Supplementary Information for:

A Chiral Self-Catenated Dual-Ligand Coordination Polymer Constructed from Three Distinct Interwoven Helical Motifs Interconnected by One-Dimensional Chains

David P. Martin, Richard J. Staples, Robert L. LaDuca*

Figure S1. Side view of *helix-1*.

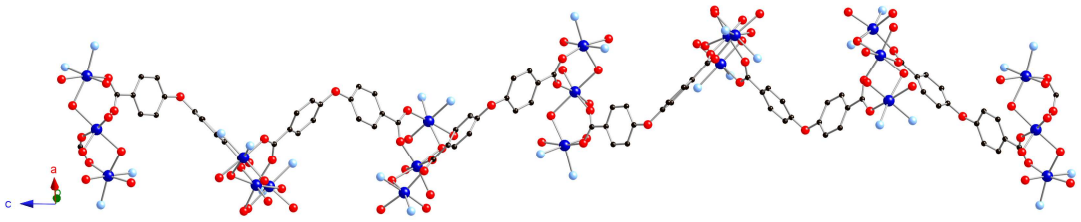

Figure S2. Side view of *helix-2*.

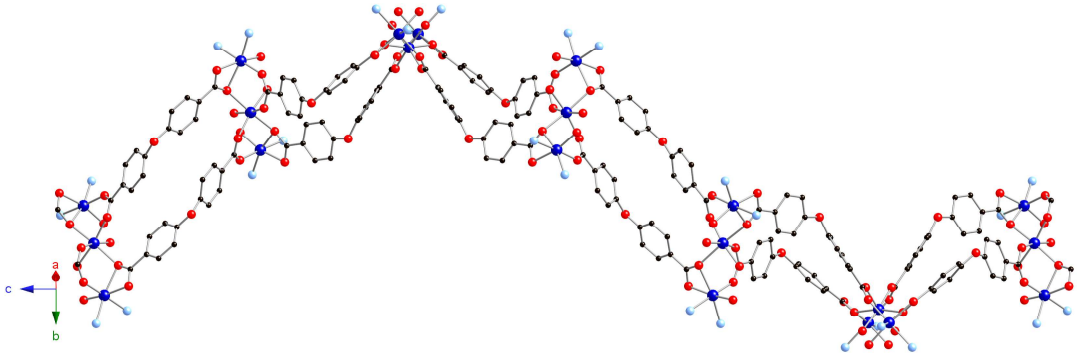

Figure S3. Side view of *helix-3*.

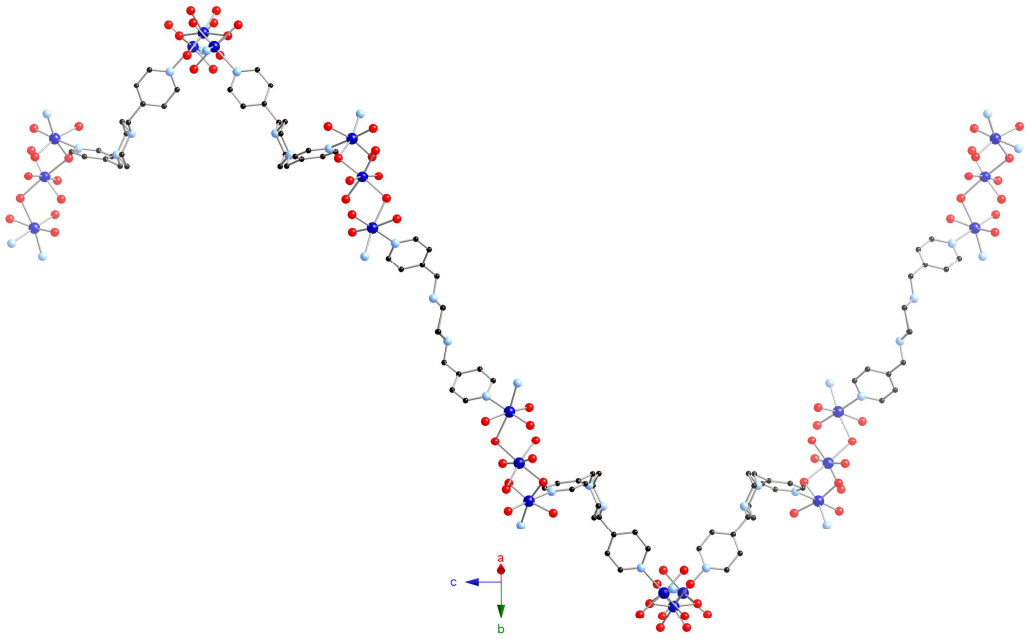

Figure S4. Quartz (**qtz**) net formed from junction of *helix-1* and *helix-2* motifs.

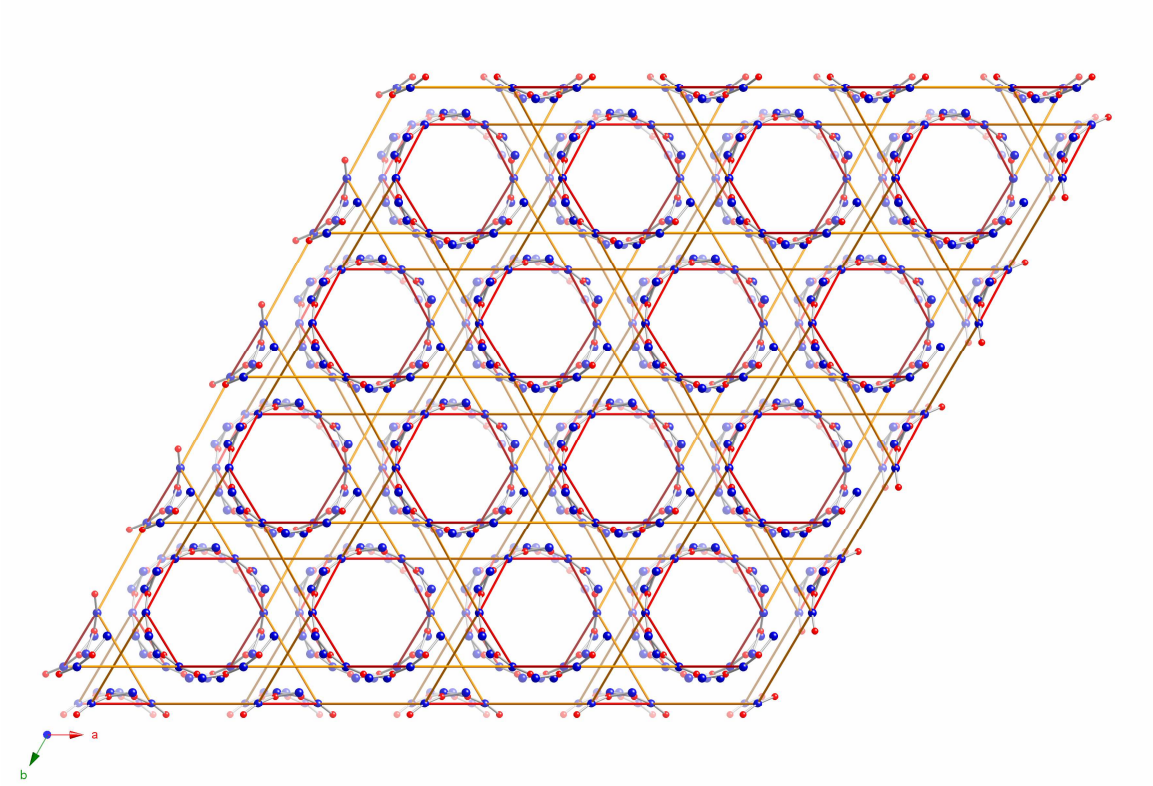

Figure S5. Quartz (**qtz**) net formed from junction of *helix-1* and *helix-3* motifs.

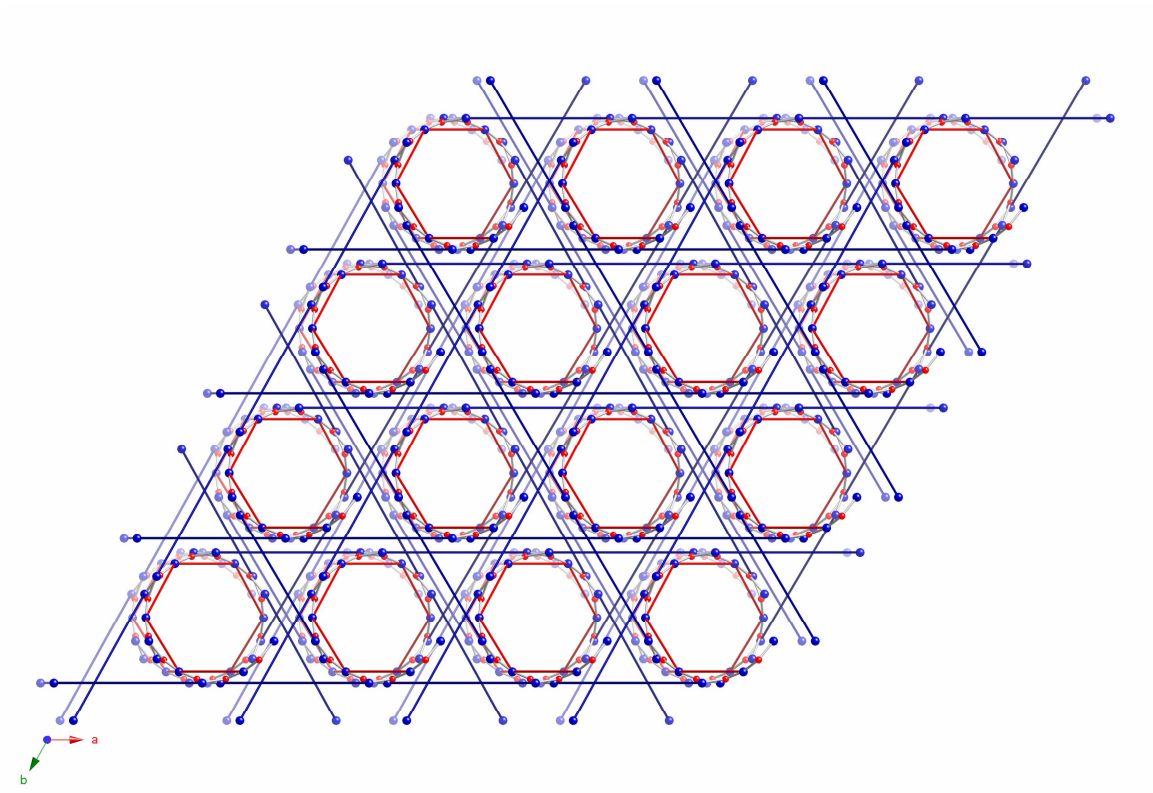

Figure S6. Four-fold interpenetrated quartz (**qtz**) net formed from junction of *helix-2* and *helix-3* motifs. Each net is shown in a different color.

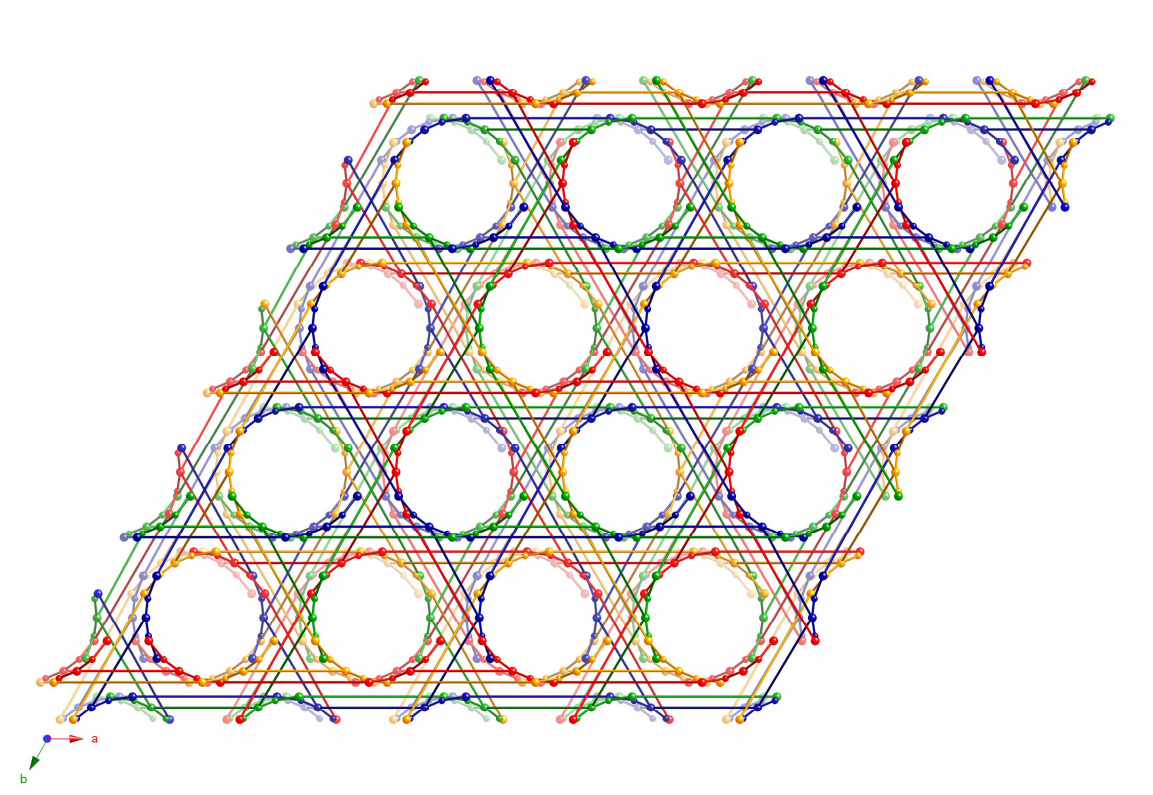

Figure S7. Curie-Weiss plot for **1**.

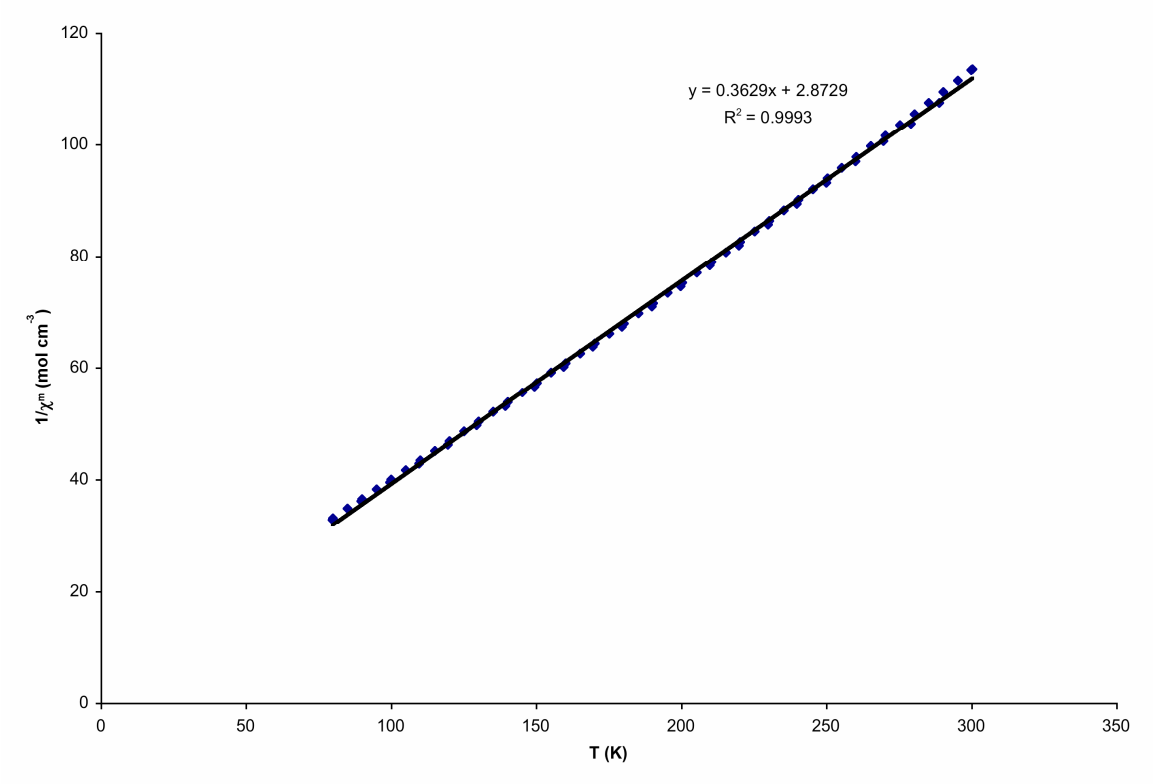

Figure 8. TGA trace for **1**.

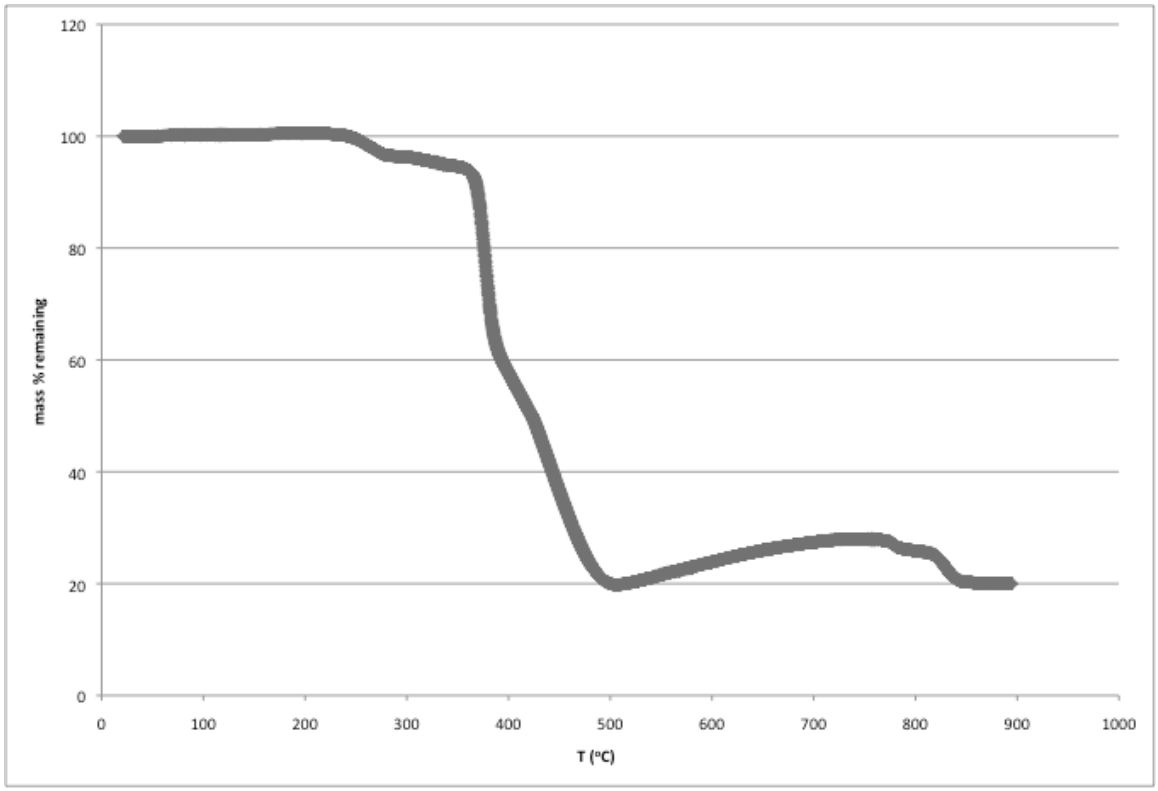

Table S1. Selected Bond distance (Å) and angle (°) information for **1**.

Co1–O1	2.025(4)
Co1–O3	2.031(4)
Co1–O5	2.214(4)
Co2–O2	2.030(4)
Co2–O4	2.060(4)
Co2–N3	2.091(6)
Co2–O6	2.132(4)
Co2–O5	2.184(4)
Co2–N1	2.224(5)
O1–Co1–O1$^{\#1}$	87.8(3)
O1–Co1–O3$^{\#1}$	169.61(17)
O1–Co1–O3	91.85(17)
O3–Co1–O3$^{\#1}$	90.4(2)
O1$^{\#1}$–Co1–O5	81.63(17)
O1–Co1–O5	91.10(17)
O3–Co1–O5	87.99(16)
O3$^{\#1}$–Co1–O5	99.12(16)
O5–Co1–O5$^{\#1}$	169.9(2)
O2–Co2–O4	94.49(17)
O2–Co2–N3	88.2(3)
O4–Co2–N3	89.7(4)
O2–Co2–O6	167.62(19)
O4–Co2–O6	90.83(17)
N3–Co2–O6	103.0(3)
O2–Co2–O5	107.34(17)
O4–Co2–O5	89.67(16)
N3–Co2–O5	164.4(3)
O6–Co2–O5	61.46(15)
O2–Co2–N1	86.5(2)
O4–Co2–N1	177.91(19)
N3–Co2–N1	88.5(4)
O6–Co2–N1	88.55(19)
O5–Co2–N1	91.79(18)
Co2–O5–Co1	108.28(17)

Symmetry equivalent position: #1 $x - y + 1, -y + 2, -z + 2$

Table S2. Network topologies generated from combinations of ligand connectivities within the overall 8-connected uninodal $4^4 5^{17} 6^7$ network topology of **1**.

ligand connectivities	**connections**	**network**
oba-A, *oba-B* pairs	4	$6^4 8^2$ single **qtz** net
oba-A, *bpmp-A*	4	$6^4 8^2$ single **qtz** net
oba-A, *bpmp-A*	4	$6^4 8^2$ 4-fold interpenetrated **qtz** net
oba-A, *bpmp-B*	4	$7^5 9$ 3-fold interpenetrated **qzd** net
oba-B pairs, *bpmp-B*	4	$7^5 9$ 3-fold interpenetrated **qzd** net
bpmp-A, *bpmp-B*	4	$7^5 9$ 3-fold interpenetrated **qzd** net
oba-B pairs, *bpmp-A*, *bpmp-B*	6	self-catenated 6^{15} net
oba-A, oba-*B* pairs, *bpmp-A*	6	self-catenated $4^4 6^9 8^2$ net
oba-A, *bpmp-A*, *bpmp-B*	6	self-catenated $5^8 6^6 7$ net
oba-A, oba-*B* pairs, *bpmp-B*	6	self-catenated $5^8 6^6 7$ net
oba-A, oba-*B* pairs, *bpmp-A*, *bpmp-B*	8	self-catenated $4^4 5^{17} 6^7$ net