Electronic Supplementary Material (ESI) for Dalton Transactions

SUPPORTING INFORMATION

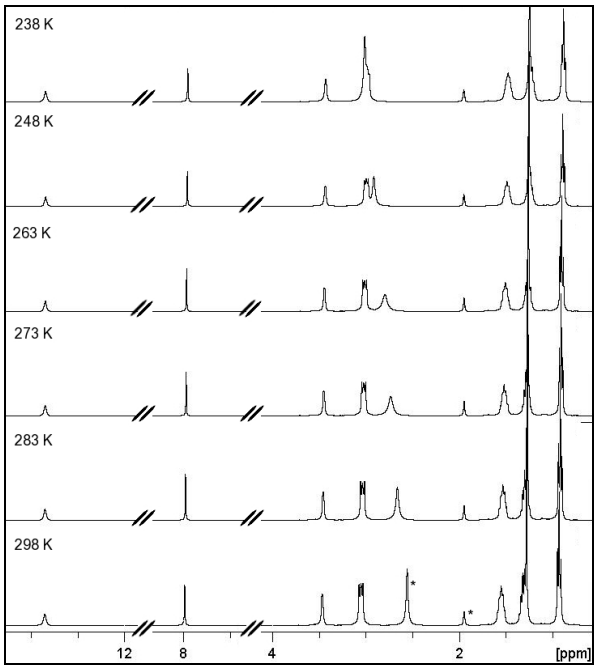

Fig. SI1. Variable temperature (298-238 K) ^{1}H NMR spectra (selected ppm ranges) of $[LH_4][NBu_4]_2$ in CD_3CN. (*) indicates solvent residual peaks.

Table SI1. Variable temperature (298 – 323 K) N-(H/D) exchange ^{1}H NMR data for $[NBu_4]_2$[**1**] in CD_3OD.

time	T	Integration of NH[a]	Δ[b]
0	298	0.958	
10		0.934	0.024
20	303	0.896	
30		0.857	0.039
37	308	0.773	
47		0.706	0.067
54	313	0.678	
64		0.592	0.086
74	323	0.453	
84		0.347	0.106
94		0.246	0.101
104		0.151	0.095

[a]*: Integrations are measured in fixed spectral regions and reported vs. the corresponding aromatic* meta-*protons (1.000 H).* [b]*: Difference between two measurements after 10 min at the same temperature.*

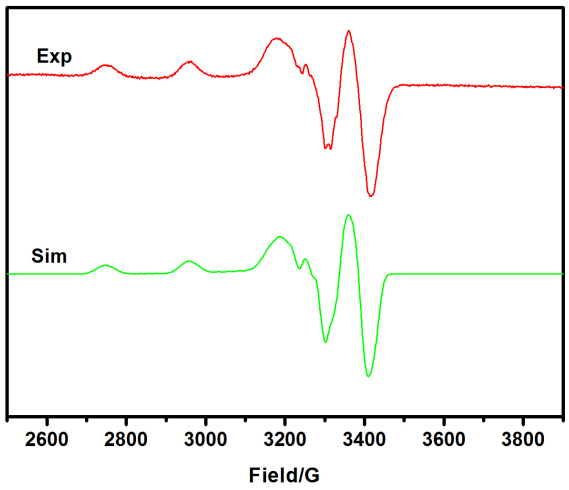

Fig. SI2. X-band EPR spectrum of $\mathbf{2}^{2-}$ in DCM (77K) and its simulated spectrum using best fit parameters: : $g_x = 2.057$, $g_y = 2.054$, $g_z = 2.197$ with A_{Cu} : A_{xx} 30 G, A_{yy} 30 G and A_{zz} 210 G and A_{isoN} of 15 G.

Fig. SI3. UV/vis spectra of $[NBu_4]_2$[**1**] (red) and $[NBu_4]_2$[**2**](black), 3 mM in CH_2Cl_2 at room temperature.

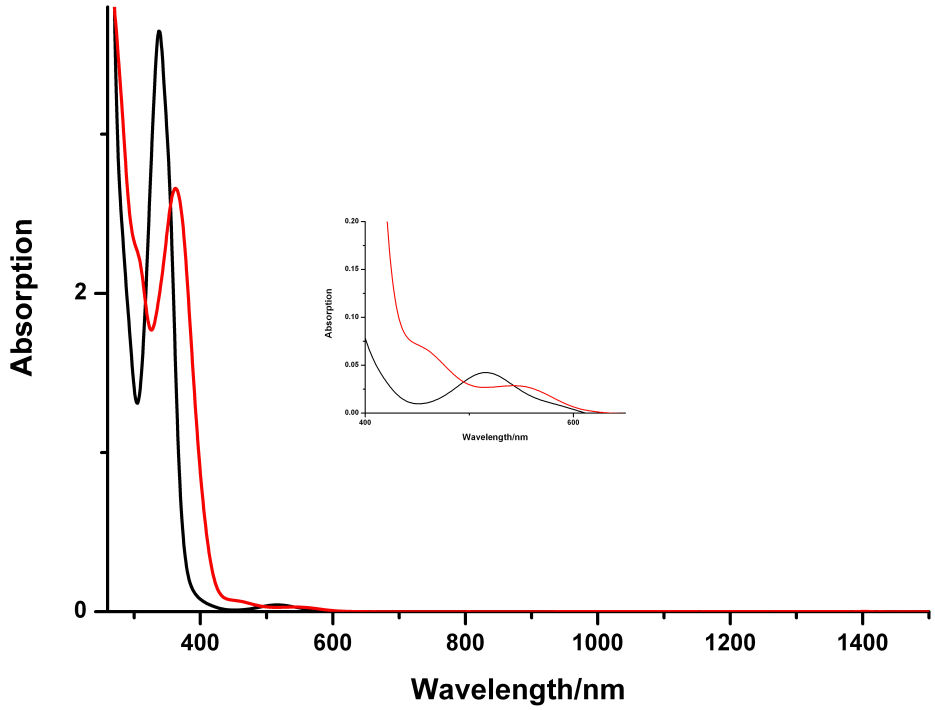

Table SI2. Calculated bond distances (Å) in the nickel complex $\mathbf{1}^{2-}$.

Bond	$[1]^{2-}$	Bond	$[1]^{2-}$
Ni-O1	1.871	Ni-O2	1.862
Ni-N1	1.862	Ni-N2	1.862
O1-C1	1.326	O2-C6	1.323
C1-C2	1.428	C6-C7	1.433
C2-C3	1.401	C7-C8	1.394
C3-C4	1.393	C8-C9	1.398
C4-C5	1.402	C9-C10	1.396
C5-C6	1.393	C10-C11	1.400
C6-C1	1.422	C11-C6	1.417
O1-H1	1.731	O2-H2	1.749
H1-N3	1.027	H2-N4	1.025

Table **SI3**. Calculated bond distances (Å) in the copper complex $\mathbf{2}^{2-}$.

Bond	$[2]^{2-}$	Bond	$[2]^{2-}$
Cu-O1	1.928	Cu-O2	1.926
Cu-N1	1.929	Cu-N2	1.929
O1-C1	1.327	O2-C6	1.328
C1-C2	1.428	C6-C7	1.432
C2-C3	1.401	C7-C8	1.395
C3-C4	1.392	C8-C9	1.397
C4-C5	1.403	C9-C10	1.397
C5-C6	1.393	C10-C11	1.398
C6-C1	1.427	C11-C6	1.423
O1-H1	1.703	O2-H2	1.700
H1-N3	1.028	H2-N4	1.028

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