

Supporting information

## **Homometallic Ln(III)-complexes from ILCT ligand with sensitized vis-NIR emission, excitation-dependent PL color tuning and white-light emitting**

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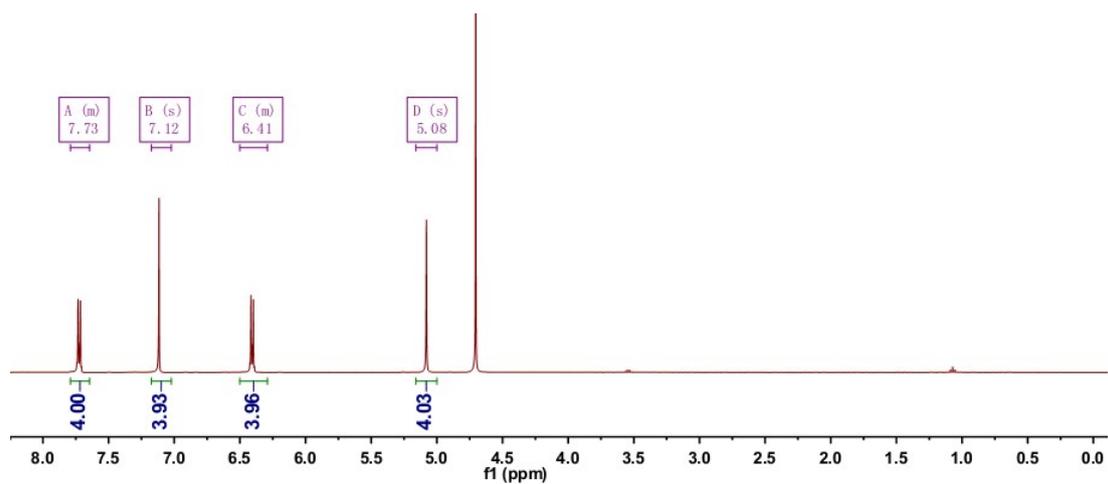


Fig. S1 The  $^1\text{H}$ NMR spectrum of PBPO ligand.

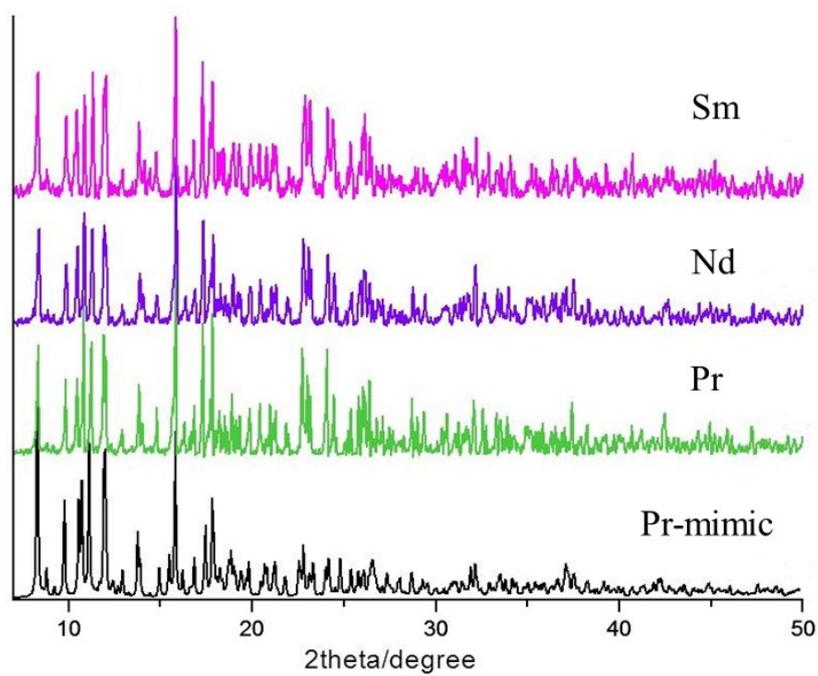


Fig. S2 The PXRD patterns of **LIFM-24**(Ln= Pr, Nd, and Sm) complexes.

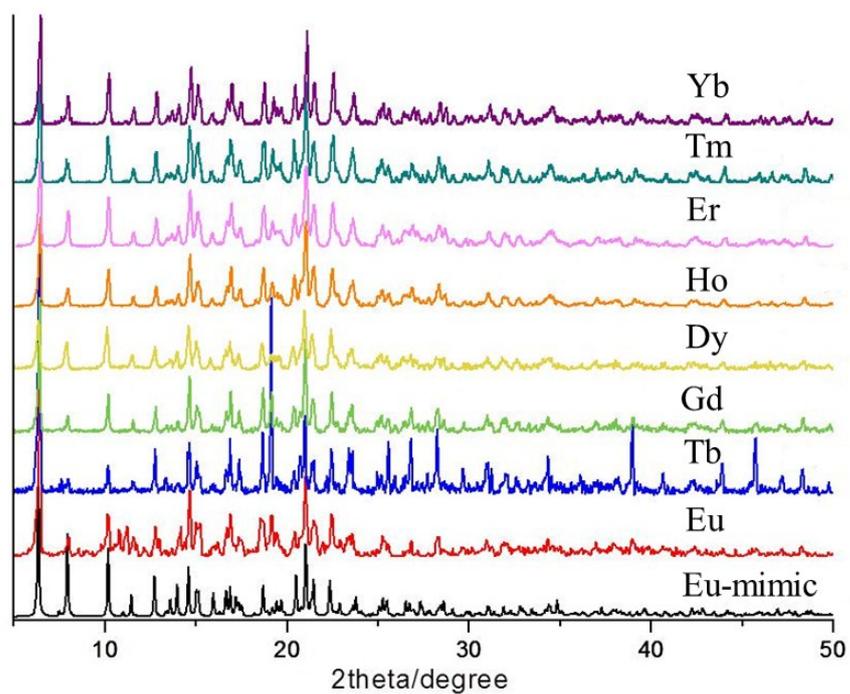


Fig. S3 The PXR D patterns of **LIFM-25**(Ln = Eu, Gd, Tb, Dy, Ho, Er, Tm, and Yb) complexes.

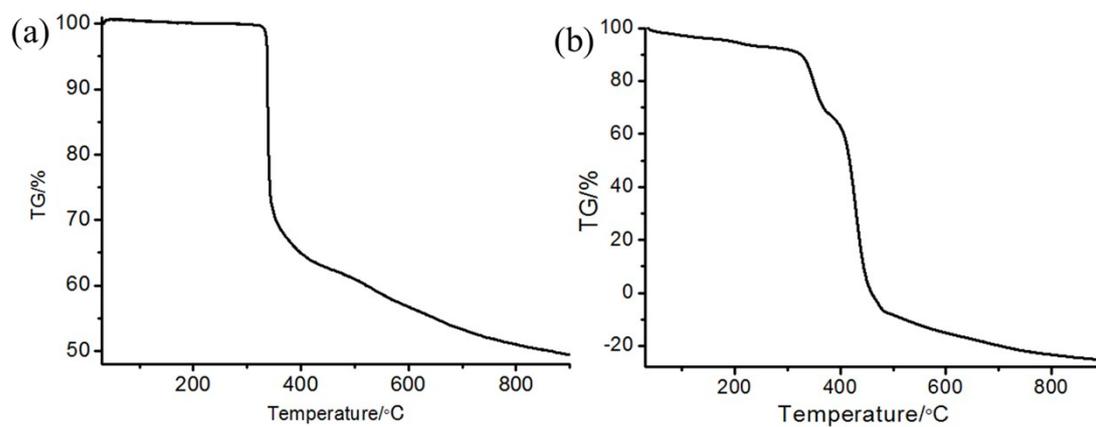


Fig. S4 The TGA curves of **LIFM-24**(Pr) (a) and **LIFM-25**(Ho) (b).

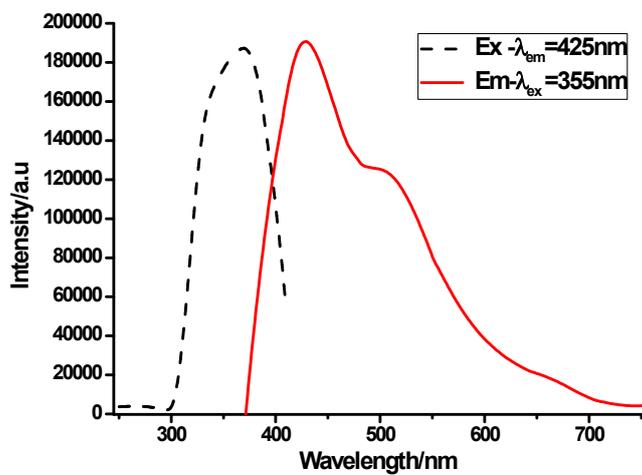


Fig. S5 The excitation (black,  $\lambda_{em}$ =425 nm) and emission (red,  $\lambda_{ex}$ =355 nm) spectra of PBPO ligand.

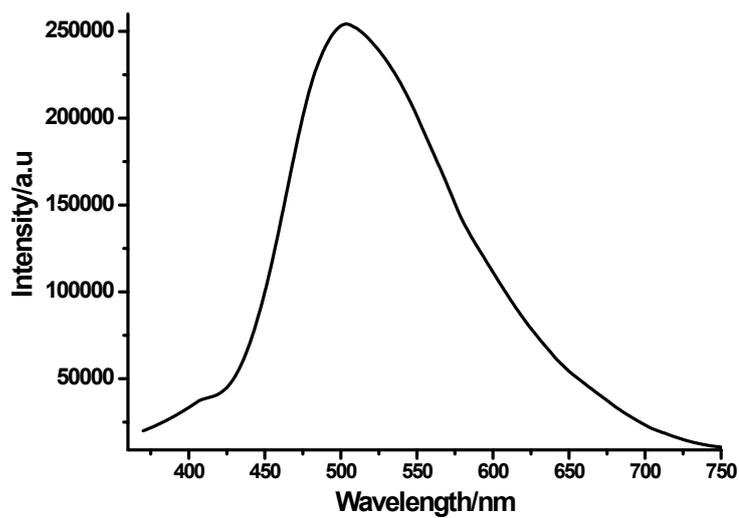


Fig. S6 The phosphorescence spectrum of LIFM-25(Gd) at 77 K ( $\lambda_{ex}$ =305 nm).

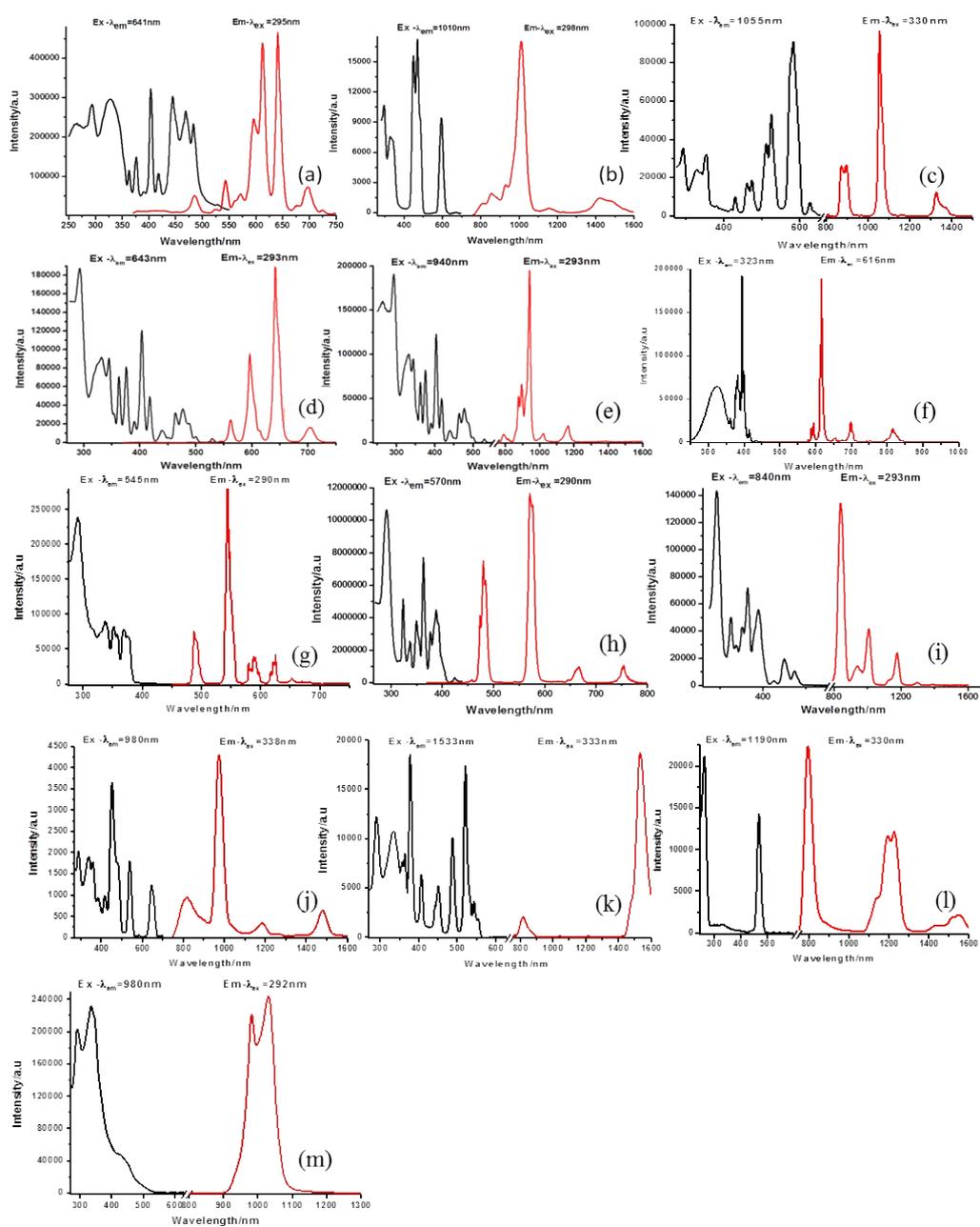


Fig. S7 The excitation (black) and emission (red) spectra of **LIFM-24(Pr)** (a and b), **LIFM-24(Nd)** (c), **LIFM-24(Sm)** (d and e), **LIFM-25(Eu)** (f), **LIFM-25(Tb)** (g), **LIFM-25(Dy)** (h and i), **LIFM-25(Ho)** (j), **LIFM-25(Er)** (k), **LIFM-25(Tm)** (l) and **LIFM-25(Yb)** (m).

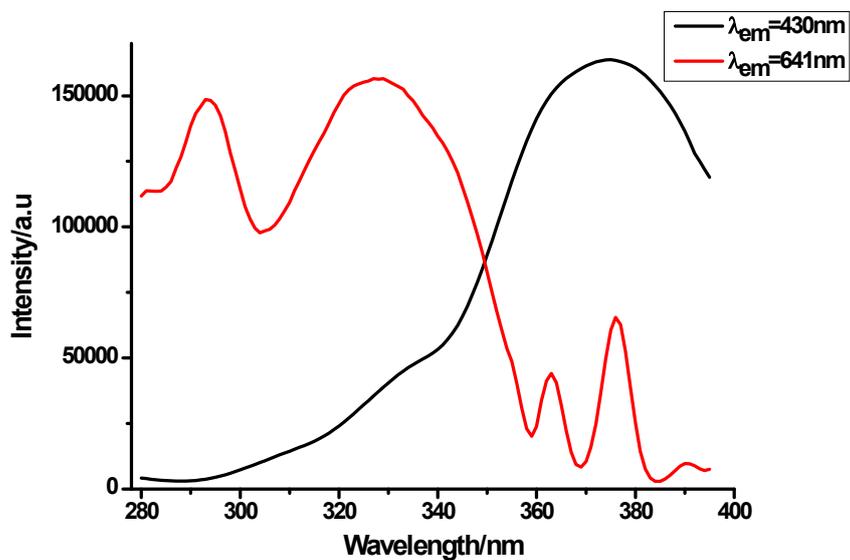


Fig. S8 Excitation spectra of LIFM-24(Pr) monitored at 430 nm (based on ligand emission, black) and 641 nm (based on Pr<sup>3+</sup> emission, red).

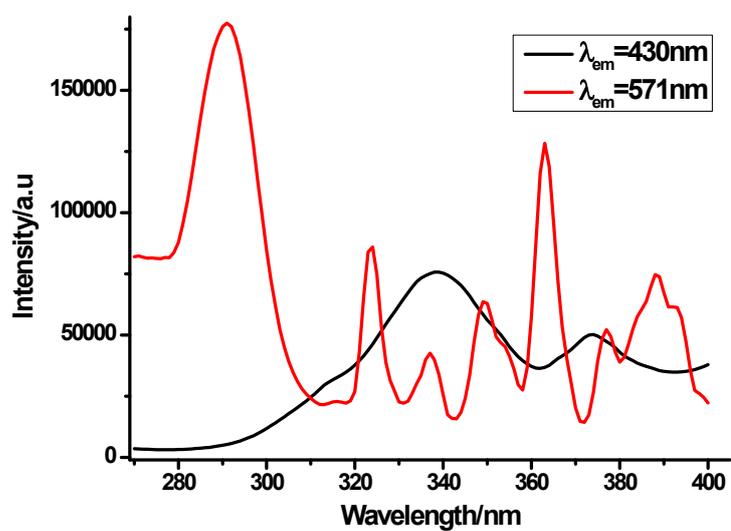


Fig. S9 Excitation spectra of LIFM-25(Dy) monitored at 430 nm (based on ligand emission, black) and 571 nm (based on Dy<sup>3+</sup> emission, red).