**Supporting Information**

**Structural and magnetic properties of novel dinuclear Cu(II) complexes featuring triazolyl-naphthalimide ligands**

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*1. High Resolution Mass Spectra*

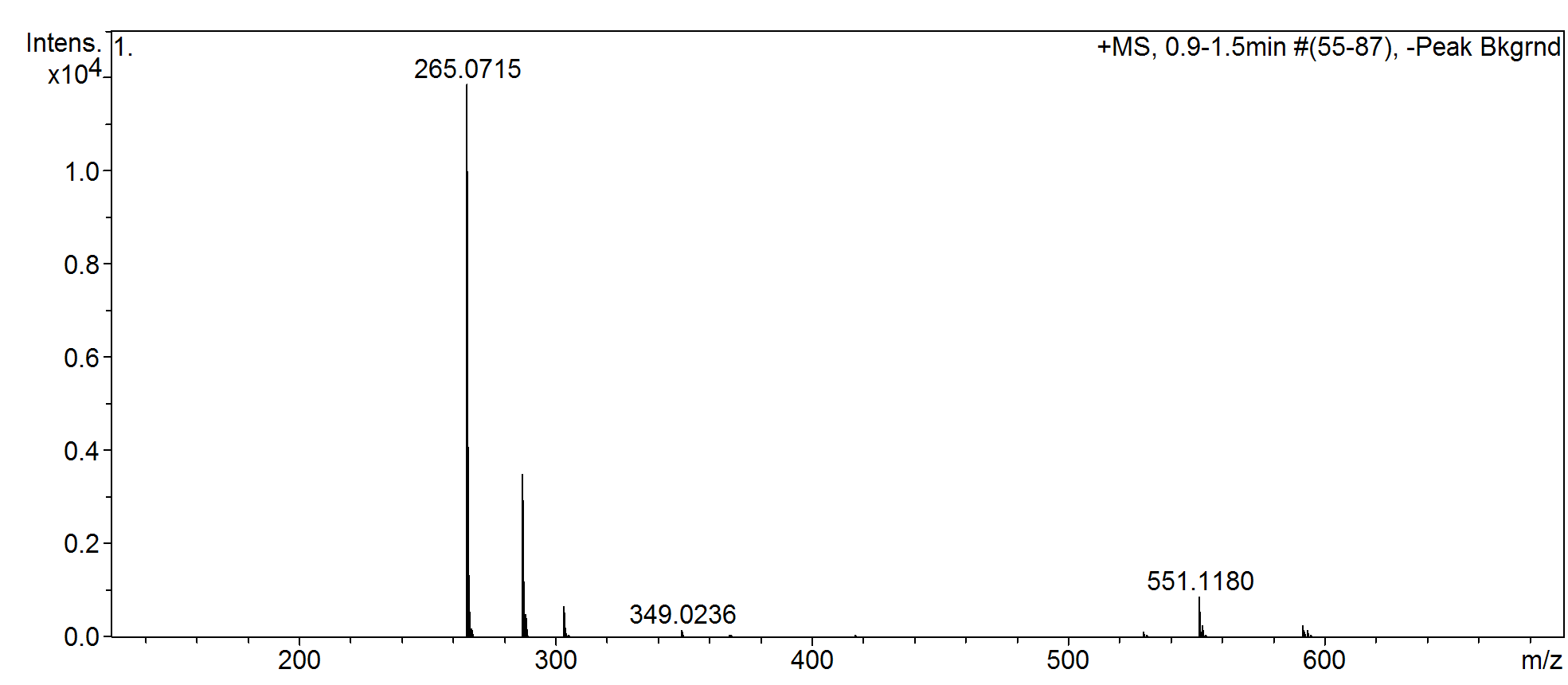
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Figure S1: HRMS (ESI+) spectrum of L1

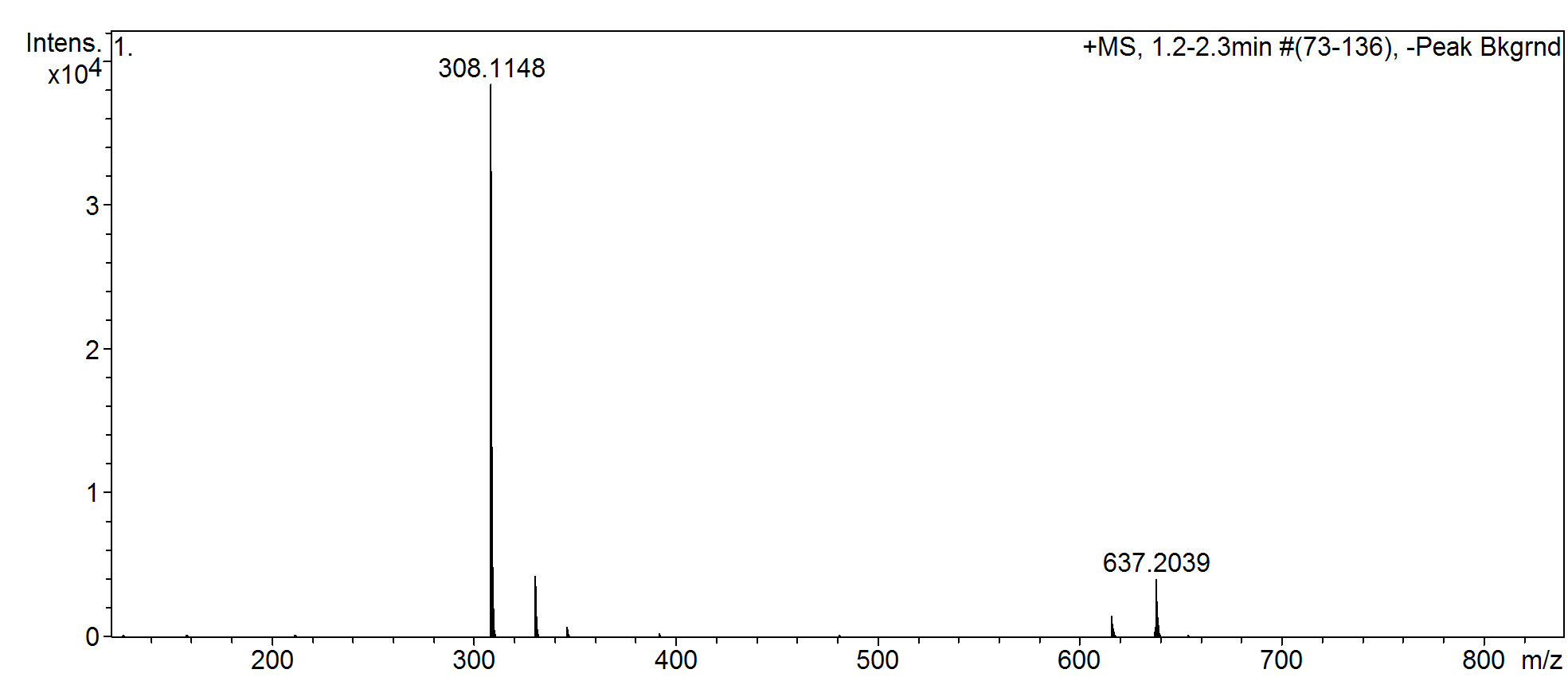


Figure S2: HRMS (ESI+) spectrum of L2

*2. Infrared spectra*

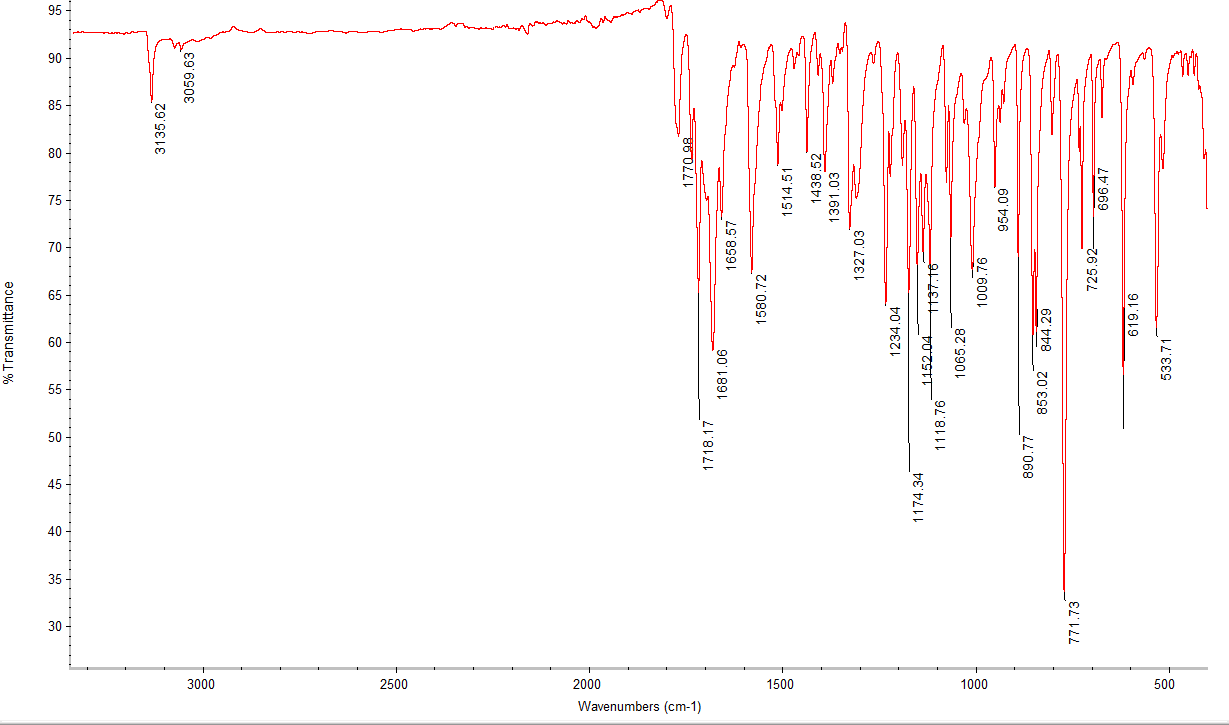
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Figure S3: IR(neat) spectrum of L1

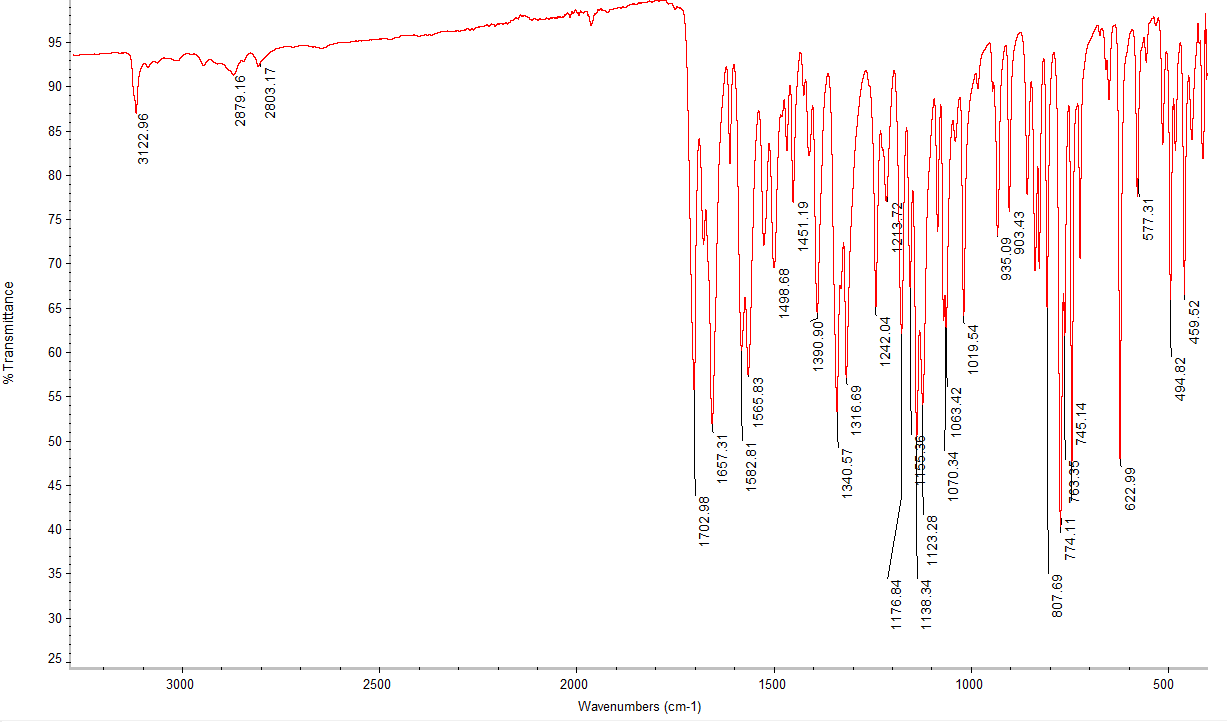


Figure S4: IR(neat) spectrum of L2

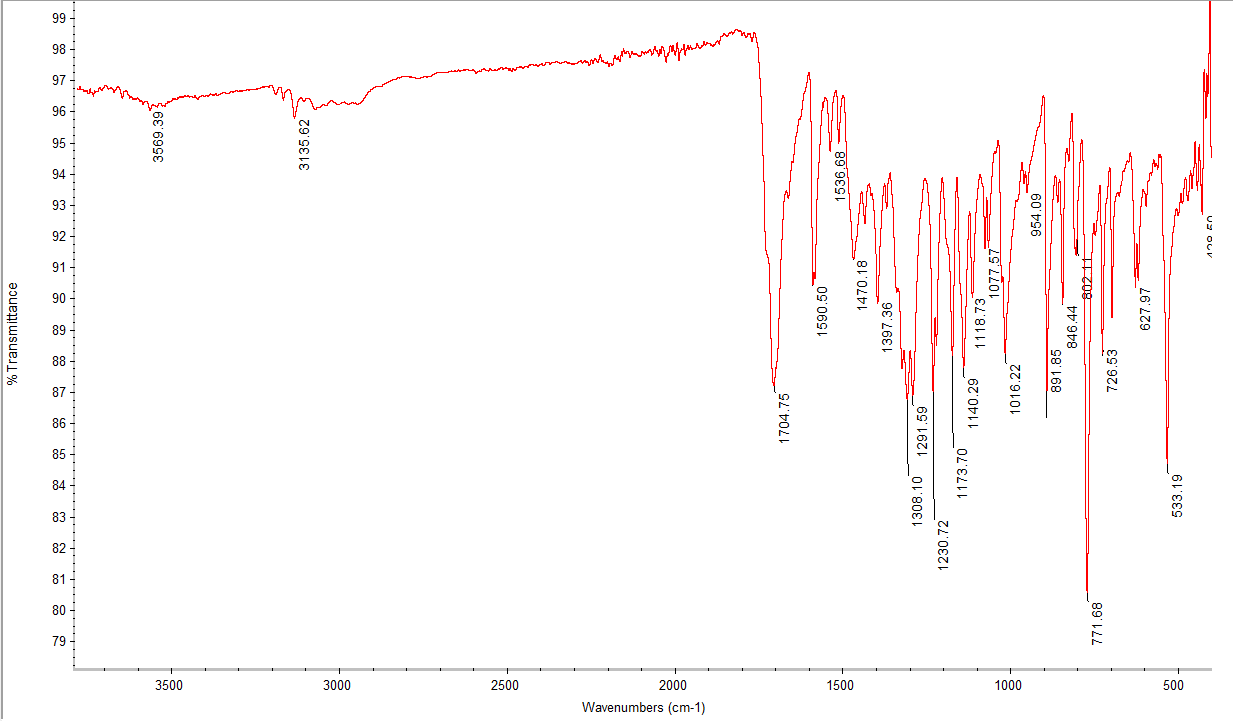


Figure S5: IR(neat) spectrum of [Cu2(L1)4(NO3)4]

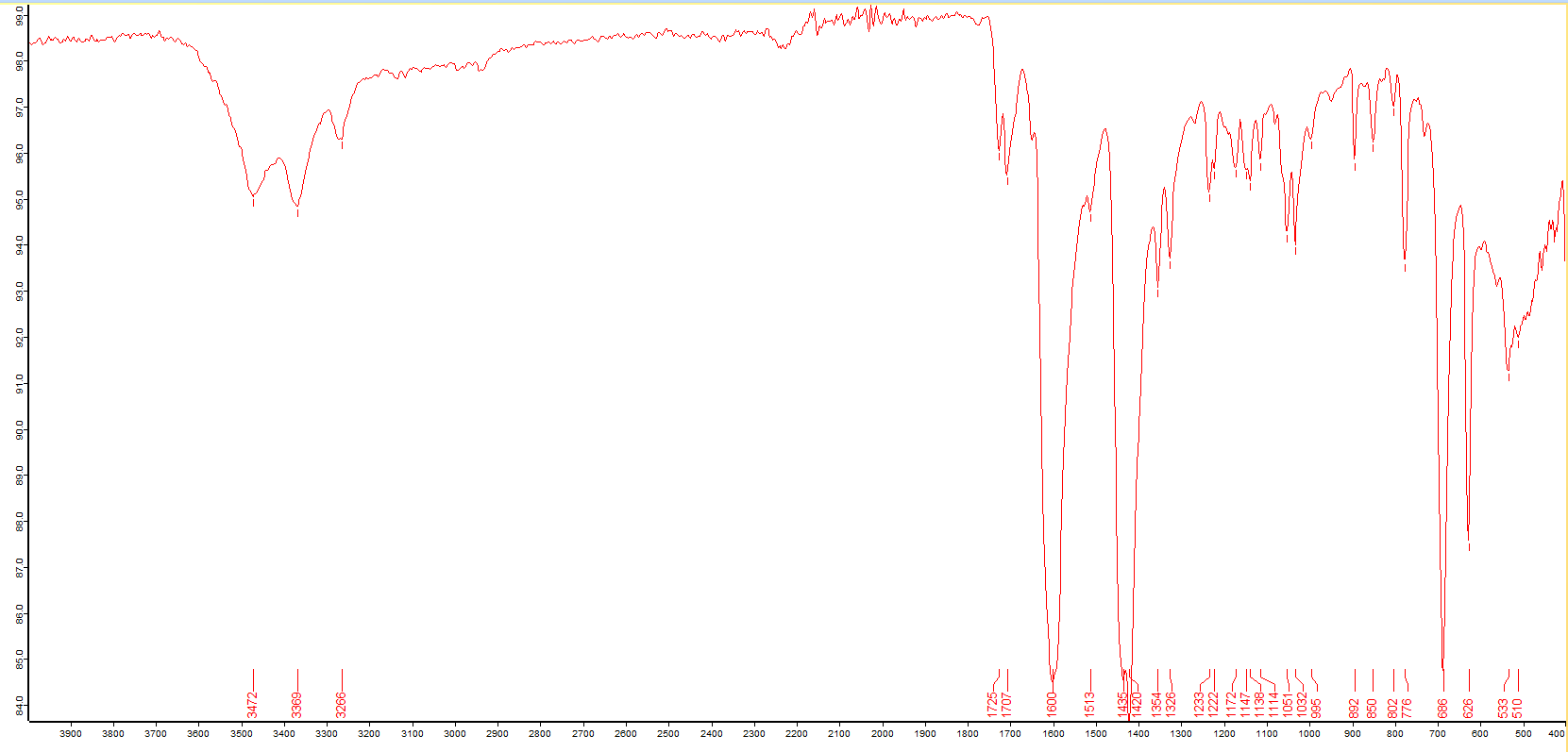


Figure S6: IR(neat) spectrum of [Cu2(L1)2(OAc)4]

*3. NMR spectra*



Figure S7: 1H NMR (DMSO-*d*6, 400 MHz) spectrum of L1



Figure S8: 1H NMR (DMSO-*d*6, 400 MHz) spectrum of L1 – aromatic region



Figure S9: 13C{1H} NMR (DMSO-*d*6, 101 MHz) spectrum of L1



Figure S10: 13C{1H} NMR (DMSO-*d*6, 101 MHz) spectrum of L1 (110 – 165 ppm)



Figure S11: 1H NMR (DMSO-*d*6, 400 MHz) spectrum of L2



Figure S12: 1H NMR (DMSO-*d*6, 400 MHz) spectrum of L2 – aromatic region



Figure S13: 13C{1H} NMR (DMSO-*d*6, 101 MHz) spectrum of L2



Figure S14: 13C{1H} NMR (DMSO-*d*6, 101 MHz) spectrum of L2 (100 – 170 ppm)

4. *Variable temperature magnetic susceptibility*

Variable temperature magnetic susceptibility for poly-crystalline powder samples were recorded on a Quantum Design MPMS® XL-7 SQUID magnetometer at 0.1 T. Magnetic susceptibility was recorded in the range of 300-4 K cooling at 3 K/min. Diamagnetism of the sample and sample holder were accounted for using pascals constants and by measurement, respectively. Data for [Cu2(L1)4(NO3)4] and [Cu2(L1)2(OAc)4] presented in Table S1 and S2.

Table S1: χmT v T data for [Cu2(L1)4(NO3)4]

|  |  |  |  |
| --- | --- | --- | --- |
| Temperature (K) | | χmT (cm3mol-1K) | |
| 300.0019 | 0.75702 | |
| 289.8316 | 0.77741 | |
| 279.5016 | 0.77593 | |
| 269.2881 | 0.77416 | |
| 259.0646 | 0.77234 | |
| 248.8808 | 0.77052 | |
| 238.6562 | 0.76951 | |
| 228.629 | 0.76749 | |
| 218.2655 | 0.76863 | |
| 208.0807 | 0.77042 | |
| 197.8687 | 0.77277 | |
| 187.6833 | 0.77581 | |
| 177.4646 | 0.77647 | |
| 167.3067 | 0.77656 | |
| 157.1044 | 0.77675 | |
| 146.8847 | 0.7781 | |
| 136.6957 | 0.77862 | |
| 126.4884 | 0.77907 | |
| 116.3026 | 0.78095 | |
| 106.0944 | 0.78066 | |
| 95.88165 | 0.78008 | |
| 85.6864 | 0.78135 | |
| 75.47318 | 0.78104 | |
| 65.24604 | 0.78394 | |
| 55.06224 | 0.78608 | |
| 44.83253 | 0.79685 | |
| 34.62006 | 0.78948 | |
| 24.41437 | 0.78906 | |
| 14.20805 | 0.78795 | |
| 3.99839 | 0.77531 | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table S2: χmT v T data for [Cu2(L1)2(OAc)4]   |  |  |  |  | | --- | --- | --- | --- | | Temperature (K) | | χmT (cm3mol-1K) | | | 299.989 | 0.76804 | | | 289.928 | 0.74346 | | | 279.862 | 0.71746 | | | 269.685 | 0.68963 | | | 259.777 | 0.66099 | | | 249.648 | 0.63004 | | | 239.671 | 0.59785 | | | 229.666 | 0.56384 | | | 219.638 | 0.52799 | | | 209.676 | 0.49065 | | | 200.1 | 0.45320 | | | 189.801 | 0.41136 | | | 179.802 | 0.36940 | | | 169.887 | 0.32685 | | | 159.908 | 0.28352 | | | 149.958 | 0.24043 | | | 139.977 | 0.19808 | | | 129.979 | 0.15750 | | | 119.994 | 0.11987 | | | 110.012 | 0.08628 | | | 100.006 | 0.05771 | | | 90.0128 | 0.03509 | | | 79.9987 | 0.01870 | | | 70.0326 | 0.00831 | | | 60.0311 | 0.00280 | | | 50.0327 | 0.00061 | | | 39.9973 | 0.00006 | | | 30.0007 | 0.00000 | | | 19.9978 | 0.00000 | | | 17.4371 | 0.00000 | | | 10.0138 | 0.00000 | | | 4.01032 | 0.00000 | | |  |