

Electronic Supplementary Information

**A phosphorescent Ir(III) complex with formamide for luminescent determination of low-level water content in organic solvents**

Song Guo,<sup>a</sup> Yun Ma,<sup>a</sup> Shujuan Liu,<sup>a</sup> Qi Yu,<sup>a</sup> Aqiang Xu,<sup>a</sup> Jianmei Han,<sup>a</sup> Liuwei Wei,<sup>a</sup> Qiang Zhao<sup>\*a</sup> and Wei Huang

## NMR and MALDI-TOF spectra

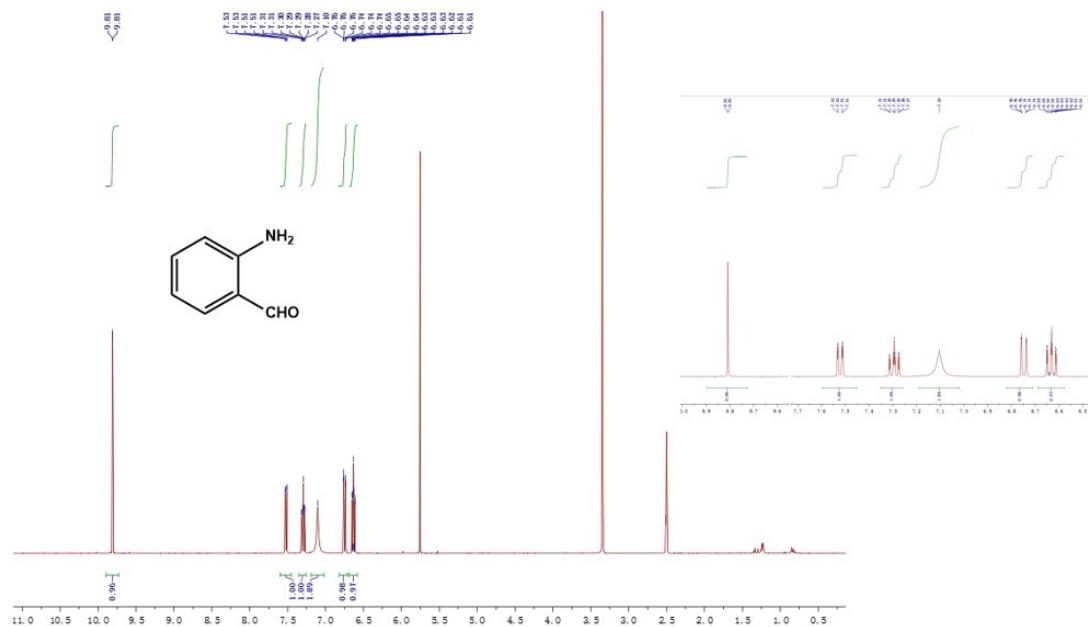
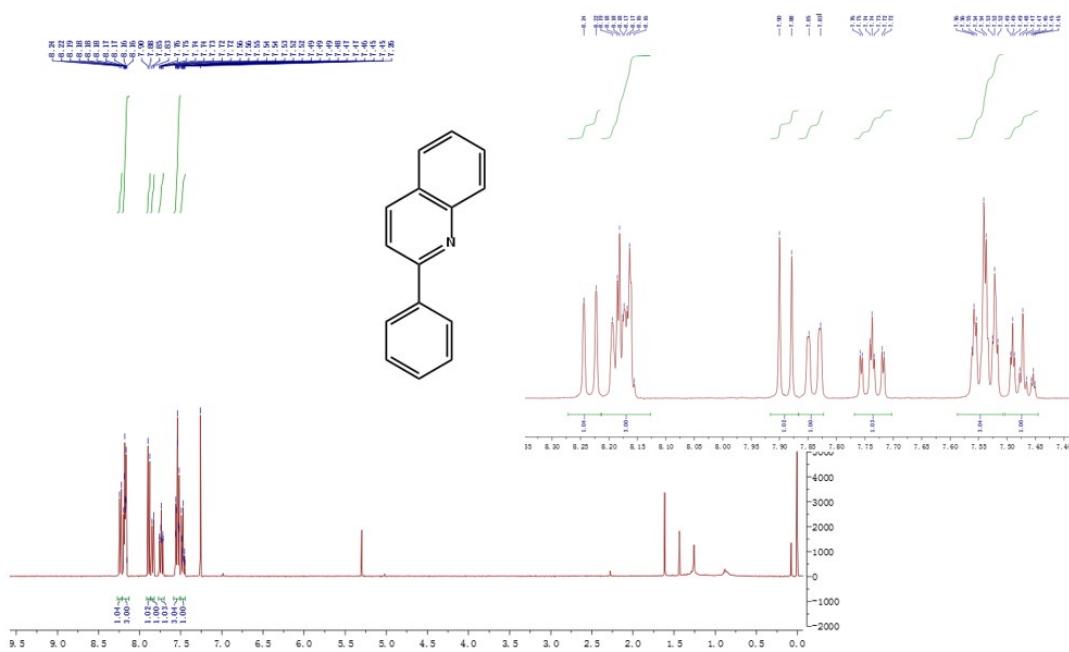
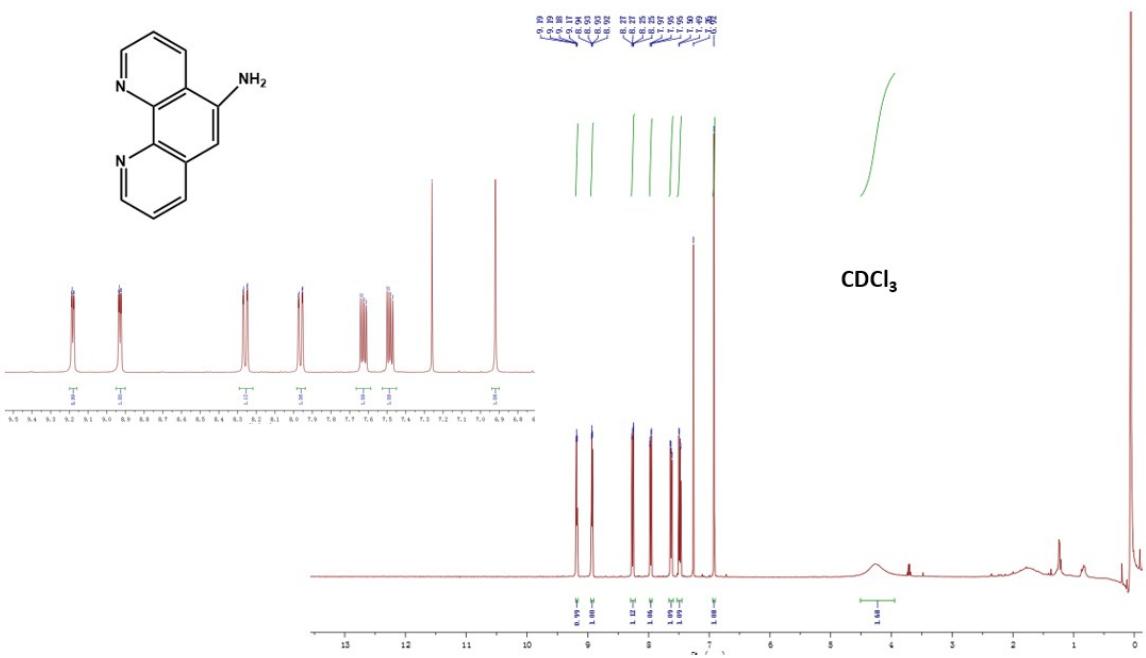


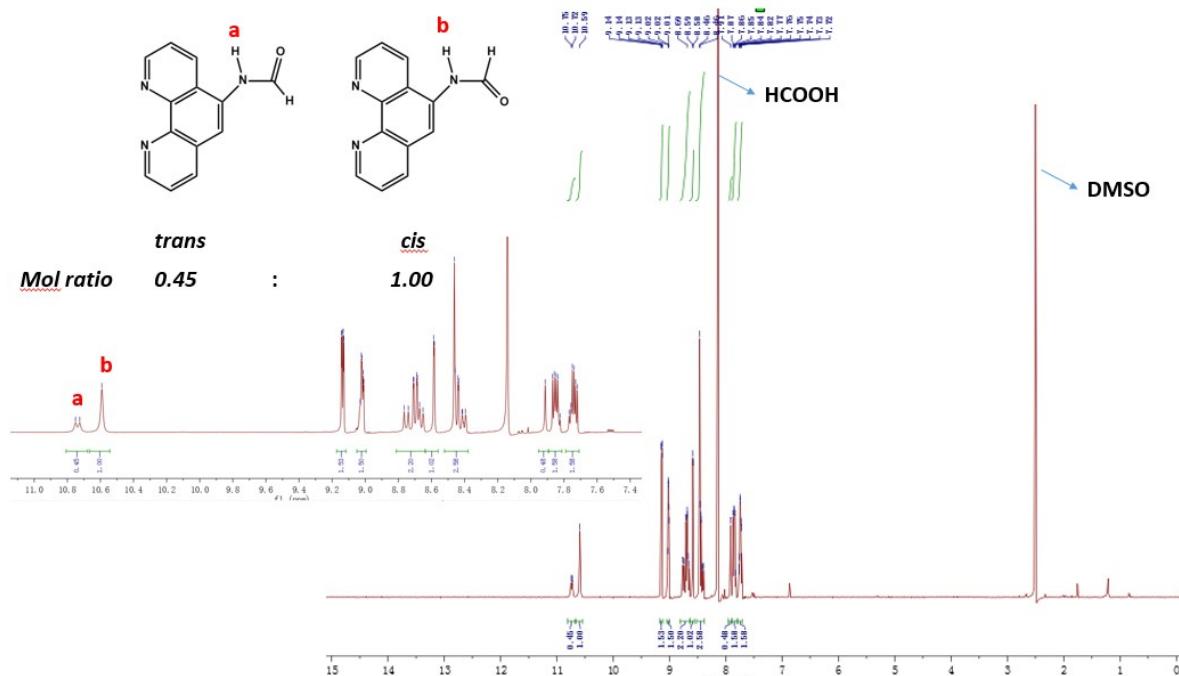
Fig. S1  $^1\text{H}$  NMR spectrum of compound 6.



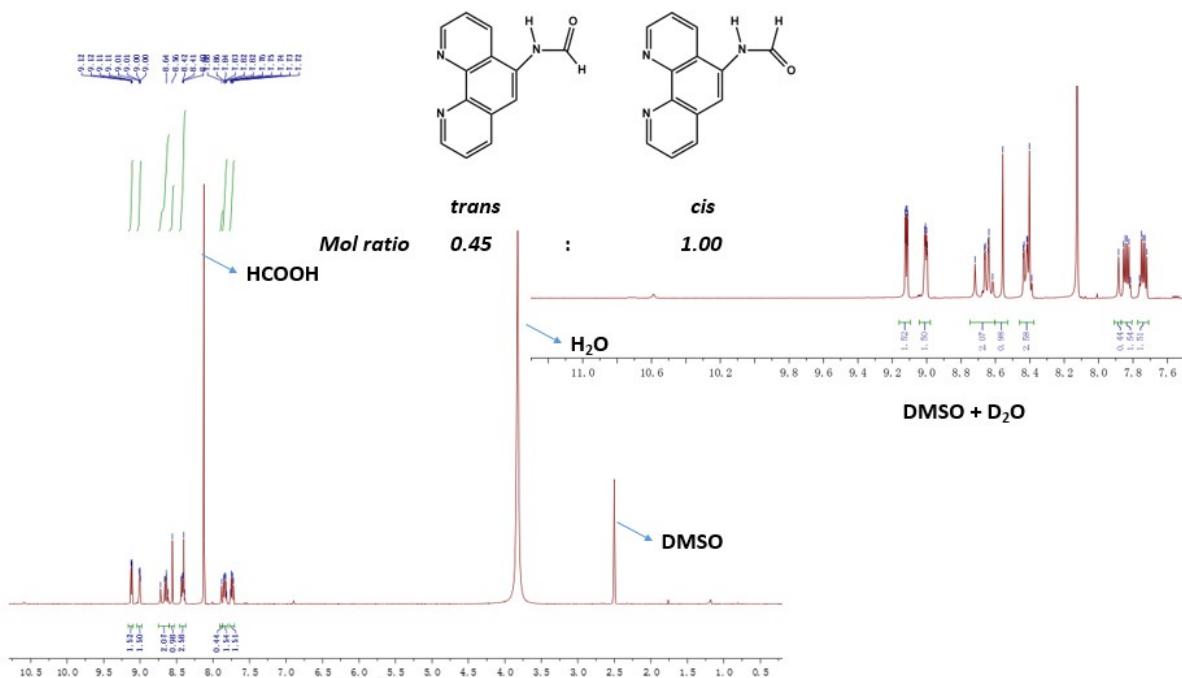
**Fig. S2** <sup>1</sup>H NMR spectrum of compound 7.



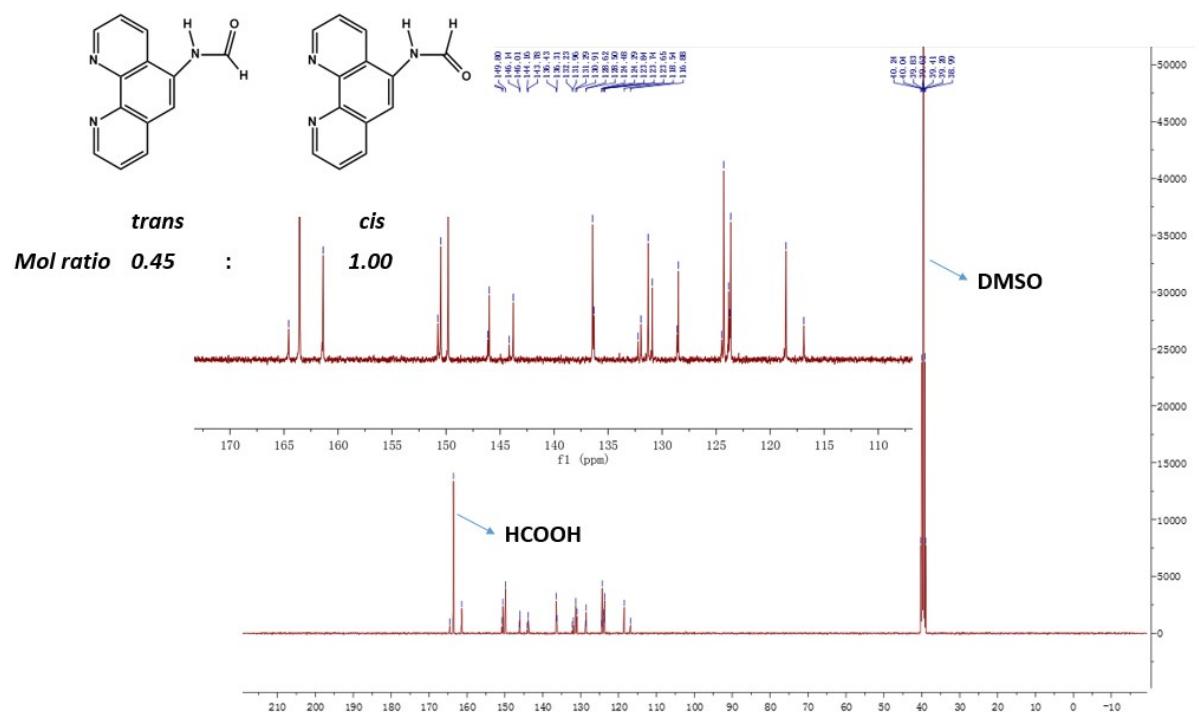
**Fig. S3** <sup>1</sup>H NMR spectrum of compound 3.



**Fig. S4**  $^1\text{H}$  NMR spectrum of compound **4** (in DMSO).



**Fig. S5** <sup>1</sup>H NMR spectrum of compound **4** (in DMSO + D<sub>2</sub>O).



**Fig. S6**  $^{13}\text{C}$  NMR spectrum of compound 4.

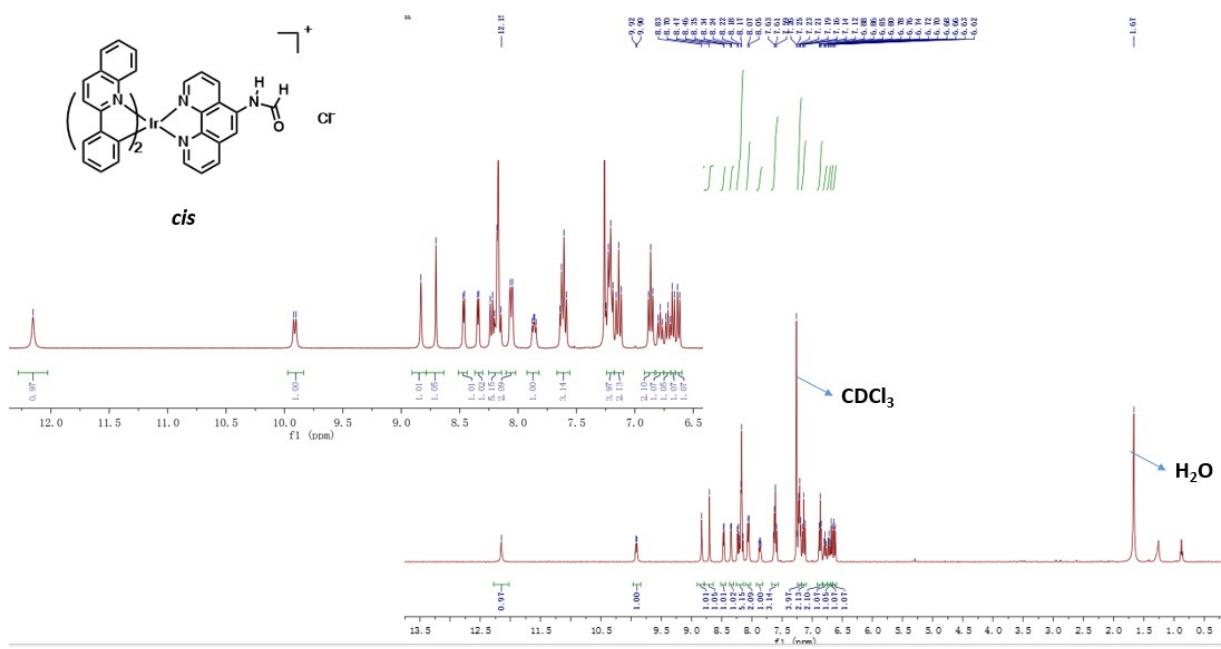
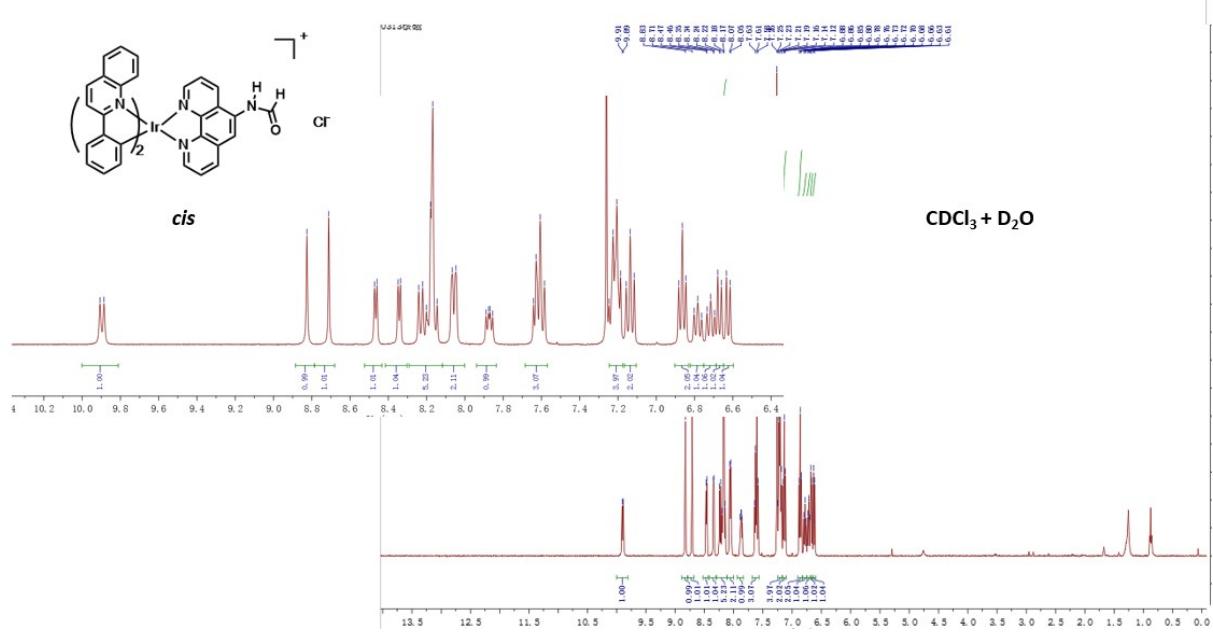
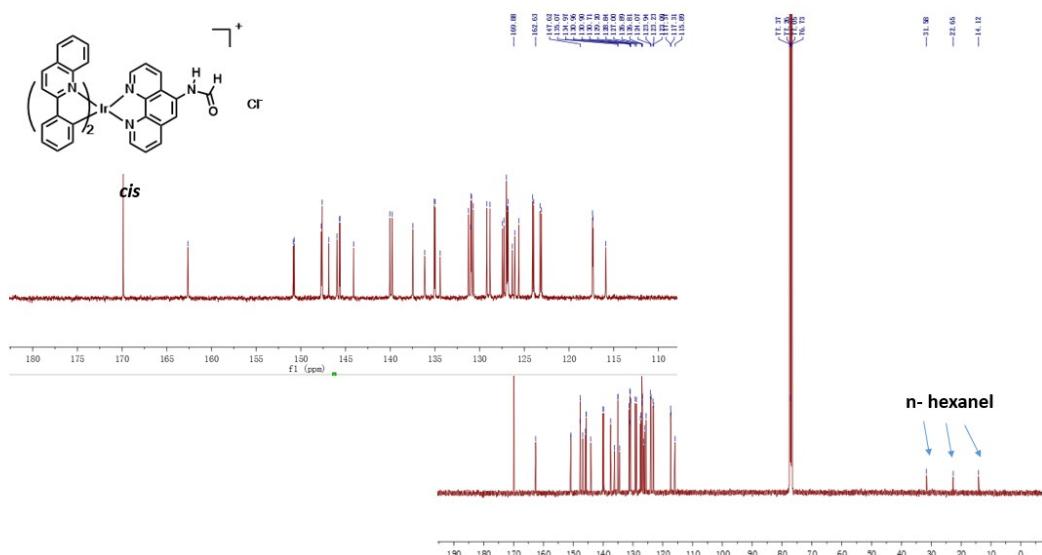


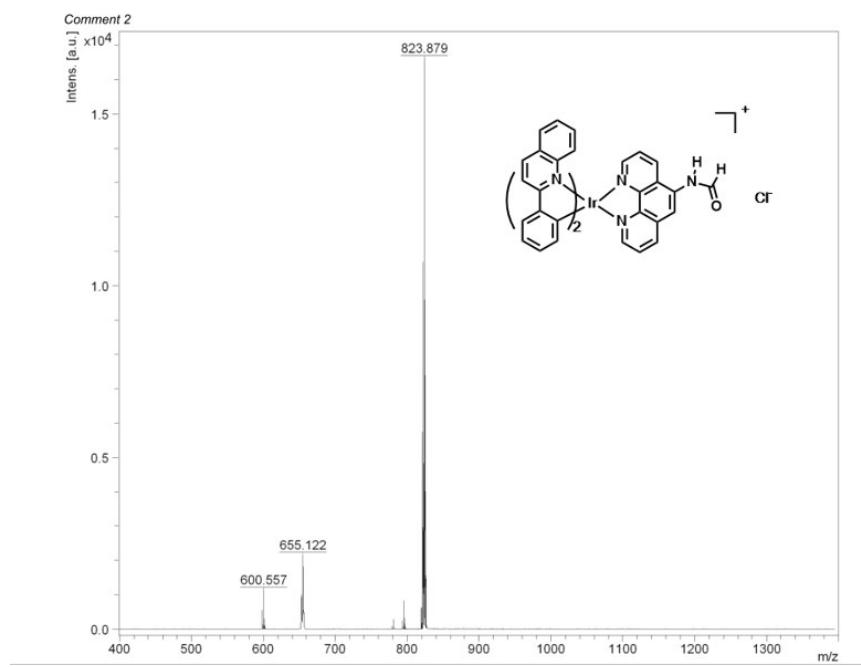
Fig. S7 <sup>1</sup>H NMR spectrum of complex 9 (in  $\text{CDCl}_3$ ).



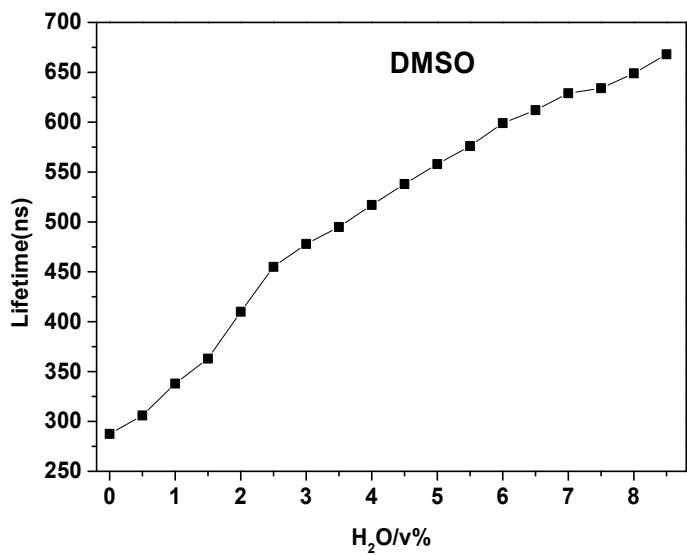
**Fig. S8** <sup>1</sup>H NMR spectrum of complex **9** (in  $\text{CDCl}_3 + \text{D}_2\text{O}$ ).



**Fig. S9**  $^{13}\text{C}$  NMR spectrum of complex 9.



**Fig. S10** MALDI-TOF spectrum of complex **9**.



**Fig. S11** Lifetime titration curve of DMSO solution ( $1.0 \times 10^{-5}$  mol/L) of complex **9** containing  $\text{F}^-$  (0.2 equiv.) with different contents of water.