

Electronic Supplementary Information (ESI)

Spectroscopic studies of lanthanide complexes of varying nuclearity based on a compartmentalised ligand.

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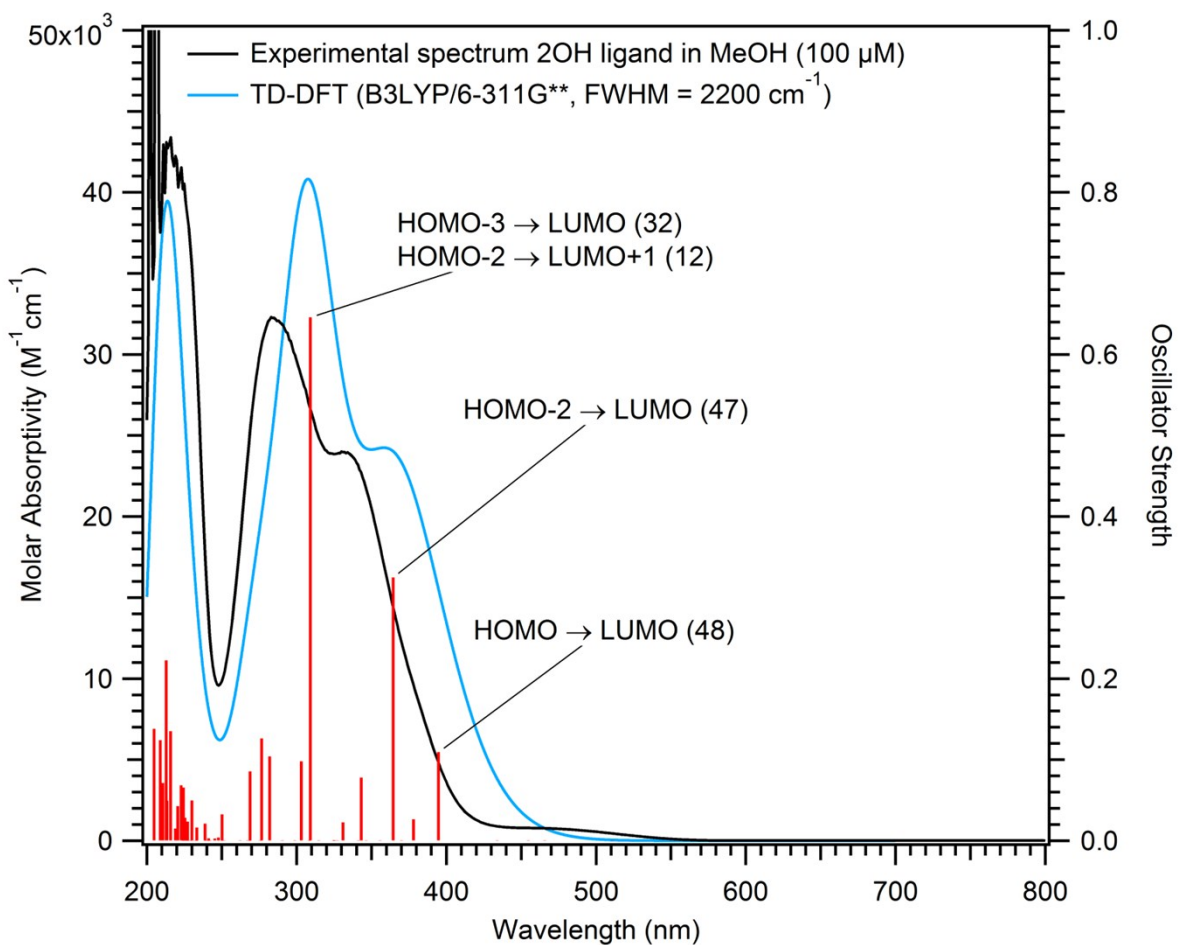


Fig. ESI1 UV-Vis absorption and calculated spectra of H_2L

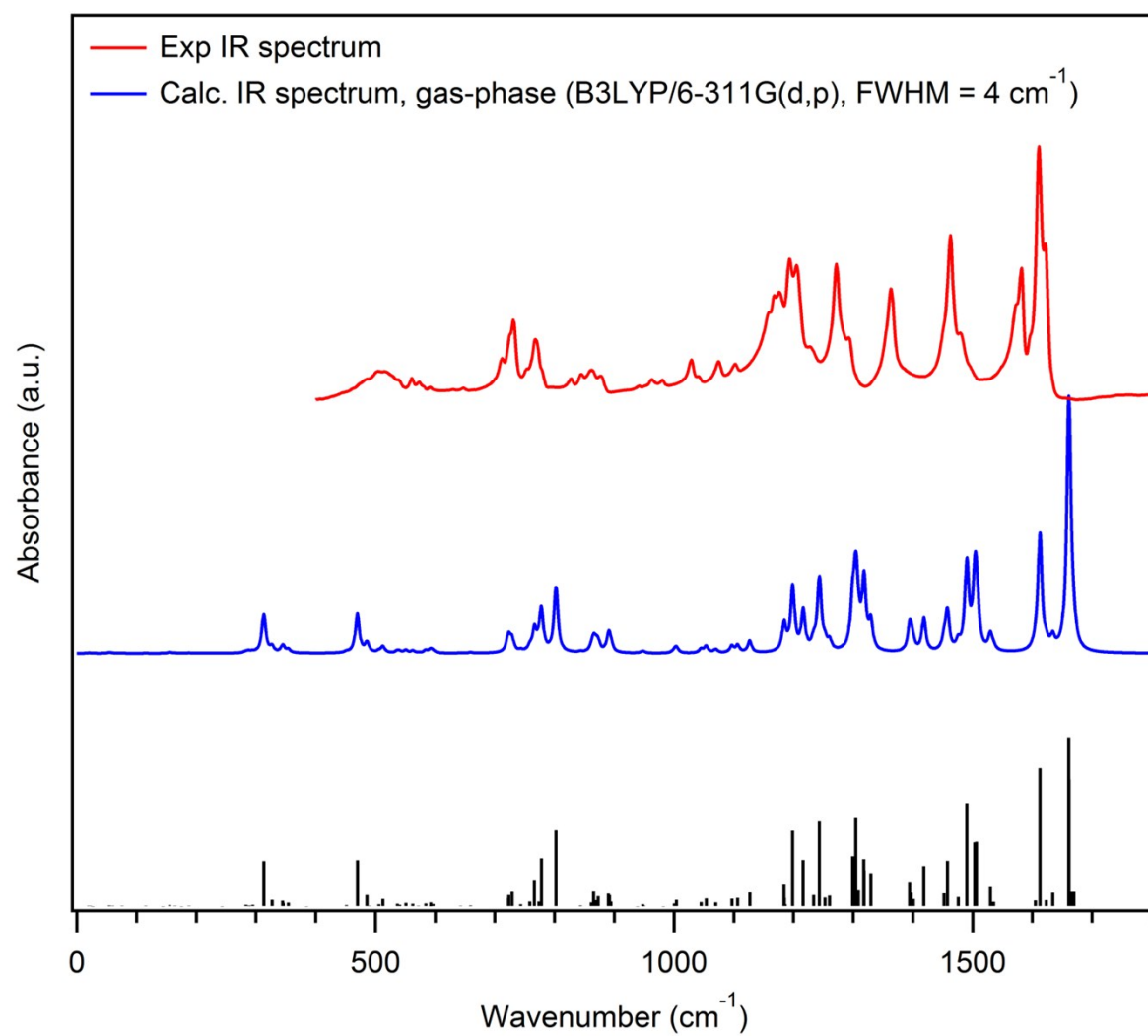


Fig. ESI2 IR spectrum of H_2L , experimental and calculated

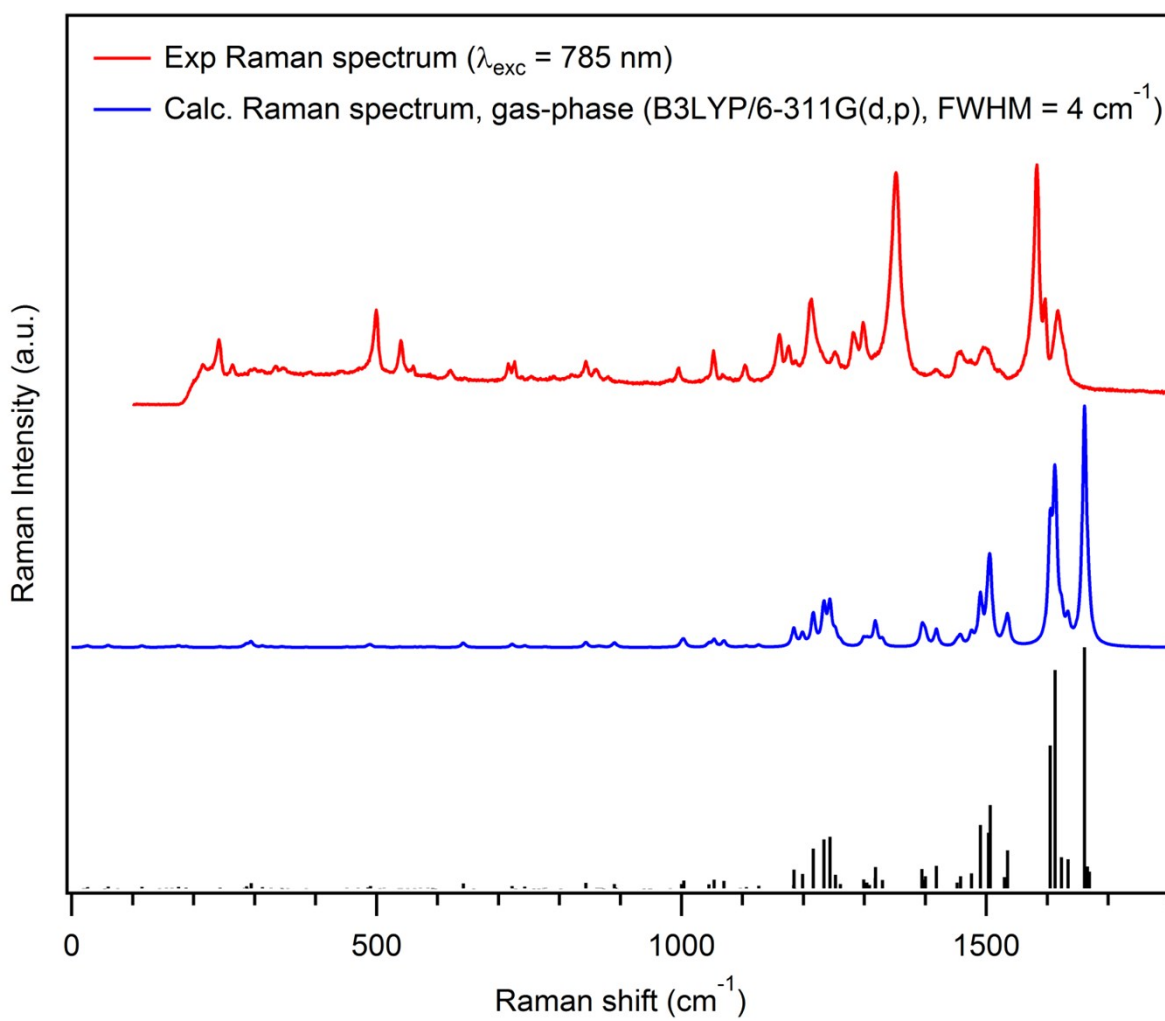
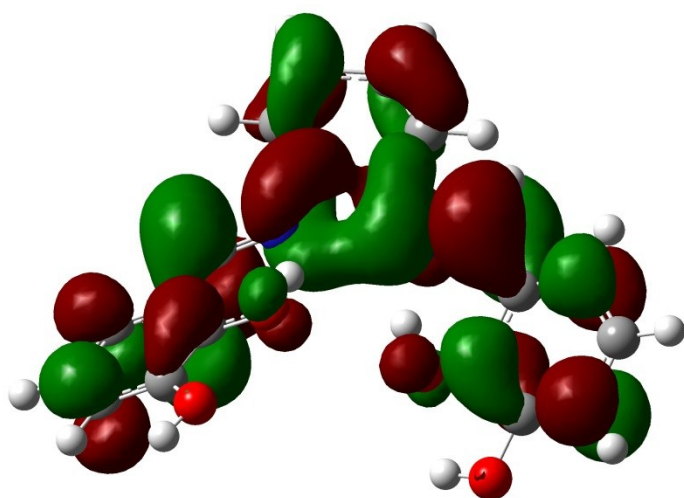


Fig. ESI3 Raman spectrum of H_2L experimental and calculated

LUMO (π^*)



HOMO (π)

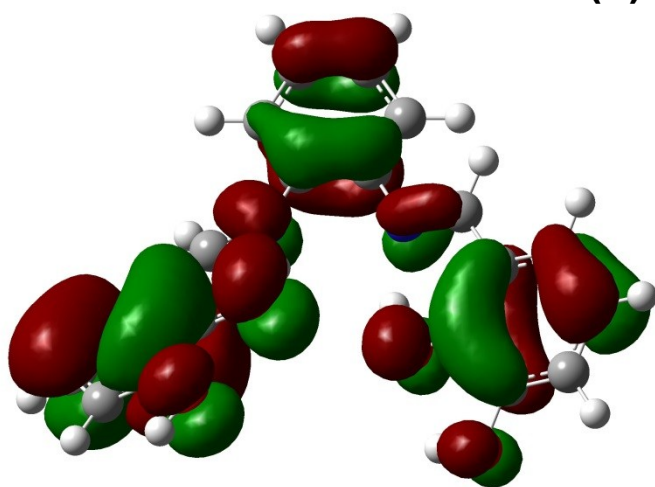


Fig. ESI4 HOMO-LUMO diagram of H_2L

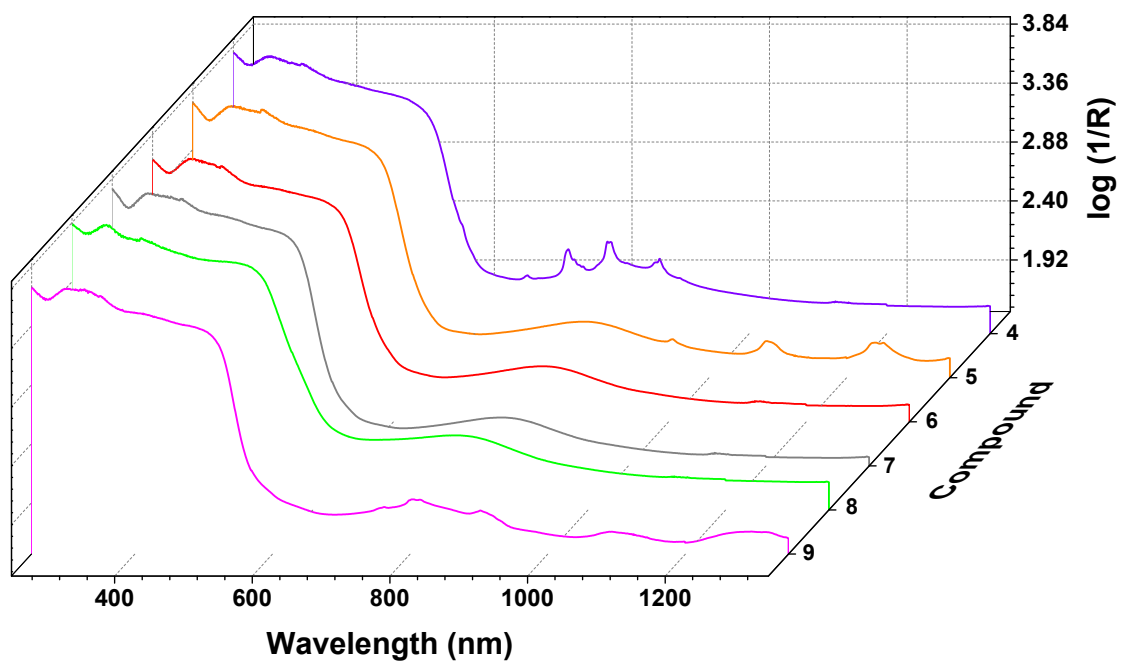


Fig. ESI5 Diffuse reflectance of mononuclear coordination compounds

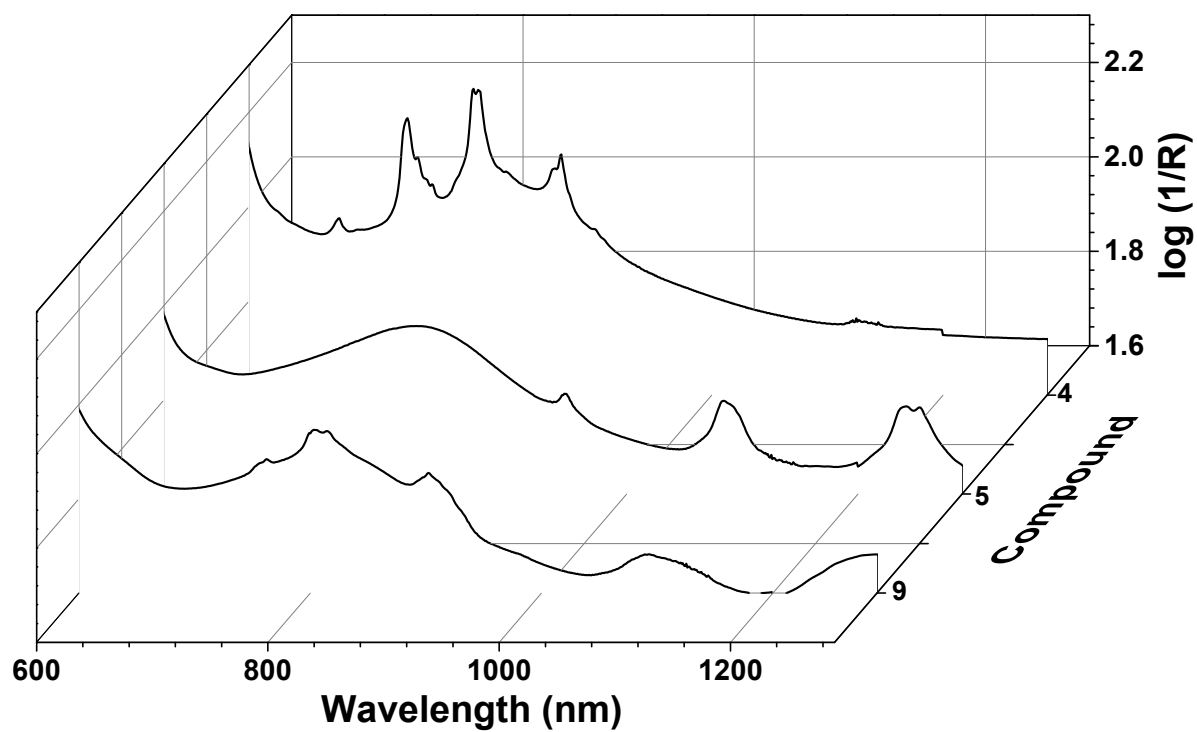


Fig. ESI6 Diffuse reflectance showing f - f transitions (zoom) of Nd^{III} , Sm^{III} and Dy^{III} mononuclear coordination compounds

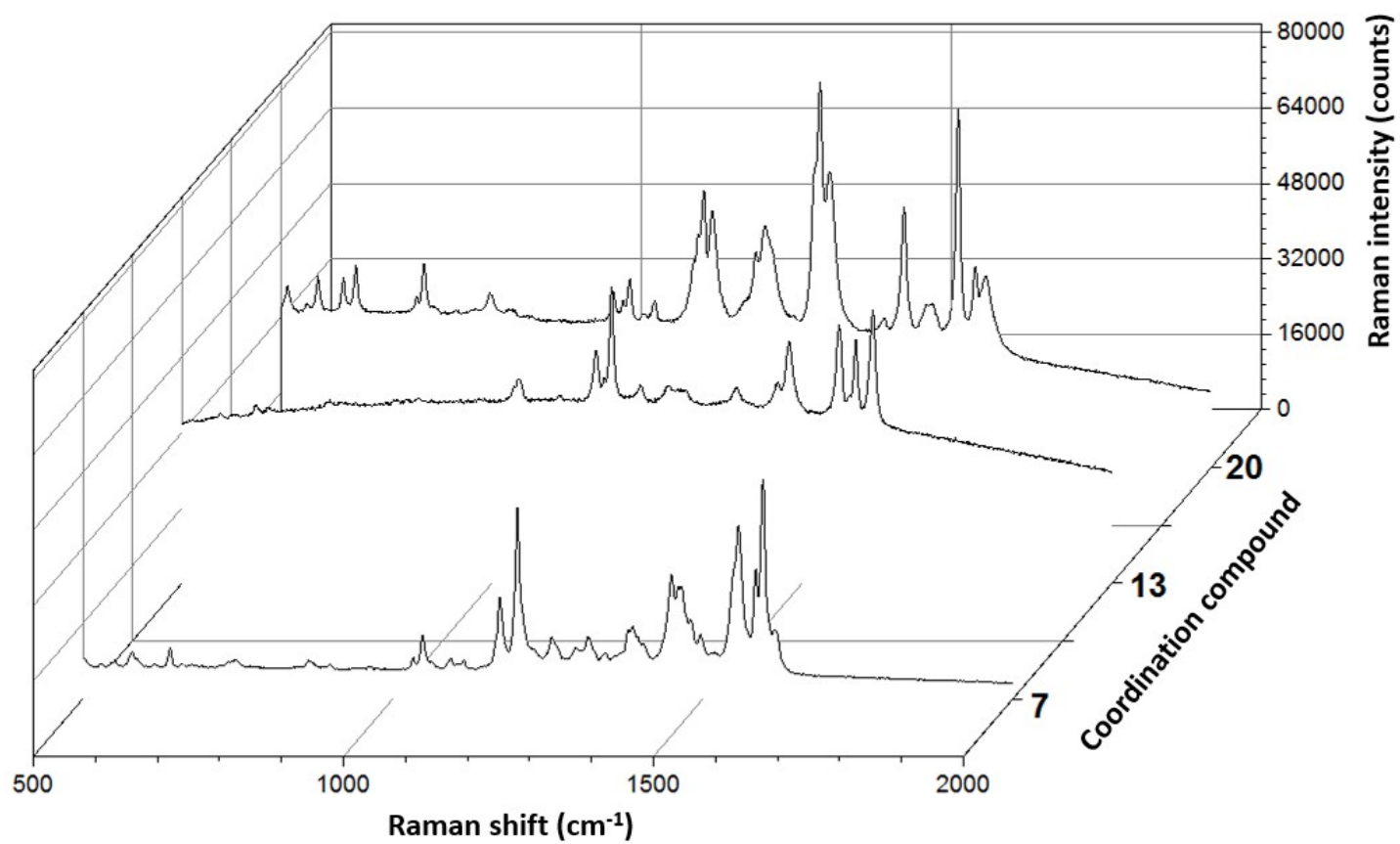


Fig. ESI7 Experimental Raman of selected compounds

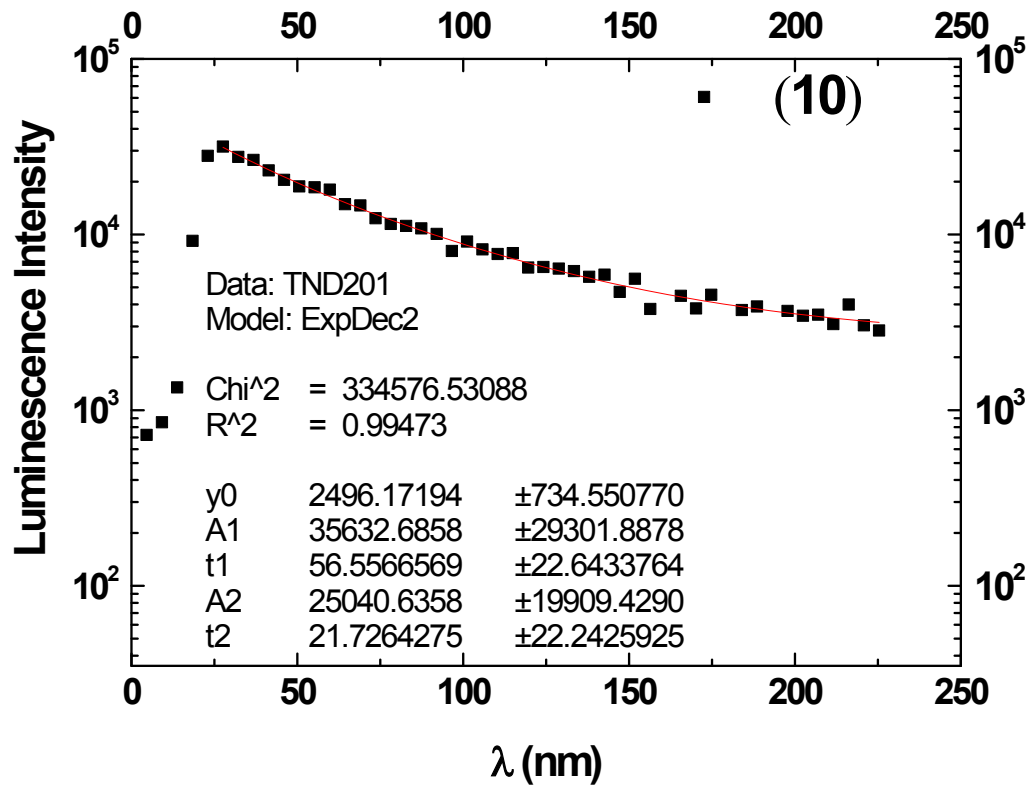


Fig. ESI8 Measurement and fit of the lifetime for $[NdZn(O_2NO)_2(Cl)(L)(OH_2)] \cdot 2H_2O$, monitoring the transition $^4F_{3/2} \rightarrow ^4I_{9/2}$

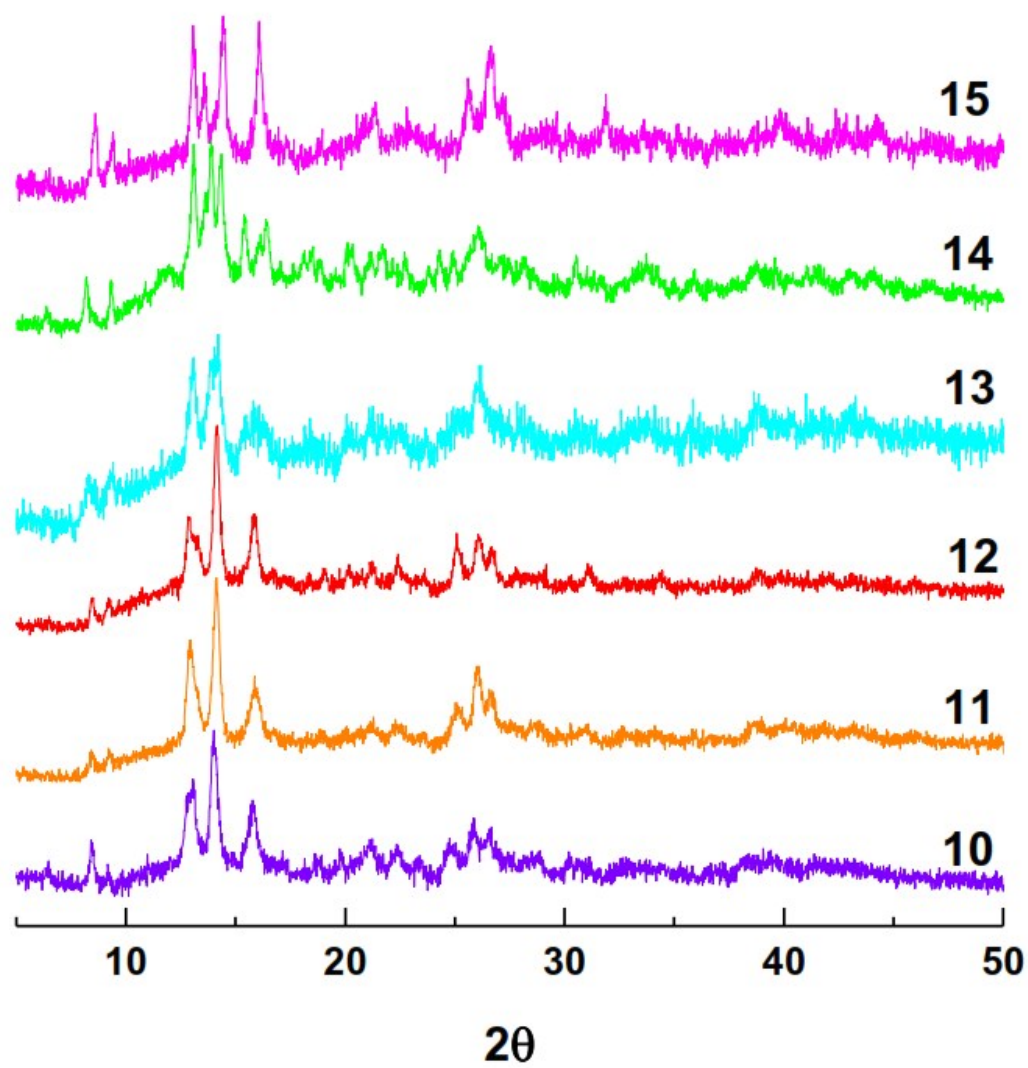


Fig. ESI9 XRPD of dinuclear compounds

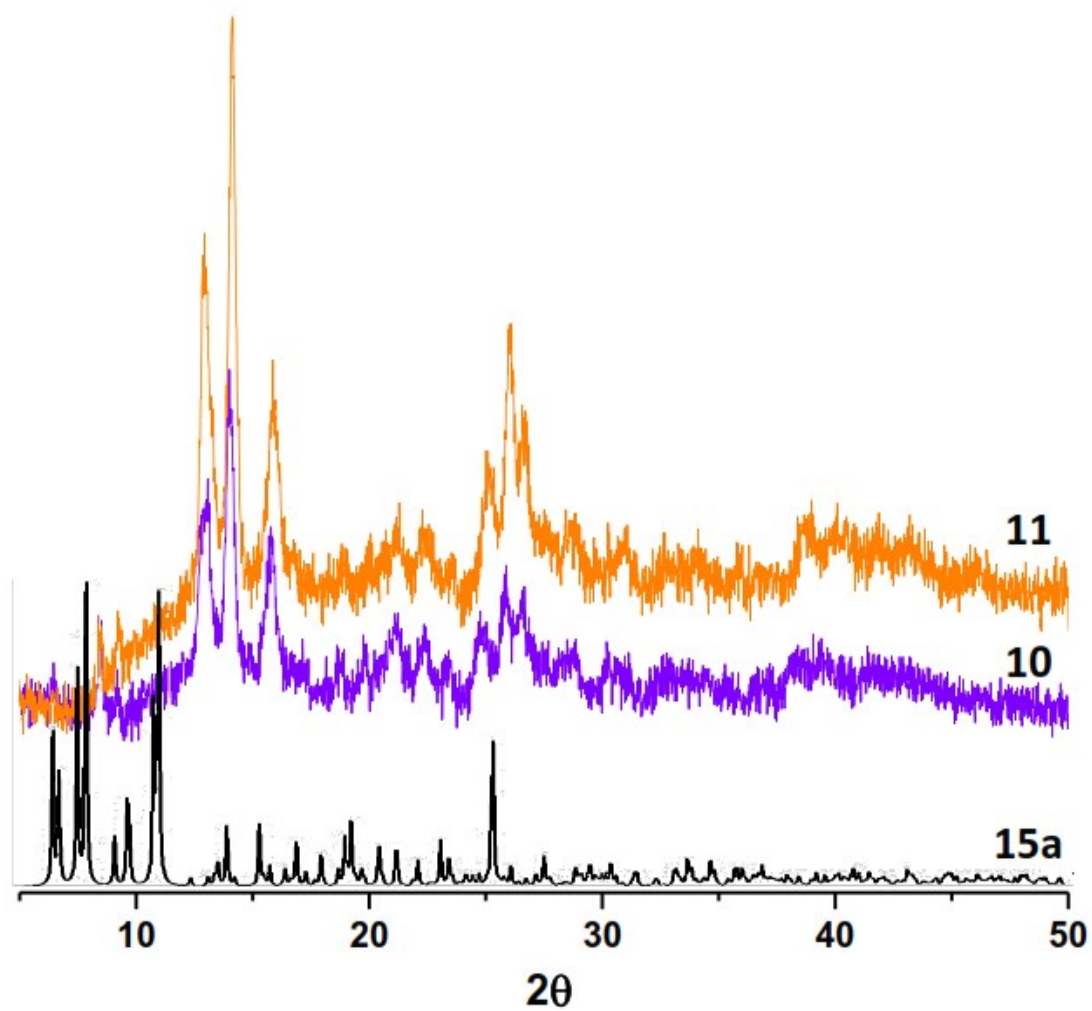


Fig. ESI10 XRPD of **10**, **11**, **15a** (crystal structure) compounds

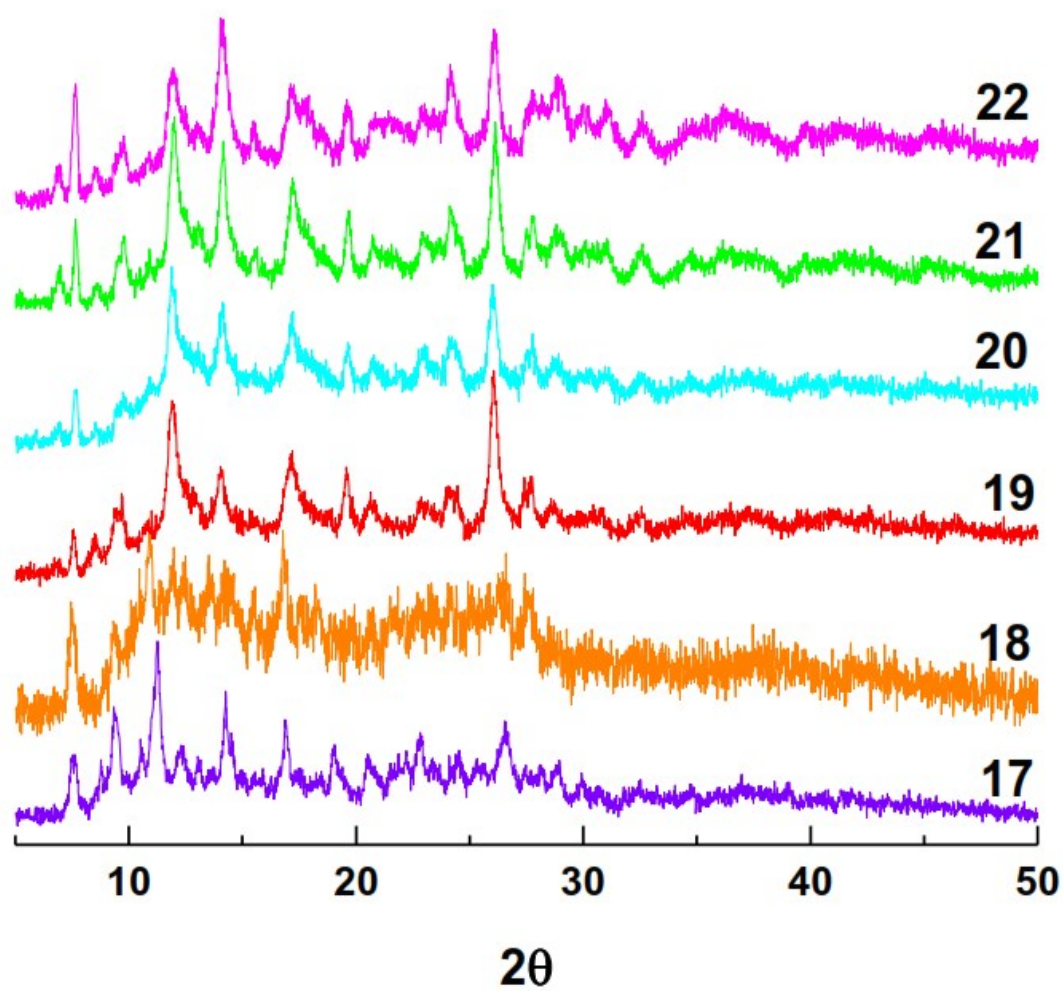


Fig. ESI11 XRPD of trinuclear compounds

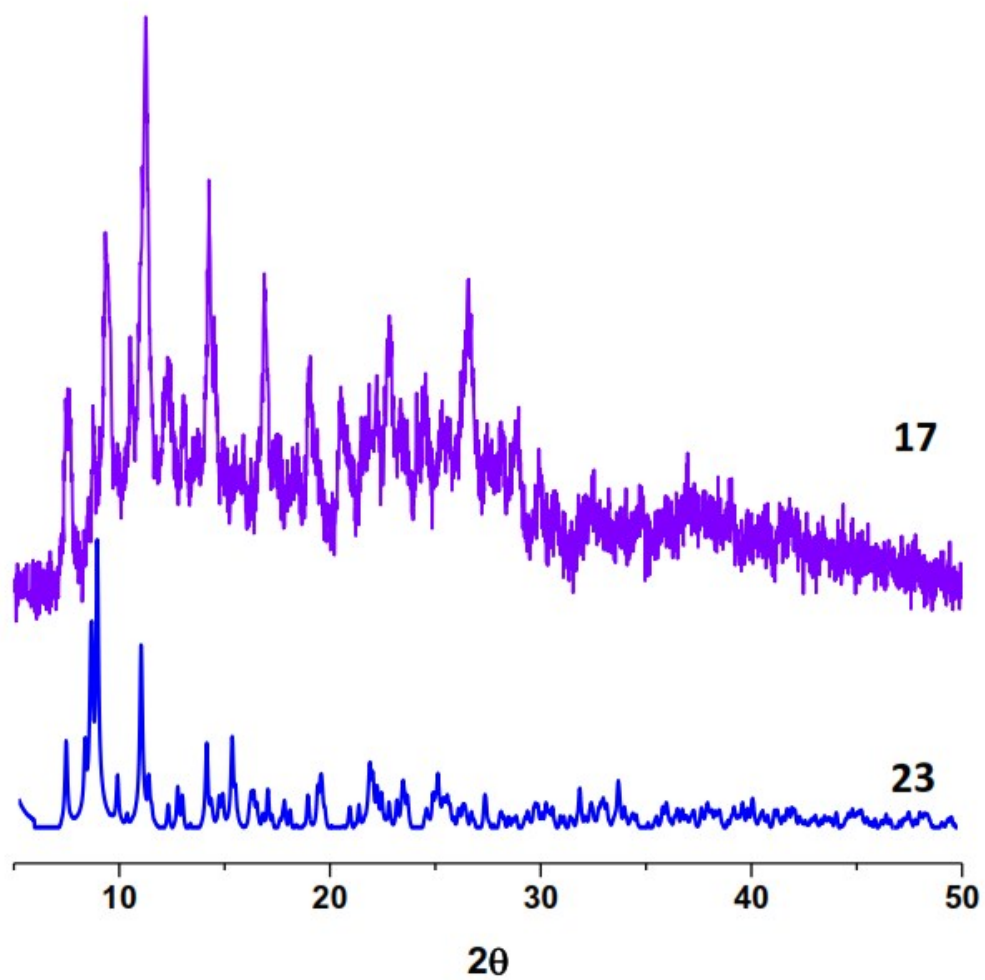


Fig. ESI12 XRPD of **17** and **23** compounds

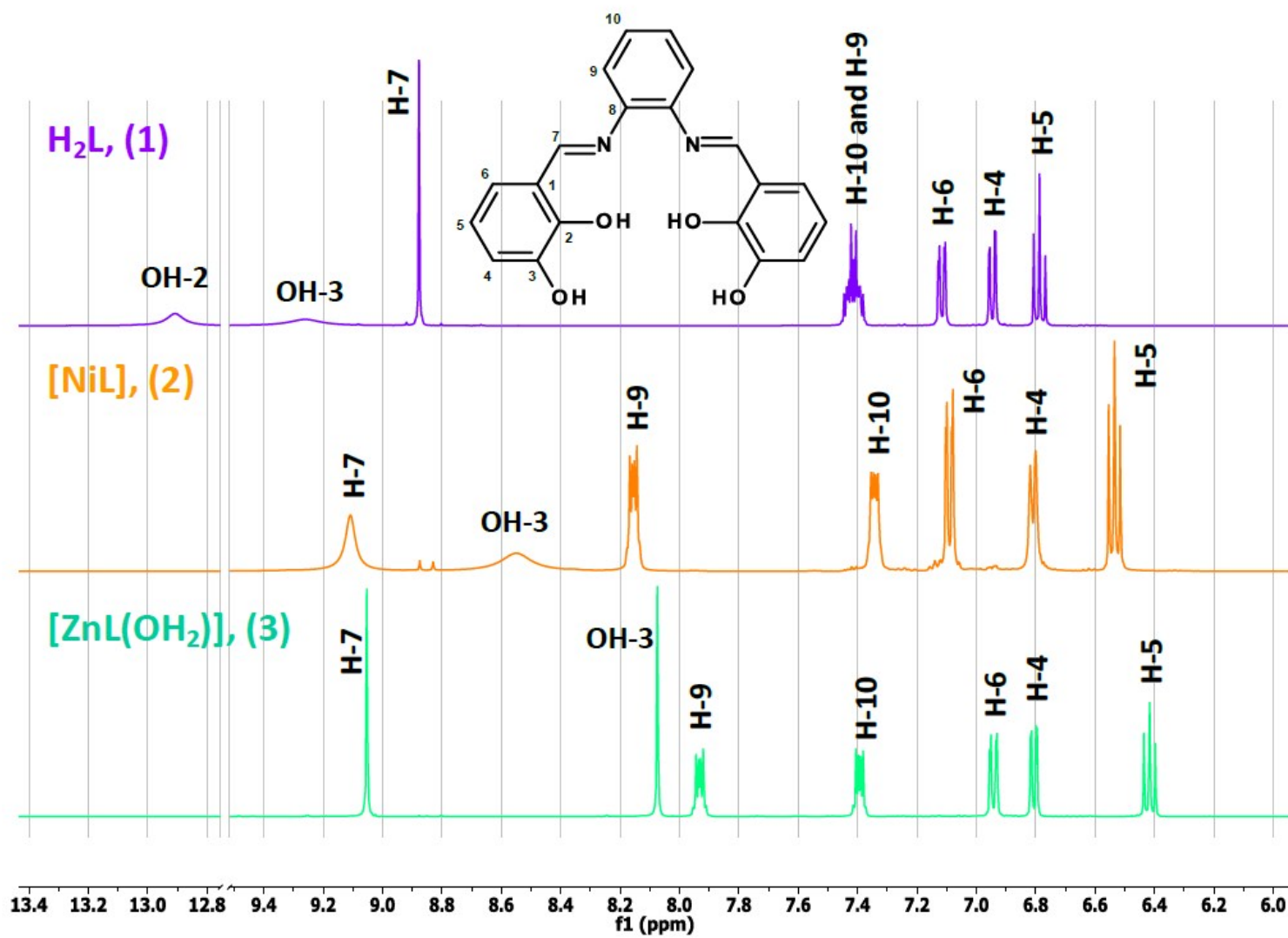


Fig. ESI13 ^1H NMR spectra of the chromophores recorded in DMSO-d_6

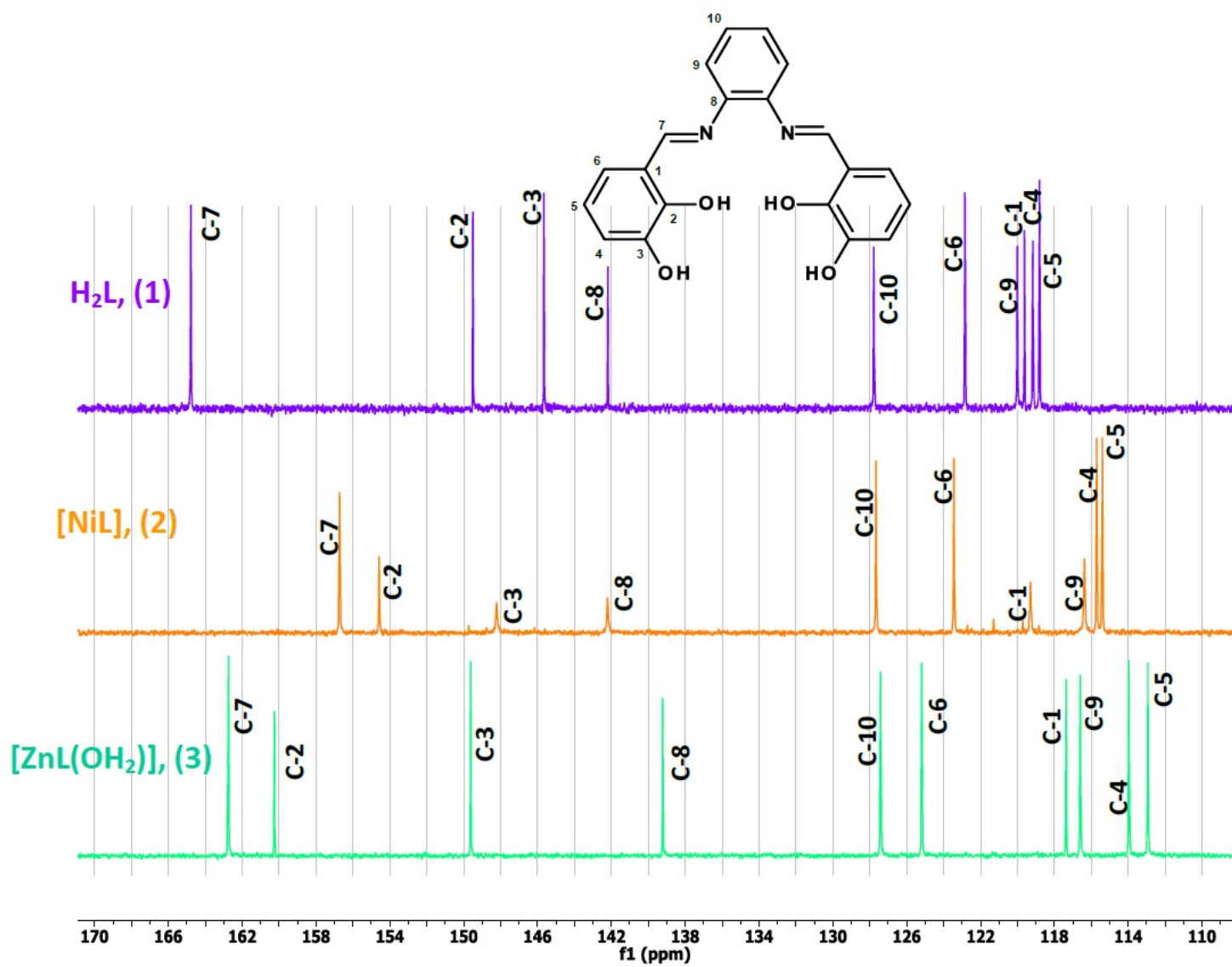


Fig. ESI14 ^{13}C NMR spectra of the chromophores recorded in DMSO-d_6

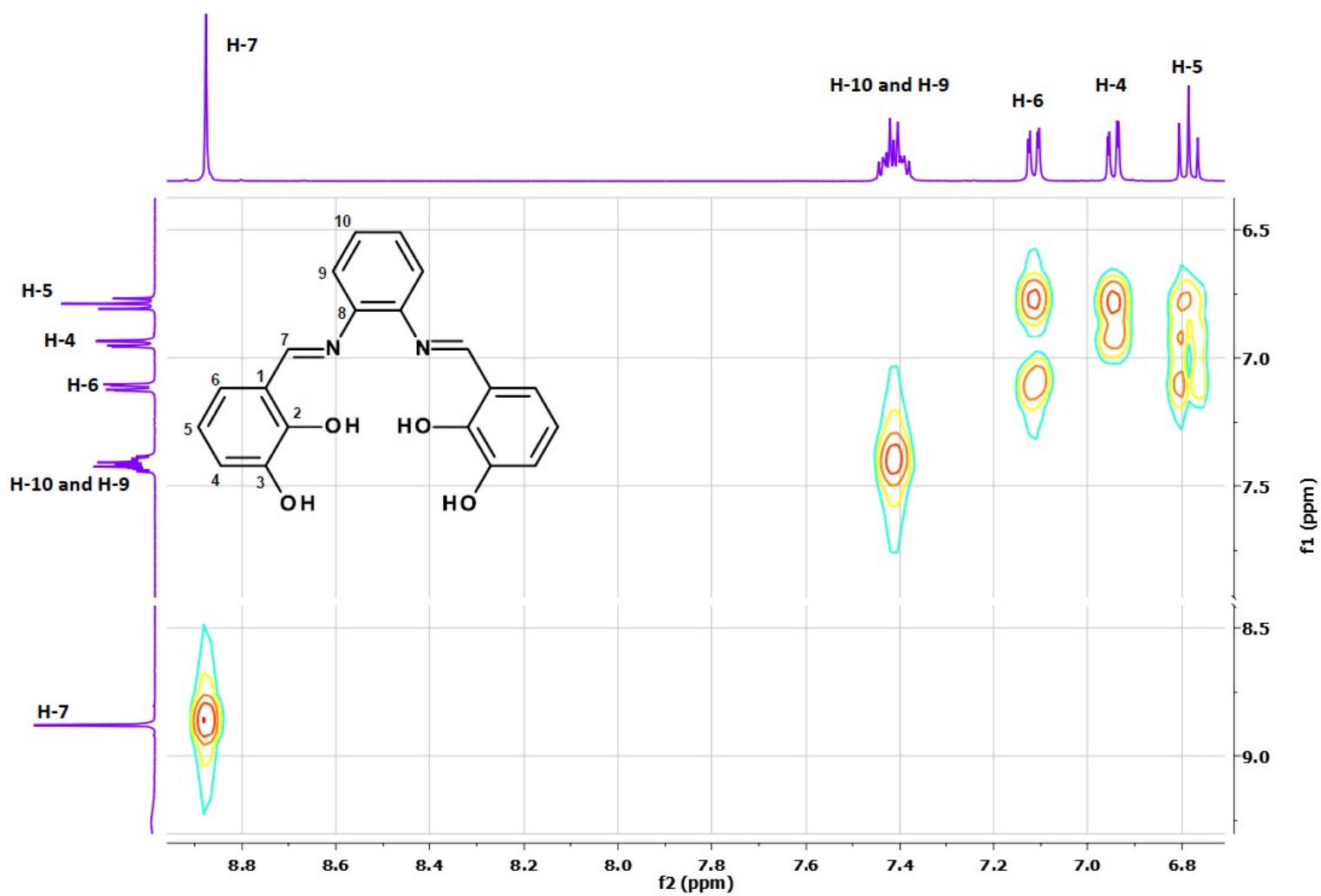


Fig. ESI15 COSY spectrum of the uncoordinated ligand H_2L 1

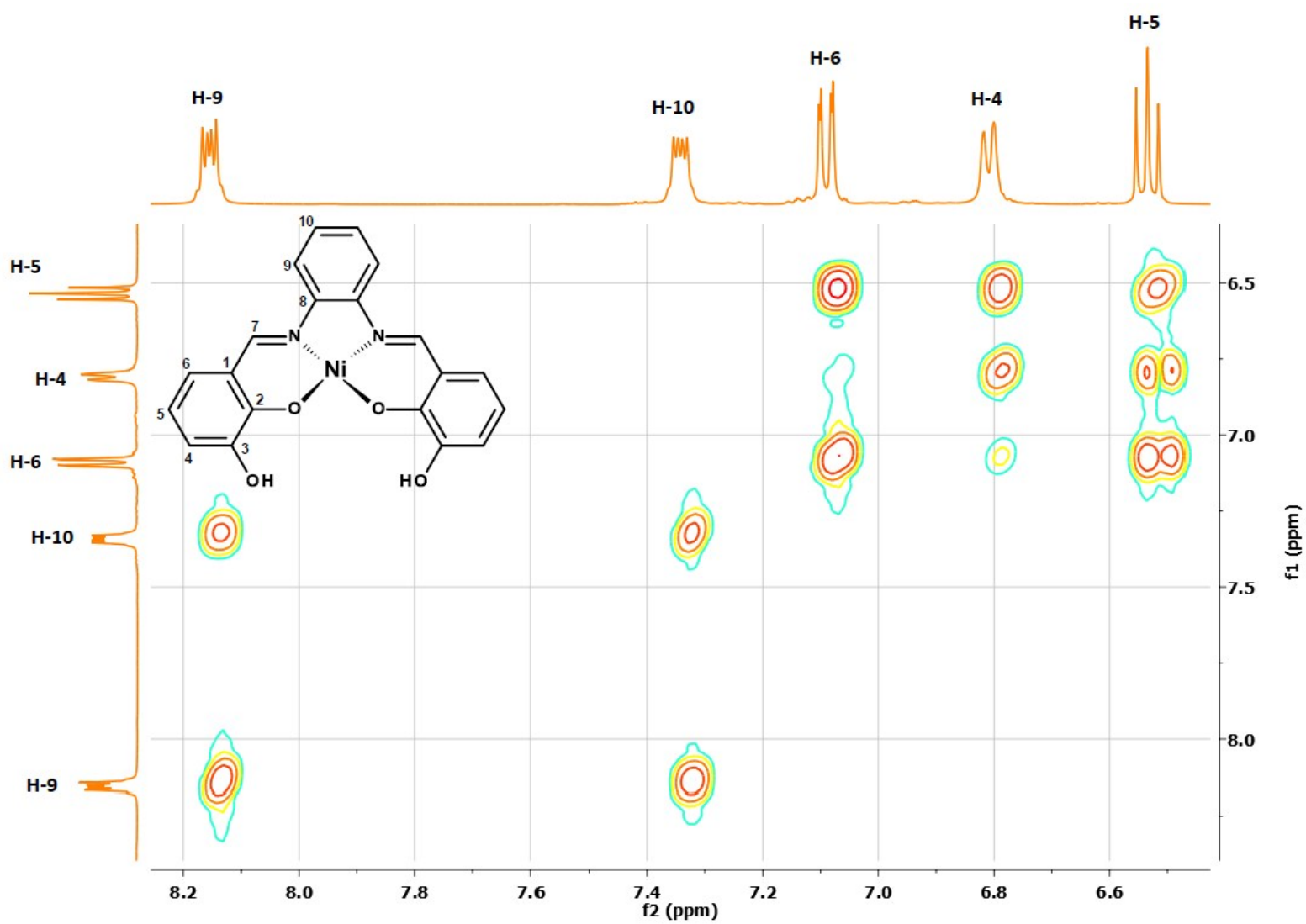


Fig. ESI16 COSY spectrum of the [NiL] complex 2

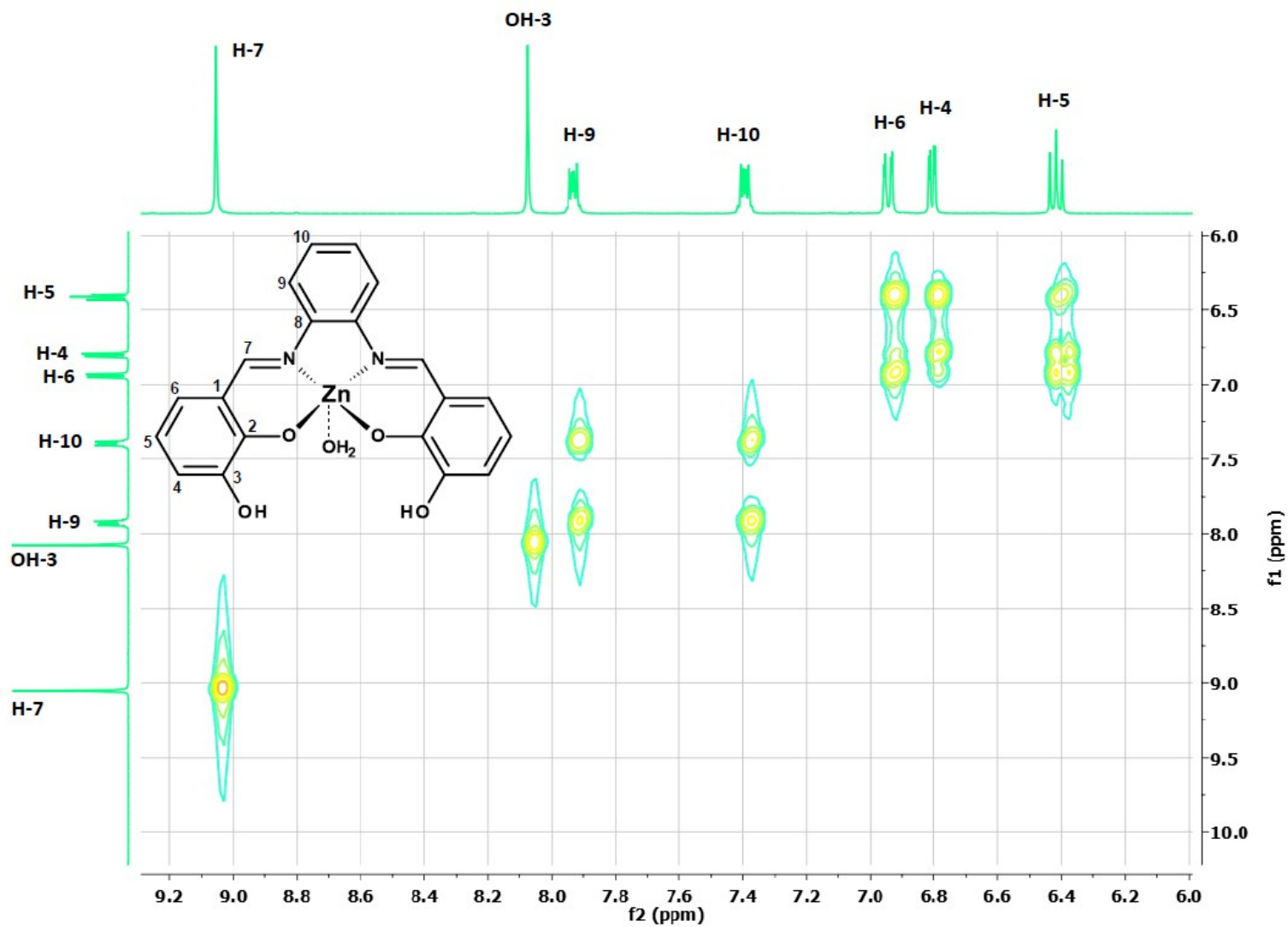


Fig. ESI17 COSY spectrum of the [ZnL(OH₂)] complex **3**

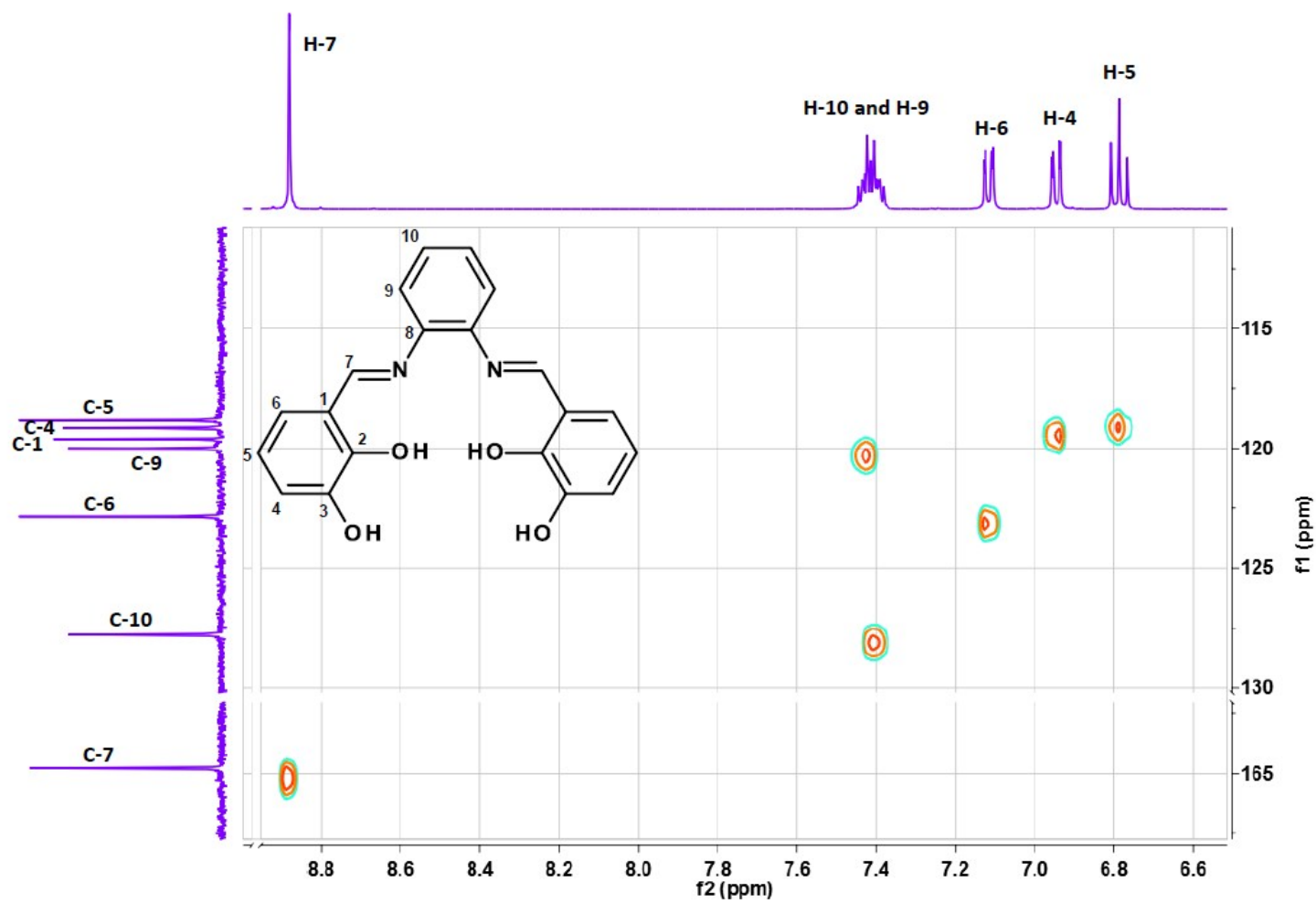


Fig. ESI18 HSQC spectrum of the uncoordinated ligand **H₂L 1**

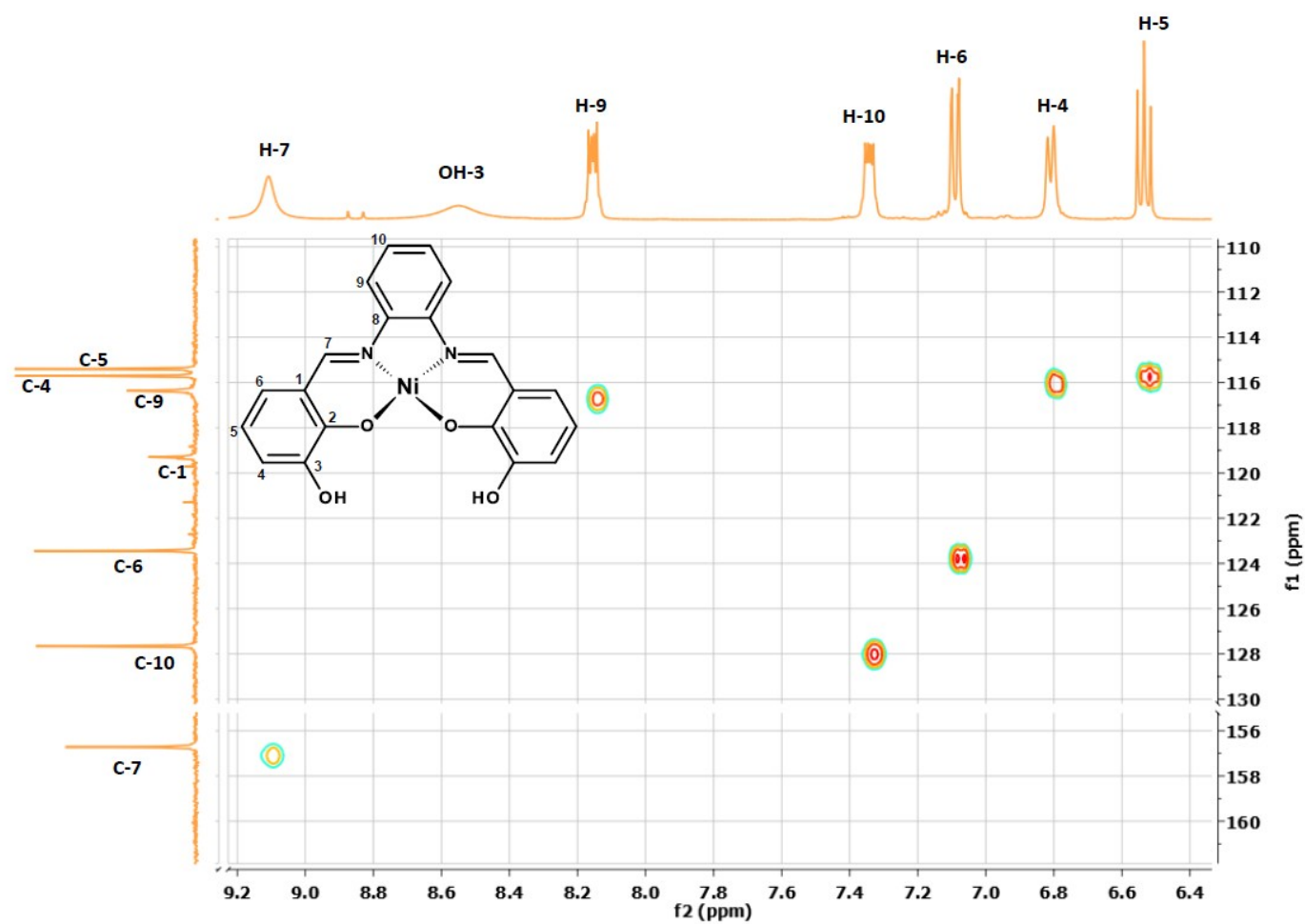


Fig. ESI19 HSQC spectrum of the [NiL] complex 2

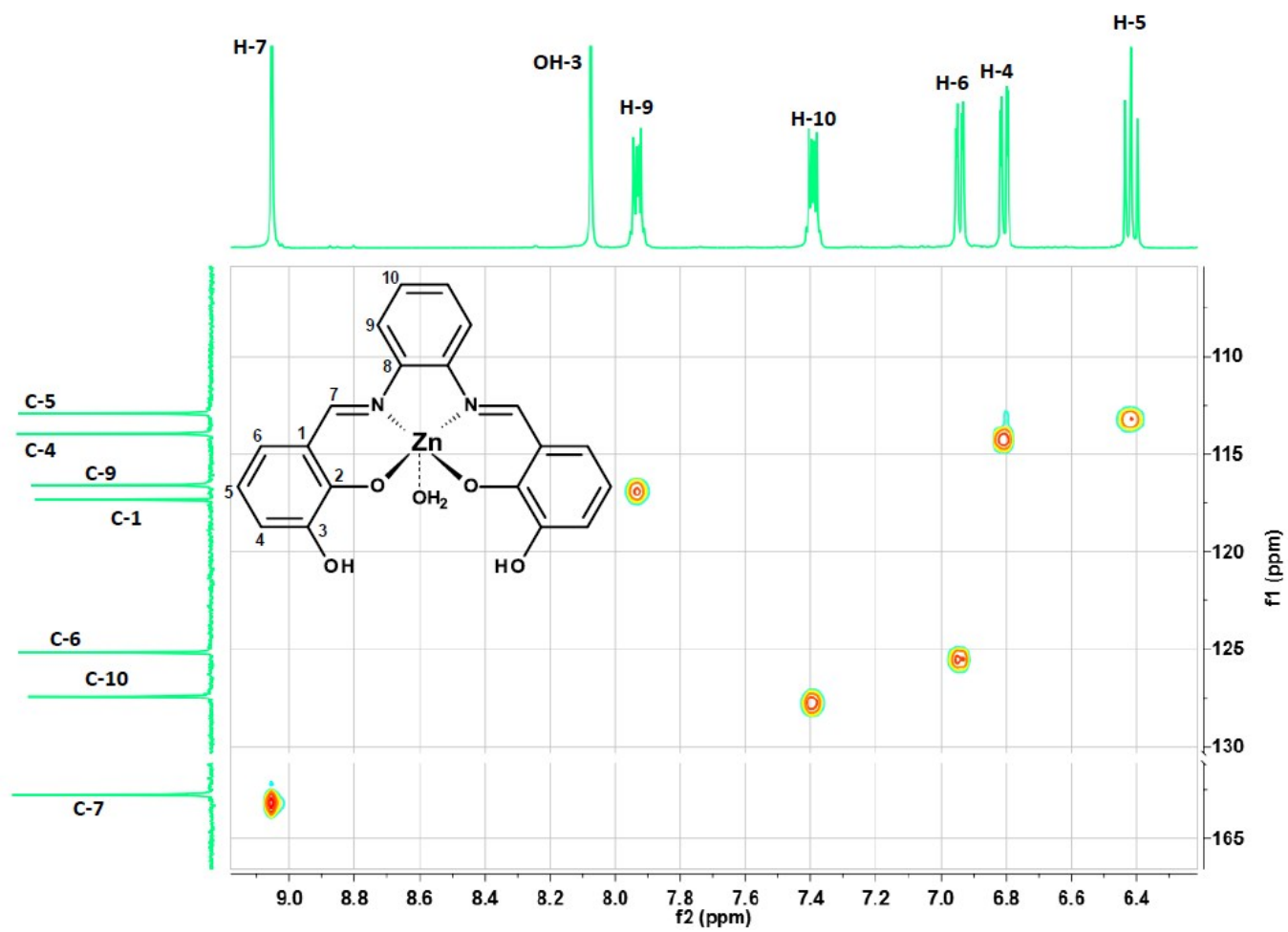


Fig. ESI20 HSQC spectrum of the $[\text{ZnL}(\text{OH}_2)]$ complex **3**