of **PSMAP** (a) and (b) **PSMAM** ligands.

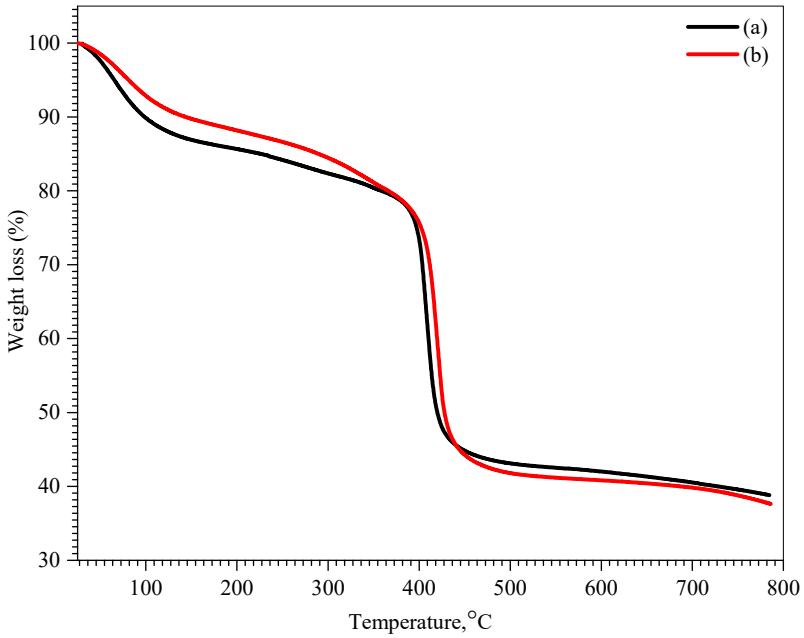


Figure 20S. TGA curves of **PSMAP**-Mn(II) (a) and (b) **PSMAM**-Mn(II) complexes.

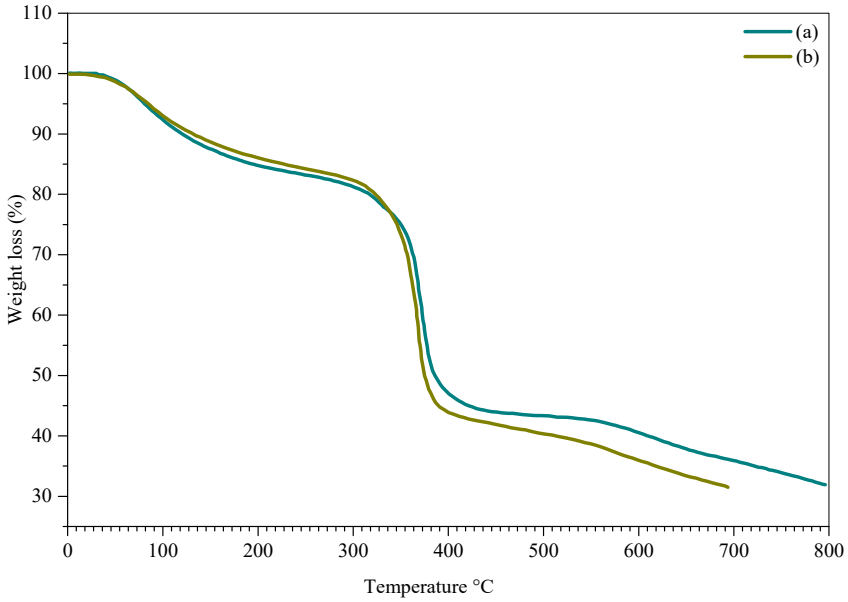


Figure 21S. TGA curves of **PSMAP**-Ni(II) (a) and (b) **PSMAM**-Ni(II) complexes.

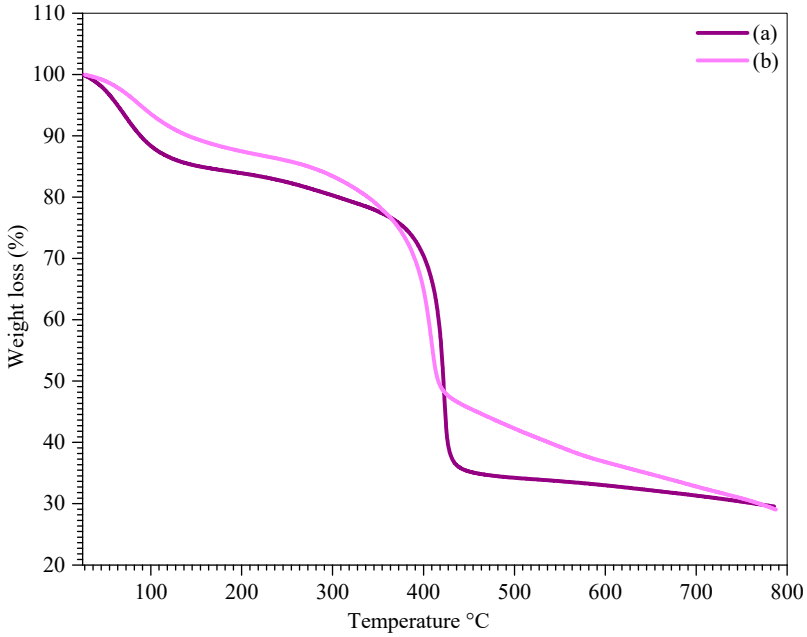


Figure 22S. TGA curves of **PSMAP**-Co(II) (a) and (b) **PSMAM**-Co(II) complexes.

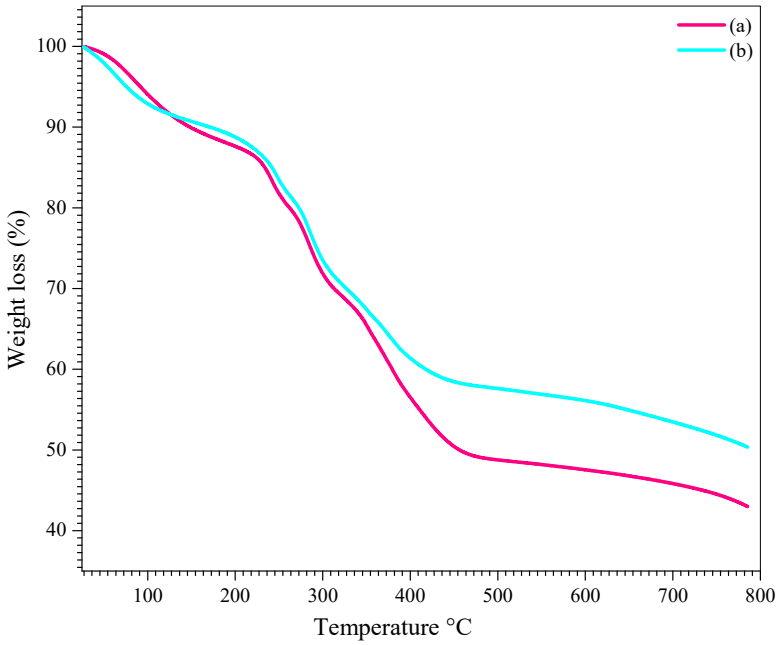
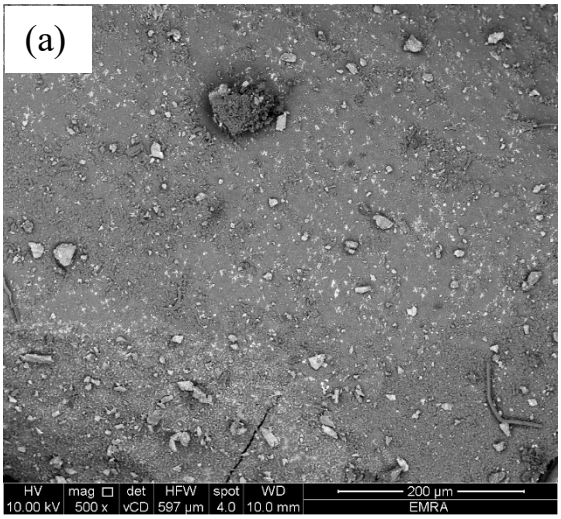
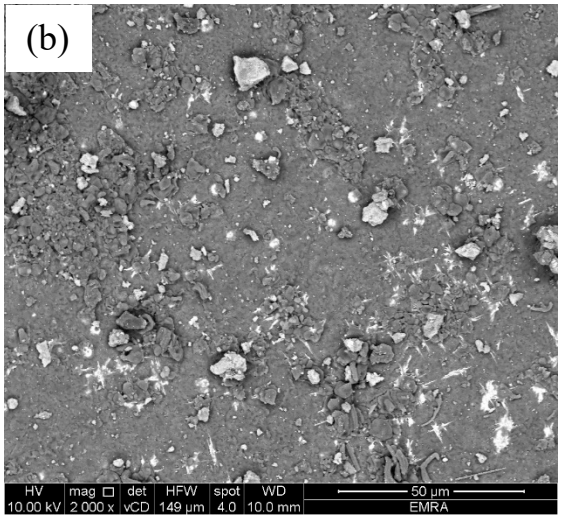
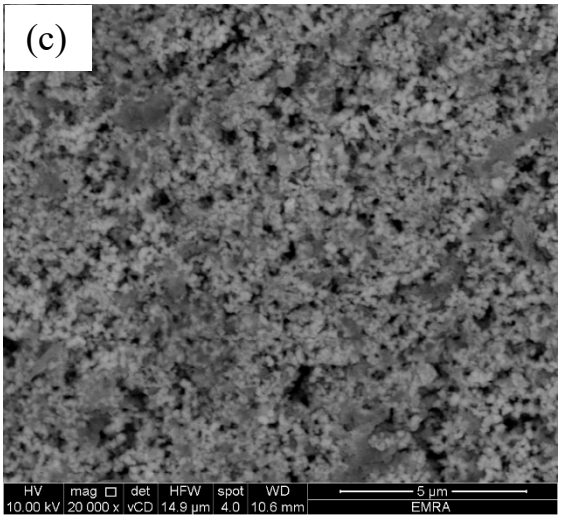
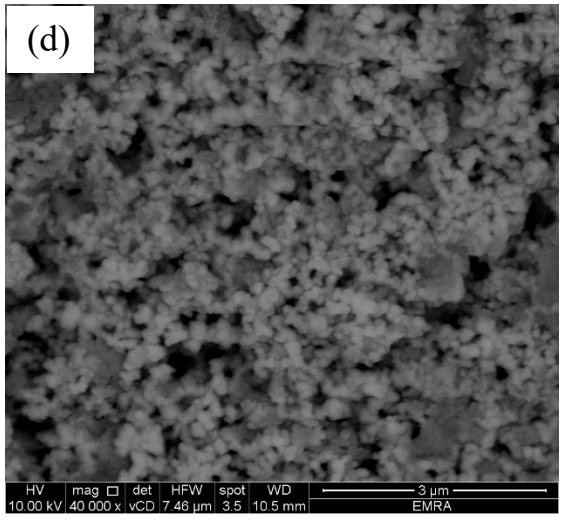


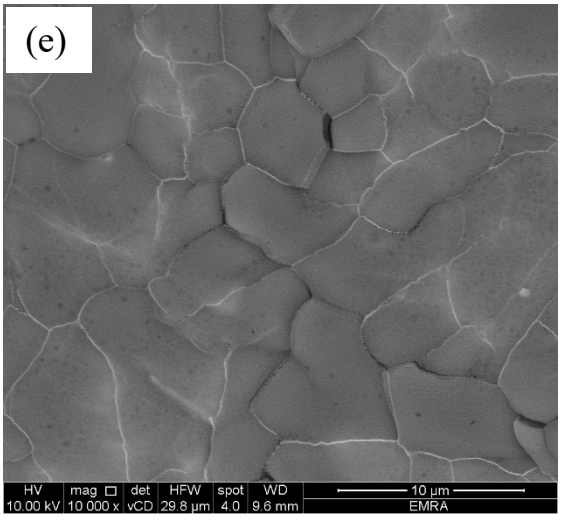
Figure 23S. TGA curves of **PSMAP**-Cu(II) (a) and (b) **PSMAM**-Cu(II) complexes.

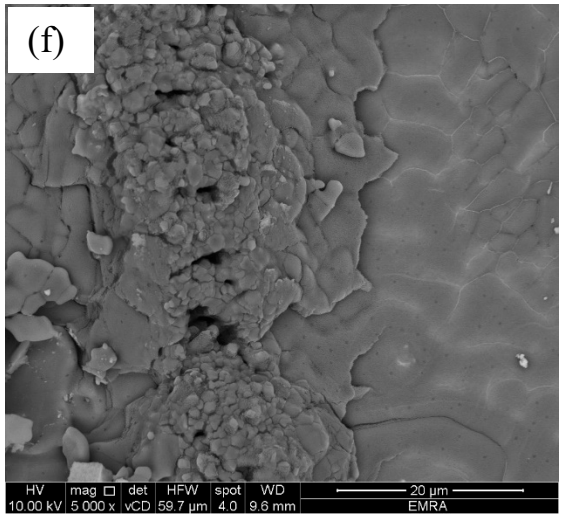

(a)
HV mag det HFW spot WD
10.00 kV 500 x vCD 597 µm 4.0 10.0 mm
200 µm
EMRA


(b)
HV mag det HFW spot WD
10.00 kV 2 000 x vCD 149 µm 4.0 10.0 mm
50 µm
EMRA


(c)
HV mag det HFW spot WD
10.00 kV 20 000 x vCD 14.9 µm 4.0 10.6 mm
5 µm
EMRA


(d)
HV mag det HFW spot WD
10.00 kV 40 000 x vCD 7.46 µm 3.5 10.5 mm
3 µm
EMRA


(e)
HV mag det HFW spot WD
10.00 kV 10 000 x vCD 29.8 µm 4.0 9.6 mm
10 µm
EMRA


(f)
HV mag det HFW spot WD
10.00 kV 5 000 x vCD 59.7 µm 4.0 9.6 mm
20 µm
EMRA

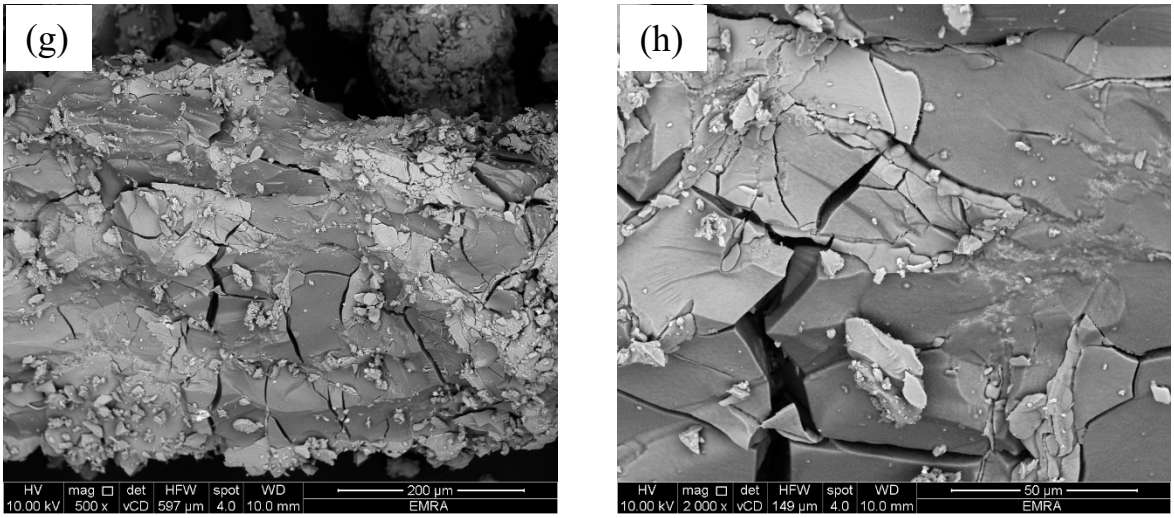
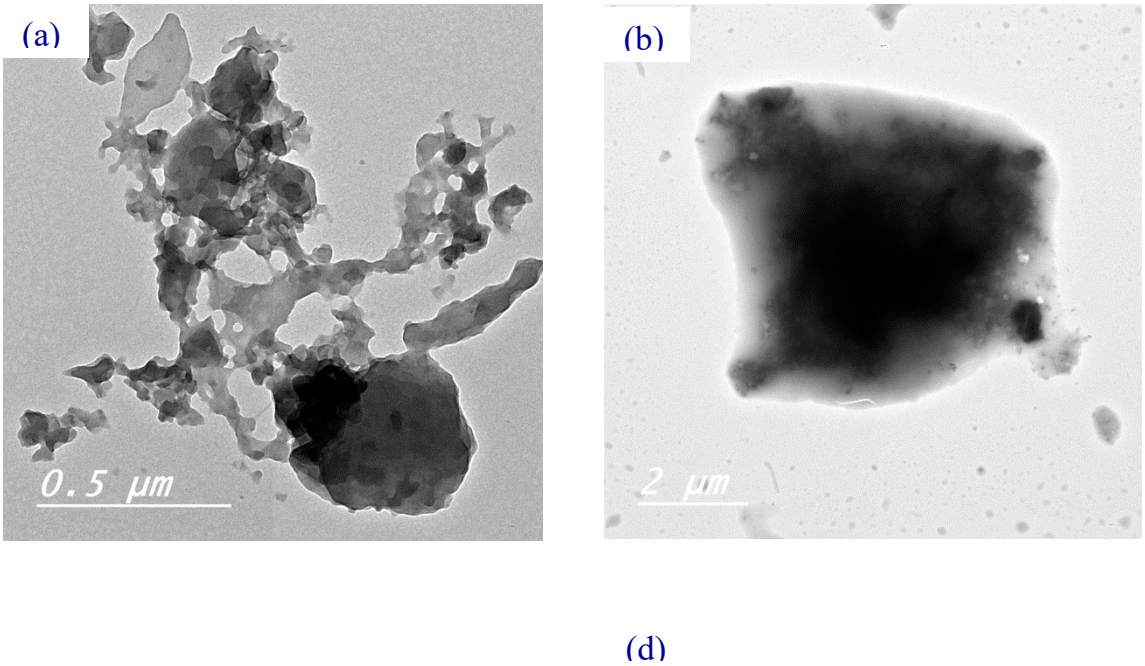


Figure 24S. SEM chromatogram of polymer-metal complexes, **PSMAP**-Mn(II) (a), **PSMAM**-Mn(II) (b), **PSMAP**-Ni(II) (c), **PSMAM**-Ni(II) (d), **PSMAP**-Co(II) (e), **PSMAM**-Co(II) (f), **PSMAP**-Cu(II) (g) and **PSMAM**-Co(II) (h).



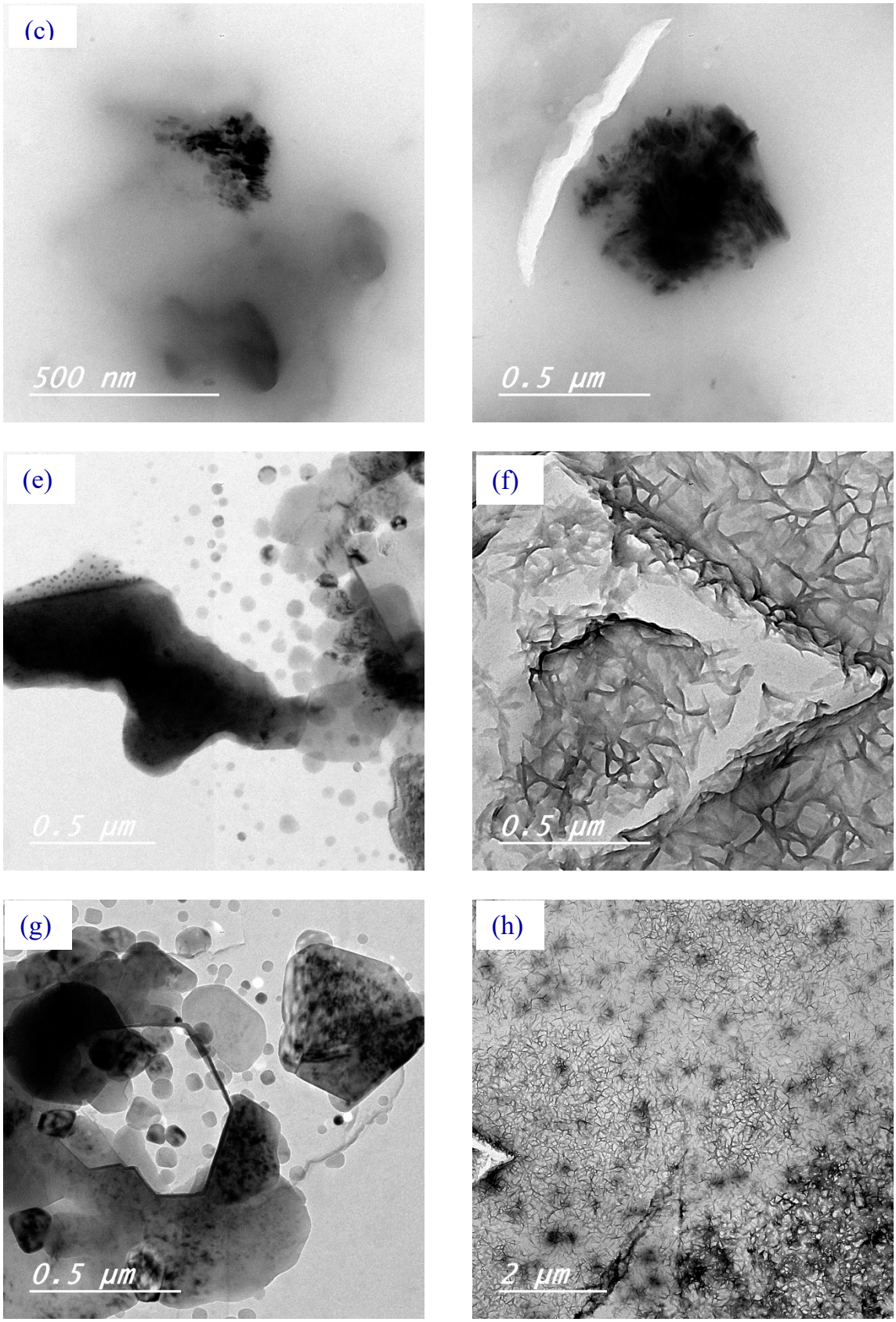


Figure 25S. TEM images of (a) **PSMAP**-Mn(II), (b) **PSMAM**-Mn(II), (c) **PSMAP**-Ni(II), (d) **PSMAM**-Ni(II), (e) **PSMAP**-Co(II), (f) **PSMAM**-Co(II), (g) **PSMAP**-Cu(II) and (h) **PSMAM**-Cu(II) complexes.