Supplementary Materials to the paper entitled:

Zinc coordination compounds on acylhydrazones of 2-tosylaminobenzaldehyde basis as promising luminescent agents

Table S1. Crystal data and structure refinements for **1** and **2**

Parameters	**1**	**2**
Chemical formula	$C_{42}H_{36}N_6O_6S_2Zn$	$C_{44}H_{42}N_6O_6S_2Zn$
M_r	850.26	880.32
Crystal system, space group	Triclinic, $P\bar{1}$	Tetragonal, $P4_2/n$
Diffractometer, radiation wavelength	Bruker D8 Venture, micro-focus MoKα radiation source, λ = 0.71073 Å	
Temperature (K)	100	100
a (Å) *b* (Å) *c* (Å)	7.7566 (9), 10.7650 (14), 11.7669 (13)	22.859 (5) 22.859 (5) 7.7729 (17)
α(°) β(°) γ(°)	82.387 (5), 76.938 (6), 79.434 (4)	90 90 90
V (Å^3)	936.6 (2)	4061.5 (19)
Z	1	4
m (mm^{-1})	0.83	0.77
T_{min}/T_{max}	0.6788/0.7465	0.6099/0.7465
d_{calc}, g/cm^3	1.507	1.440
Crystal size (mm)	0.18 × 0.06 × 0.05	0.18 × 0.08 × 0.07
No. of measured, independent and observed [$I > 2\sigma(I)$] reflections	11354, 6232, 4308	9113, 3232, 1625
R_{int}	0.034	0.132
$R[F^2 > 2\sigma(F^2)]$, $wR(F^2)$, S	0.054, 0.143, 1.08	0.138, 0.392, 1.16
No. of parameters	264	270
$\Delta\rho_{min}/\Delta\rho_{max}$, e/Å^3	-1.27/0.64	-0.84/3.22

Table S2. D-H···A interactions in crystals of **1**

Interaction	**D–H, Å**	**H···A, Å**	**D···A, Å**	**D–H–A, deg.**
N3-H3...N1	0.83(3)	2.00(3)	2.722(3)	145(3)
N3-H3...N2	0.83(3)	2.62(3)	3.176(3)	125(3)
C3-H3A...O1	0.95	2.44	2.764(3)	100
C20-H20...O2	0.95	2.52	2.897(3)	104
C5-H5...O2 (1-x, 2-y, 1-z)	0.95	2.59	3.510(3)	162
C16-H16...O3 (1-x, 1-y, 1-z)	0.95	2.46	3.238(3)	139

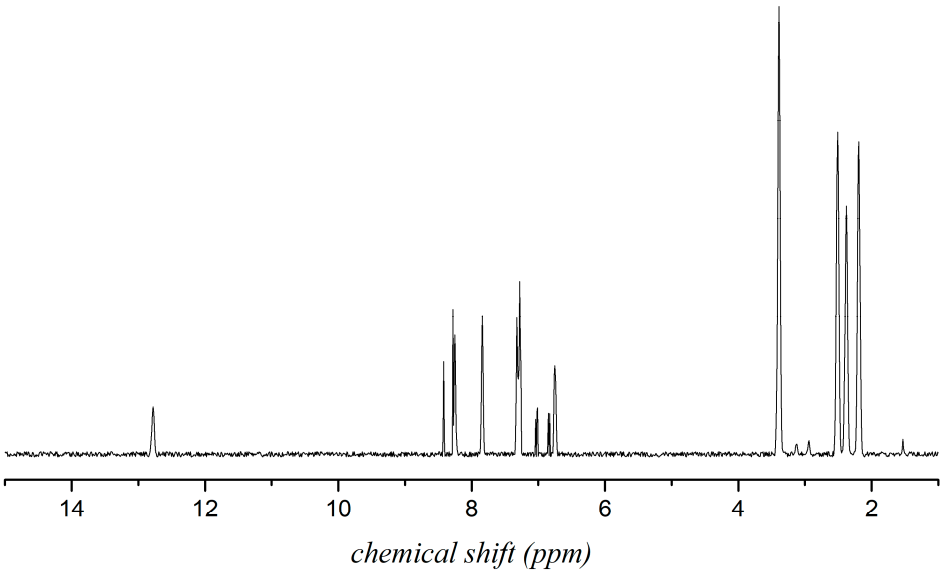


Figure S1. ^{1}H-NMR spectra of **2**.

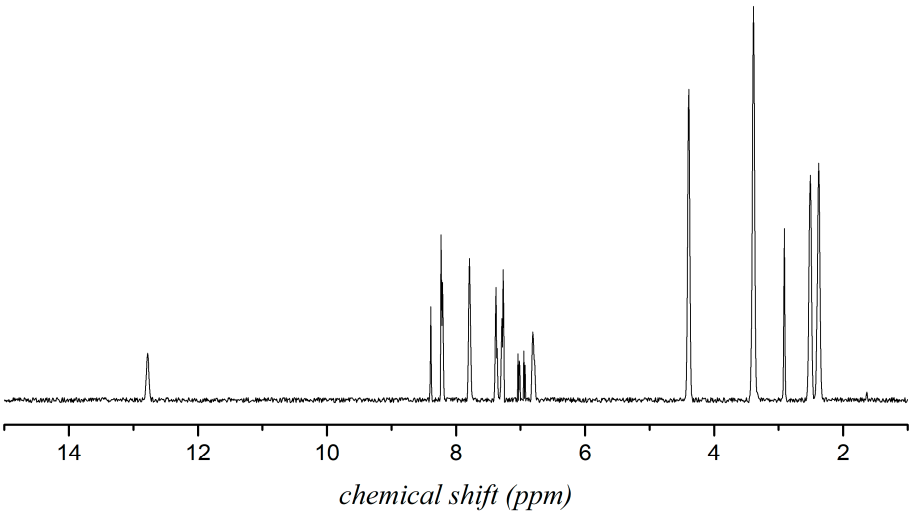


Figure S2. ^{1}H-NMR spectra of **3**.

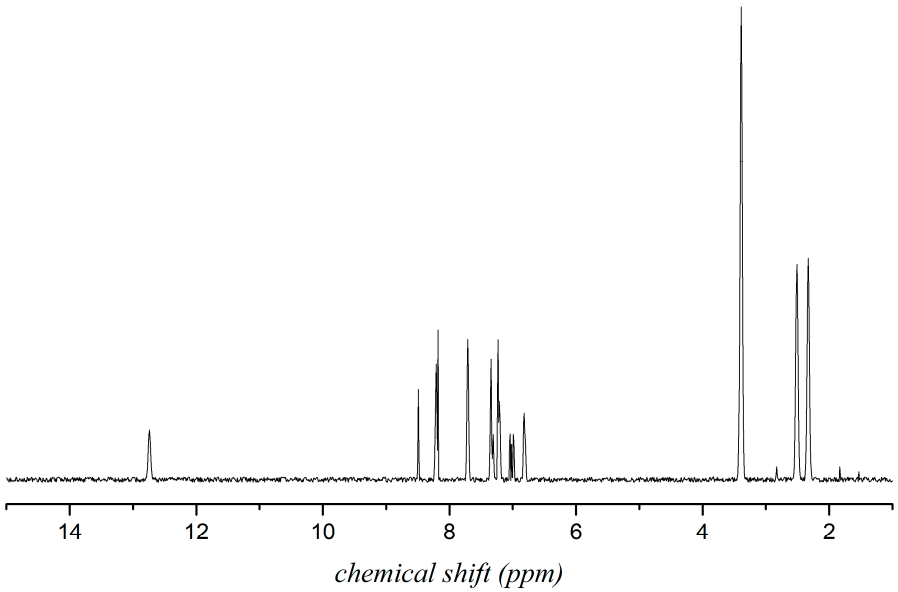


Figure S3. ^{1}H-NMR spectra of **4**.

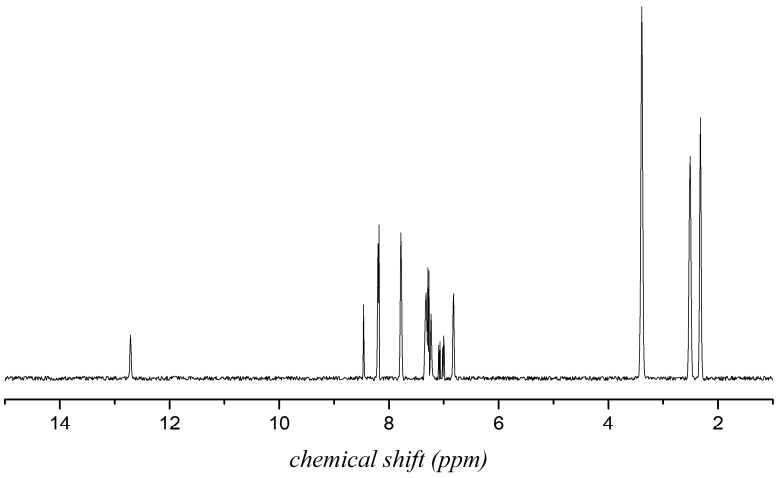


Figure S4. ^{1}H-NMR spectra of **5**.

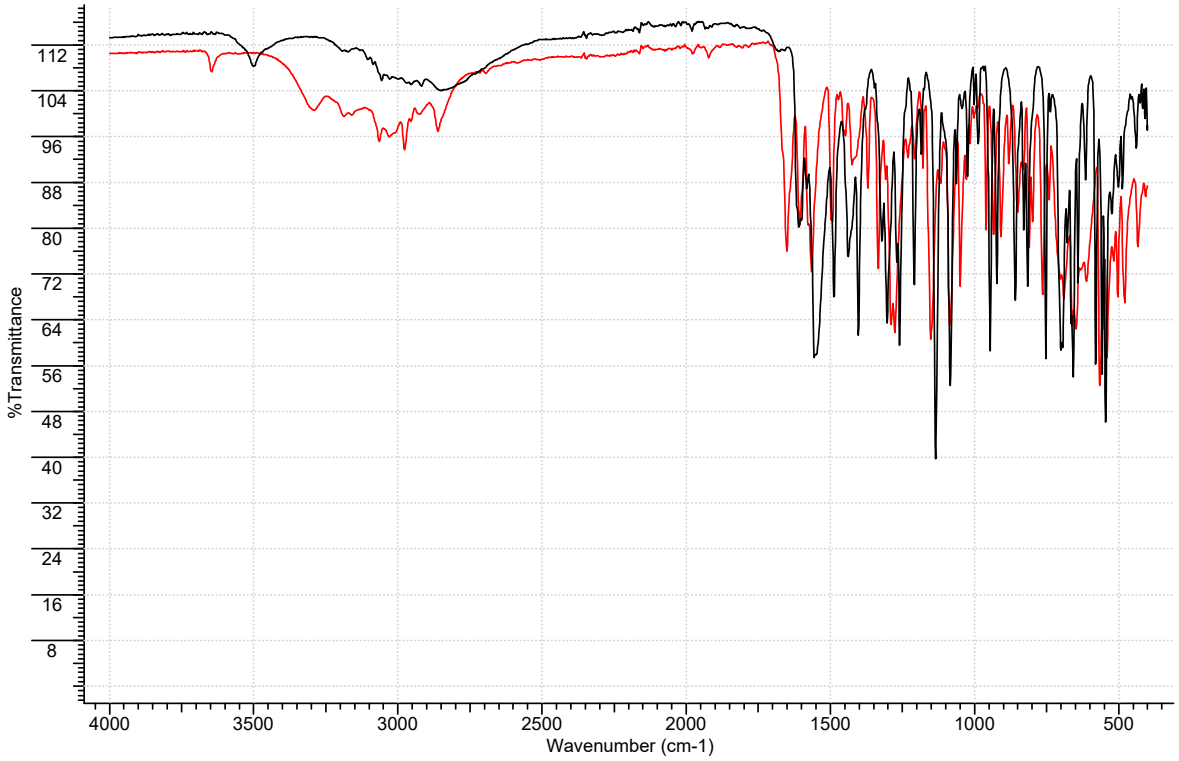


Figure S5. IR spectra of HL^1 (red line) and **1** (black line).

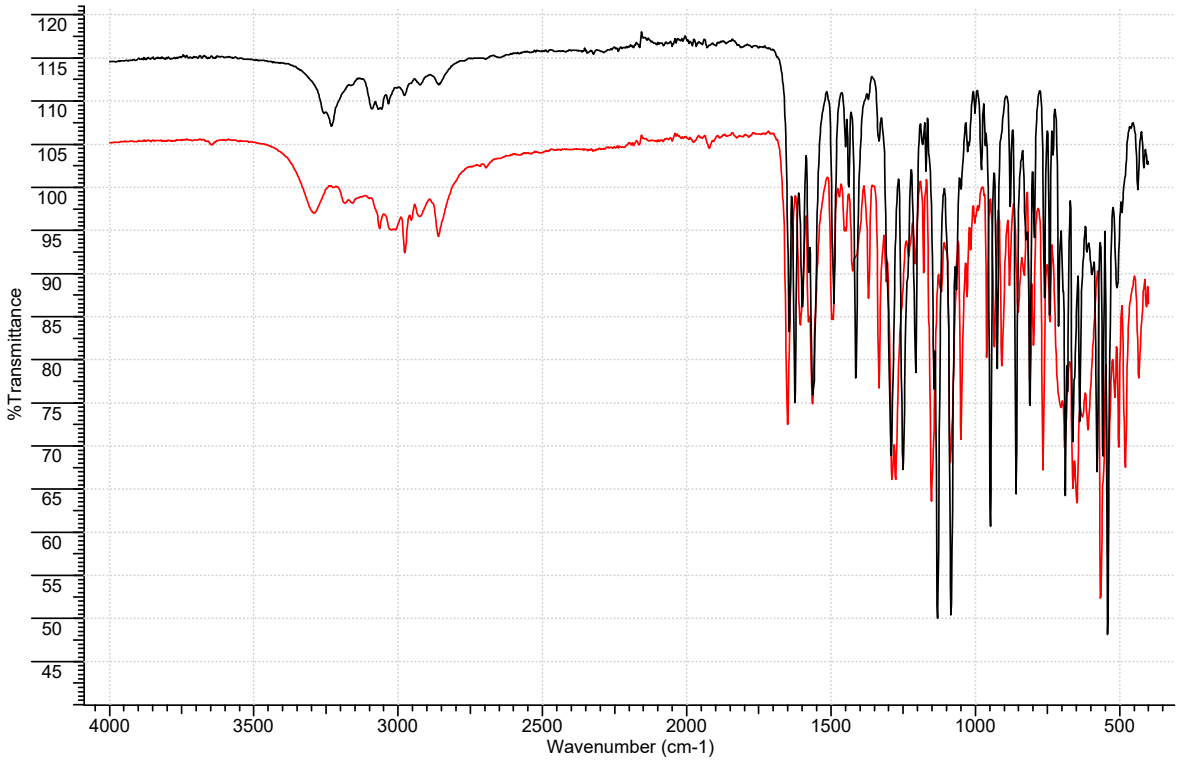


Figure S6. IR spectra of HL^2 (red line) and **2** (black line).

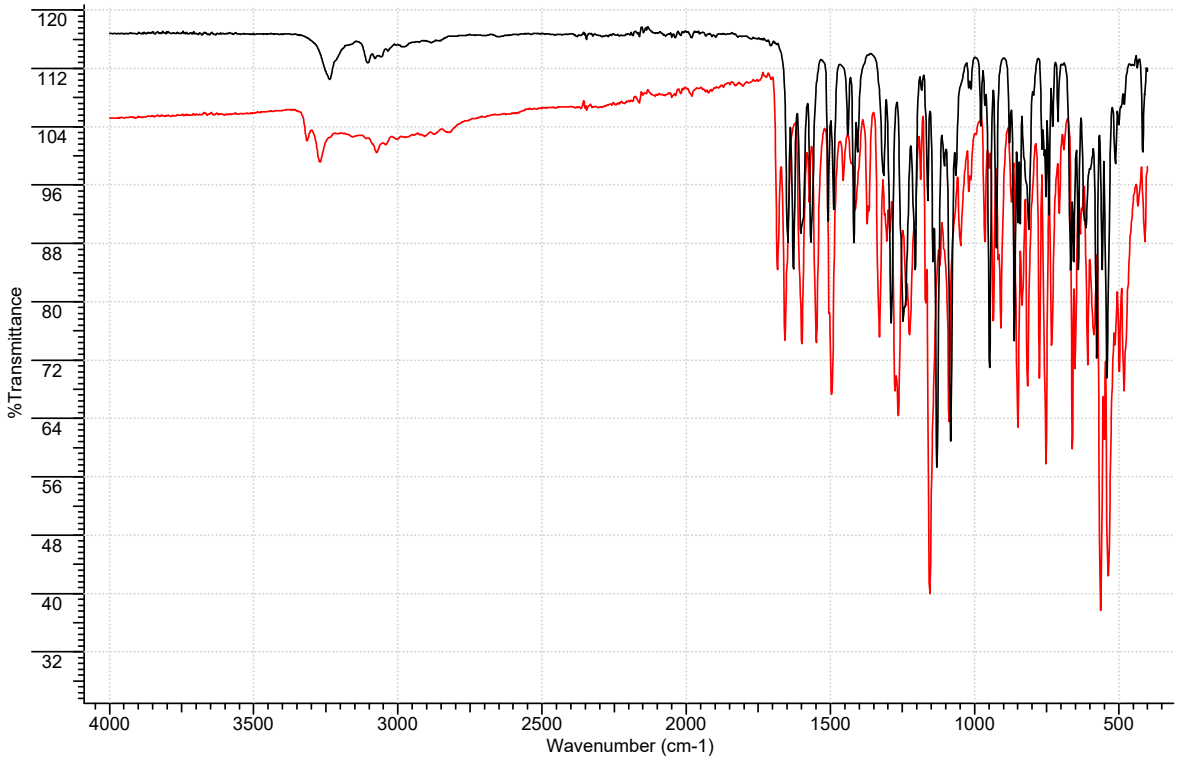


Figure S7. IR spectra of HL^3 (red line) and **3** (black line).

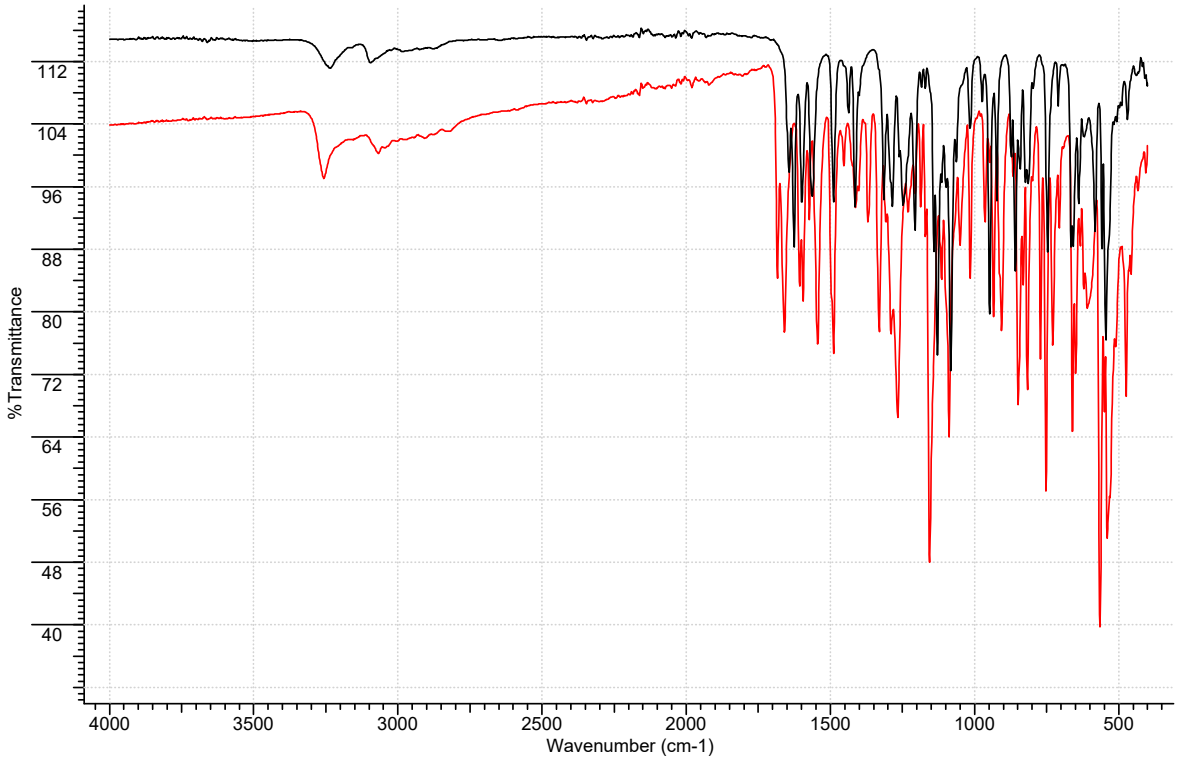


Figure S8. IR spectra of HL^4 (red line) and **4** (black line).

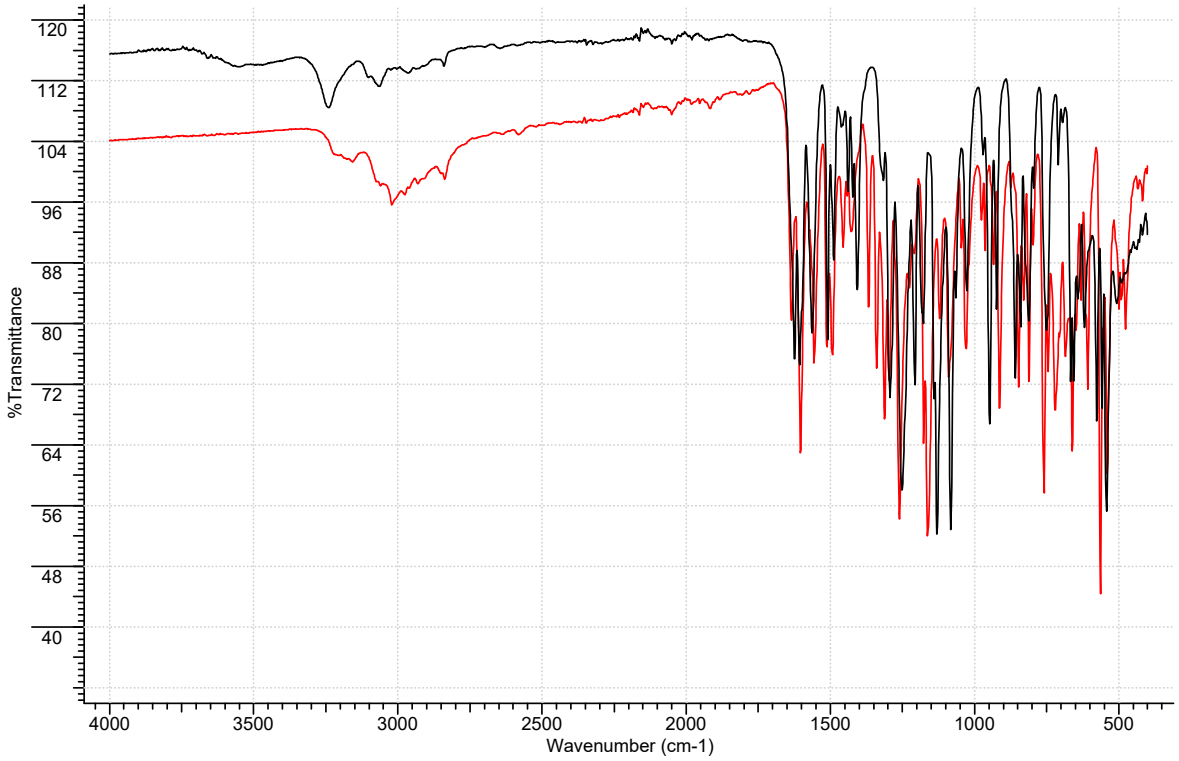


Figure S9. IR spectra of HL^5 (red line) and **5** (black line).

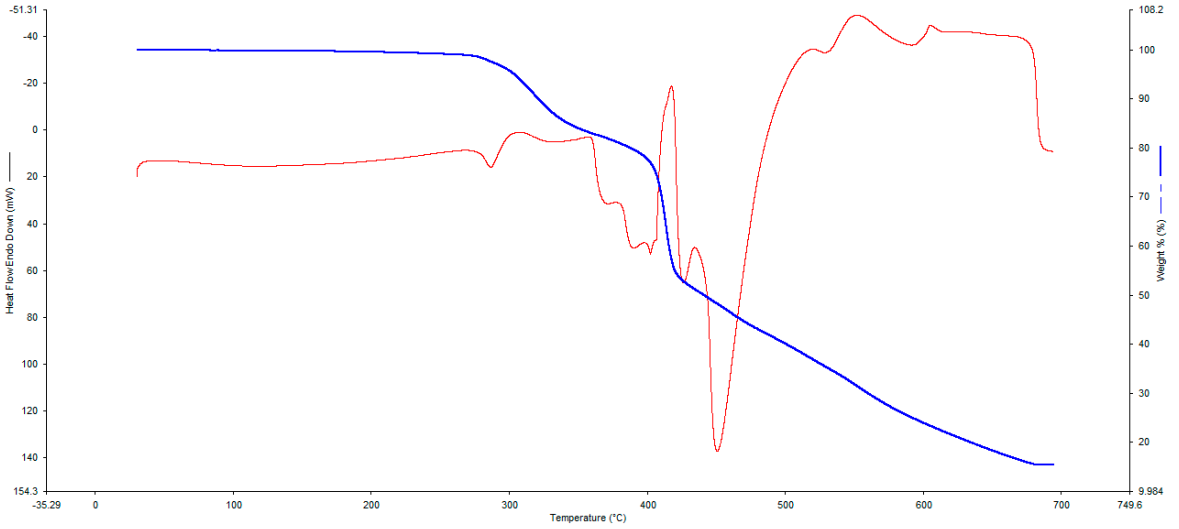


Figure S10. TGA and DSC curves of **1**

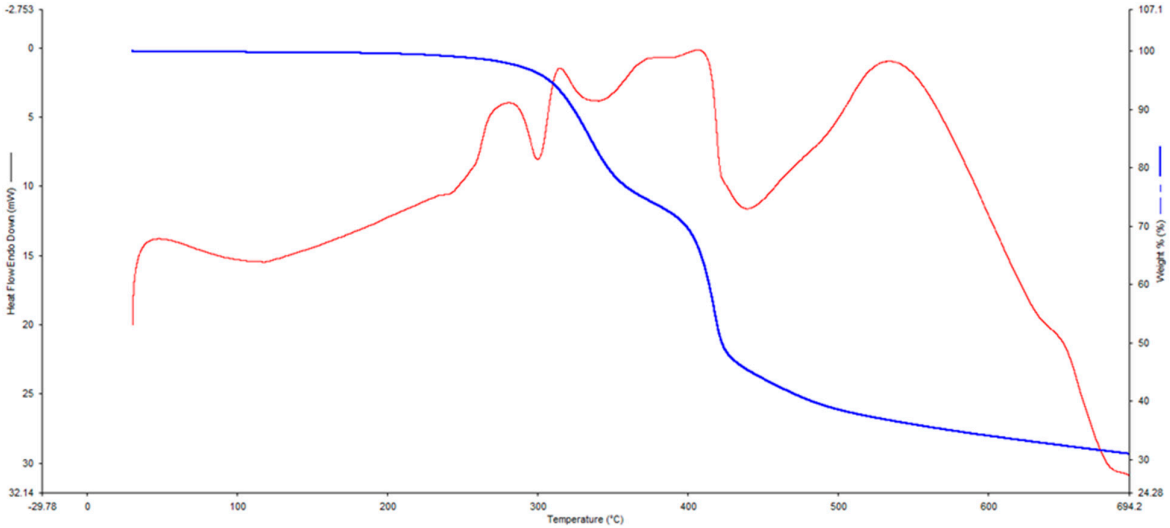


Figure S11. TGA and DSC curves of **2**

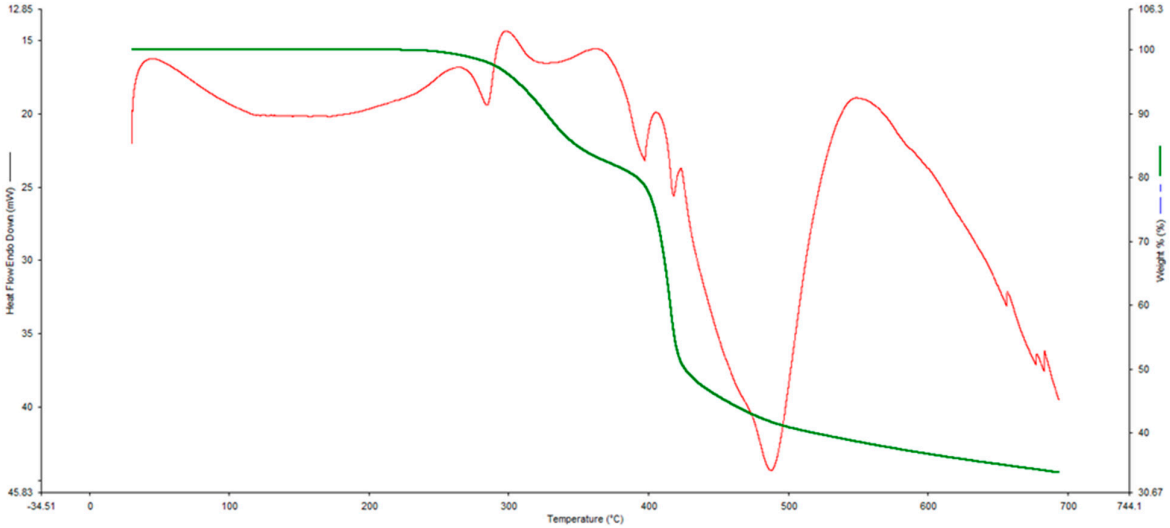


Figure S12. TGA and DSC curves of **3**

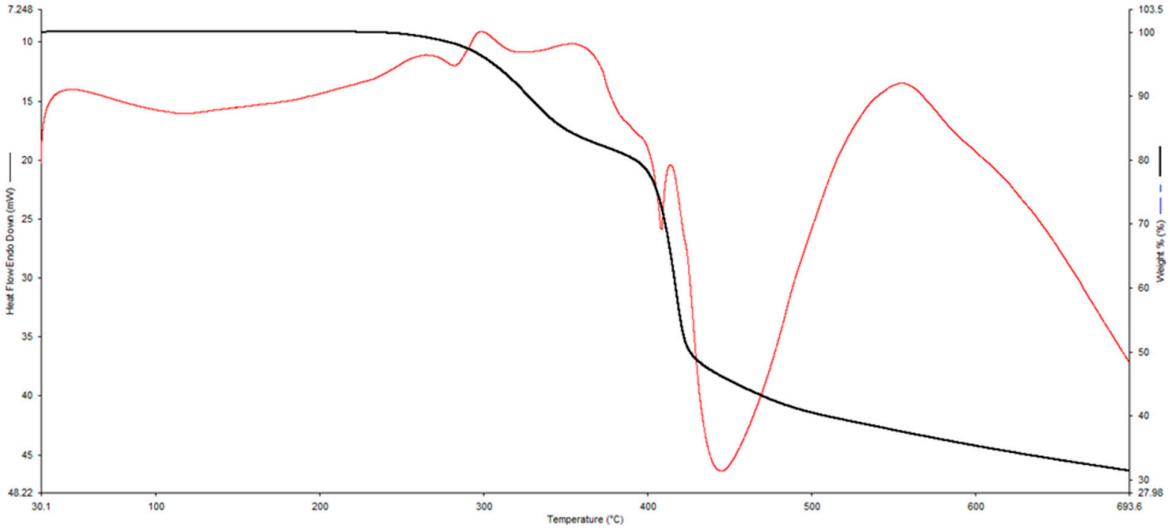


Figure S13. TGA and DSC curves of **4**

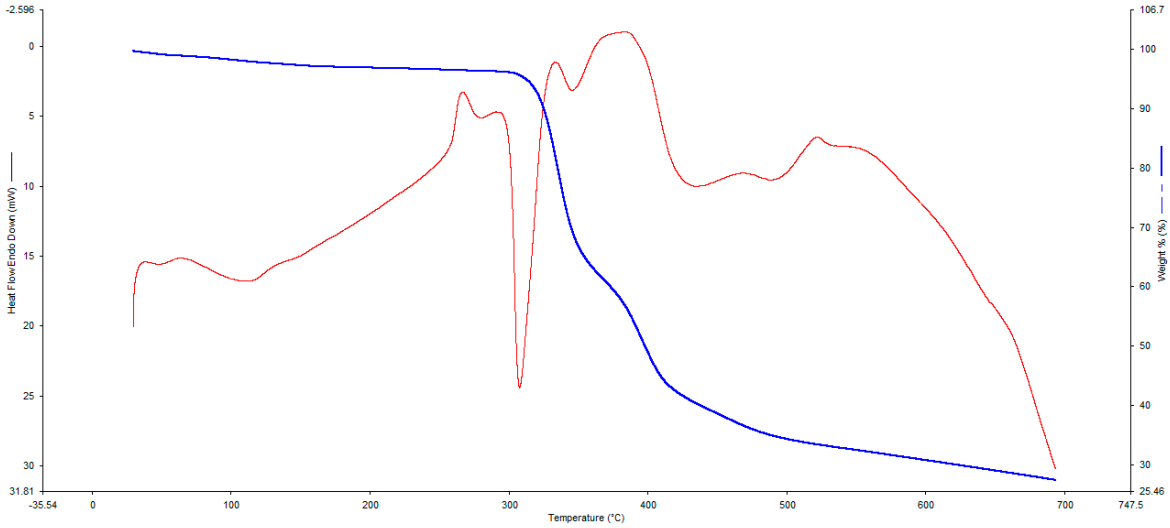


Figure S14. TGA and DSC curves of **5**

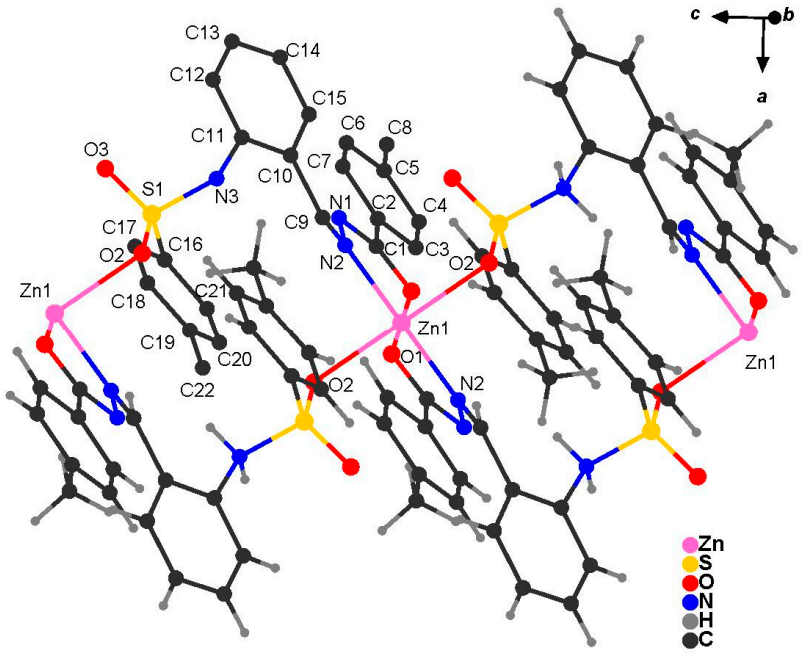


Figure S15. Crystal structure of **2** (Zn1-O1 2.006(7) Å, Zn1-O2 2.382(7) Å, Zn1-N2 2.066(9) Å, O1-C1 1.250(12) Å, N1-N2 1.358(12) Å, N1-C1 1.359(13) Å, N2-C9 1.290(13) Å, S1-O2 1.411(8) Å, S1-O3 1.436(8) Å, S1-N3 1.616(9) Å, S1-C16 1.772(12) Å, O1-Zn1-O1 180.0(4)º, O1-Zn1-O2 90.0(3)º, O1-Zn1-N2 78.0(3)º, O2-Zn1-O2 180.0(4)º, N2-Zn1-O2 91.3(3)º).

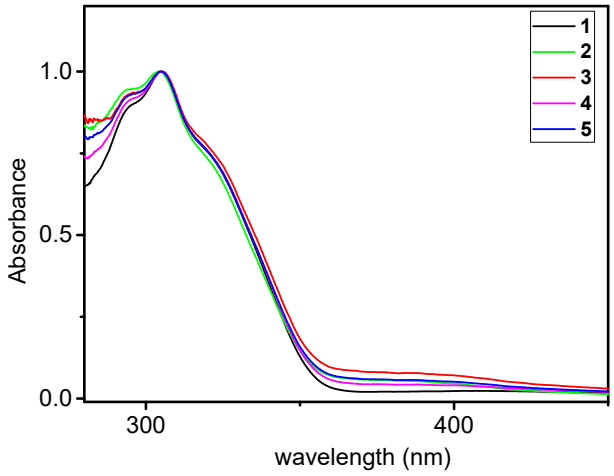


Figure S16. UV-vis absorption spectra of compounds 1-5 in DMSO solution at 5×10^{-5} M at room temperature

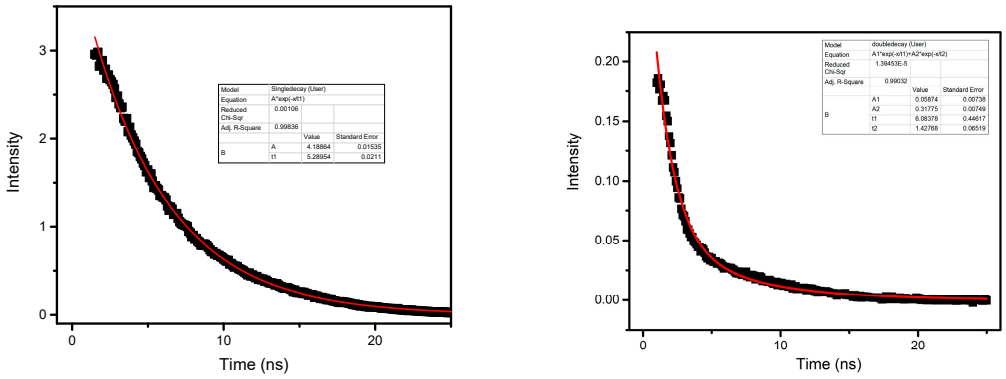


Figure S17. PL decay curves of complex 1 (left) and HL^1 (right) in solid states

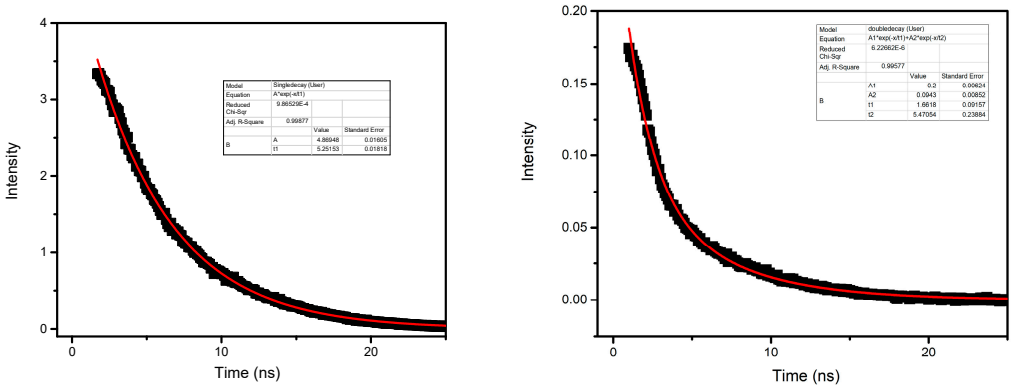


Figure S18. PL decay curves of complex 2 (left) and HL^2 (right) in solid states

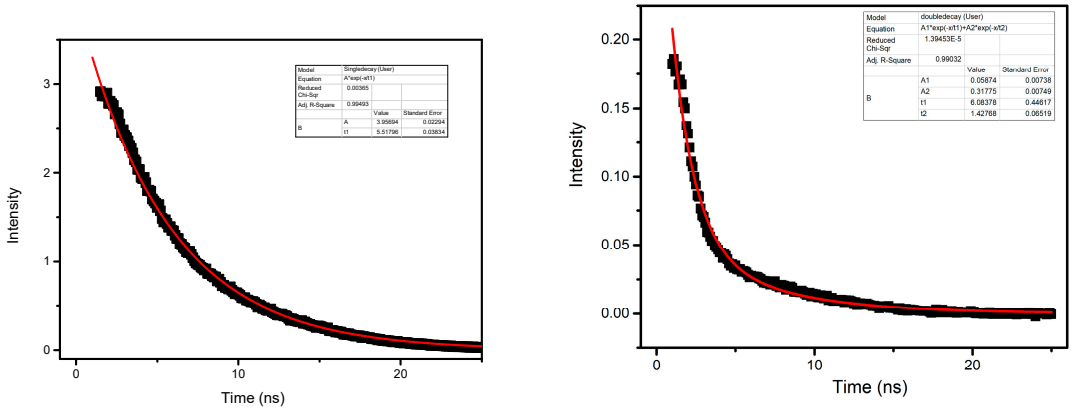


Figure S19. PL decay curves of complex 3 (left) and HL^3 (right) in solid states

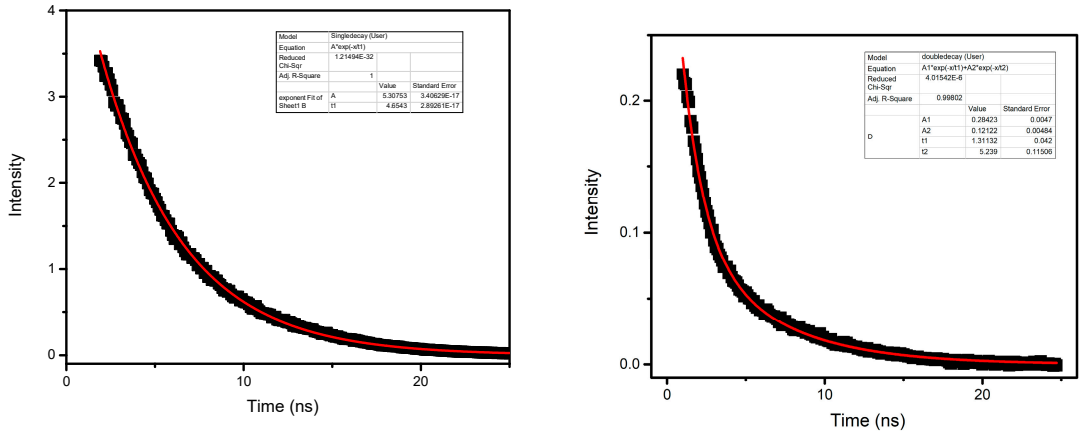


Figure S20. PL decay curves of complex 4 (left) and HL^4 (right) in solid states

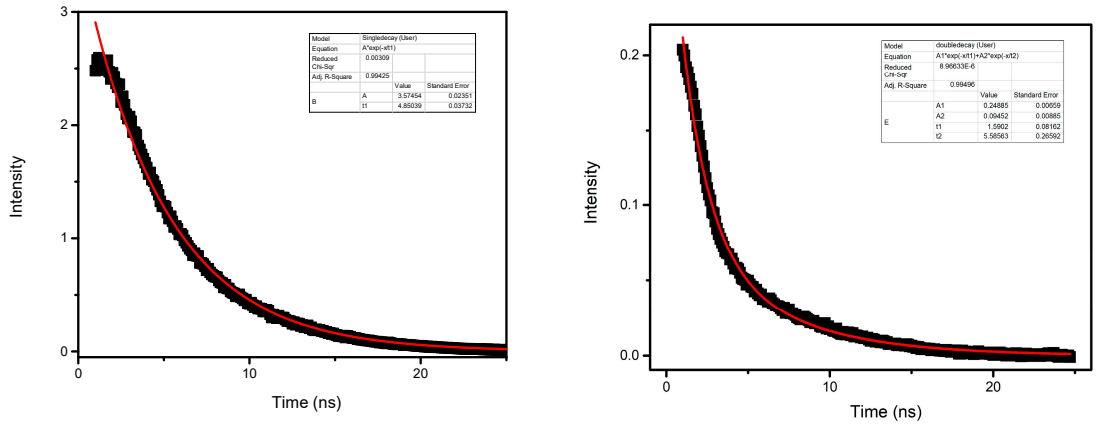


Figure S21. PL decay curves of complex 5 (left) and HL^5 (right) in solid states