Heteroleptic Ir(III) complexes with varied π-conjugated diimine ligands: synthesis, tunable triplet states and nonlinear absorption properties

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1. Photophysical properties of Ir-1–Ir-5

![Emission spectra of complex Ir-1 in air-saturated and degassed CH₂Cl₂ solution.](Fig. S1)

Fig. S1 Emission spectra of complex Ir-1 in air-saturated and degassed CH₂Cl₂ solution.
Fig. S2 Emission spectra of complex Ir-2 in air-saturated and degassed CH$_2$Cl$_2$ solution

Fig. S3 Emission spectra of complex Ir-3 in air-saturated and degassed CH$_2$Cl$_2$ solution
**Fig. S4** Emission spectra of complex Ir-4 in air-saturated and degassed CH₂Cl₂ solution

**Fig. S5** Normalized emission spectra of Ir-1 in different solvents.
Fig. S6 Normalized emission spectra of Ir-2 in different solvents.

Fig. S7 Normalized emission spectra of Ir-3 in different solvents
Fig.S8 Time-resolved TA spectra of Ir-1 in toluene without SE signals, $c = 1 \times 10^{-5}$ mol L$^{-1}$, $\lambda_{ex} = 355$ nm

Fig.S9 Time-resolved TA spectra of Ir-2 in toluene without SE signals, $c = 1 \times 10^{-5}$ mol L$^{-1}$, $\lambda_{ex} = 355$ nm
**Fig. S10** Time-resolved TA spectra of Ir-3 in toluene without SE signals, $c = 1 \times 10^{-5}$ mol L$^{-1}$, $\lambda_{ex} = 355$ nm

**Fig. S11** Time-resolved TA spectra of Ir-4 in toluene without SE signals, $c = 1 \times 10^{-5}$ mol L$^{-1}$, $\lambda_{ex} = 355$ nm
Fig. S12 Emission delay time of Ir-1–Ir-4

Fig. S13 Nonlinear transmission curves for L-1 – L-4 in toluene for 4.1 ns laser pulses at 532 nm. 
($c = 5 \times 10^{-4}$ mol/L)