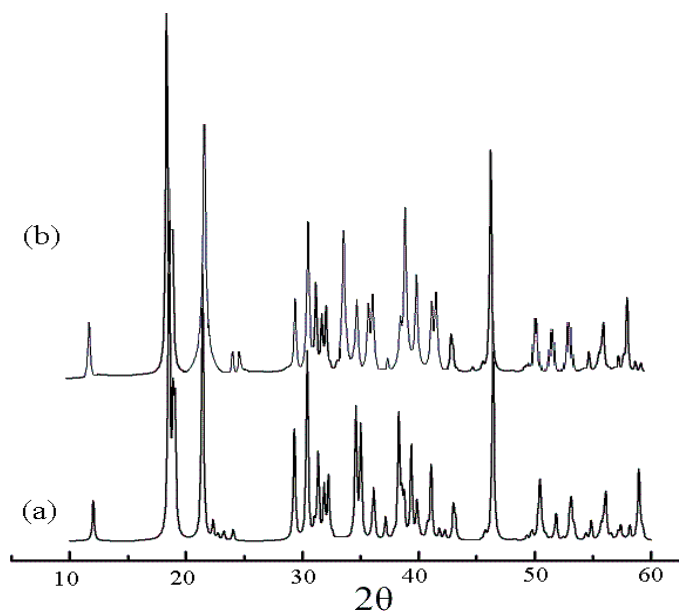
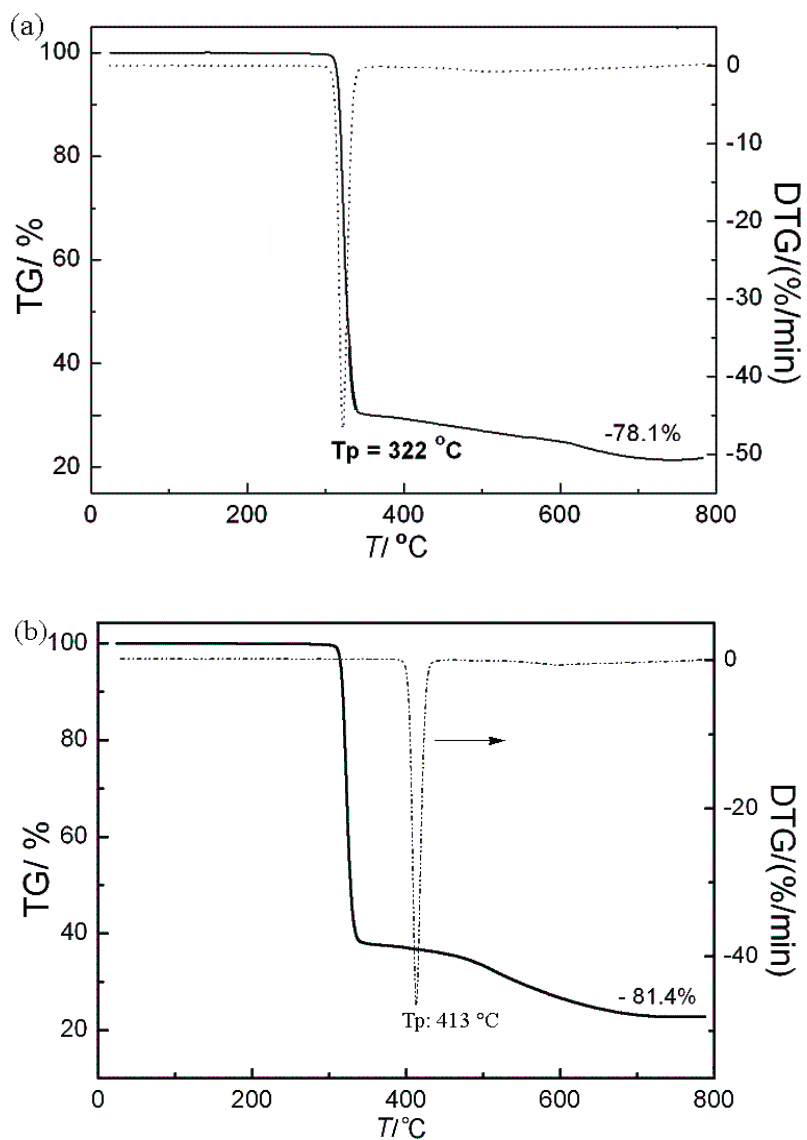


## Network topology and property studies for two binodal self-penetrated coordination polymers

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**Fig. S1** The X-ray powder diffraction (XRPD) patterns for **1** at room temperature: (a) simulated; (b) experimental.



**Fig. S2** TGA curves at a heating rate of  $10^\circ\text{C}/\text{min}$ . Real line: TG; broken line: DTG. (a): **1**; (b): **2**.

**Table S3** Selected bond lengths [Å] and angles [°] in **1** and **2**

Complex 1			
Co(1)-O(4)	1.956(2)	Co(1)-O(5)	1.957(2)
Co(1)-O(6)#1	1.968(2)	Co(1)-O(3)#1	1.976(2)
Co(1)-N(3)#2	2.150(3)	Co(1)-Co(1)#1	2.6456(6)
Cu(1)-N(2)	1.917(2)	Cu(1)-N(1)	1.920(2)
Cu(1)-O(1)	2.164(2)	O(4)-Co(1)-O(5)	89.99(11)
N(2)-Cu(1)-N(1)	148.27(12)	N(2)-Cu(1)-O(1)	105.56(11)
N(1)-Cu(1)-O(1)	104.06(11)		
Complex 2			
Co(1)-O(2)	1.983(2)	Co(1)-N(4)#3	2.041(3)
Co(1)-N(1)	2.042(3)	Co(1)-O(3)#4	2.049(2)
Co(1)-O(4)#4	2.332(2)	N(4)-Co(1)#5	2.041(3)
O(3)-Co(1)#2	2.049(2)	O(4)-Co(1)#2	2.332(2)
O(2)-Co(1)-N(4)#3	94.53(10)	O(2)-Co(1)-N(1)	109.86(10)
N(4)#3-Co(1)-N(1)	104.99(11)	O(2)-Co(1)-O(3)#4	107.13(10)
N(4)#3-Co(1)-O(3)#4	107.76(11)	N(1)-Co(1)-O(3)#4	127.55(11)
O(2)-Co(1)-O(4)#4	165.80(9)	N(4)#3-Co(1)-O(4)#4	86.60(10)
N(1)-Co(1)-O(4)#4	83.39(10)	O(3)#4-Co(1)-O(4)#4	59.29(8)