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Syntheses, Structures and Characteristics of Four Metal Organic Coordination Polymers Based on 5-Hydroxyisophthalic Acid and N-containing Auxiliary Ligands

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(1) Table S1 Selected bond lengths (Å) and angles (°) for 1-4.

Compound **1**					
Zn1-O1	2.047 (2)	Zn1-O2^{i}	1.991 (2)	Zn1-O3^{ii}	1.975 (2)
Zn1-N1	2.127 (3)	Zn1-N2	2.159 (3)	O1-Zn1-N1	88.54 (10)
O1-Zn1-N2	143.28 (10)	O2^{i}-Zn1-O1	92.53 (10)	O2^{i}-Zn1-N1	159.42 (11)
O2^{i}-Zn1-N2	91.40 (12)	O3^{ii}-Zn1-O1	94.33 (10)	O3^{ii}-Zn1-O2^{i}	100.78 (10)
O3^{ii}-Zn1-N1	99.63 (11)	O3^{ii}-Zn1-N2	120.68 (10)	N1-Zn1-N2	75.84 (11)
Symmetry codes: (i) -x, +y, 1/2-z; (ii) 1/2-x,1/2-y,1-z.					
Compound **2**					
Ni1-O1^{i}	2.098 (3)	Ni1-O1W	2.055 (3)	Ni1-O2^{i}	2.179 (3)
Ni1-O5	2.024 (3)	Ni1-N1	2.100 (3)	Ni1-N2^{ii}	2.132 (3)
O1^{i}- Ni1-O2^{i}	61.80 (10)	O1^{i}- Ni1-N1	89.97 (12)	O1^{i}- Ni1-N2^{ii}	91.14 (12)
O1W- Ni1-O1^{i}	164.41 (10)	O1W- Ni1-O2^{i}	102.61 (11)	O1W- Ni1-N1	89.96 (12)
O1W- Ni1-N2^{ii}	89.03 (12)	O5-Ni1-O1W	96.54 (12)	O5-Ni1-O1^{i}	99.05 (11)
Symmetry codes: (i) *x*+1, *y*, *z*; (ii) *x*, *y*, *z*+1; (iii) *x*−1, *y*, *z*; (iv) *x*, *y*, *z*−1.					
Compound **3**					
Zn1-O2	1.929 (2)	Zn1-O3^{i}	1.948 (2)	Zn1-N1^{ii}	2.027 (3)
Zn1-N6	2.022 (3)	O2-Zn1-O3^{i}	122.41 (9)	O2-Zn1-N1^{ii}	116.47 (10)
O3^{i}-Zn1-N1^{ii}	98.00 (10)	O2-Zn1-N6	115.30 (10)		
Symmetry codes: (i) 1+x,+y,+z; (ii) +x,1/2-y,1/2+z; (iii) -1+x,+y,+z; (iv) +x,1/2-y,-1/2+z.					
Compound **4**					
Zn1-O2	1.941 (5)	Zn1-O6	1.953 (5)	Zn1-O8^{i}	1.931 (5)
Zn1-O10^{ii}	1.995 (4)	Zn2-O3^{iii}	1.940 (4)	Zn2-O4^{i}	1.942 (5)
Zn2-O10	1.971 (4)	Zn2-O1^{ii}	1.977 (5)	O8^{i}-Zn1-O2	121.1 (2)
O8^{i}-Zn1-O6	100.7 (2)	O2-Zn1-O6	109.7 (2)	O8^{i}-Zn1-O10^{ii}	108.5 (2)
O2-Zn1-O10^{ii}	104.46 (19)	O6-Zn1-O10^{ii}	112.52 (19)	O3^{iii}-Zn2-O4^{i}	109.2 (2)
O3^{iii}-Zn2-O10	108.44 (19)	O4^{i}-Zn2-O10	122.2 (2)	O3^{iii}-Zn2-O1^{ii}	104.4 (2)
O4^{i}-Zn2-O1^{ii}	105.7 (3)	O10-Zn2-O1^{ii}	105.4 (2)		
Symmetry codes: (i) −*x*, *y*−1/2, −*z*+1/2; (ii) −*x*, −*y*+1, −*z*; (iii) *x*−1, −*y*+3/2, *z*−1/2; (iv) *x*+1, −*y*+3/2, *z*+1/2; (v) −*x*, *y*+1/2, −*z*+1/2.					

(2) Table S2 The hydrogen bond geometries for 1-4.

Compound **1**				
D-H···*A*	*D*-H	H···*A*	*D*···*A*	*D*-H···*A*
O(5)-H(5)···O(4)^{iii}	0.82	1.95	2.690 (4)	151
C(12)-H(12)···O(4)^{iv}	0.93	2.40	3.309 (5)	166
C(15) -H(15)···O(4)^{iv}	0.93	2.51	3.413 (5)	165
Symmetry codes: (iii) −*x*+1, *y*, −*z*+1/2; (iv) *x*−1/2, *y*−1/2, *z*.				
Compound **2**				
D-H···*A*	*D*-H	H···*A*	*D*···*A*	*D*-H···*A*
O1W-H1WA···O4	0.88	1.87	2.617 (4)	141
O3-H3A···O2W	0.82	1.90	2.713 (5)	171
O1W-H1WB···O2^{v}	0.88	1.93	2.744 (4)	153
Symmetry code: (v) *−x+2, −y+1, −z.*				
Compound **3**				
D-H···*A*	*D*-H	H···*A*	*D*···*A*	*D*-H···*A*
O5-H5*A*···O1^{v}	0.82	1.93	2.752 (3)	177
C20-H20···O1^{v}	0.93	2.57	3.274 (4)	132
C23-H23···O5^{vi}	0.93	2.57	3.246 (4)	130
Symmetry codes: (v) −*x*+3, *y*+1/2, −*z*+3/2; (vi) −*x*+3, *y*−1/2, −*z*+3/2.				
Compound **4**				
No Classic Hydrogen Bonds Found				

(3) Figure S1 The powder XRD patterns and the simulated one from the single-crystal diffraction data for compounds 1-4