Supporting information for

Metal-carboxylate coordination polymers with redox-active moiety of tetrathiafulvalene (TTF)

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Equation 1 for **1**, a uniform chain with spin S = 1/2 (Cu^{II}).

$$\chi' = \frac{Ng^2\beta^2}{kT}\frac{0.25 + 0.074975x + 0.075235x^2}{1.0 + 0.9931x + 0.172135x^2 + 0.757825x^3} \qquad (1)$$

$$\chi = (1-P)\chi' + \frac{Ng^2\beta^2}{4kT}P$$

with $\chi = |J| / kT$

Equation 1 for **2**, a uniform chain with spin S = 5/2 (Mn^{II}).

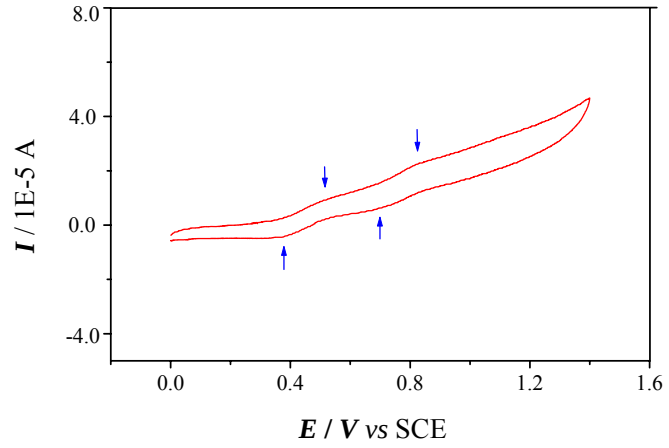
$$X = \frac{Ng^2\beta^2 S(S+1)}{3KT} * \frac{1+\mu}{1-\mu} \qquad \mu = \coth[\frac{JS(S+1)}{KT}] - [\frac{KT}{JS(S+1)}] \qquad (2)$$

Equation 2 for **3**, a dinuclear mode with spin S = 5/2 (Mn^{II}).

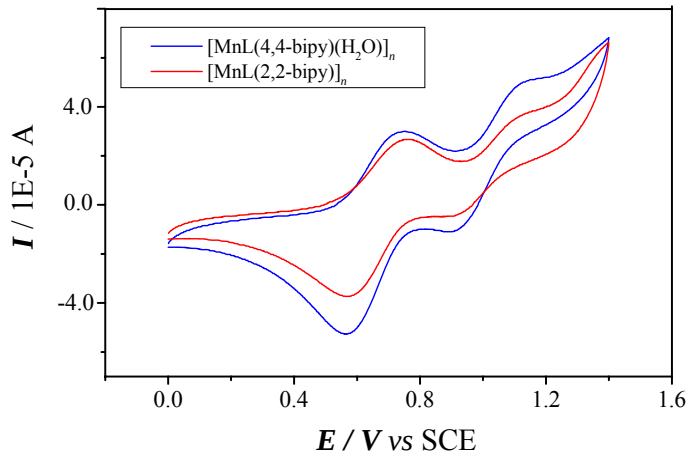
$$\chi_m = \frac{2Ng^2\beta^2}{kT}\left(\frac{A}{B}\right) \qquad (3)$$

A = 55+30exp(-10J/kT)+14exp(-18J/kT)+ 5exp(-24J/kT)+exp(-28J/kT)

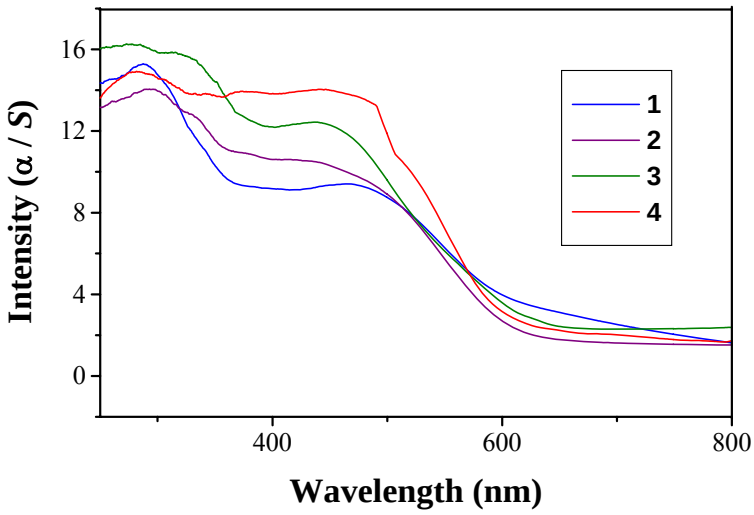
B = 11+9exp(-10J/kT)+7exp(-18J/kT)+ 5exp(-24J/kT)+3exp(-28J/kT)+exp(-30J/kT)



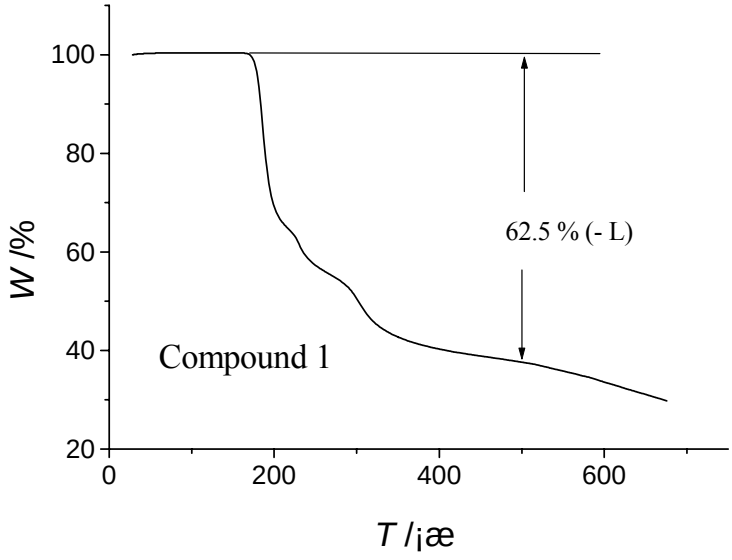
SI-Fig. 1 Solid state cyclic voltammogram of Na_2L (CH_3CN, 0.1 $mol \cdot L^{-1}$ Bu_4NClO_4, 100 $mV\ s^{-1}$).



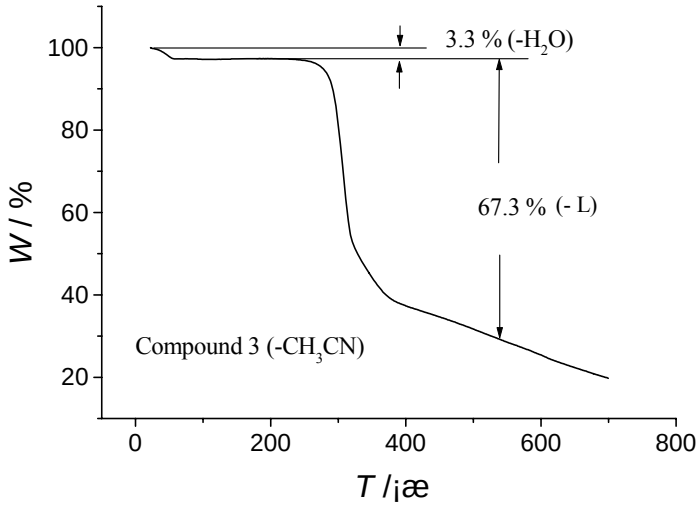
SI-Fig. 2 Solid state cyclic voltammogram of manganese(II) complexes **2** and **3** (CH_3CN, 0.1 $mol \cdot L^{-1}$ Bu_4NClO_4, 100 $mV\ s^{-1}$).



SI-Fig. 3 Solid state UV-vis spectra of complexes **1**–**4**



(a)



(b)

SI-Fig. 4 Thermal gravimetric measurements of (a) **1** and (b) **3**.

SI-Table 1. Short S···S, S···C, S···N and C···C contacts in compound **1** and **2** (Å)

	1		
S(5)···C(16)^{vi}	3.441(9)	S(6)···N(1)^{vi}	3.315(5)
C(12)···C(14)^{vii}	3.352(11)		
	2		
C(19)···C(15)^{viii}	3.346(4)	S(4)···S(6)^{ix}	3.542(1)
S(3)···S(3')^{x}	3.530(1)	S(5)···S(6)^{xi}	3.533(1)

Symmetry: vi: 1/2+x, 1/2-y, 1/2+z; vii: 1/2-x, 1/2-y, 1-z; viii: 1-z, -1-y, 1-z; ix: 1/2-x, -1/2+y, 1/2-z; x = 1/2-x, 1/2-y, -z; xi = 1/2-x, 3/2-y, -z.