Supplementary Material (ESI) for Dalton Transactions
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Electronic Supplementary Information

Photophysics in Solution and Langmuir-Blodgett Film and Vapochromic Behavior of the Pt(II) 2,6-Bis(*N*-alkylbenzimidazol-2′-yl)pyridine Complexes with Different Alkyl Chains and Counter Anions

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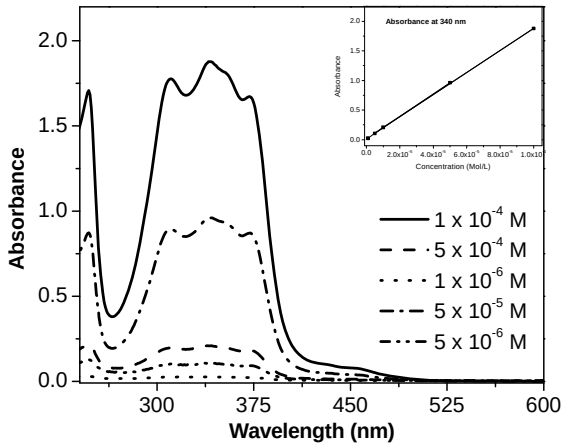


Figure S1. Concentration-dependent UV-Vis absorption spectra of **3** in CH_3CN.

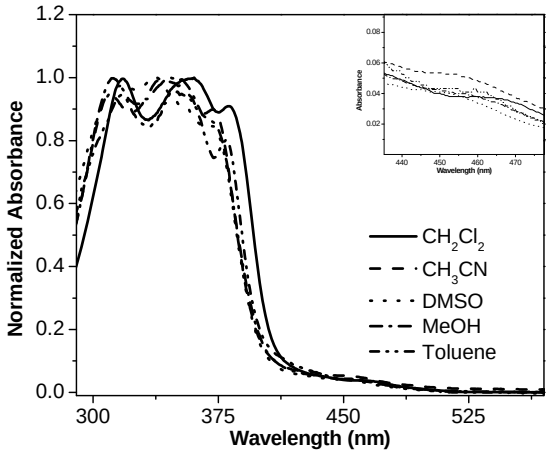


Figure S2. UV-Vis absorption spectra of **5c** in different solvents. Insets are the expansion for the ^{1}MLCT band of this complex.

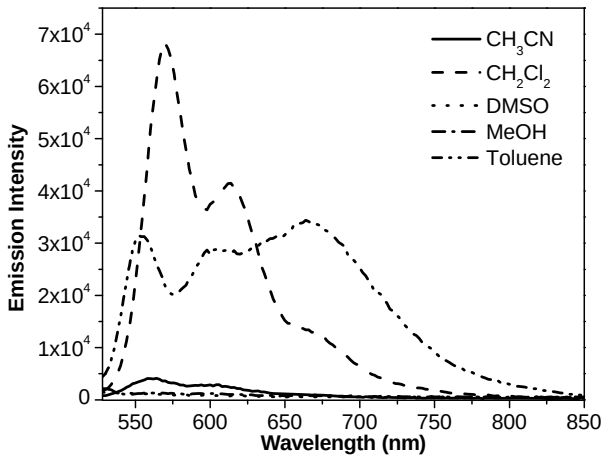


Figure S3. Emission spectra of **5c** in different solvents. The concentration used for the measurements is 1×10^{-5} mol/L, and the excitation wavelength is 450 nm.

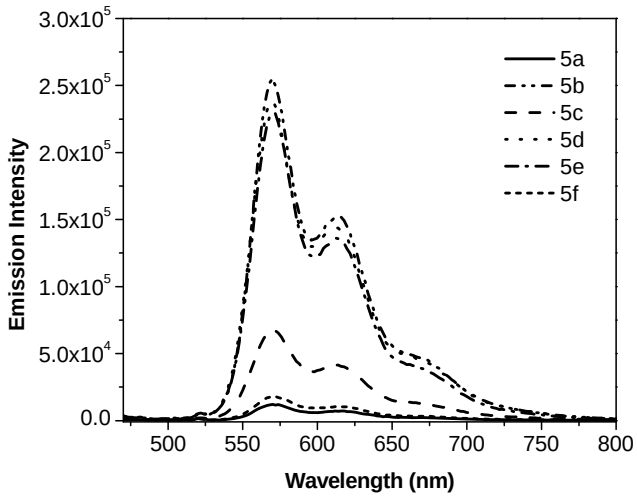


Figure S4. Emission spectra of **5a-5e** in CH_2Cl_2. The concentration used for the measurements is 1×10^{-5} mol/L, and the excitation wavelength is 450 nm.

Figure S5. Solutions of complexes **5(a-f)** in hexane / chloroform (v/v = 3/1) mixture.

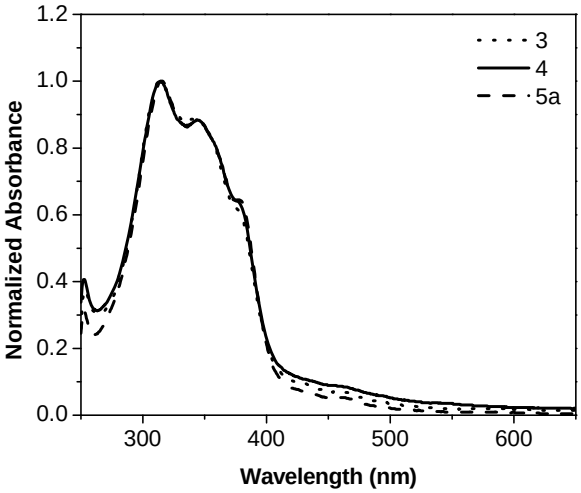


Figure S6. Absorption spectra of aggregated **3-5a** in hexane / chloroform (v/v = 66/34) solution.

The original concentration for all of the solutions is 2×10^{-5} mol/L.

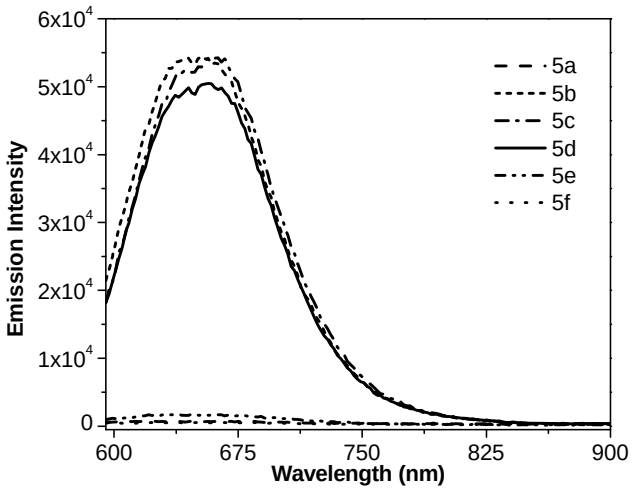


Figure S7. Emission spectra of aggregated **5 (a-f)** in mixed hexane/$CHCl_3$ (v/v = 7/3) solution (c = 2×10^{-5} mol/L) upon excitation at λ_{ex} = 570 nm. The percentage shown in the legend is the hexane percentage.

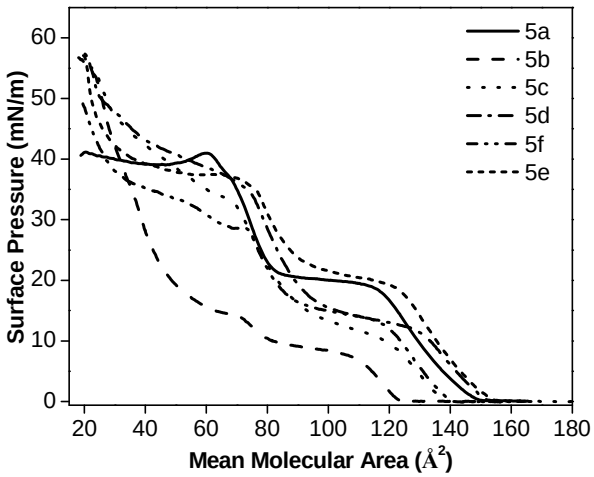
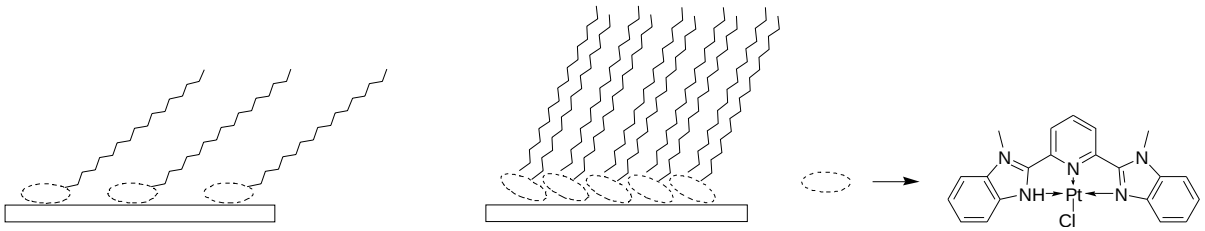


Figure S8. Surface pressure-molecular area isotherm on pure water for **5(a-f).**



(a) (b)

Figure S9. Schematic representation of "*flat-on*" (a) and "*side-on*" (b) orientation of the molecules in LB films.

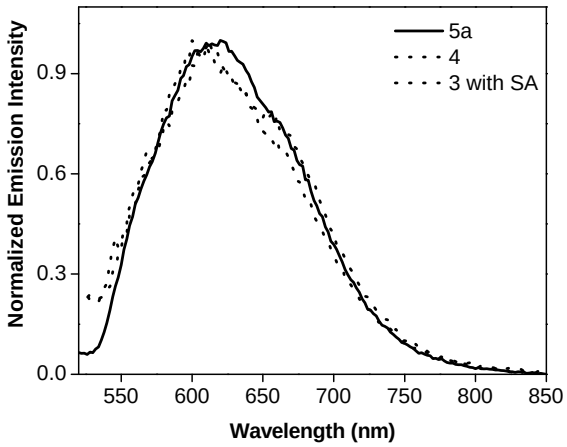


Figure S10. Normalized emission spectra of 5-layer LB films of **3-5a** when excited at 450 nm.