

Supporting information

Broadband Spectra with Fluorescence and Phosphorescence Dual Emission from Bichromophoric Platinum Metallomesogens Containing 6,12-Dihydro-indeno[1,2-b]fluorene Linkage

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Table S1. Phase Transitions of the platinum complexes^{a, b}

Compound	T(°C) (H (kJ mol ⁻¹))	
	Phase	Phase
FJ-1	Cr 188 (7.4) Sm 220 (27.9)	Iso
FJ-2	Cr 75 Cr' 82 Sm 193 (3.8)	Iso

^aThe data collected from second heating with a rate of 10 °C min⁻¹. ^bThe phase transitions temperature represent the peak. Phase nomenclature: Cr = crystal, Cr' = glass transition, Sm = smectic mesophase, Iso = isotropic liquid.

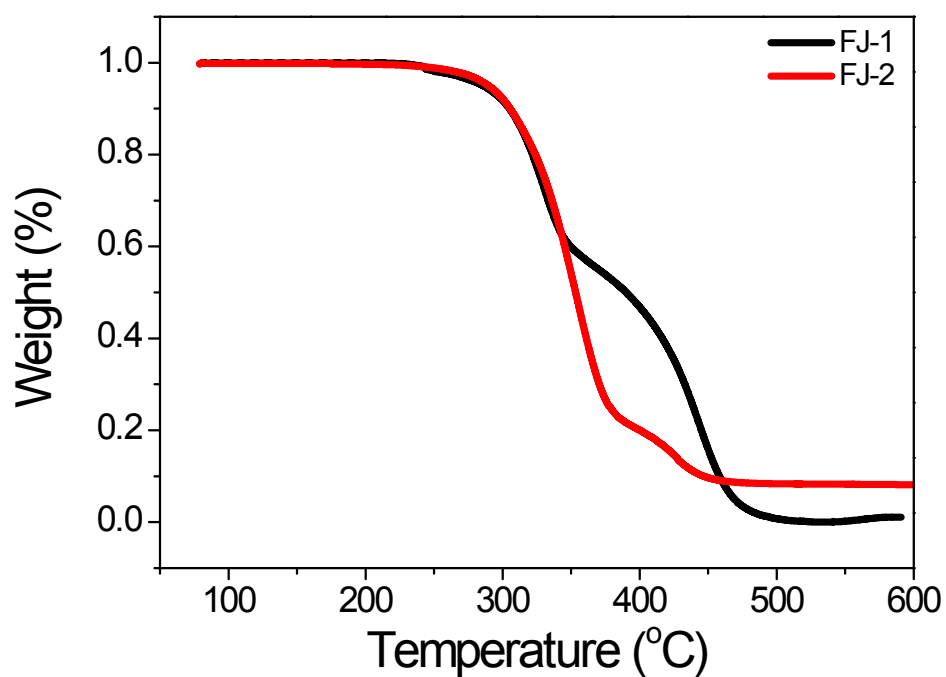


Figure S1. TAG traces of FJ-1 and FJ-2

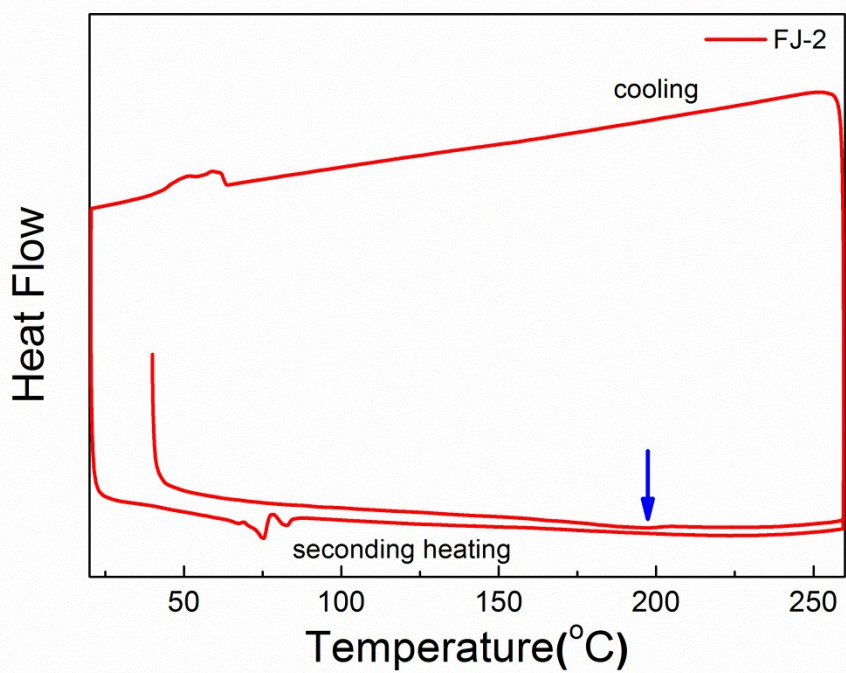
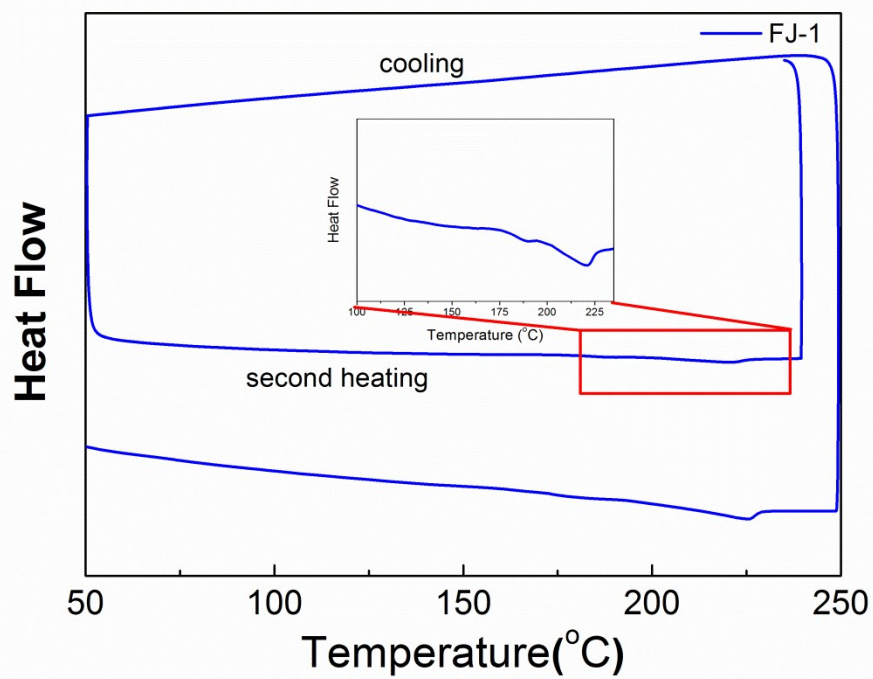


Figure S2. DSC traces obtained for the first and second heating and first cooling cycles of FJ-1 and FJ-2 at a rate of $10^{\circ}\text{C min}^{-1}$.

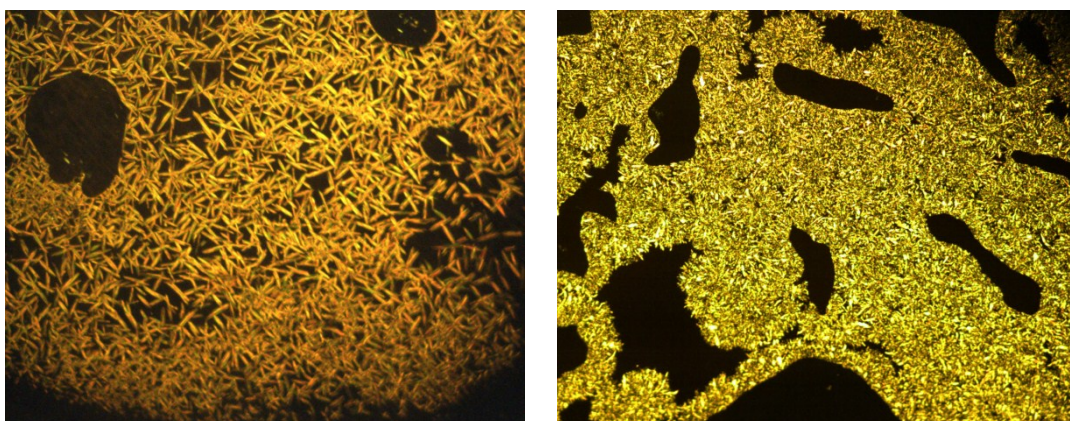


Figure S3. POM images of FJ-1 (left, 168°C) and FJ-2 (right, 120°C) upon cooling process

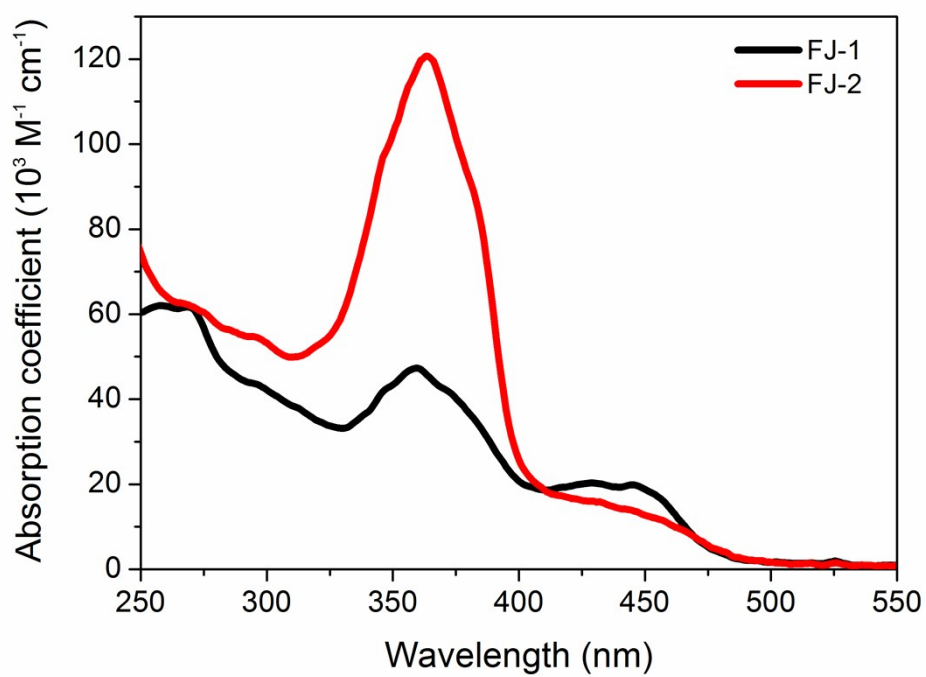


Figure S4. UV-vis absorption spectra of the FJ-1 (black) and FJ-2 (red) measured in CH₂Cl₂ (1 × 10⁻⁶ M) at room temperature

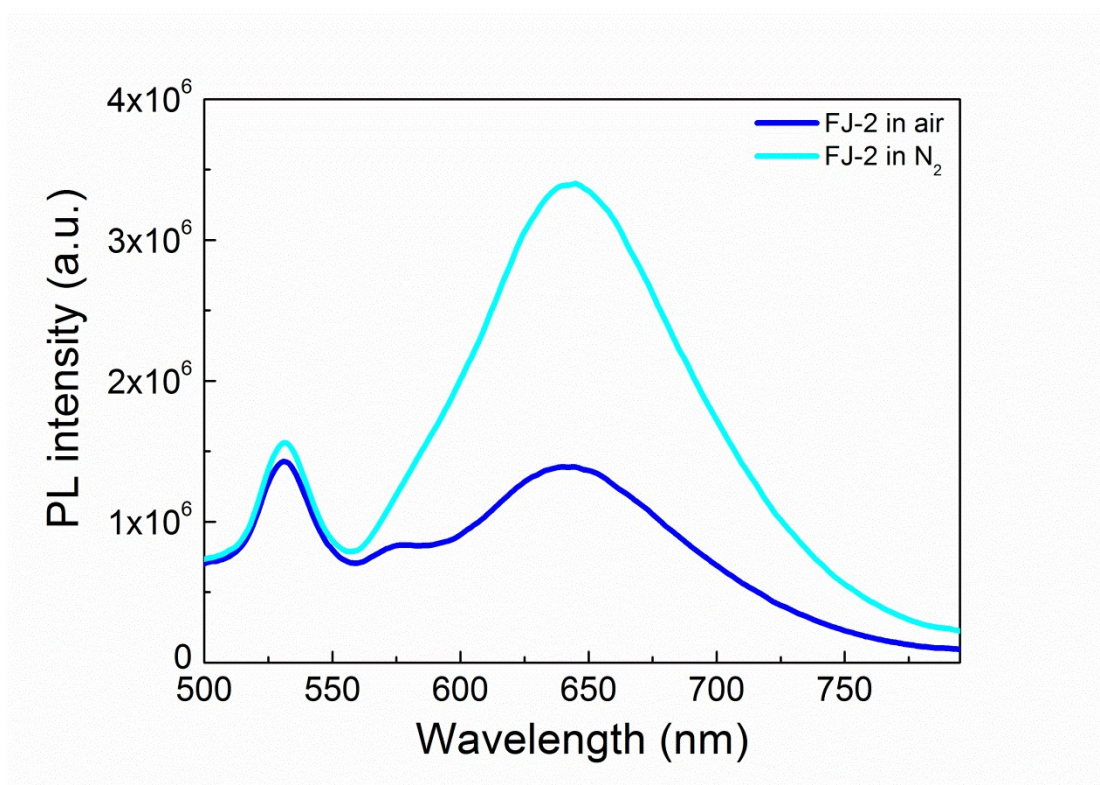


Figure S5. PL spectra of FJ-2 in solution both in air and N₂ at RT upon excitation of 460 nm

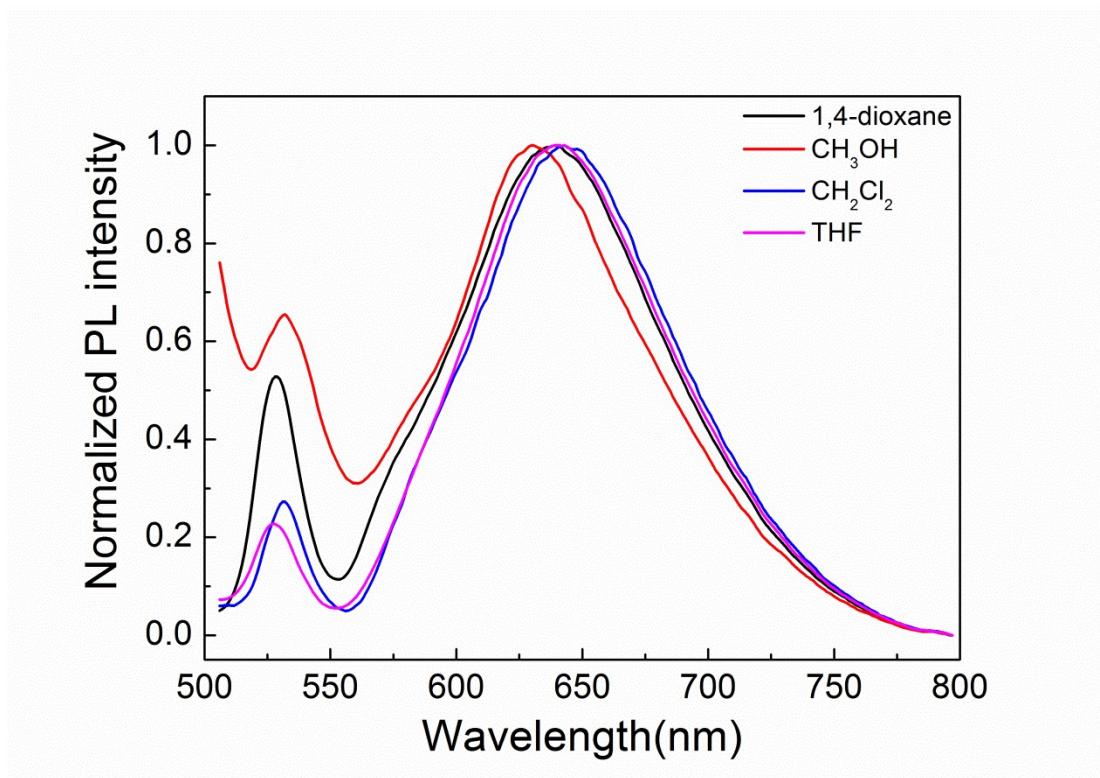


Figure S6. PL spectra of FJ-2 in different degassed solution at RT upon excitation of 460 nm

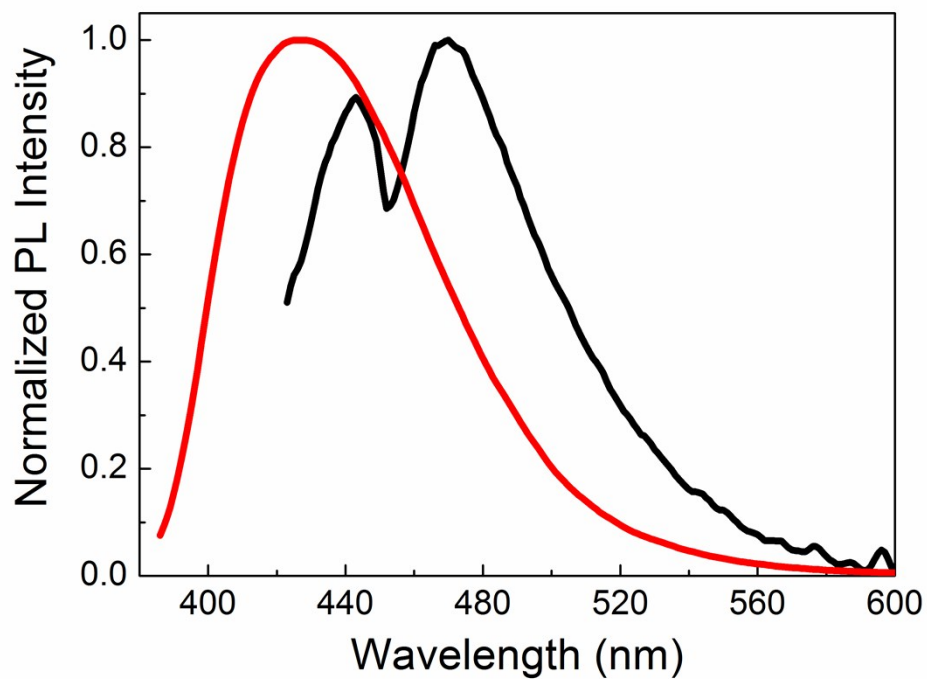


Figure S7 Emission of cyclometallating ligand in CH_2Cl_2 at room temperature (red) and 77K (black)

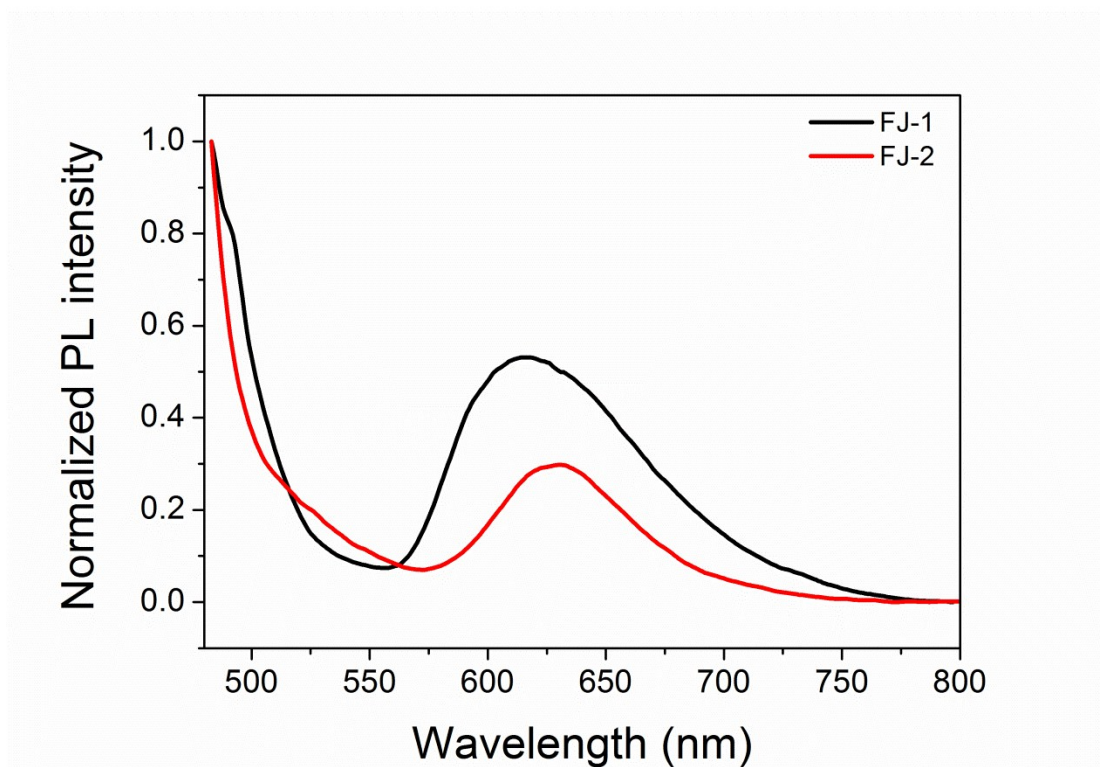


Figure S8. PL spectra of FJ-1 and FJ-2 in neat film at RT upon excitation of 460 nm

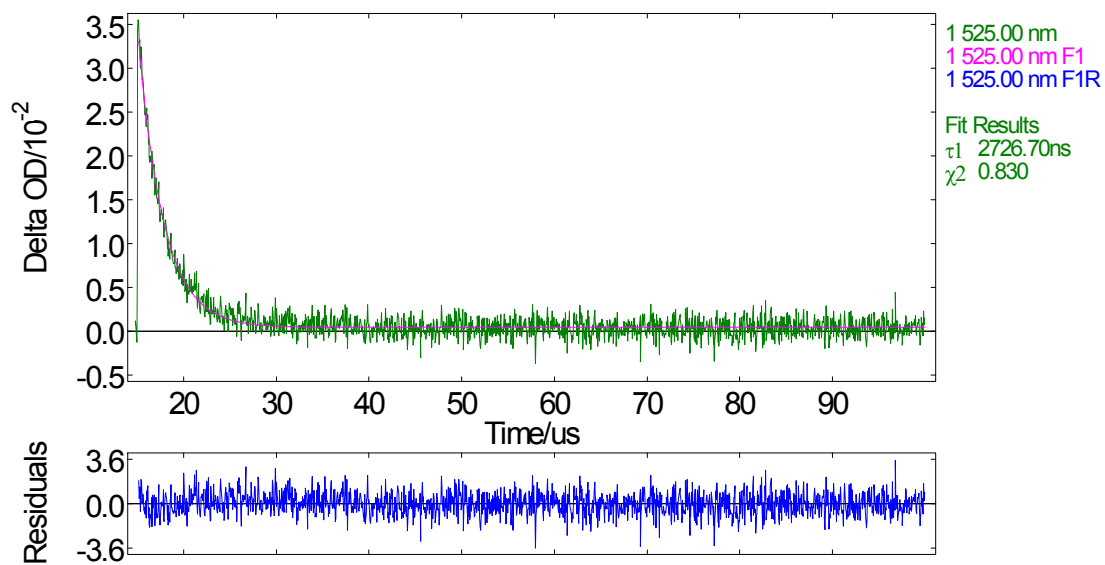


Figure S9. TA decay for FJ-1, following 525 nm pulsed laser excitation in degassed CH_2Cl_2

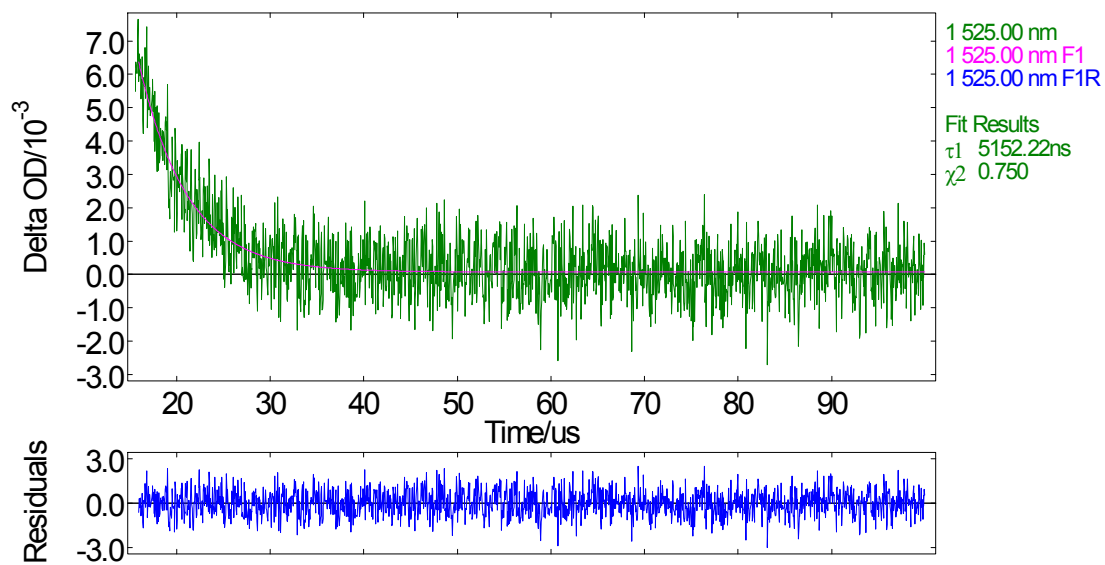


Figure S10. TA decay for FJ-2, following 525 nm pulsed laser excitation in degassed CH_2Cl_2

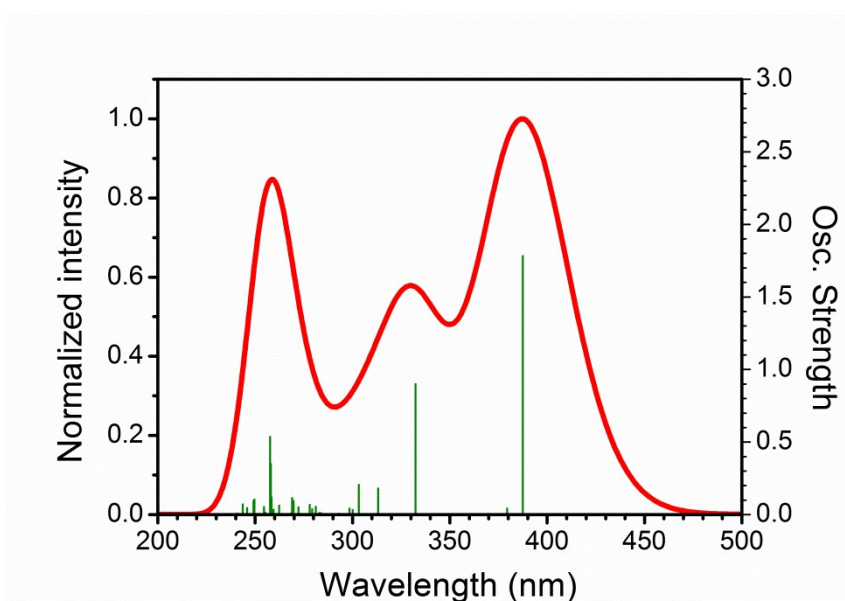


Figure S11. The simulated absorption spectra of FJ-1 together with the Osc. Strength.

Table S2. Natural Transition orbitals representing the main absorption bands of FJ-1

Wavelength/nm	Osc. Strength	Major contribution
387.5	1.7859	HOMO->LUMO (45%) HOMO-1->LUMO+1(33%)
332.4	0.9026	HOMO-2->LUMO (30%) HOMO->LUMO (15%) HOMO->LUMO+2 (22%)
313.2	0.1843	HOMO-3->LUMO (22%) HOMO-2->LUMO+1 (16%), HOMO->LUMO+1 (11%)
303.3	0.2086	HOMO-4->LUMO (20%) HOMO-3->LUMO+1 (23%), HOMO->LUMO+2 (11%)
269.0	0.1186	HOMO->LUMO+7 (13%)
258.5	0.122	HOMO->LUMO+12 (12%)
258.1	0.3522	HOMO-1->LUMO+10 (10%)
257.8	0.5387	HOMO->LUMO+9 (10%)
249.7	0.1073	HOMO-1->LUMO+7 (12%), HOMO-1->LUMO+8 (22%), HOMO->LUMO+8 (11%)

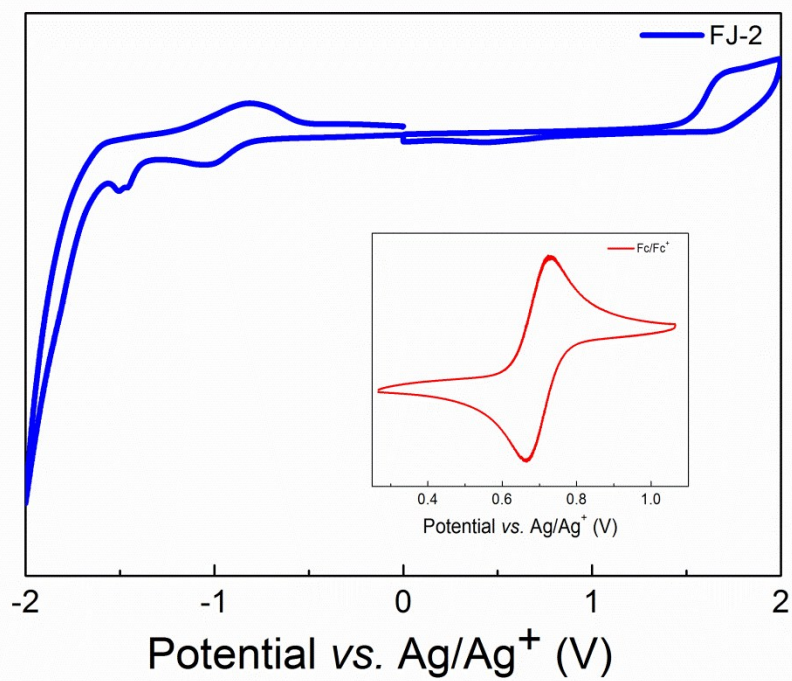
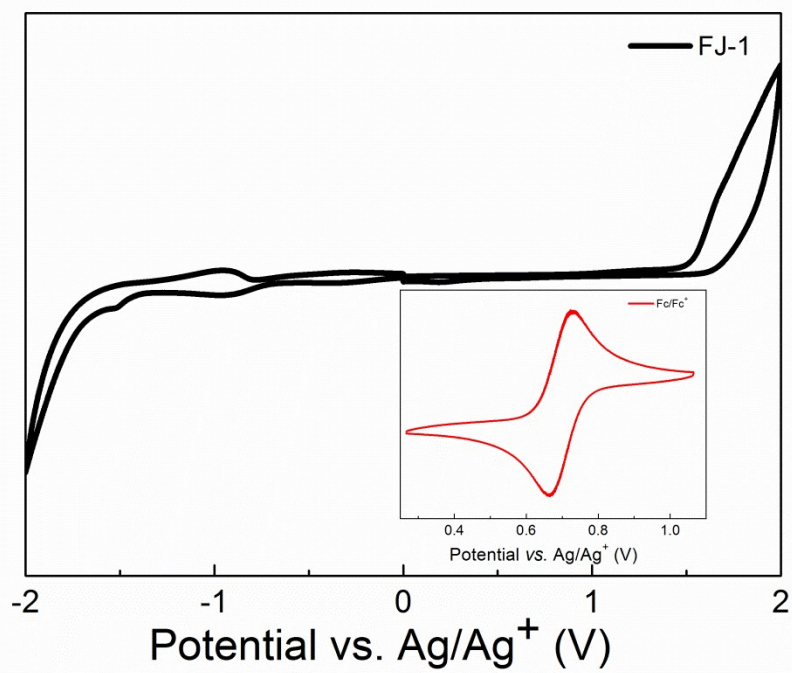


Figure S12. CV curves of platinum complexes measured in CH_2Cl_2 solution.

¹H NMR and TOF-MS spectra

