Supporting Information

For

Chelating tris(amide) ligands: versatile scaffolds for nickel(II)

Matthew B. Jones,* Brian S. Newell, Wesley A. Hoffert,* Kenneth I. Hardcastle,* Matthew P. Shoresb and Cora E. MacBeth*a

aDepartment of Chemistry, Emory University, Atlanta, GA, USA. Fax: 01 404-727-6586; Tel: 01-404-727-7033; E-mail: cmacbet@emory.edu
bDepartment of Chemistry, Colorado State University, Fort Collins, CO, USA. Tel: 01-970-491-6033; E-mail: shores@lamar.colostate.edu

Table of Contents

| Figure S1  Cyclic voltammogram of [Et₄N]₂[Ni(L²)(CN)] | S2 |
| Figure S2  Temperature dependant magnetic susceptibility for Ph₄P[Ni(L²)] | S2 |
| Figure S3  Expansion of magnetic susceptibility of [Et₄N]₃[CoNi(L²)₂(μ₂-CN)] collected at various fields | S3 |
| Figure S4 Magnetic susceptibility of [Et₄N]₃[CoNi(L²)₂(μ₂-CN)] | S3 |
| Figure S5 Magnetic susceptibility of [Et₄N]₃[CoNi(L²)₂(μ₂-CN)] (D allowed to refine freely) | S4 |
**Figure S1.** Cyclic voltammogram of [Et$_4$N]$_2$[Ni(LiPr)(CN)] recorded in DMF (0.2 M tetrabutylammonium hexafluorophosphate TBAPF$_6$). Scan rate 50 mV/sec (vs. Fc/Fc$^+$). 

![Cyclic voltammogram](image1)

**Figure S2.** Temperature dependence of the magnetic susceptibility for [Ph$_4$P][Ni(LiPr)] obtained with an applied field of 0.1 T (circles). Best fits to the data (red line) give $g = 2.354$, $D = -19.44$ cm$^{-1}$, $E = -1.46$ cm$^{-1}$, TIP = $808 \times 10^{-6}$ emu·mol$^{-1}$, and relative error $f = 0.018$. Inset: Magnetization of Ph$_4$P[Ni(LiPr)] as a function of reduced magnetic field.

![Temperature dependence of magnetic susceptibility](image2)
**Figure S3.** Low temperature expansion of magnetic susceptibility of $[\text{Et}_4\text{N}]_3[\text{CoNi}(\text{LiPr})_2(\mu_2-\text{CN})]$ collected at various fields.

**Figure S4.** Magnetic susceptibility of $[\text{Et}_4\text{N}]_3[\text{CoNi}(\text{LiPr})_2(\mu_2-\text{CN})]$ (circles) measured with an applied field of 0.1 T. The fit (red line) was obtained with $D$ fixed at 10 cm$^{-1}$. $J = -1.56$ cm$^{-1}$, $g = 2.12$, $D = 10$ cm$^{-1}$ (fixed), TIP = $6.87 \times 10^{-3}$ emu·mol$^{-1}$, $f = 0.10$. 

---

**S3**
Figure S5. Magnetic susceptibility of $\text{[Et}_4\text{N}]_3\text{[CoNi(L)\text{H}_2(\mu_2-CN)]}$ (circles) measured with an applied field of 0.1 T. The fit (red line) was obtained with $D$ allowed to refine freely. $J = -1.49 \text{ cm}^{-1}$, $g = 2.17$, $D = 20 \text{ cm}^{-1}$, TIP = $6.21 \times 10^{-3}$ emu·mol$^{-1}$, $\theta = 0.067$. 