Electronic Supplementary Material (ESI) for Dalton Transactions

Electronic supplementary information

Phosphorescent properties of metal-free diphosphine ligands and effects of copper binding

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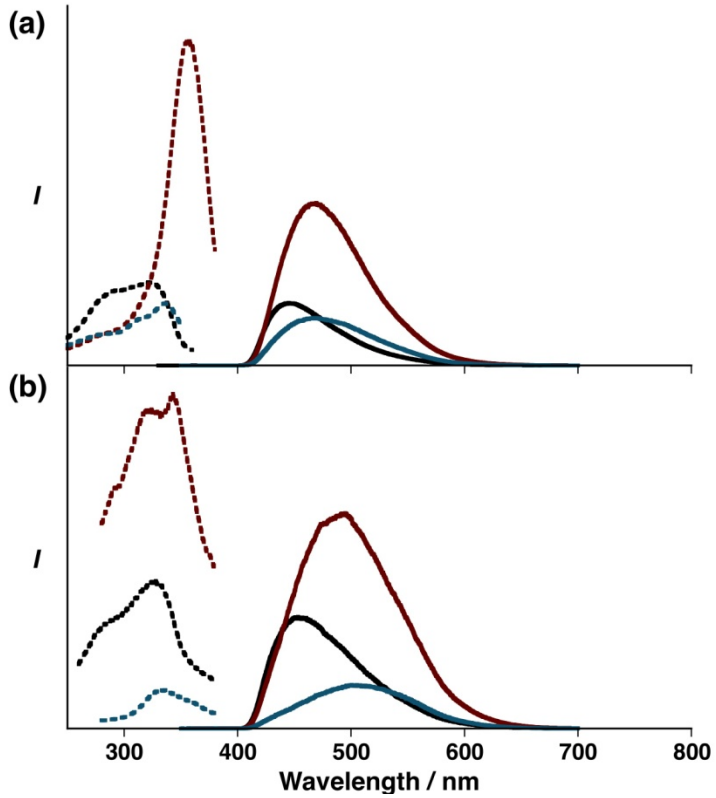

Fig. S1 Solid-state emission spectra for (a) DPEphos (black line), **1** (red line) and **2** (blue line), (c) xantphos (black line), **3** (red line), and **4** (blue line) at 298 K. Excitation wavelength: λ_{ex} = 321 nm for DPEphos, 357 nm for **1**, 336 nm for **2**, 328 nm for xantphos, 320 nm for **3**, and 335 nm for **4**. Dashed lines show the corresponding excitation spectra.

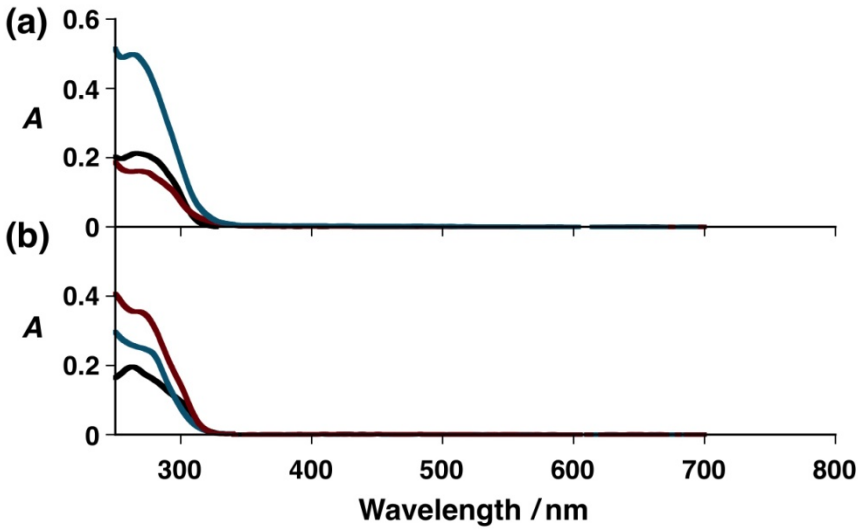

Fig. S2 UV-vis absorption spectra of dichloromethane solutions (1.0×10^{-5} M) of (a) DPEphos (black line), **1** (red line) and **2** (blue line), (b) xantphos (black line), **3** (red line), and **4** (blue line) in dichloromethane at 298 K.

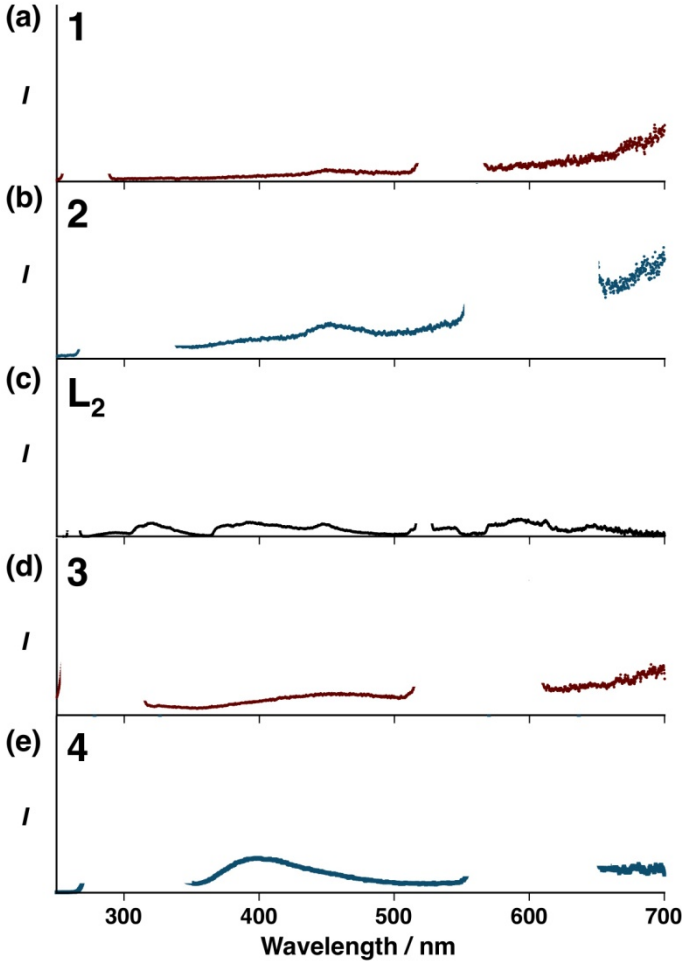

Fig. S3 Low-temperature emission spectra for (a) **1** (1.0×10^{-5} M), (b) **2** (1.0×10^{-5} M), (c) xantphos (1.0×10^{-5} M), (d) **3** (1.0×10^{-5} M), and (e) **4** (1.0×10^{-5} M) in an EPA glass (the conventional mixture of 5:5:2; diethyl ether: isopentane: ethanol) at 77 K. Excitation wavelength: λ_{ex} = 270 nm for **1**, 300 nm for **2**, 260 nm for xantphos, 280 nm for **3**, and 300 nm for **4**. The spectra are normalized to their maxima. Dashed lines show the corresponding excitation spectra. Excitation-light and second-harmonic signals are omitted for clarity.