

Electronic Supplementary Information

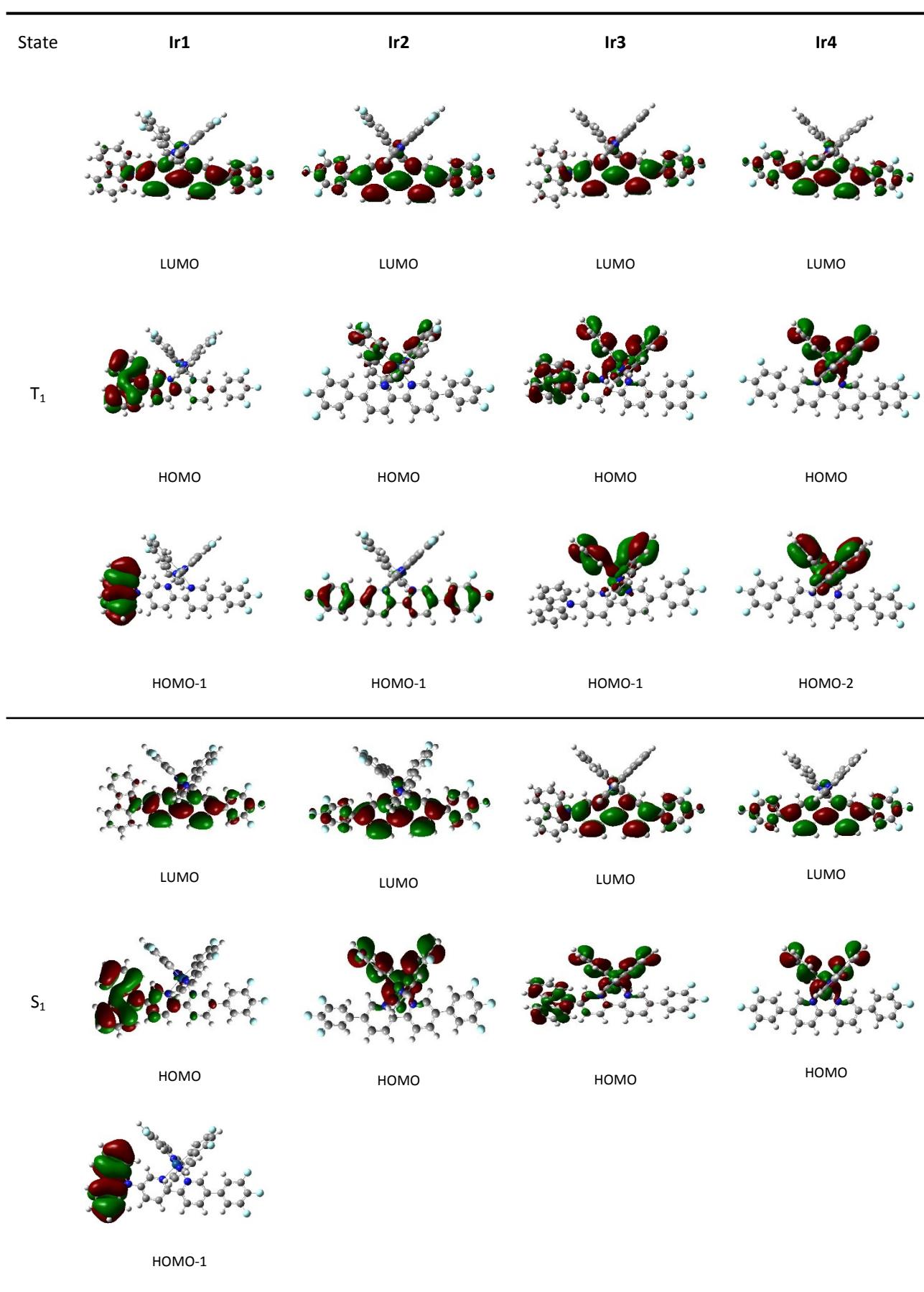
A series of iridophosphors with tunable excited states for hypoxia monitoring via time-resolved luminescence microscopy

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Table S1 HOMOs and LUMOs distributions of Ir1–Ir4 at T₁ and S₁ states



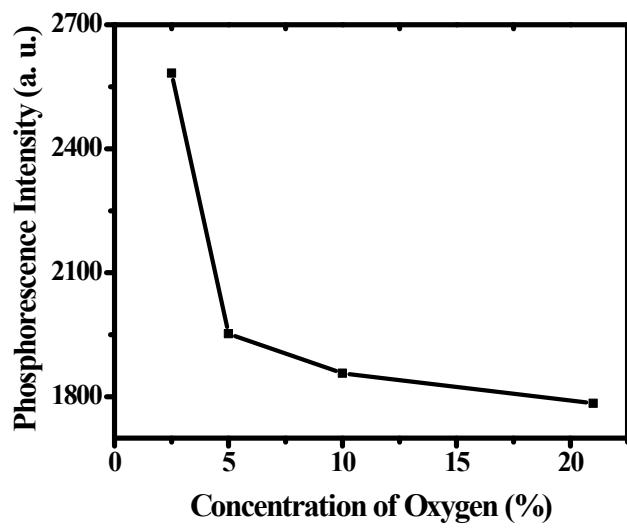


Fig. S1 Plots of average phosphorescence intensity as a function of oxygen contents in HeLa cells incubated with **Ir1** (10 μM).

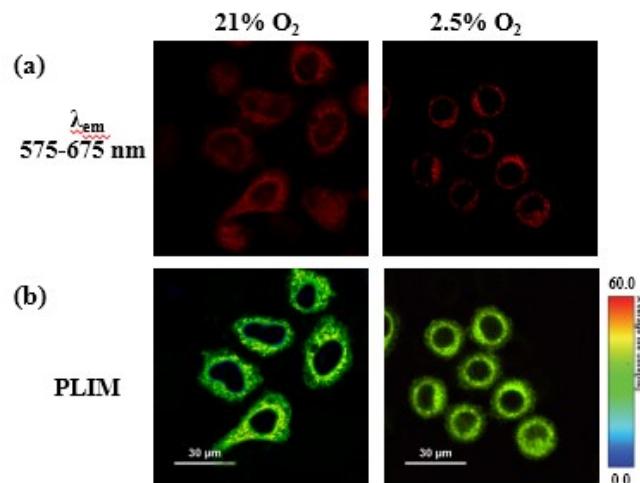


Fig. S2 (a) Confocal luminescence images in HeLa cells incubated with **Ir3** (10 μM) under different oxygen level; (b) Photoluminescence lifetime images in HeLa cells incubated with **Ir3** (10 μM) under different oxygen level.

NMR and MALDI-TOF spectra

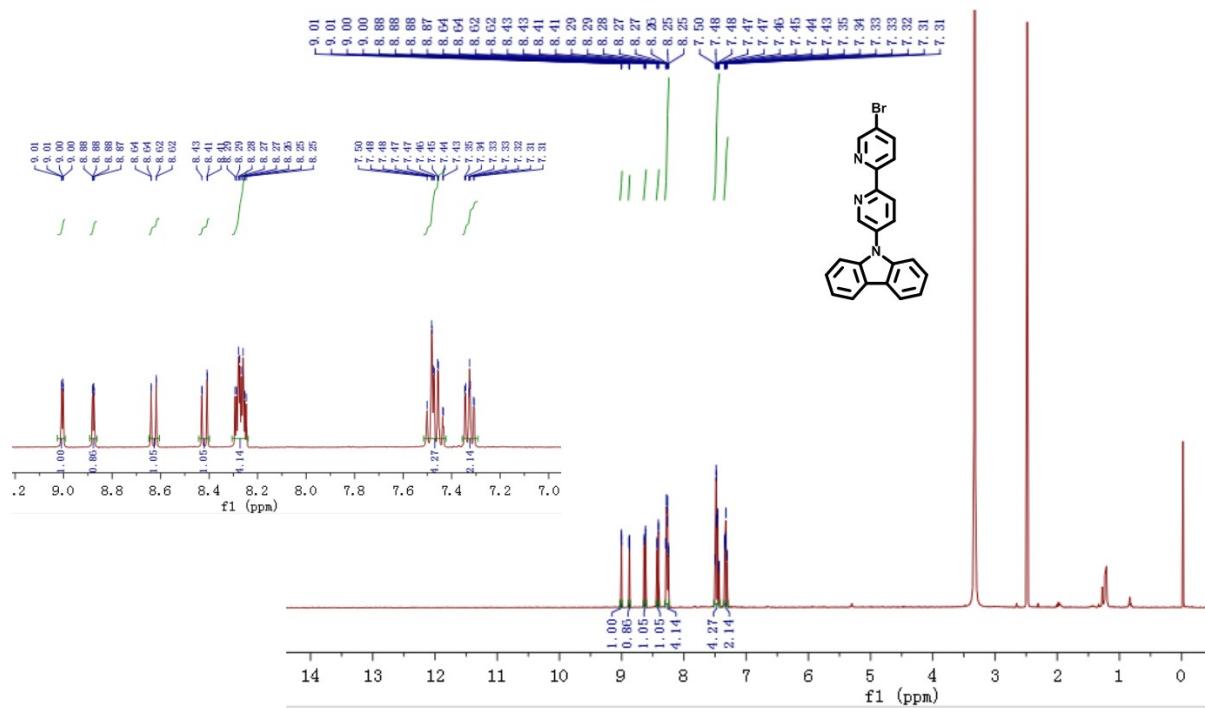


Fig. S3 ^1H NMR spectrum of 9-(5'-bromo-[2,2'-bipyridin]-5-yl)-9*H*-carbazole.

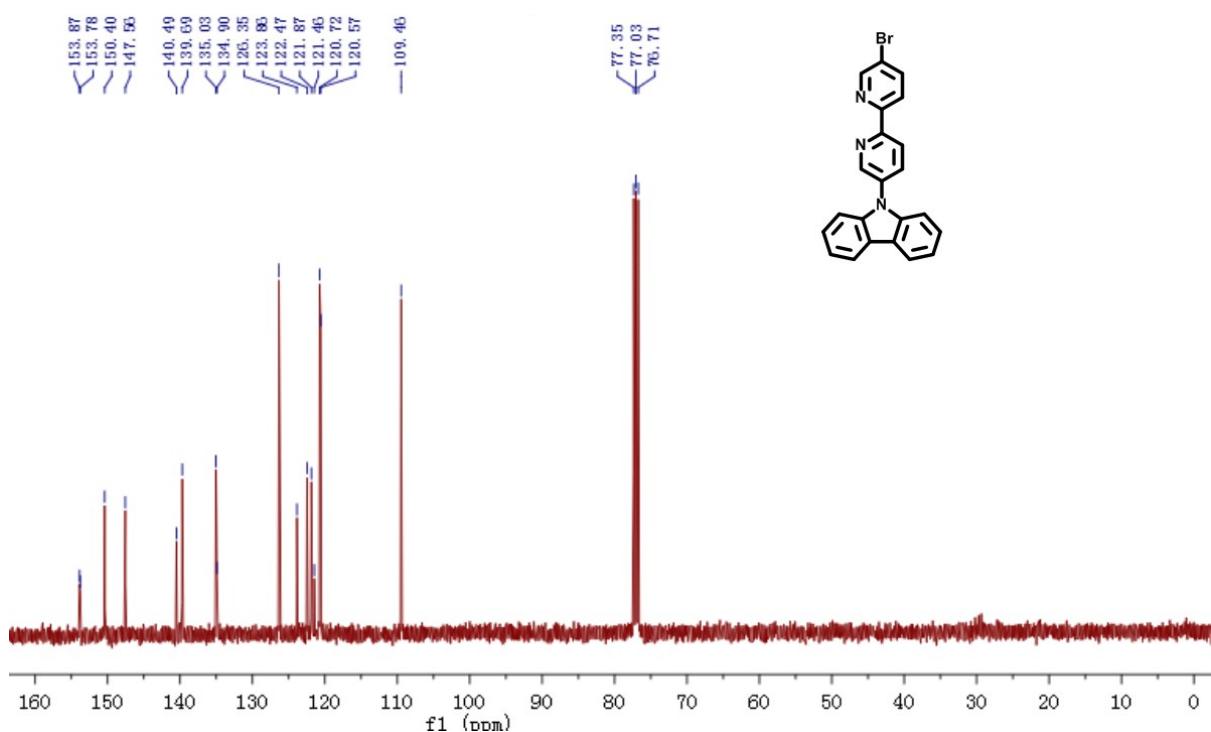
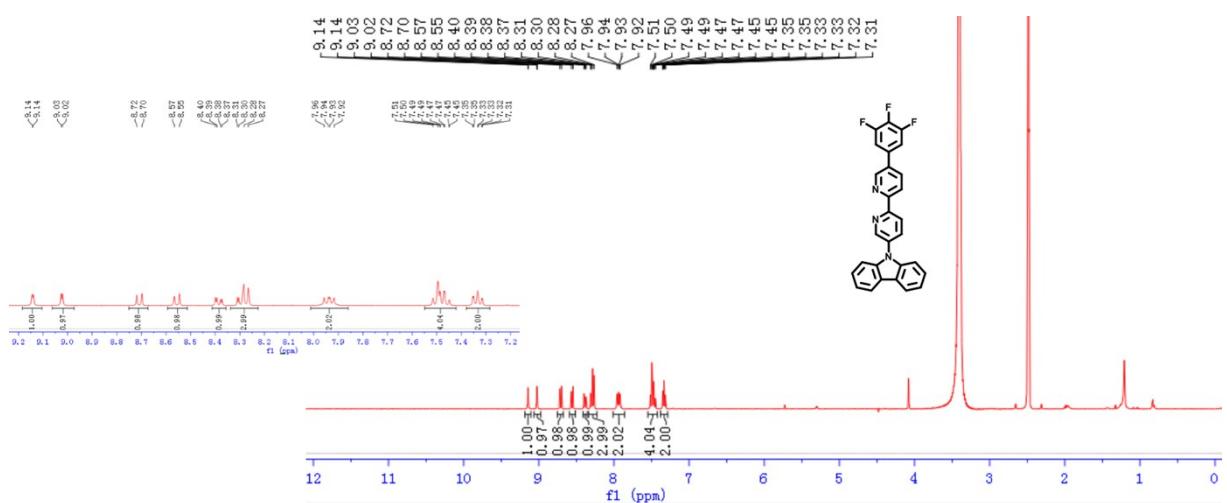


Fig. S4 ^{13}C NMR spectrum of 9-(5'-bromo-[2,2'-bipyridin]-5-yl)-9H-carbazole.



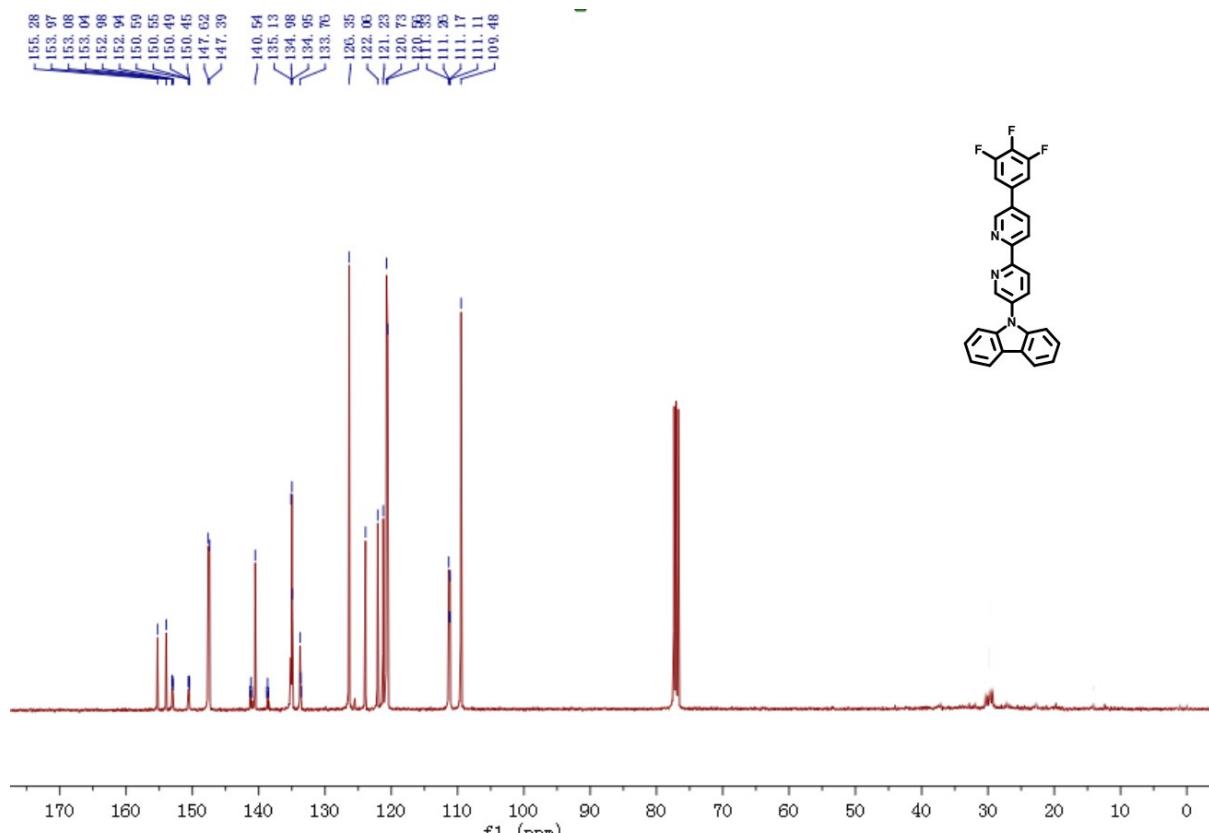


Fig. S6 ^{13}C NMR spectrum of ligand **1**.

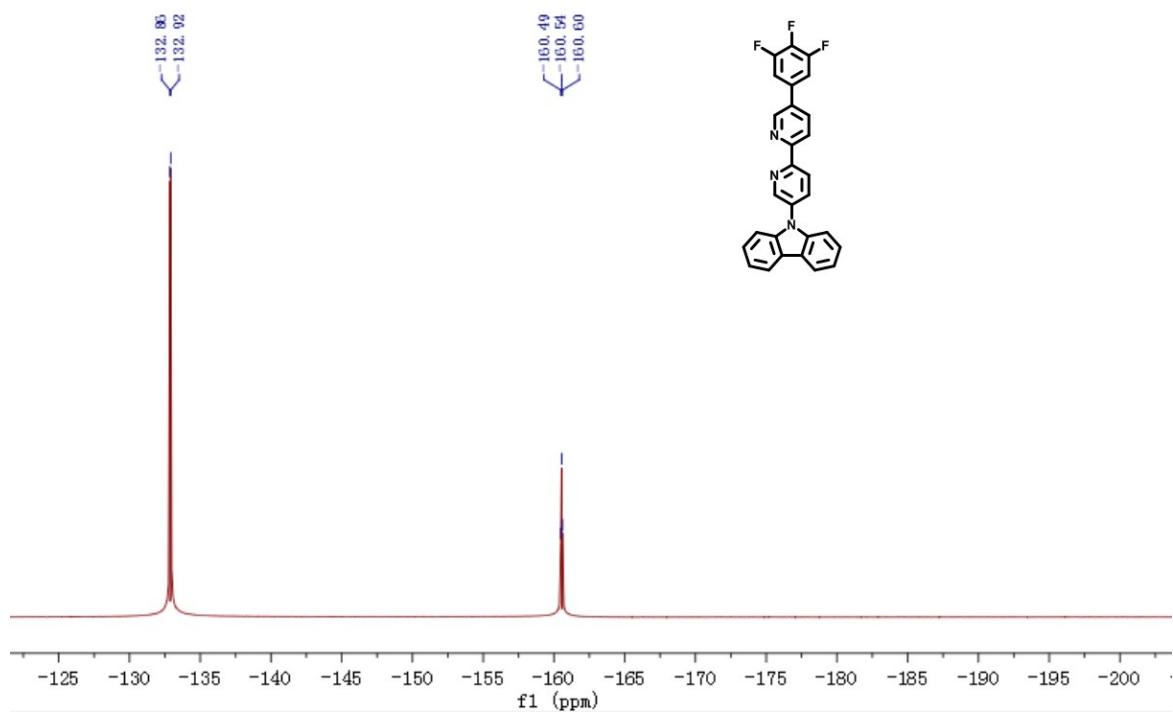


Fig. S7 ^{19}F NMR spectrum of ligand **1**.

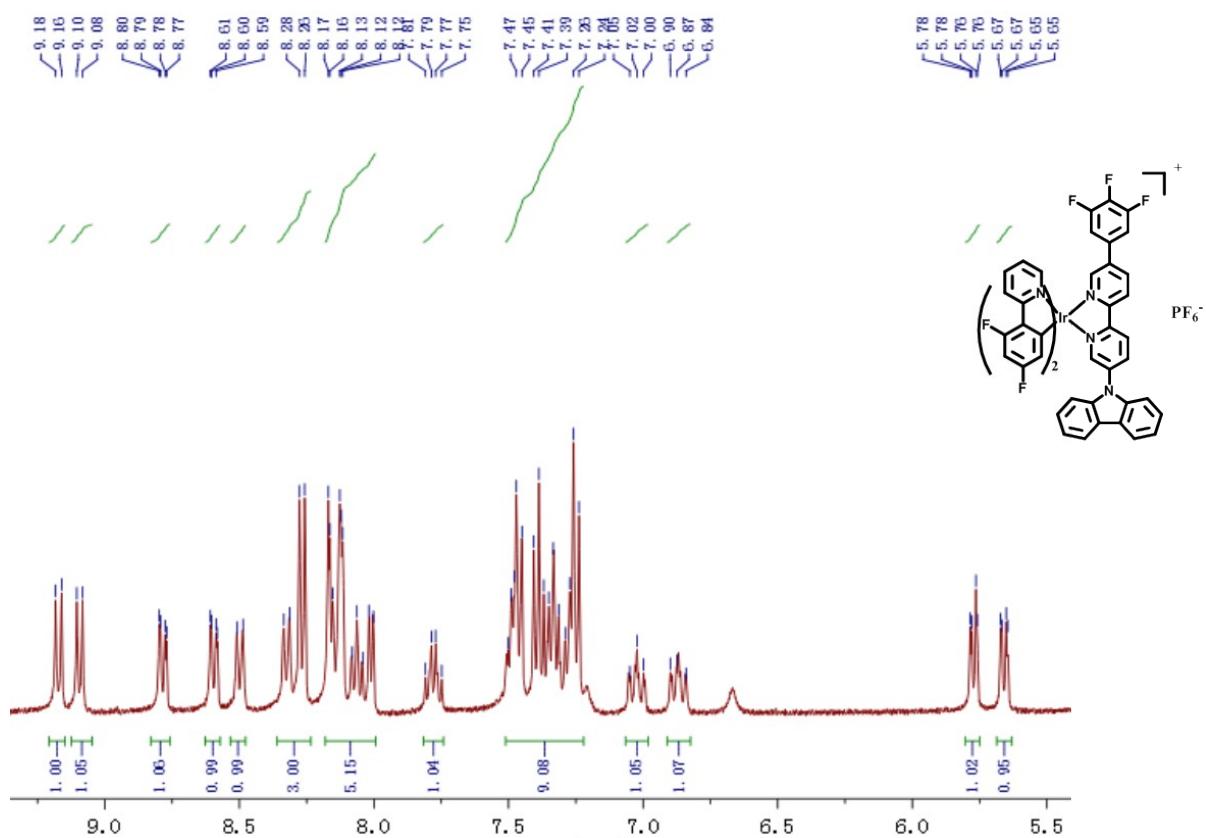


Fig. S8 ^1H NMR spectrum of Ir1.

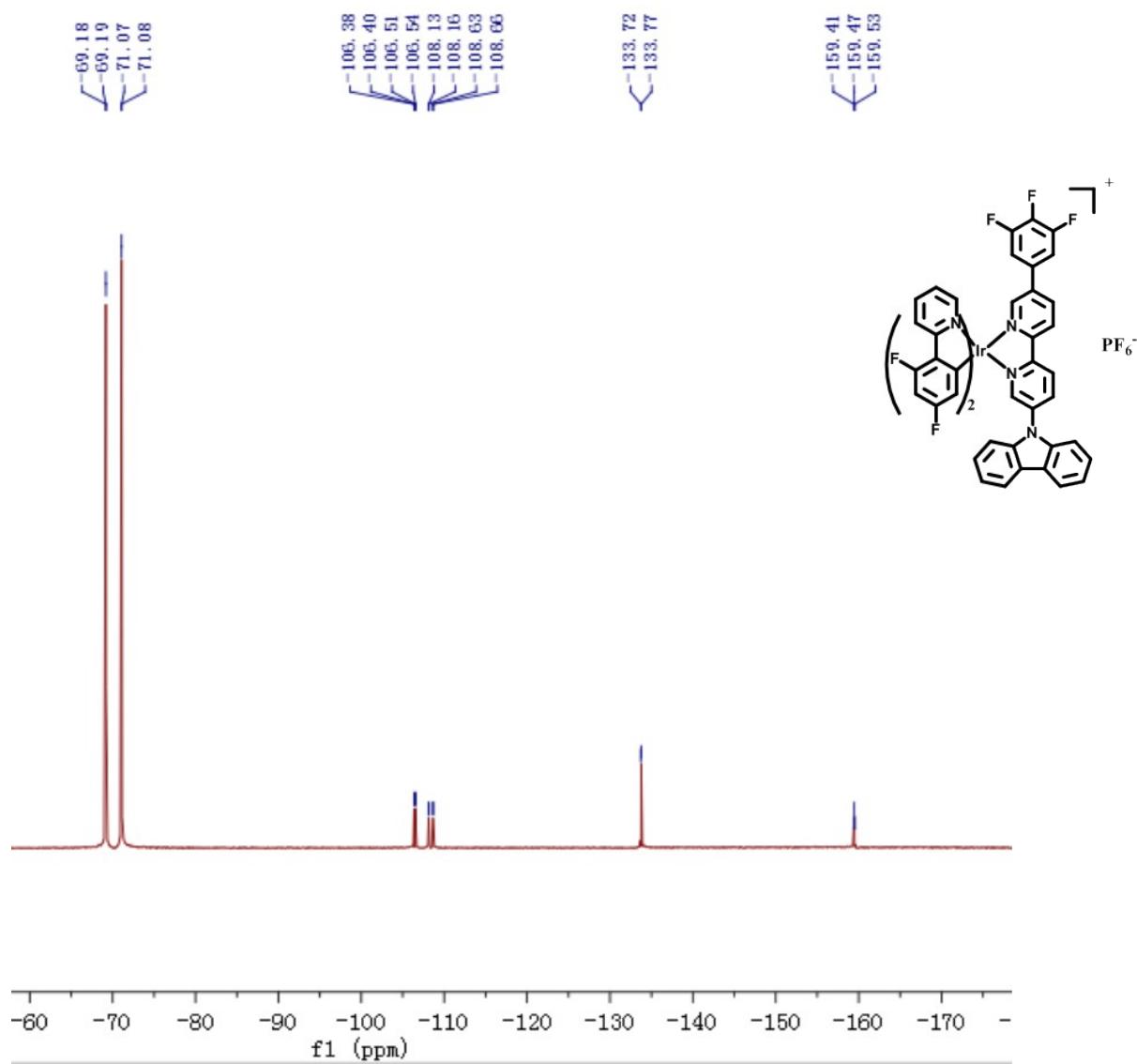


Fig. S9 ^{19}F NMR spectrum of **Ir1**.

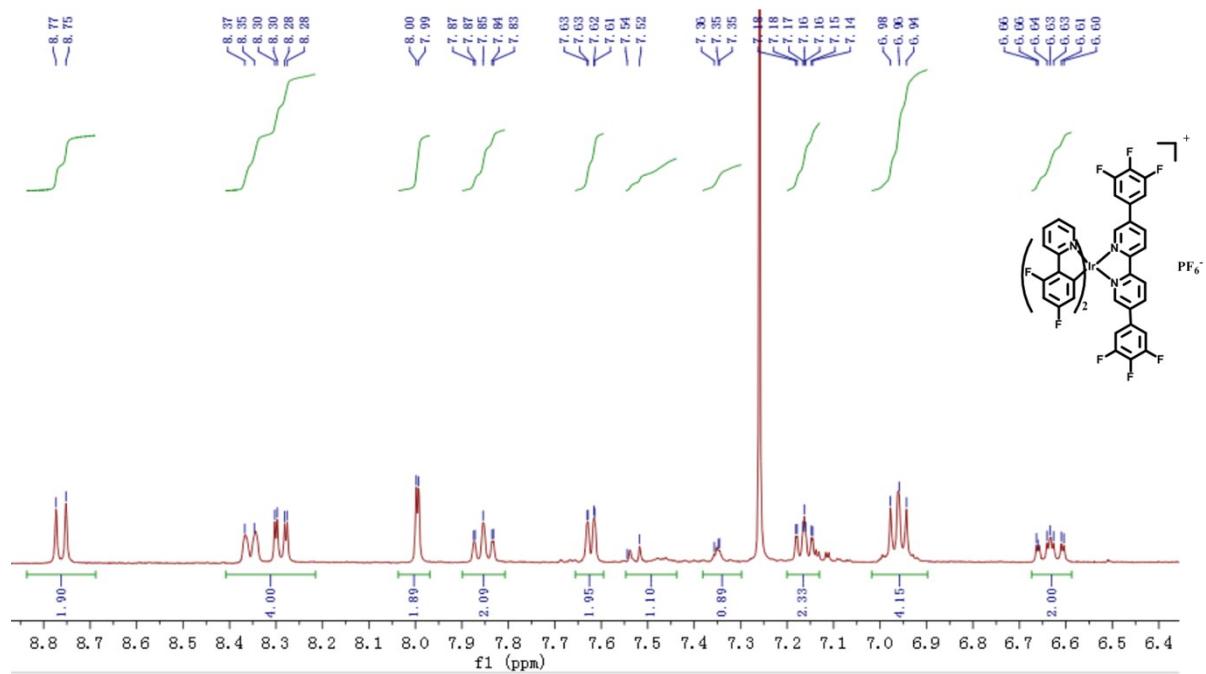


Fig. S10 ^1H NMR spectrum of Ir2.

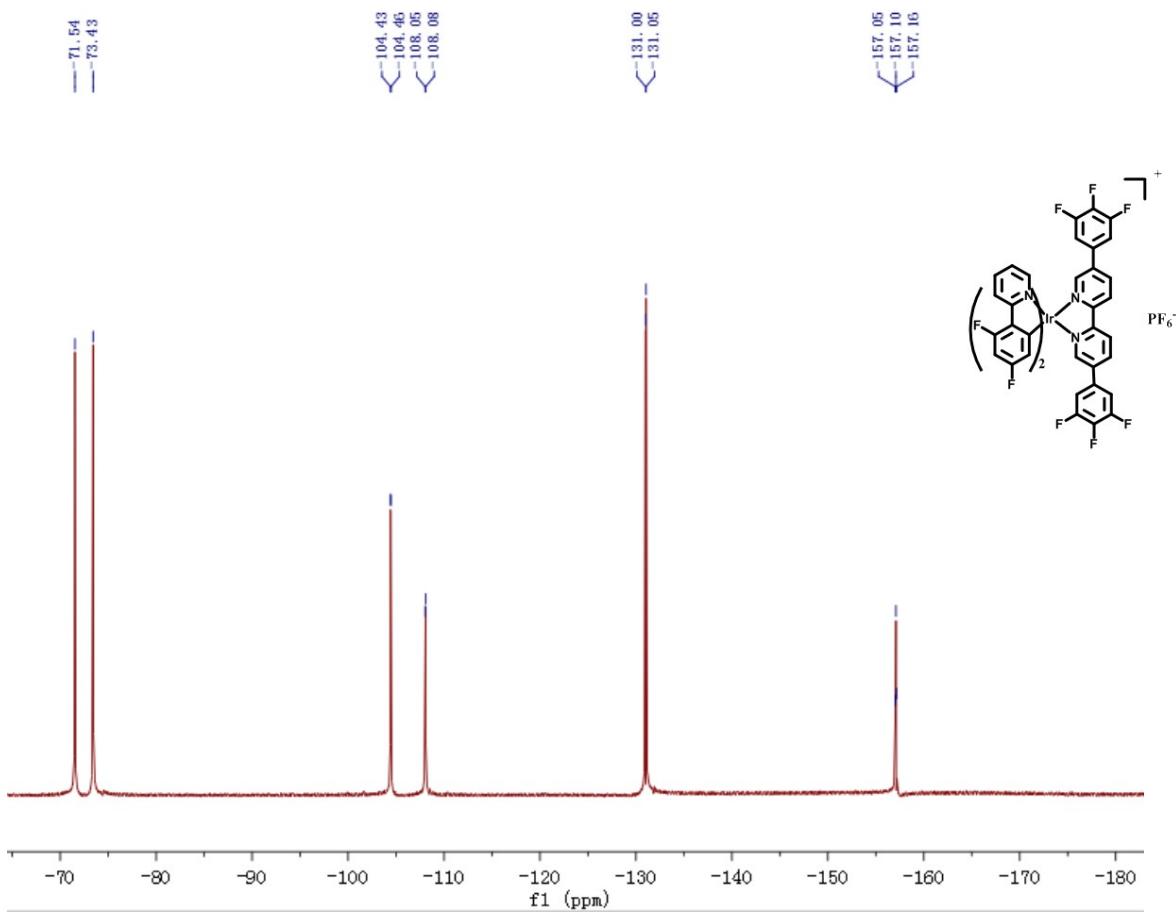


Fig. S11 ^{19}F NMR spectrum of **Ir2**.

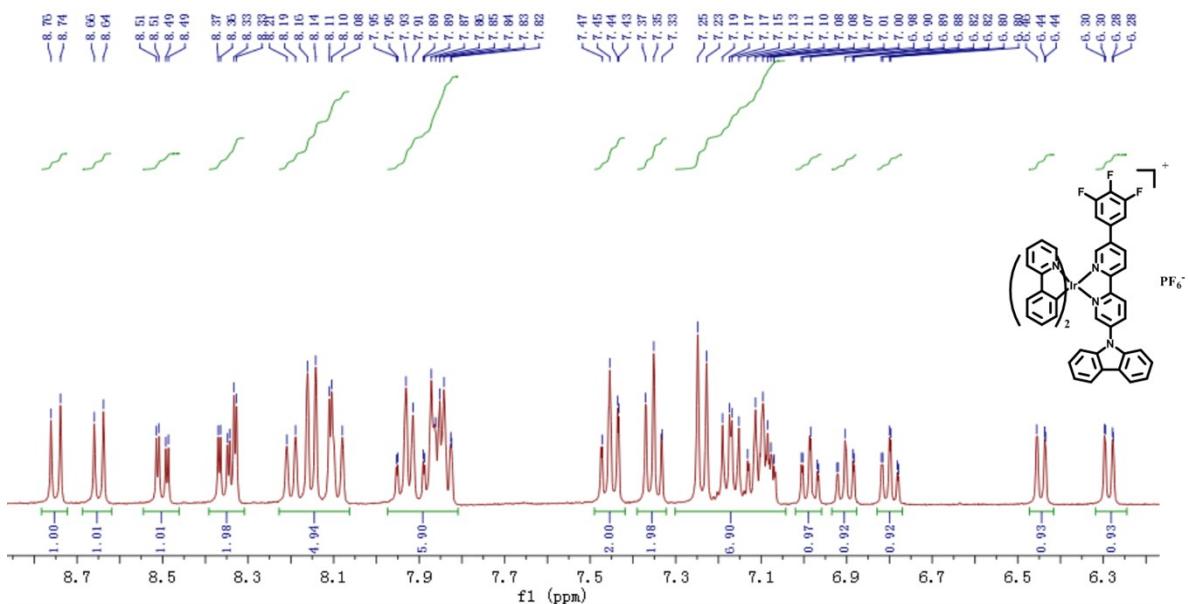


Fig. S12 ¹H NMR spectrum of Ir3.

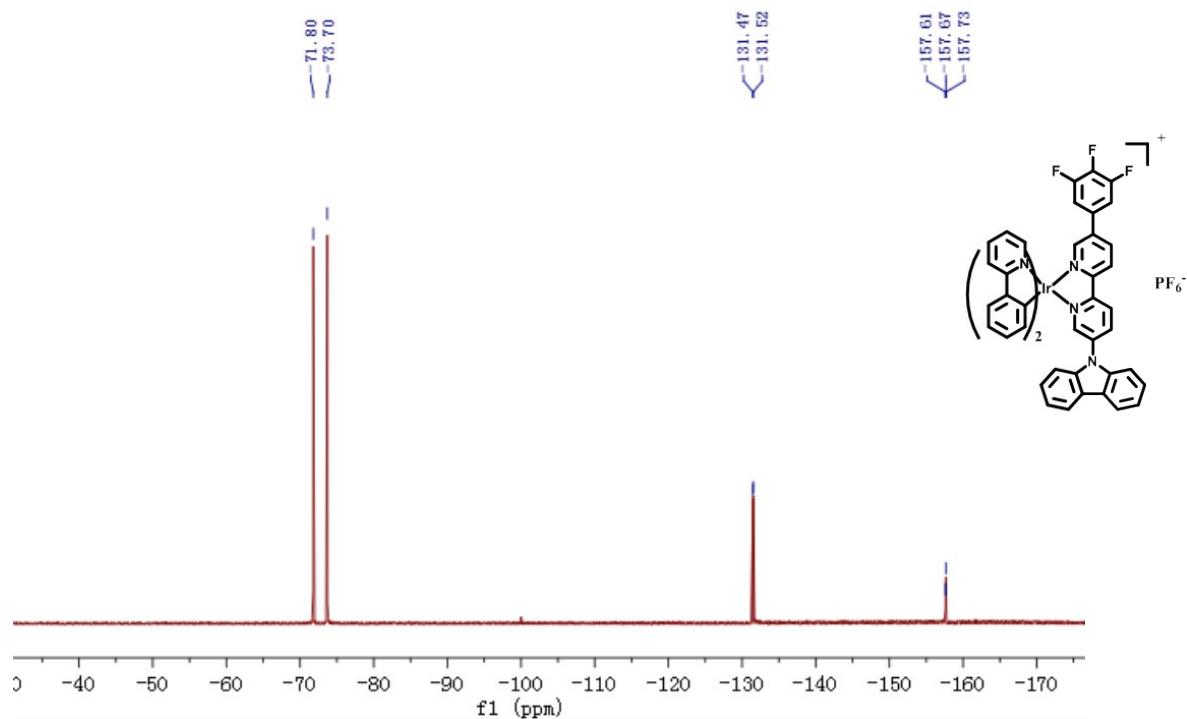


Fig. S13 ^{19}F NMR spectrum of Ir3.

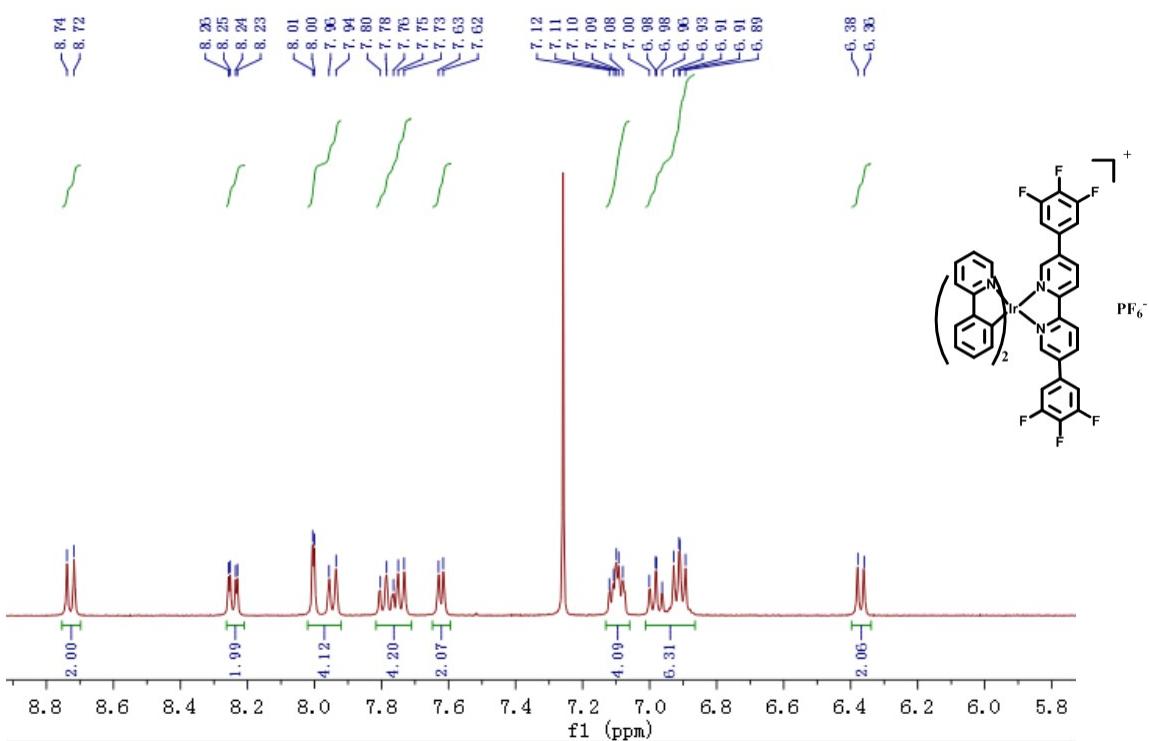


Fig. S14 ¹H NMR spectrum of Ir4.

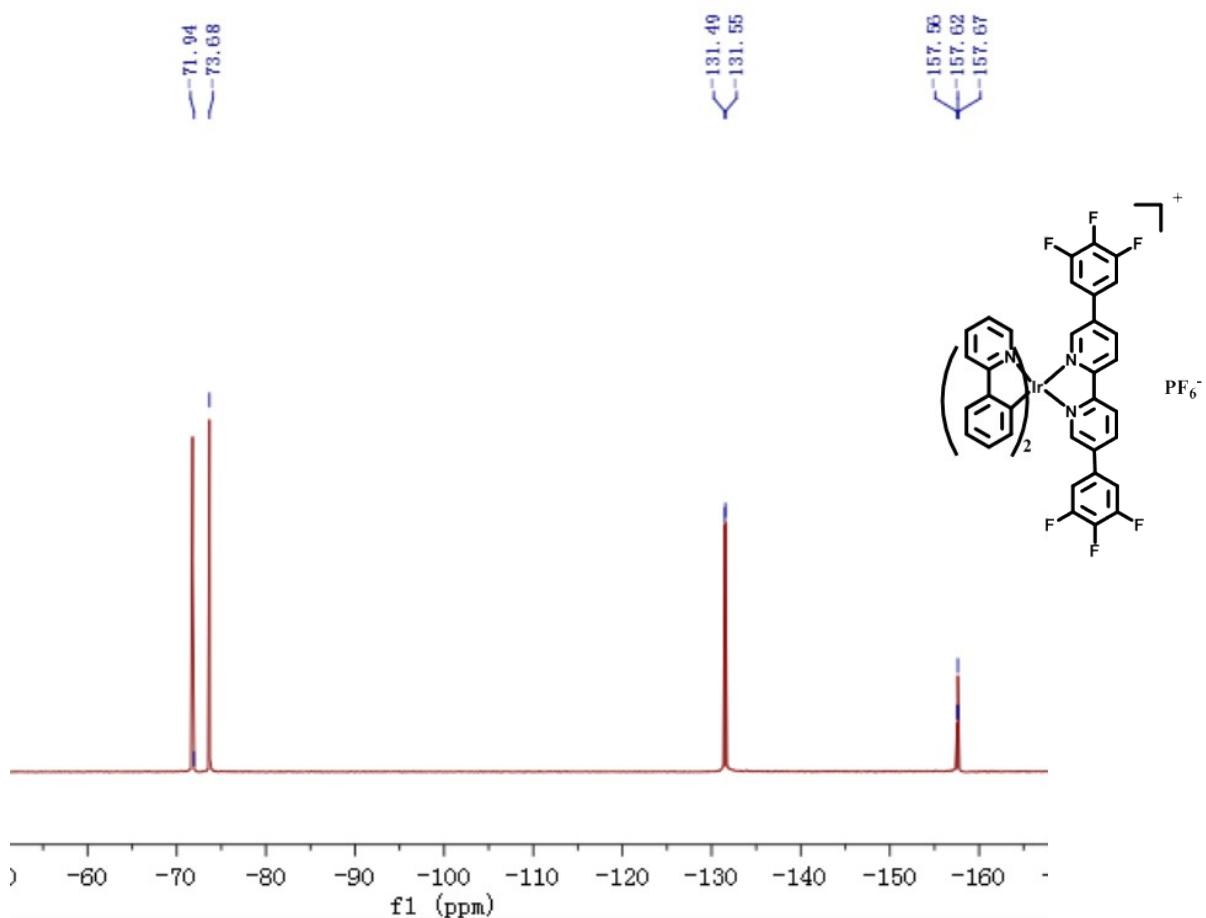


Fig. S15 ^{19}F NMR spectrum of Ir4.

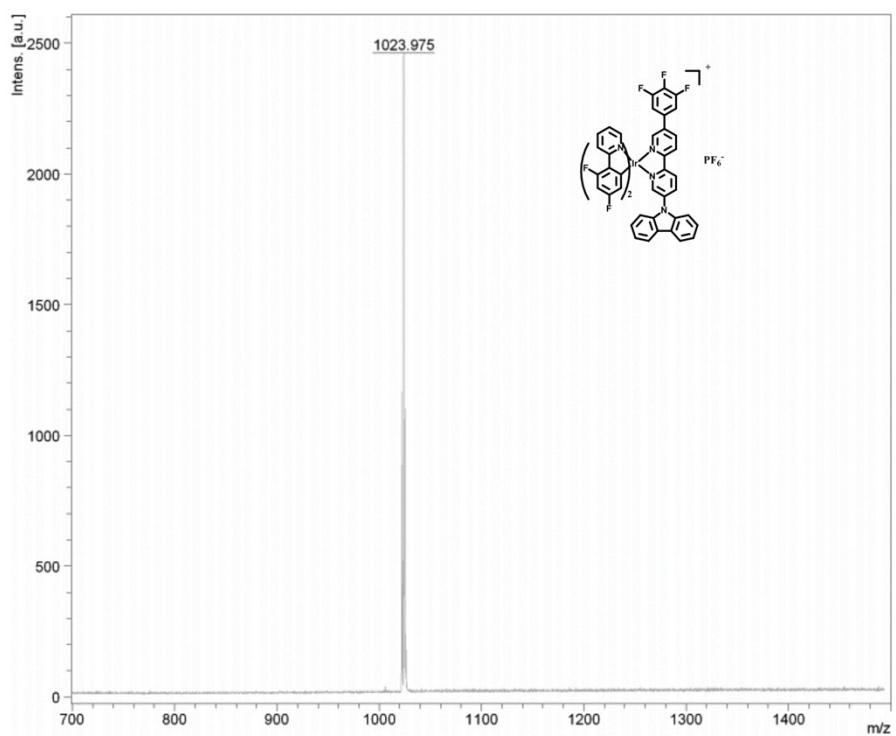


Fig. S16 MALDI-TOF spectrum of **Ir1**.

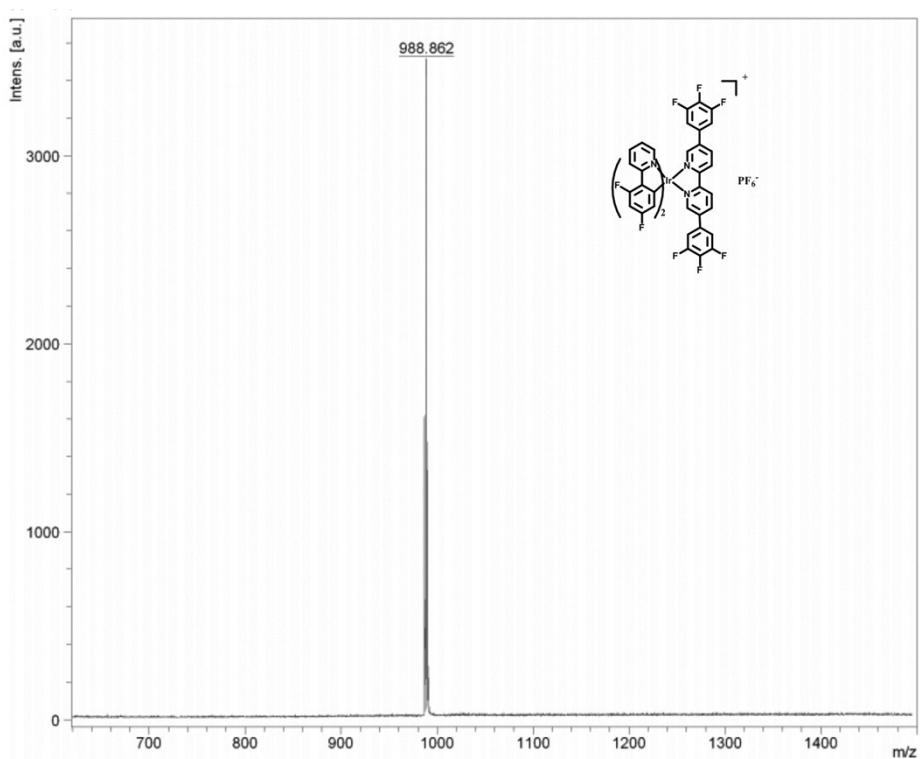


Fig. S17 MALDI-TOF spectrum of **Ir2**.

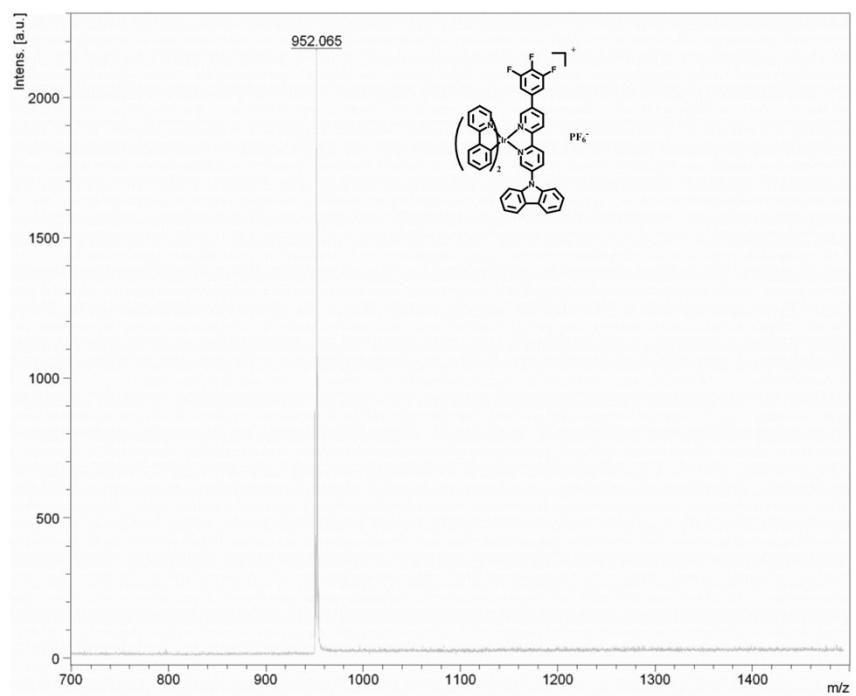


Fig. S18 MALDI-TOF spectrum of **Ir3**.

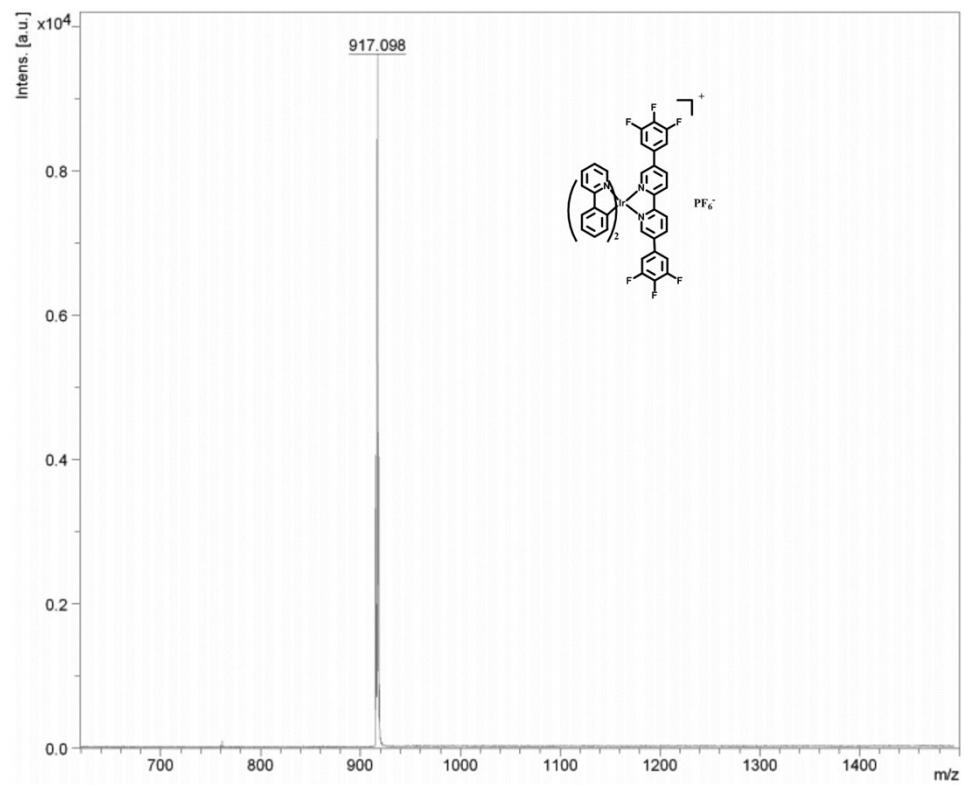


Fig. S19 MALDI-TOF spectrum of **Ir4**.

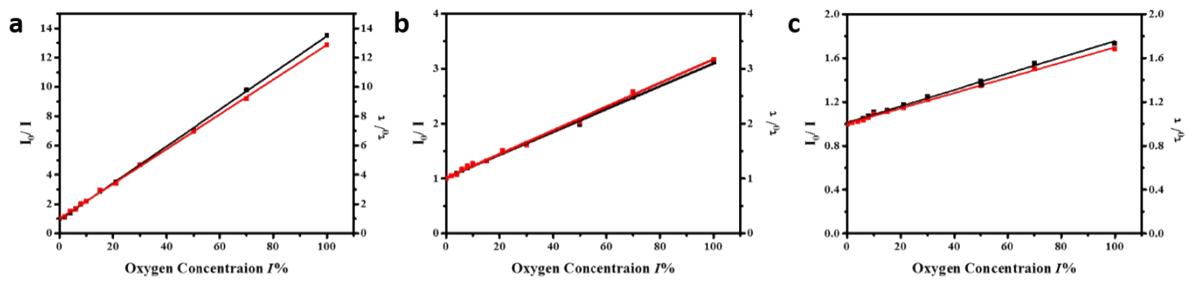


Fig. S20 The corresponding Stem–Volmer plots of Ir2–Ir4 (a-c) under the quenching by oxygen (red points stand for the values of I_0/I and corresponding $K_{SV} = 0.129$ (a), 0.032 (b) and 0.017 (c), respectively; black points stand for the values of τ_0/τ and corresponding $K_{SV} = 0.137$ (a), 0.031 (b) and 0.018 (c), respectively.).