Supporting Materials

Coordination-Enhanced Luminescence on Tetraphenylethylene-Based Supramolecular Assemblies

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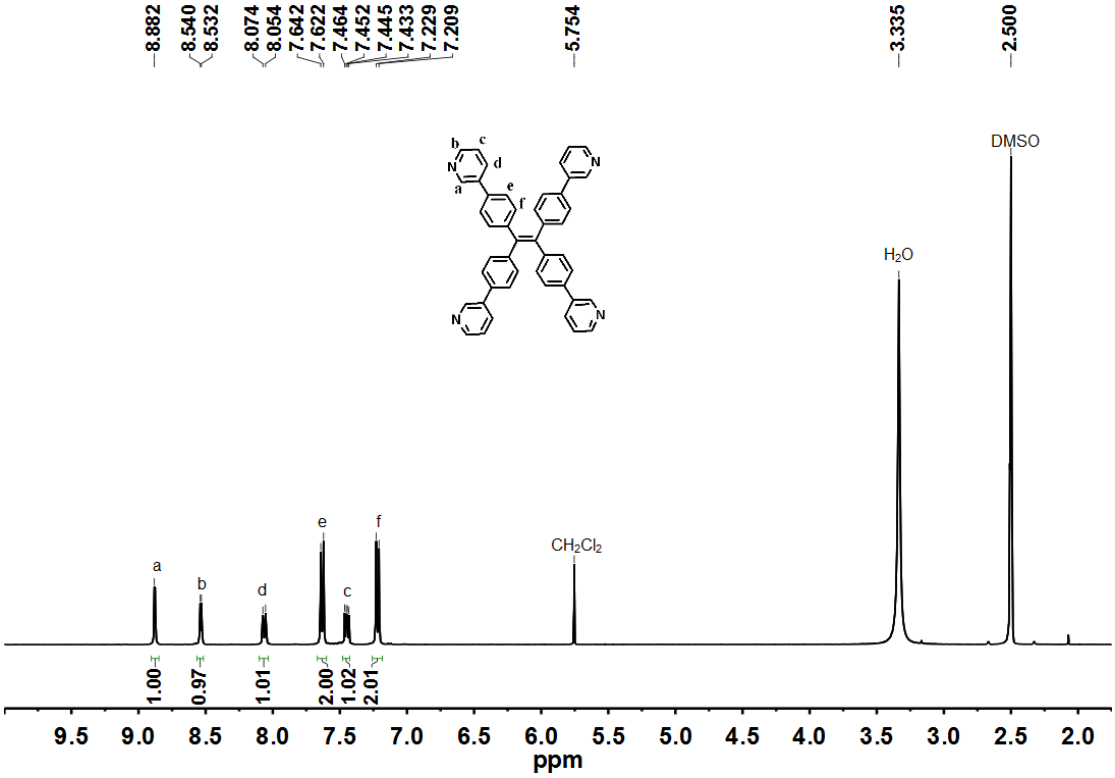


Fig S1. ^{1}H NMR spectrum of the ligand **L**^{a} (400 MHz, DMSO- d_6, 298K)

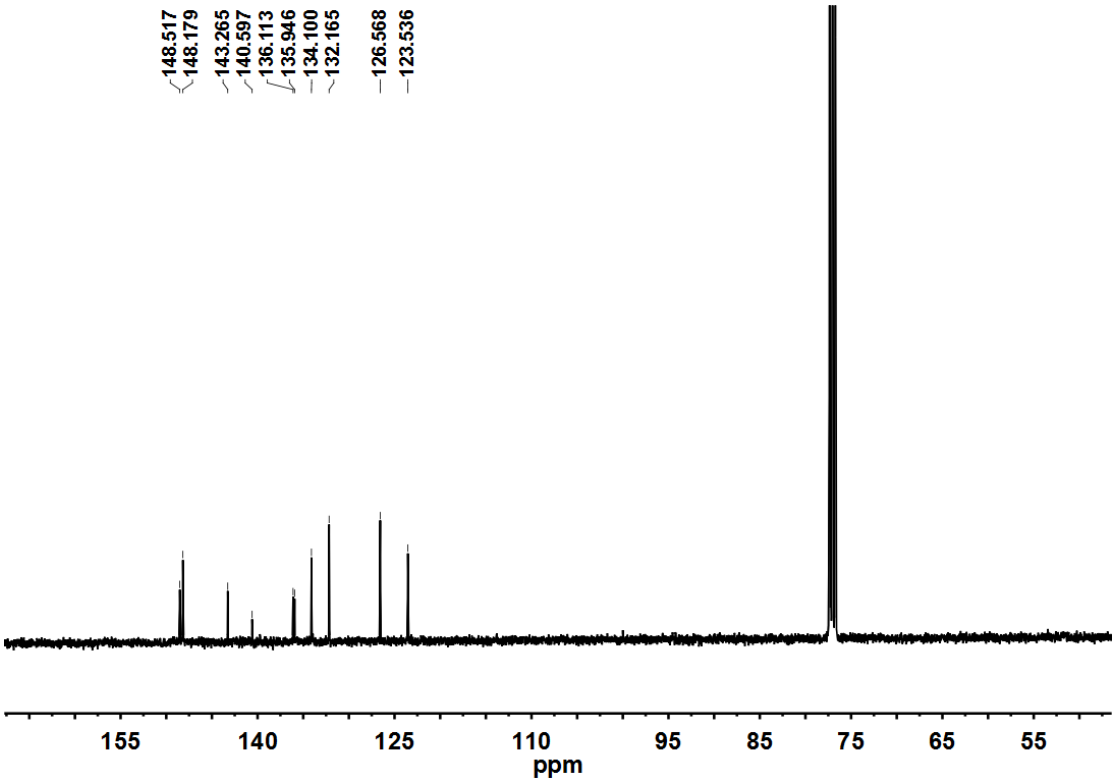


Fig S2. ^{13}C NMR spectrum of the ligand **L**^{a} (100 MHz, $CDCl_3$, 298K)

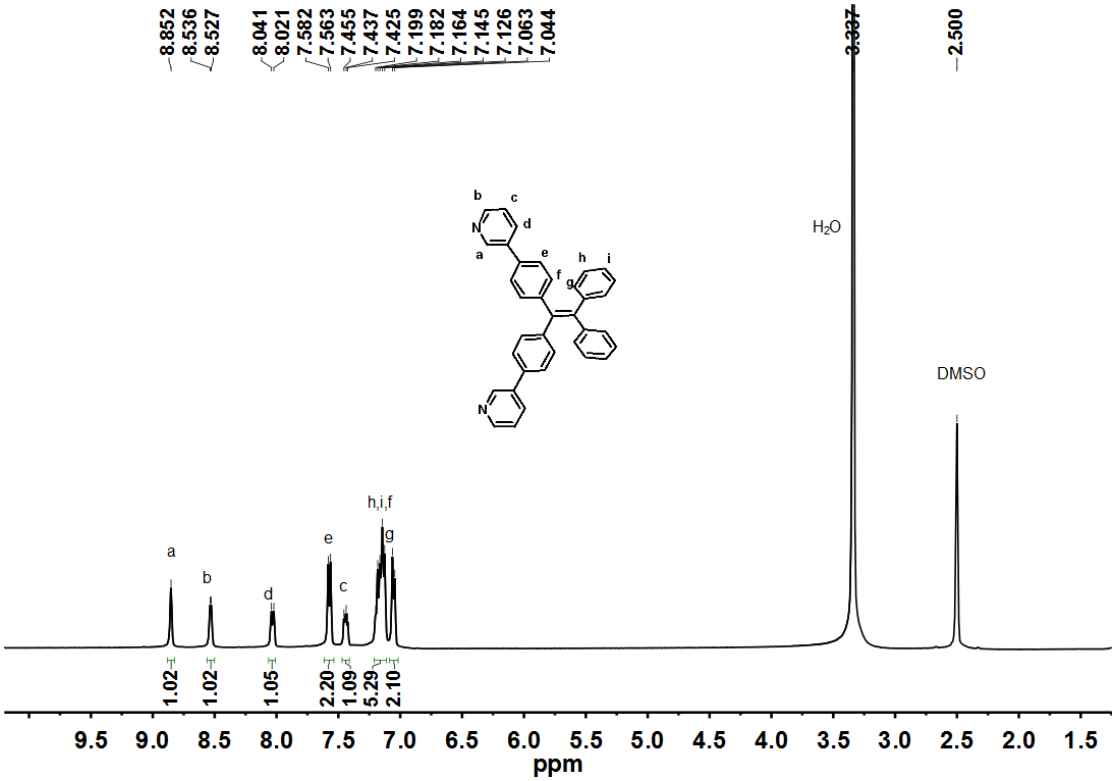


Fig S3. ^{1}H NMR spectrum of the ligand **L**^{b} (400 MHz, DMSO-d_6, 298K)

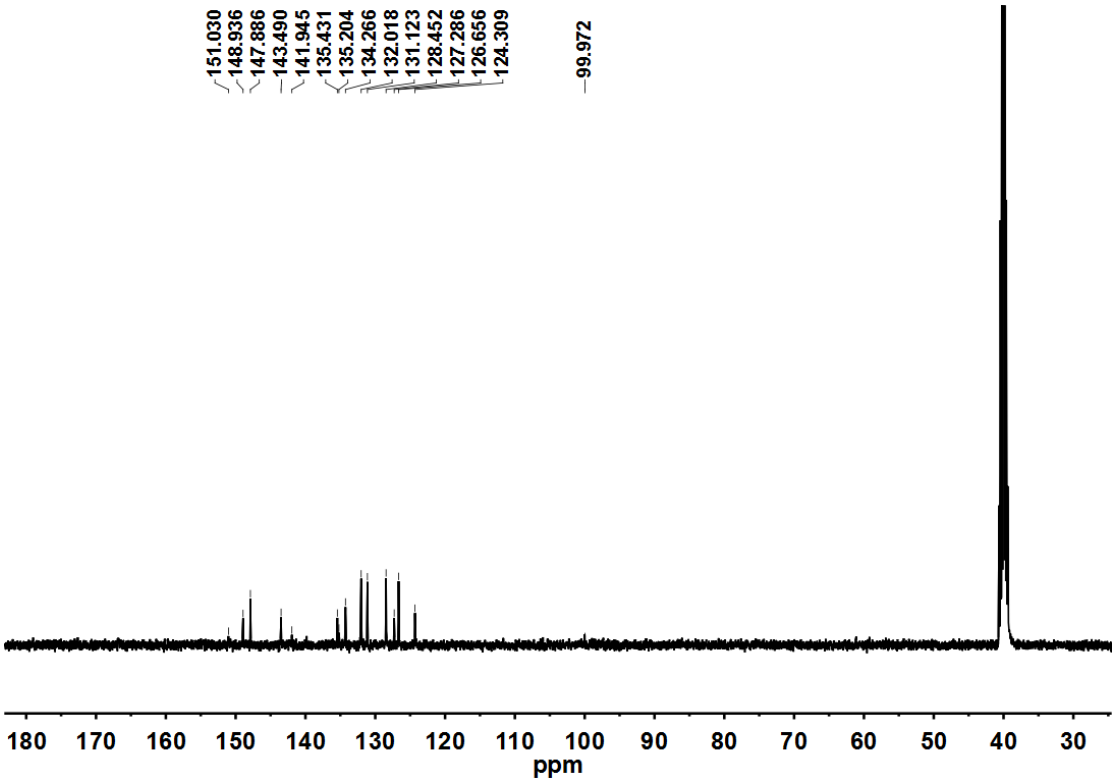


Fig S4. ^{13}C NMR spectrum of the ligand **L^{b}** (100 MHz, DMSO-d_6, 298K)

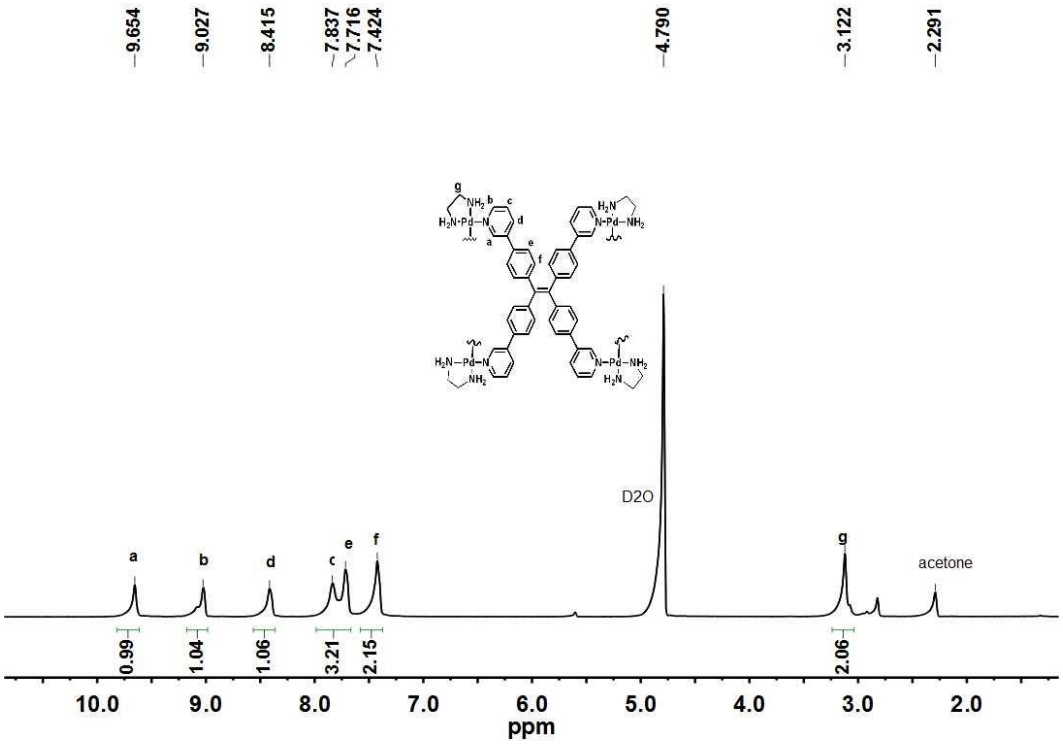


Fig S5. ^{1}H NMR spectrum of the assembly **1** (400 MHz, D_2O: acetone- d_6 =1:1, 298K)

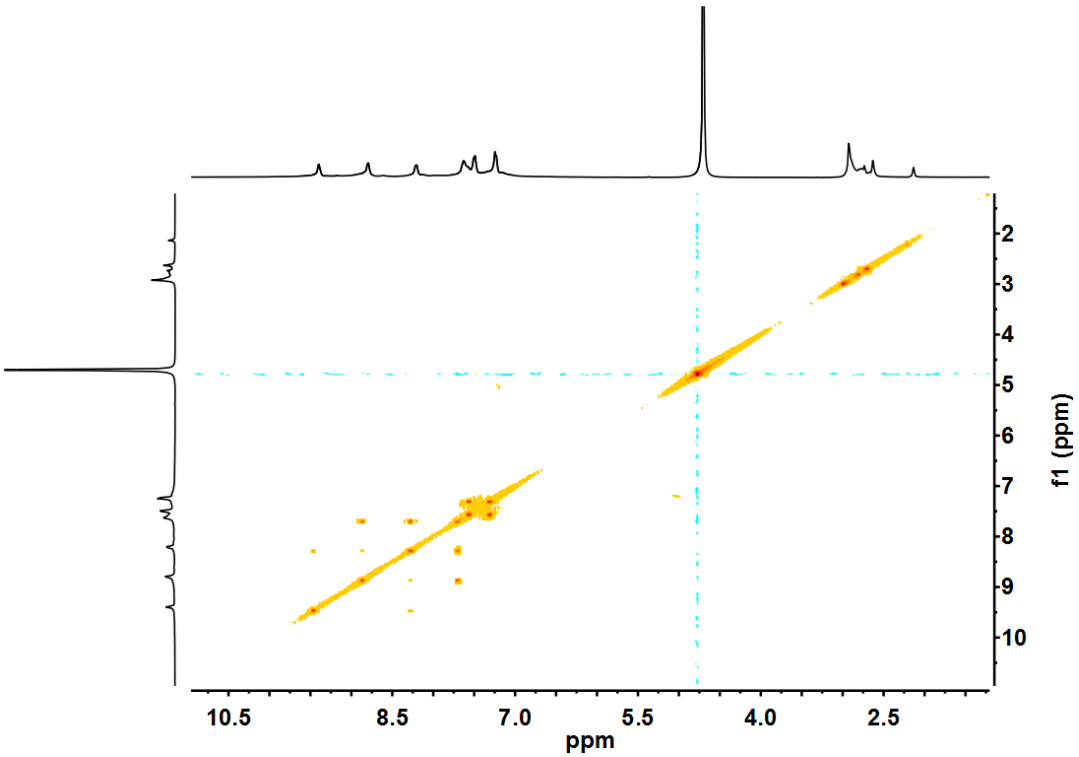


Fig S6. ^{1}H-^{1}H COSY spectrum of the **1**·NO_3 (400 MHz, D_2O:acetone-d_6 =1:1,298K)

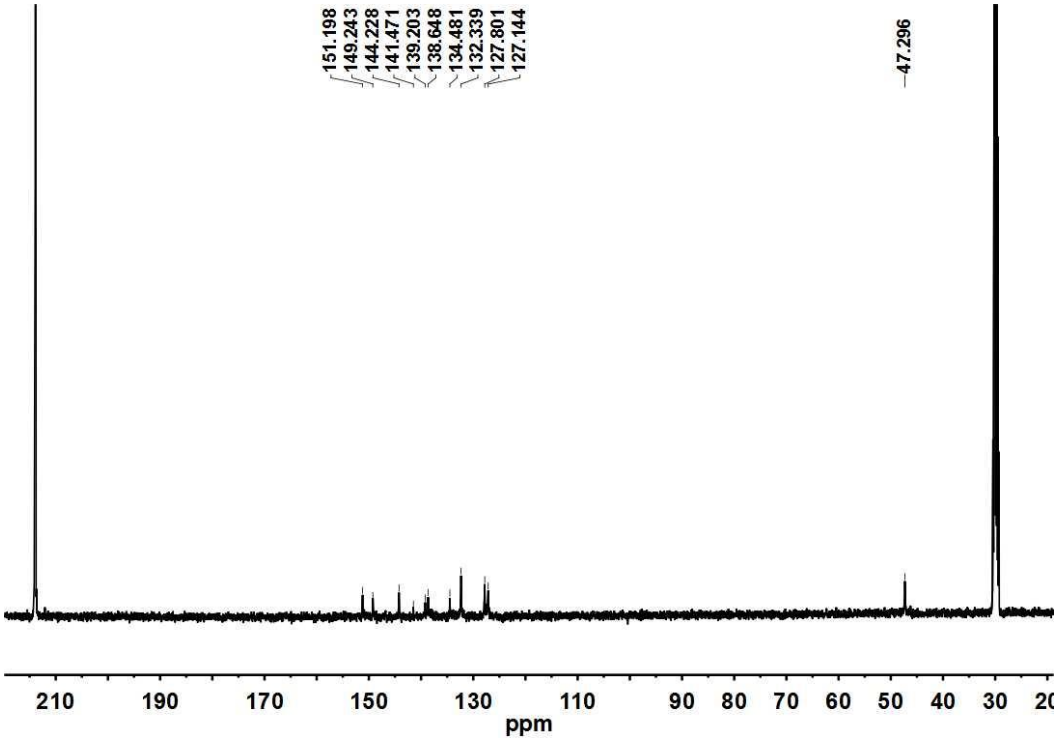


Fig S7. ^{13}C NMR spectrum of the assembly **1** (100MHz, D_2O: acetone-d_6 =1:1, 298K).

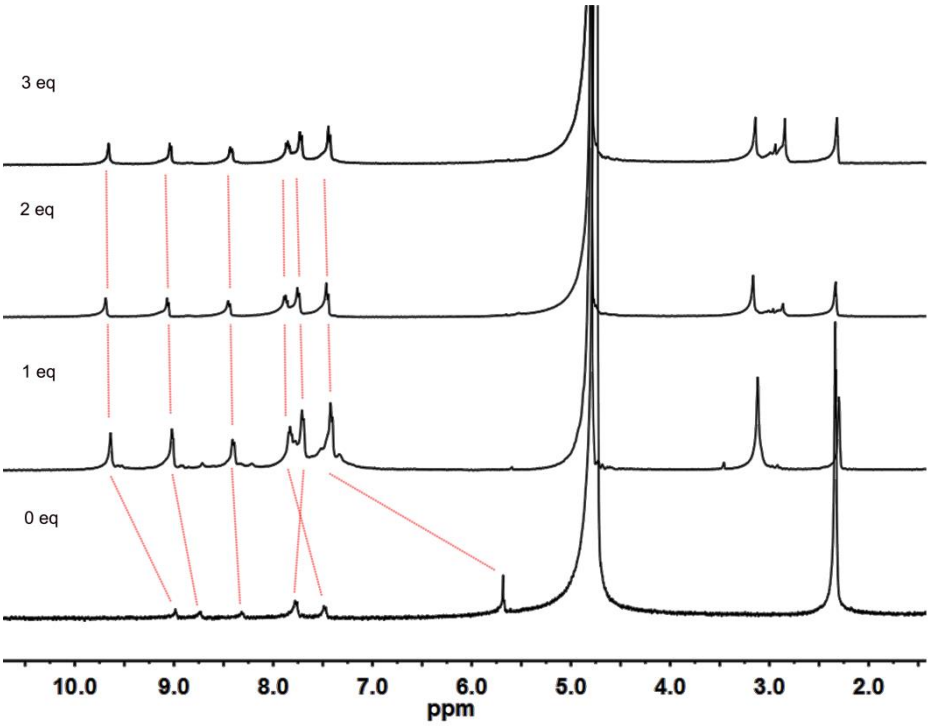
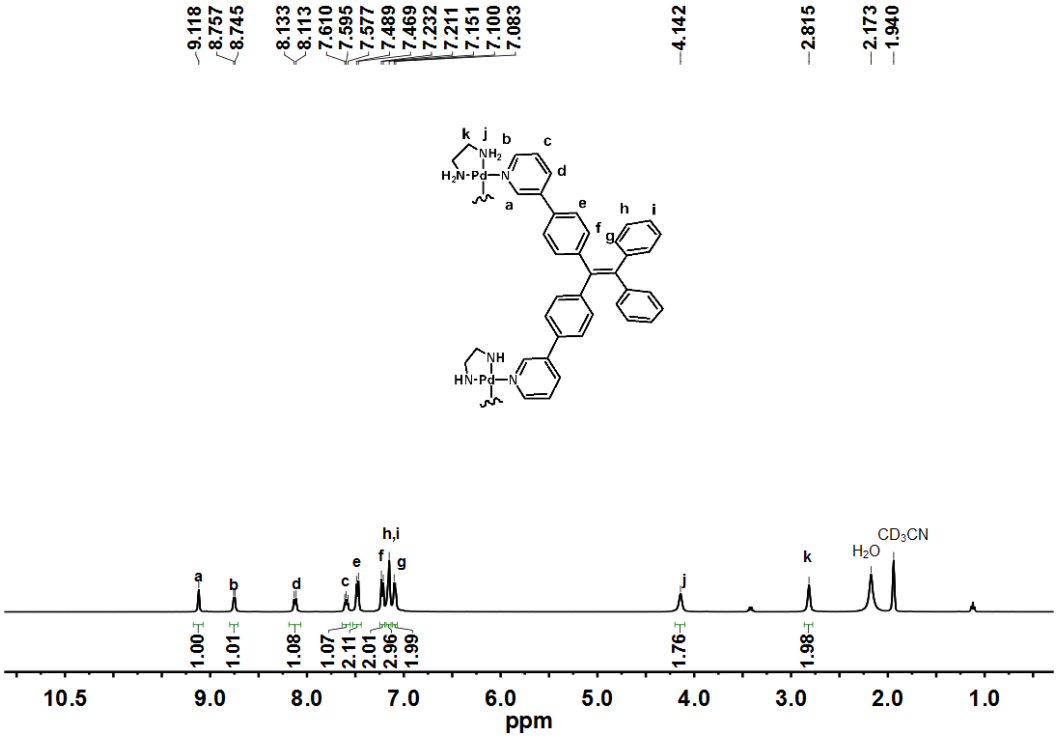


Fig S8. 1H NMR spectra of L[a] with the titration of (en)Pd(NO_3)$_2$ (400MHz, D_2O: acetone-d_6=1:1, 298K).



FigS9. [1]H NMR spectrum of the assembly **2** **·BF$_4$** (400 MHz,CD_3CN, 298K)

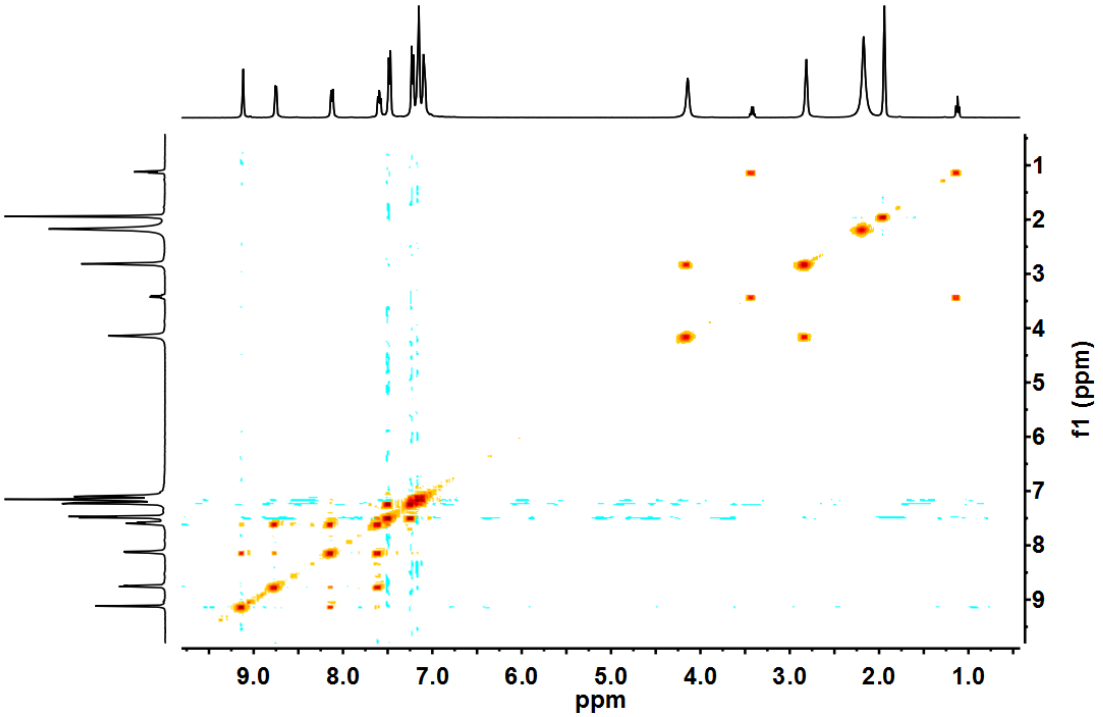


Fig S10. ^{1}H-^{1}H COSY spectrum of the **2**·**BF$_4$** (400 MHz,CD_3CN, 298K)

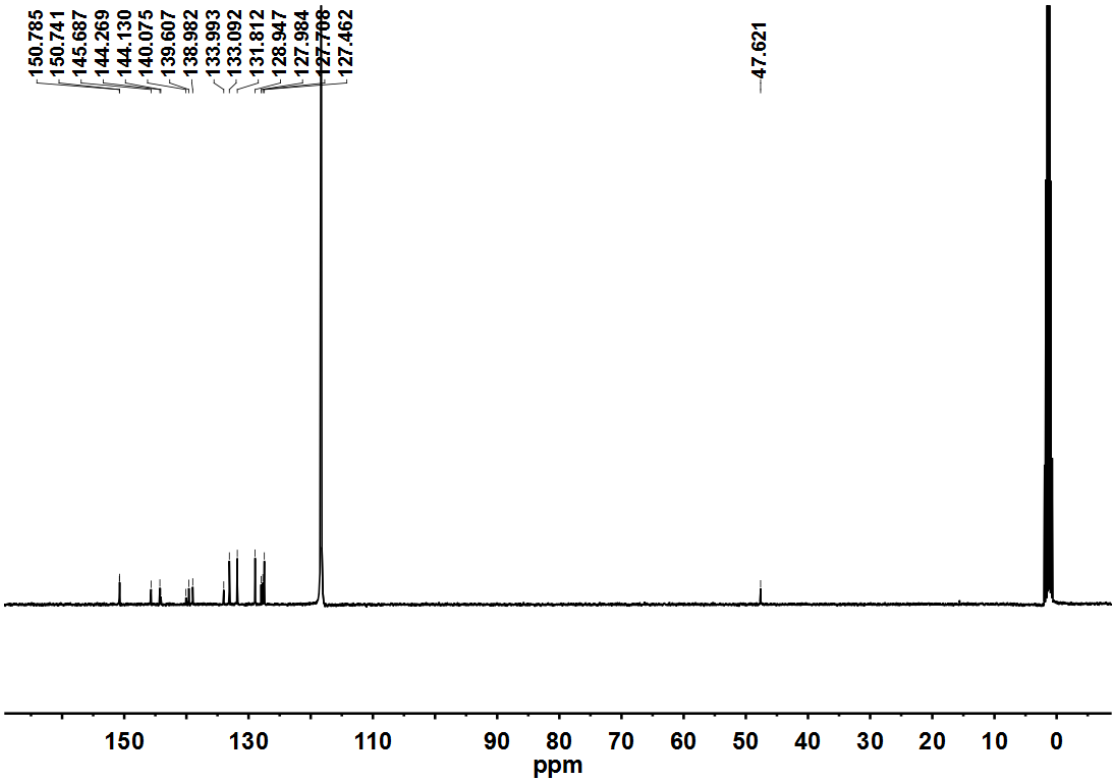


Fig S11. ^{13}C NMR spectrum of the **2**·**BF$_4$**(100MHz,CD_3CN, 298K)

1.2 DOSY spectra

Stokes-Einstein equation,

$$D = k_B T/6\ \pi\eta r$$

was applied to estimate the dynamic radius for complexes 1 and 2 and of the species resulting from reacting an equivalent mixture of ligand with (en)Pd(NO_3)$_2$.Where D = diffusion coefficient; k_B= Boltzmann'sconstant; T = absolute temperature; η=dynamic viscosity of the solvent (1.2 mPa s, 298K， calculated by Ubbelohde viscometer); r= hydrodynamic radius of aspherical particle.

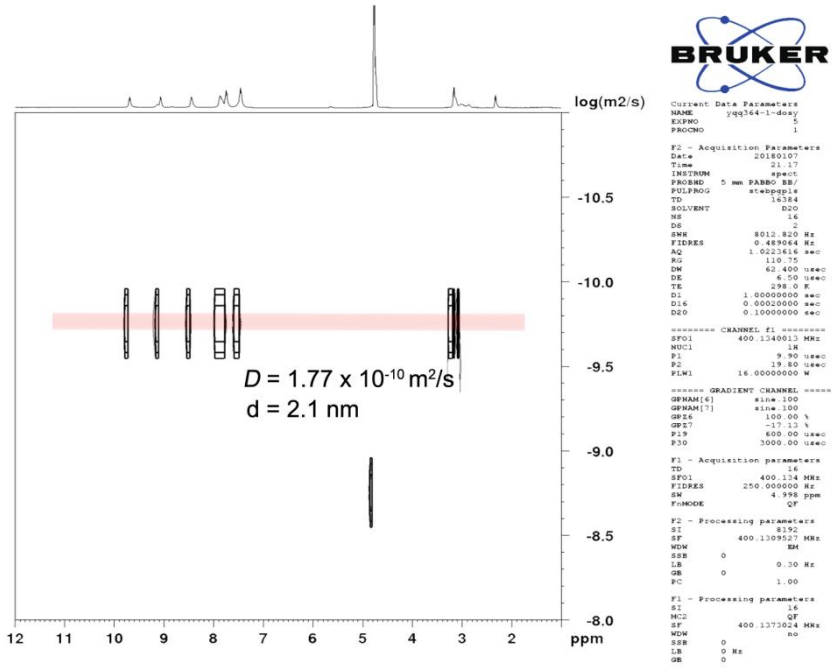


Fig S12. ^{1}H DOSY spectrum of compound **1** (400 MHz, D_2O: acetone-d_6 = 1:1, 298K)

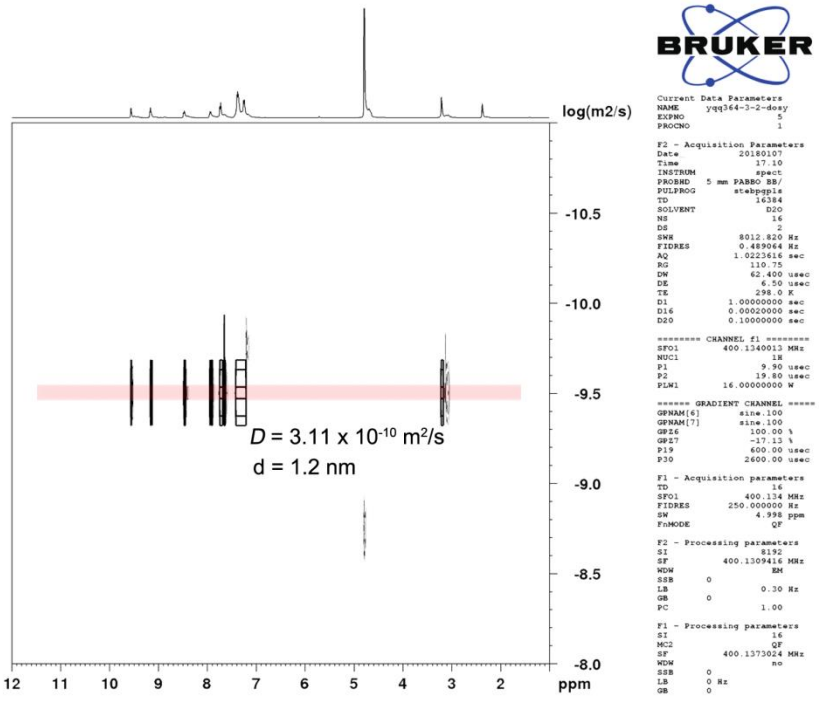


Fig S13. ^{1}H DOSY spectrum of compound **2** (400 MHz, D_2O:acetone-d_6 =1:1, 298K)

1.3 ESI-TOF-MS

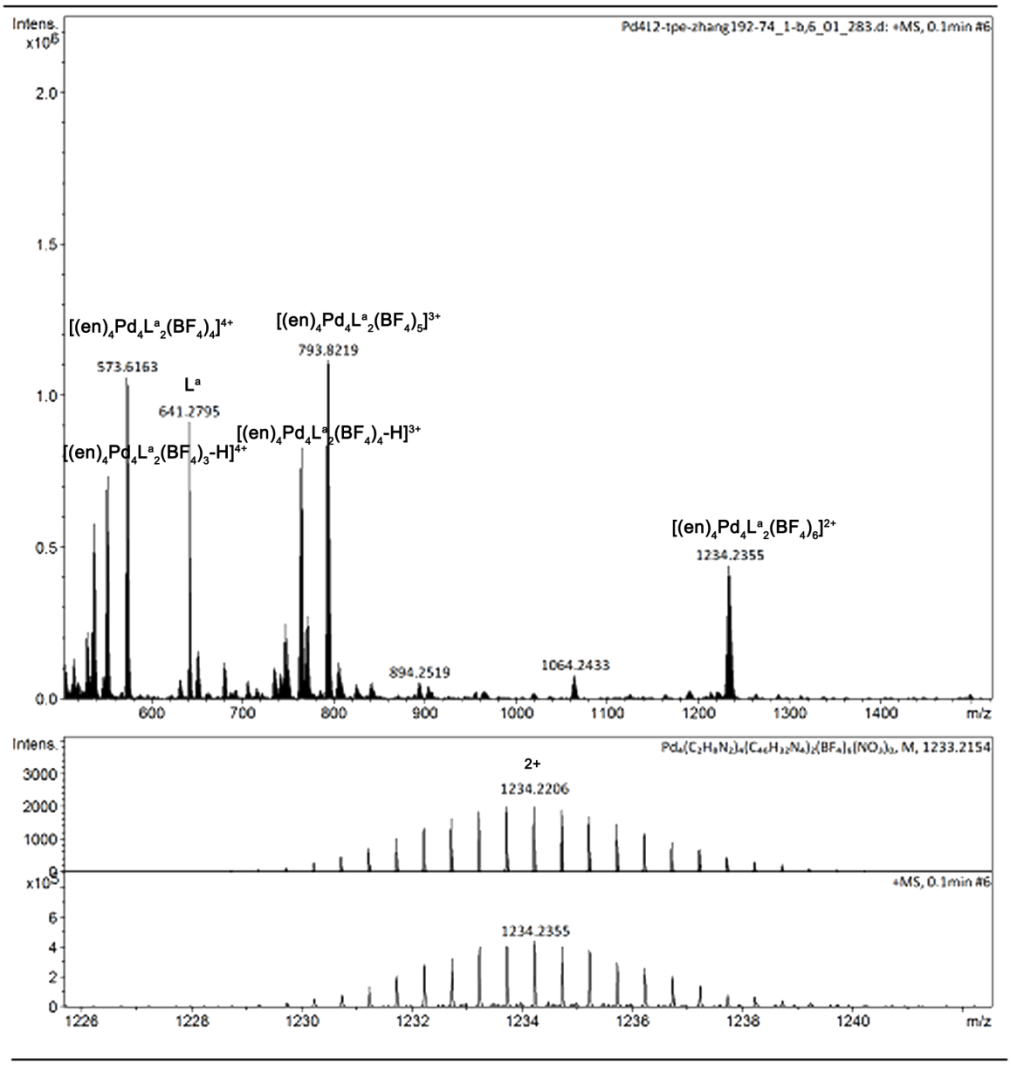


Fig S14. ESI-TOF mass spectrum of **1**·BF_4 and the observed and simulated isotopic patterns of the 2+ peaks

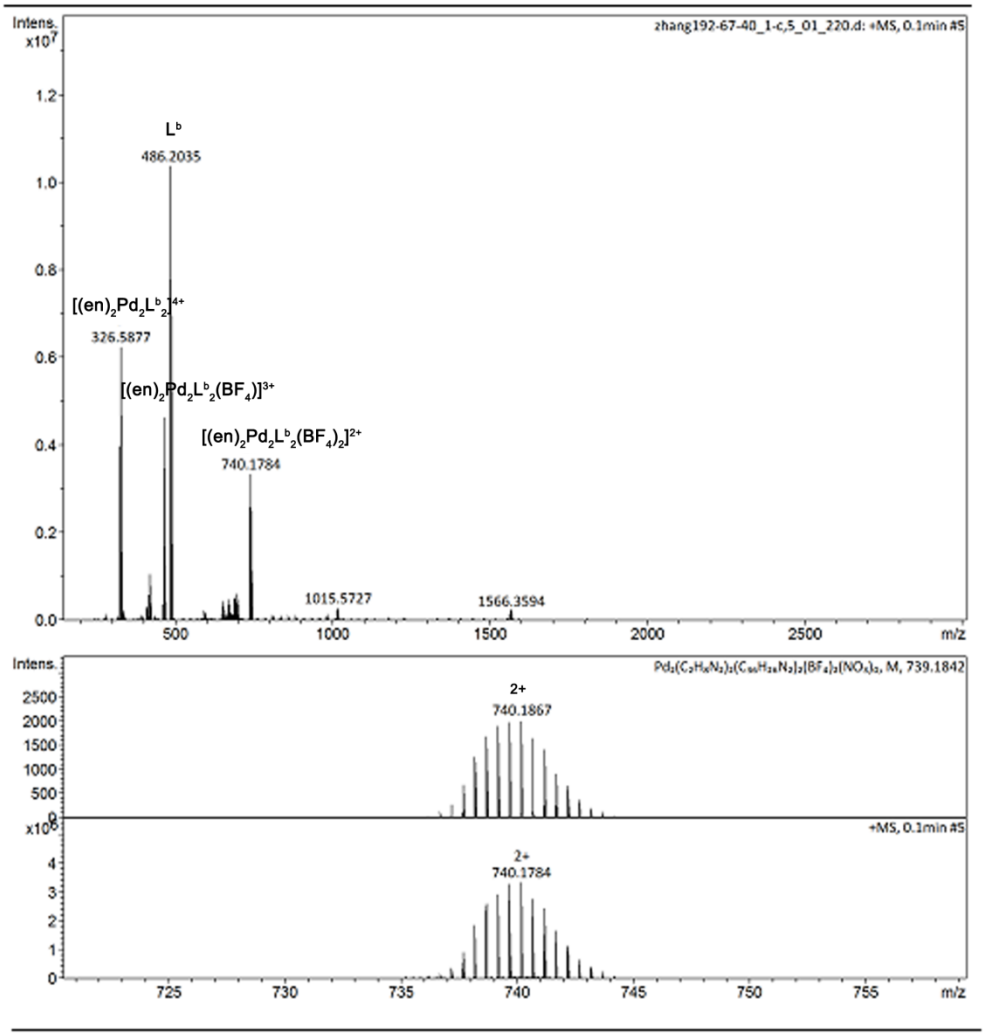


Fig S15. ESI-TOF mass spectrum of **2**·BF_4 and the observed and simulated isotopic patterns of the 2+ peaks.

1.4 UV-vis absorption spectra

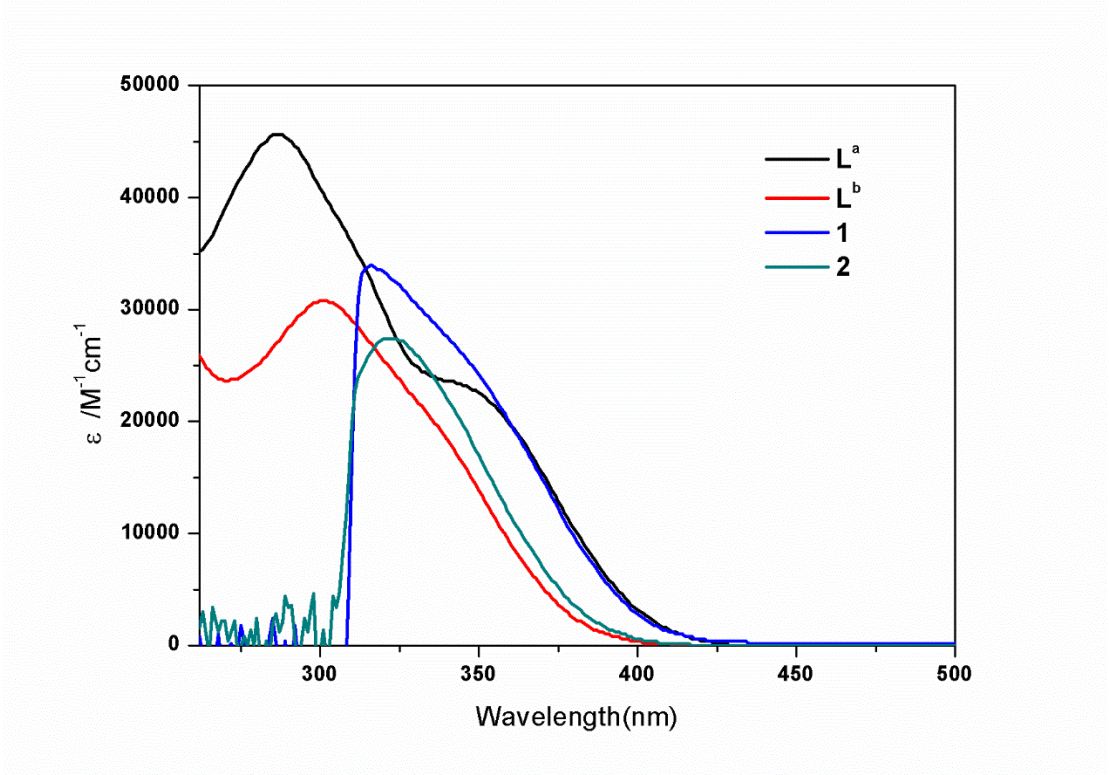


Fig S16. UV-vis absorption spectra of ligand $\mathbf{L^a}$, $\mathbf{L^b}$ in DMSO and complexes **1** and **2** in H_2O/ acetone (v:v=1:1). (c_L =50 μM).

1.5 Fluorescence spectra

Table S1. Fluorescence and quantum yield of ligands and assemblies in dilute solution (c_L =50 μM) and in solid state.

	Dilute solution			Solid state		
	λex(nm)	λem(nm)	Φ_F(%)	λex(nm)	λem(nm)	Φ_F(%)
$\mathbf{L^a}$	365	528	0.739	408	488	84.2
$\mathbf{L^b}$	343	490	-	386	440	74.1
1	372	492	4.22	458	543	6.57
2	358	488	-	430	528	4.13

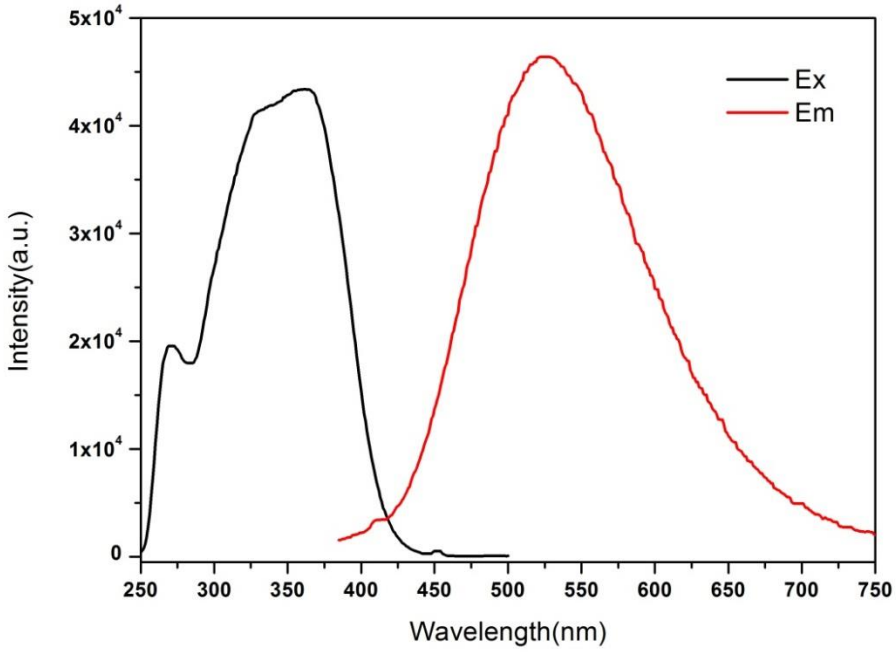


Fig S17. Fluorescence excitation (black, λ_{em} = 528 nm) and emission (red, λ_{ex} = 365nm) spectra of **L**^{a} in DMSO (c_L =50 μM).

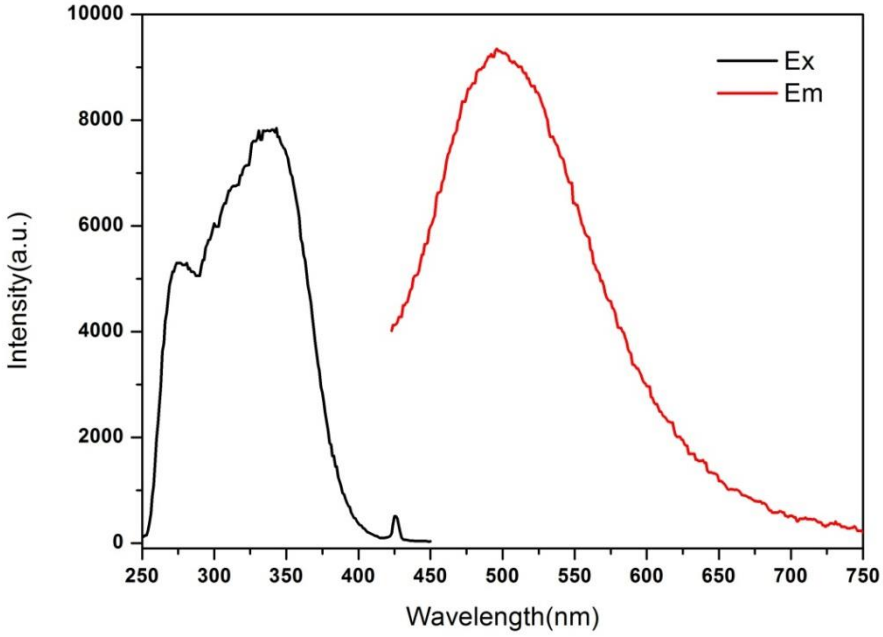


Fig S18. Fluorescence excitation (black, λ_{em} = 490 nm) and emission (red, λ_{ex} = 343nm) spectra of **L**^{b} in DMSO (c_L =50 μM).

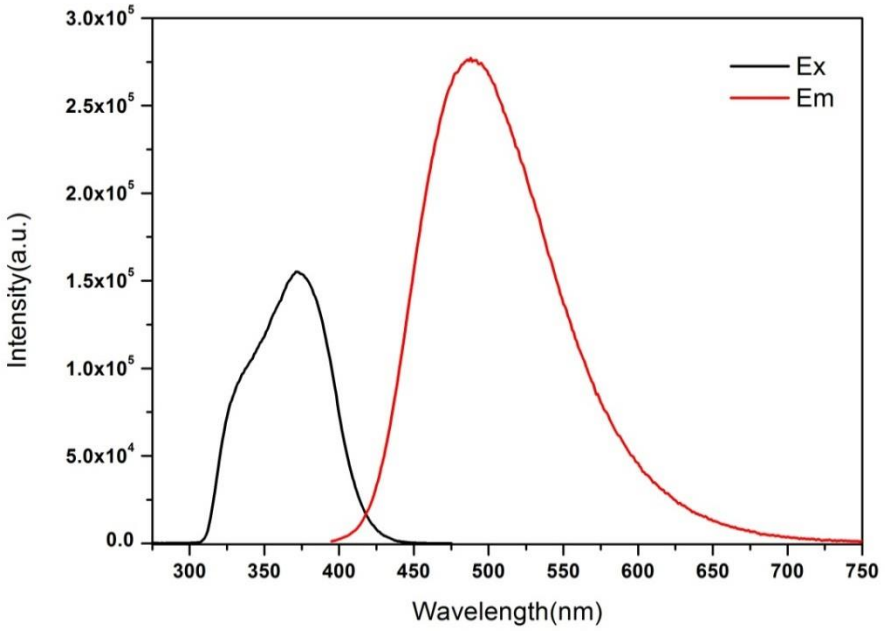


Fig S19. Fluorescence excitation (black, λ_{em} = 492 nm) and emission (red, λ_{ex} = 372nm) spectra of **1** in H_2O/acetone(v:v=1:1) (c_L =50 μM).

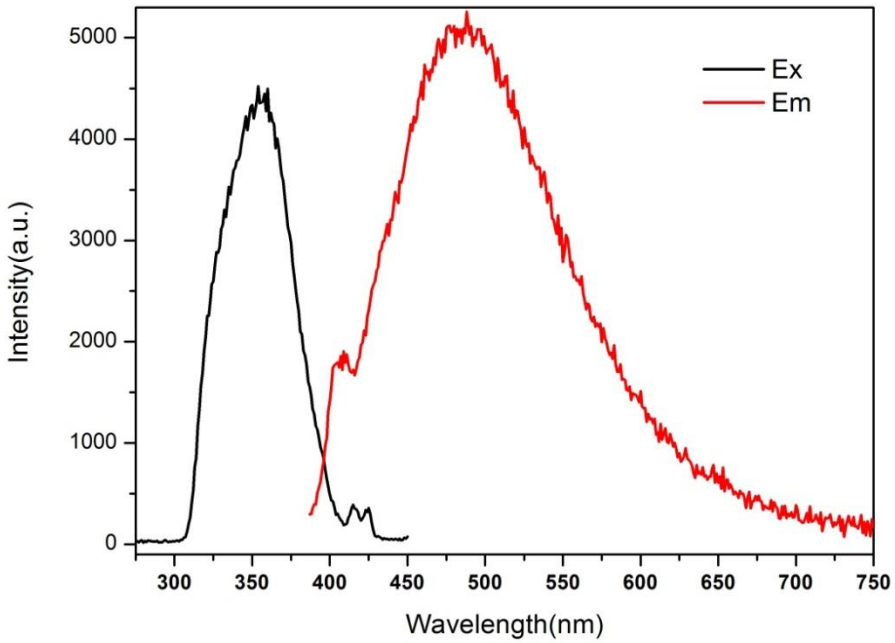


Fig S20. Fluorescence excitation (black, λ_{em} = 488 nm) and emission (red, λ_{ex} = 358 nm) spectra of **2** in H_2O/acetone (v:v=1:1) (c_L =50 μM).

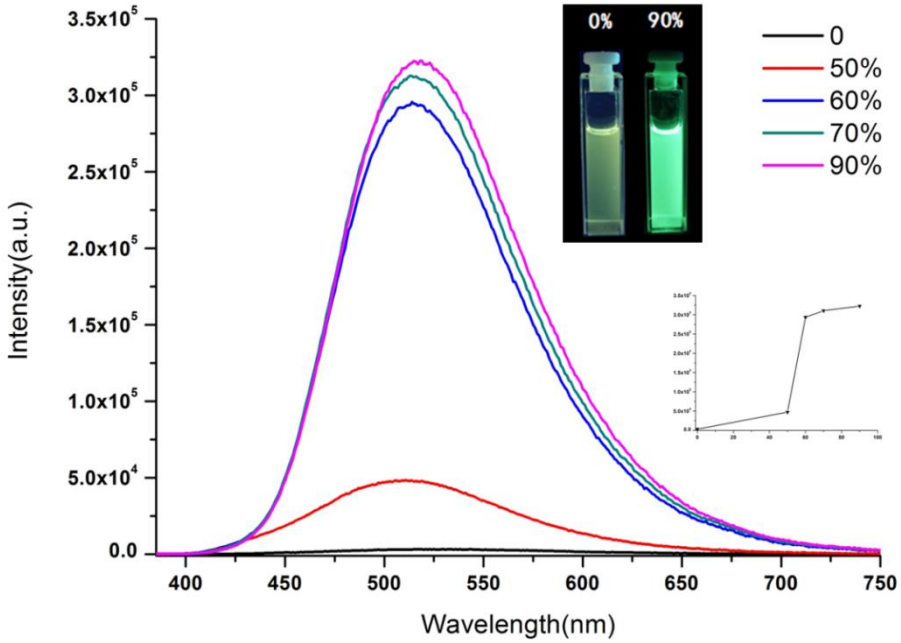


Fig S21. The photograph and emission spectrum of $\mathbf{L^a}$ with increasing H_2O fractions in H_2O/DMSO mixtures (λ_{ex} = 343 nm, c_L = 50 μM).

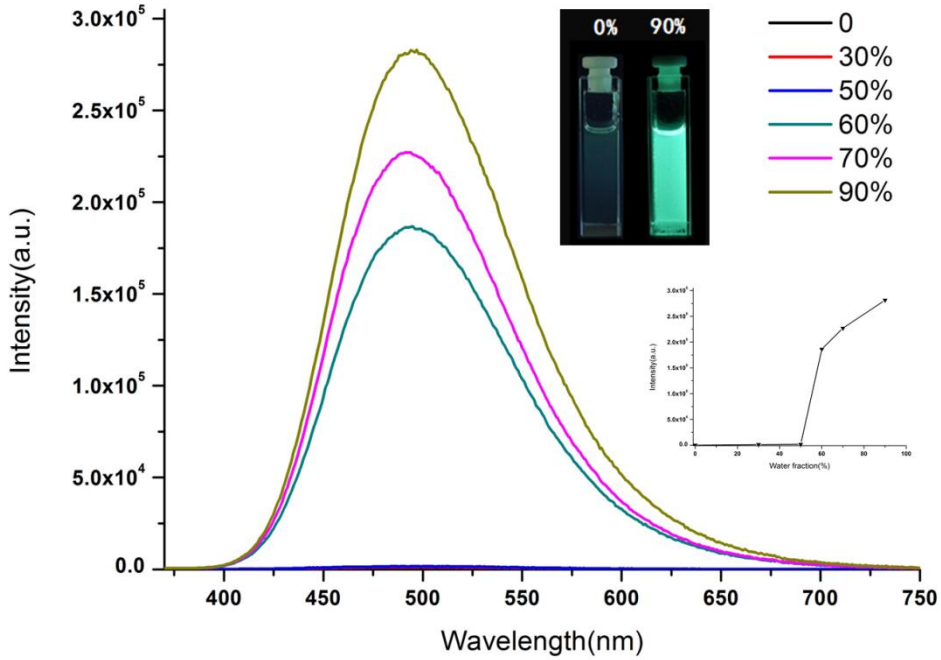


Fig S22. The photograph and emission spectrum of $\mathbf{L^b}$ with increasing H_2O fractions in H_2O/DMSO mixtures. (λ_{ex} = 365 nm, c_L = 50 μM).

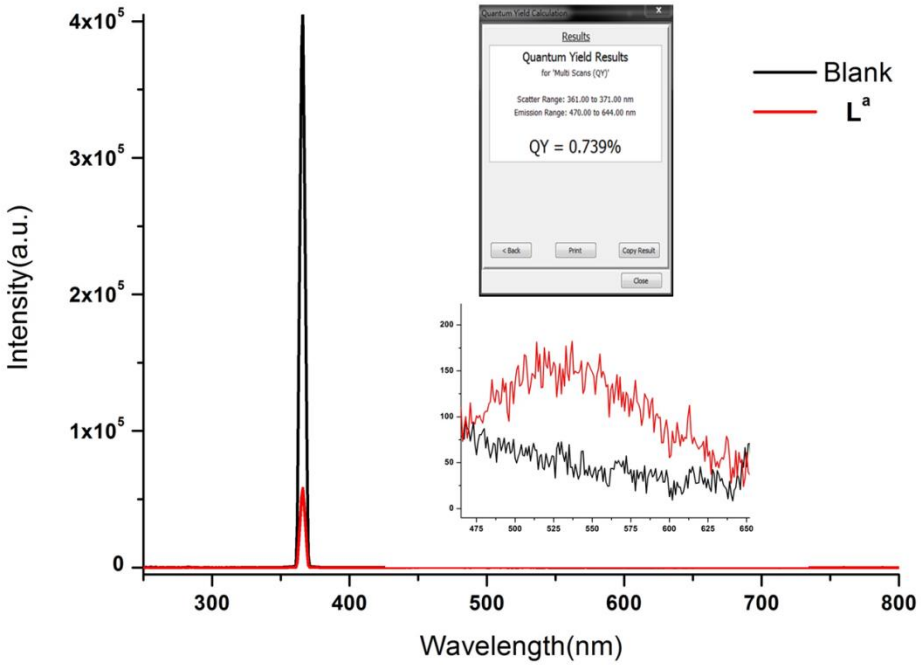


Fig S23. Quantum yield of **L**^{a} in DMSO (298K, λ_{ex}=408nm).

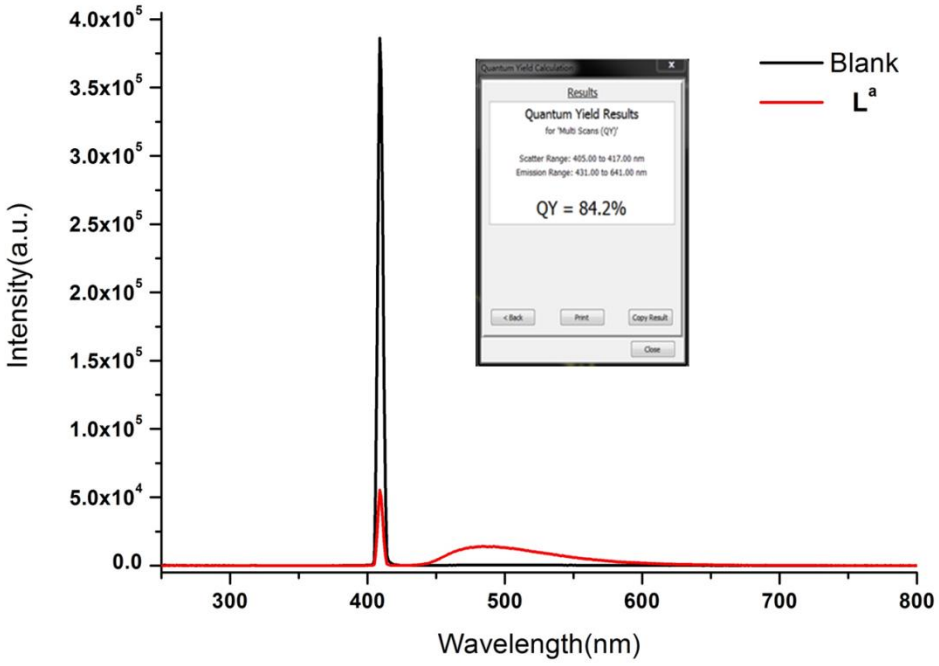


Fig S24. Quantum yield of **L**^{a} in solid state (298K, powder, λ_{ex} = 408 nm).

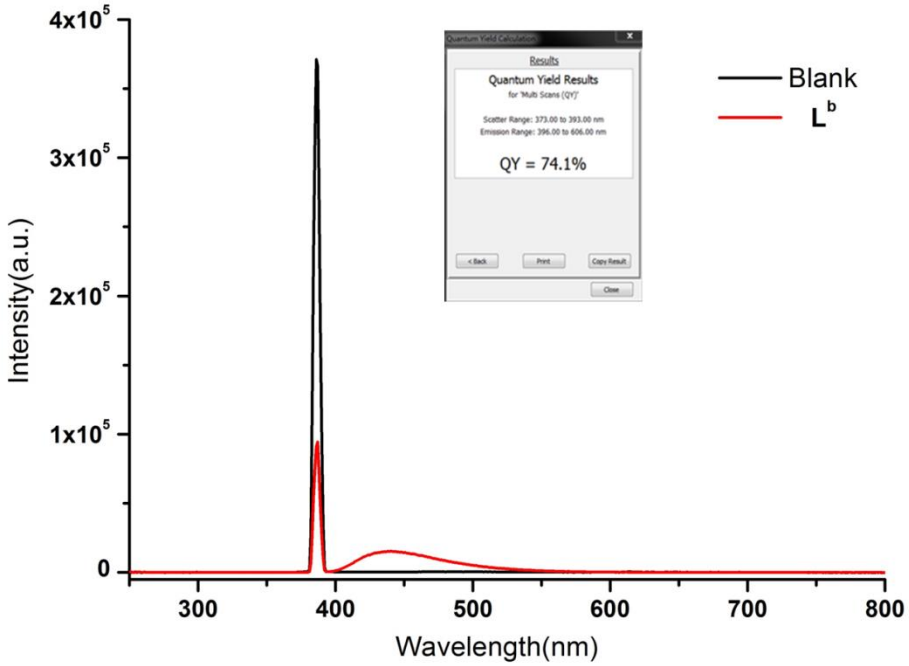


Fig S25. Quantum yield of $\mathbf{L^b}$ in solid state (298K, powder , λ_{ex} = 386 nm).

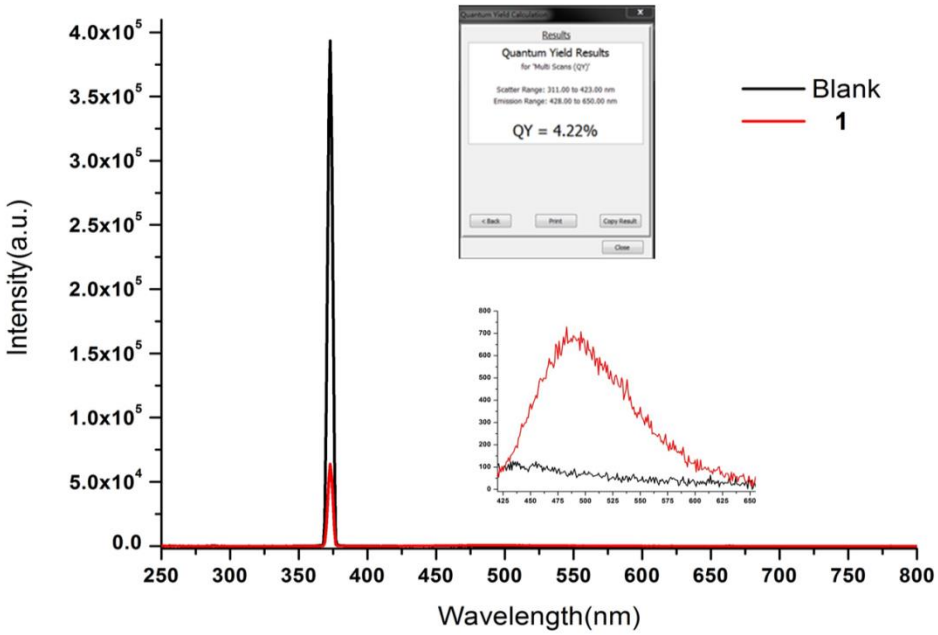


Fig S26. Quantum yield of **1** in H_2O/acetone (v:v=1:1) (298K, λ_{ex}= 372nm).

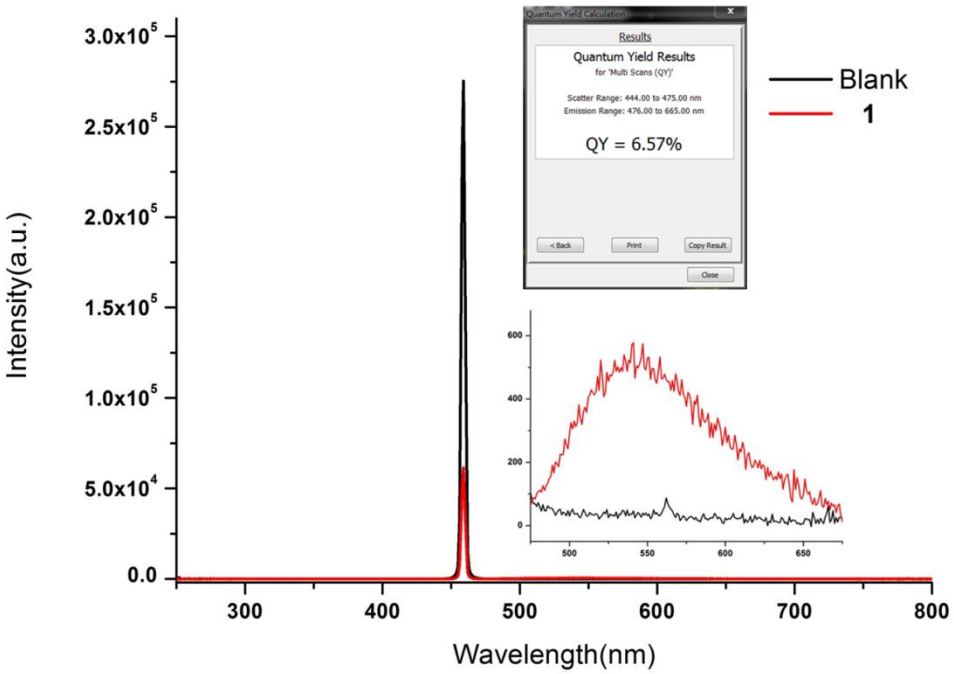


Fig S27. Quantum yield of **1** in solid state (298K, powder, λ_{ex} = 458 nm).

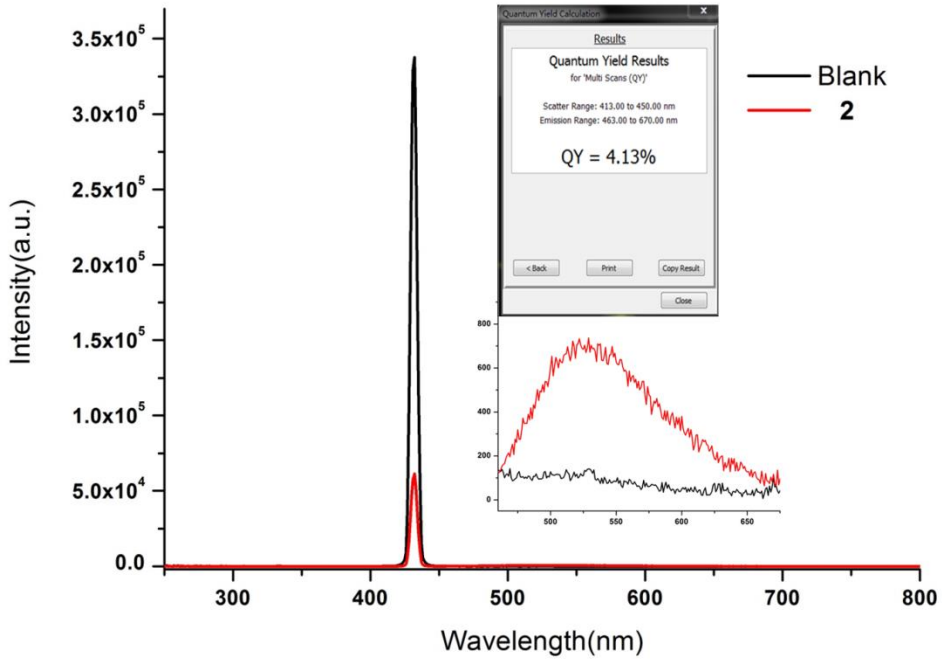


Fig S28. Quantum yield of **2** in solid state (298K, powder, λ_{ex} = 430 nm).