Indigo diimines ("Nindigo"): a new bridging ligand architecture with redox and near-IR absorbing properties

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Reactions of indigo with a variety of substituted anilines produce the corresponding indigo diimines ('Nindigos') in good yields. The Nindigo ligand consists of two fused b-diketiminate-type binding sites for metals. Accordingly, binuclear Pd complexes have been obtained in which the deprotonated Nindigo bridges two Pd(hfac) moieties in the expected bis-bidentate binding mode. The complexes possess intense electronic absorption bands in the near-infrared (near 920 nm, extinction coefficients ~ 10^4 $M^{-1}\cdot cm^{-1}$) which are ligand-centered (π–π^*) transitions. Cyclic voltammetry investigations reveal multiple redox events which are also ligand-centered in origin.