Supplementary Information for:

Zn(II) and Cu(II) coordination polymers assembled from V-shaped tetracarboxylate ligands and N-donor ancillary ligands: syntheses, structures and properties

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Table S1. Distance [Å] and angles [°] of hydrogen bonding for complexes **1**, **2** and **5**

D-H···A	*d*(D-H)	d(H···A)	d(D···A)	<(DHA)
$[Zn_2(SA)(phen)_2]\cdot 2H_2O$ **(1)**				
O1W-H1WA···O4#1	0.87(6)	2.12(7)	2.953(10)	161(10)
C4-H4···O6	0.93	2.56	2.916(8)	103
C9-H9···O1	0.93	2.54	3.070(9)	117
C11-H11···O6#2	0.93	2.52	3.40(10)	157
C18-H18···O3#3	0.93	2.53	3.442(9)	168
$Zn_2(FA)(phen)_2(H_2O)\cdot H_2O$ **(2)**				
O1W-H1WA···O6#4	0.83(3)	1.93(3)	2.738 (3)	162(4)

O1W-H1WB···O2	0.85(3)	2.01(3)	2.840(3)	156(3)
C4-H4···F5	0.93	2.33	2.974(3)	126
C13-H13···F2	0.93	2.39	3.004(3)	124
C22-H22···O4#5	0.93	2.59	3.401(3)	146
C32-H32···O5	0.93	2.55	3.335(3)	142
C37-H37···O8#6	0.93	2.56	3.275(3)	134
C41-H41···O1W	0.93	2.49	3.060(3)	120
$Cu_3(H_2FA)_3(phen)_3 \cdot H_2O$ **(3)**				
O1W-H1WA···O10#7	0.85(4)	1.88(4)	2.679(4)	156(4)
O1W-H1WB···O16#8	0.87(3)	1.92(3)	2.784(4)	173(4)
O4-H4···O17	0.83	1.71	2.518(3)	166
O8-H8···O23#9	0.82	1.80	2.619(3)	180
O12-H12···O16#10	0.82	1.91	2.719(4)	166
O14-H14···O2#11	0.82	1.91	2.719(4)	166
O19-H19···O1W	0.83(5)	1.72(5)	2.540(4)	171(5)
O22-H22···O6#12	0.82	1.91	2.719(4)	166
$Cu(H_2FA)$(2,2'-bipy)$\cdot 1.54(H_2O)$ (**4**)				
O5-H5···O3#13	0.82	1.76	2.580(4)	173
O7-H7···O2#14	0.82	1.74	2.554(4)	176
C20-H20···O2#15	0.93	2.46	3.254(4)	143
C22-H22···O3#16	0.93	2.46	3.361(5)	162
$[Cu_2(SA)$(4,4'-bipy)$_{1.5}]\cdot 2.7(H_2O)$ (**5**)				
C3-H3···O10	0.93	2.54	2.921(7)	105
C3-H3···O4#17	0.93	2.56	3.338(7)	141
C11-H11···O9	0.93	2.57	2.938(7)	104

C17-H17···O2	0.93	2.26	2.809(7)	117
C21-H21···O8#18	0.93	2.38	2.937(7)	118
C24-H24···O4#19	0.93	2.57	3.009(8)	109
C26-H26···O1W#20	0.93	2.28	3.128(11)	151
C25-H25···O5#21	0.93	2.55	3.379(8)	149
C27-H27···O1	0.93	2.38	2.818(18)	108
C31-H31···O7#18	0.93	2.54	3.098(7)	119
$[Zn_2(SA)(4,4'\text{-bipy})_2]\cdot 8H_2O$ (**6**)				
C5-H5···O5	0.93	2.50	2.890(10)	106
C9-H9···O2	0.93	2.45	3.262(10)	138
C10-H10···O3W	0.93	2.42	3.21(3)	142
C10-H10···O3W#12	0.93	2.59	3.49(3)	162
C14-H14···O5#23	0.93	2.59	3.176(10)	122

Symmetry codes: #1 x, 1/2-y, z; #2 x, y, 1+z ; #3 1-x, -y, -z ; #4 1/2-x, 1/2+y, 1/2-z ; #5 x, 1+y, z ; #6 1/2+x, -1/2-y, 1/2+z ; #7 -x, 1-y, 1-z ; #8 x-1/2, -y+1/2, z-1/2 ; #9 -x, 1-y, -z ; #10 –x-1/2, y-1/2, -z+1/2 ; #11 x-3/2, -y+1/2, z-3/2 ; #12 x, y-1, z ; #13 3/2-x,-y,-1/2+z; #14 1/2+x,1/2-y,1-z; #15 -1+x,y,z; #16 -x,1/2+y,3/2-z; #17 1/4+x, 1/4-y, 1/4+z; #18 -1/4+x, 1/4-y, 3/4+z; #19 –x, -y, z; #20 1/4-x, -1/4+y, 3/4+z; #21 1/2-x, -y, 1/2+z; # 22 –x, y, 3/2-z; #22 -1/2+x, 1/2+y, z.

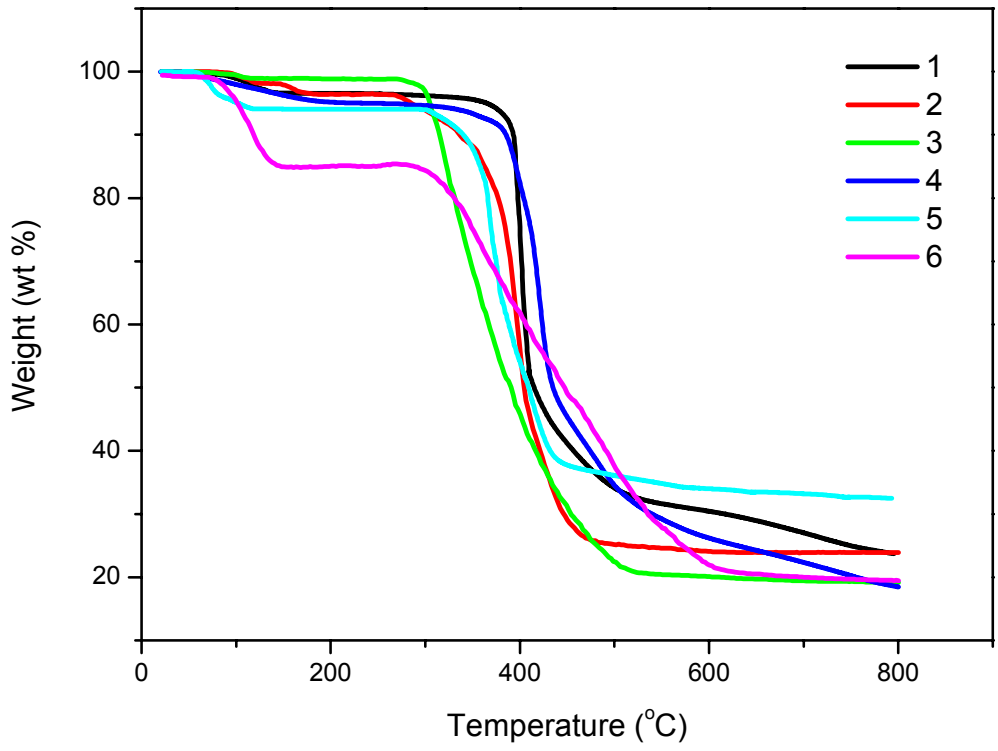

Figure S1. The TG curves of complexes **1** - **6**.