

Novel Co₅ and Ni₄ Metal Complexes and Ferromagnets by the Combination of 2-Pyridyl Oximes with Polycarboxylic Ligands

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Table S1. Selected interatomic distances (Å) and angles for **1**.

Bonds			
Ni1-O3	2.018(3)	Ni1-N3	2.019(3)
Ni1-O4	1.988(3)	Ni2-O3	1.814(3)
Ni1-O19	2.272(4)	Ni2-N4	1.846(3)
Ni1-N1	2.098(4)	Ni2-N5	1.886(4)
Ni1-N2	2.057(3)	Ni2-N6	1.855(4)
Angles			
N1-Ni1-O19	174.50(15)	N5-Ni2-O3	173.15(14)
N3-Ni1-O4	169.49(13)	N4-Ni2-N6	174.77(15)
N2-Ni1-O3	175.00(14)		

Table S2. Selected interatomic distances (Å) and angles for **2**.

Bonds			
Co1-O3	1.951(5)	Co3-O7	1.913(5)
Co1-O9	1.904(5)	Co3-O11	1.925(5)
Co1-N1	1.922(6)	Co4-O7	1.913(5)
Co1-N2	1.885(6)	Co4-O10	1.902(5)
Co1-N3	1.916(6)	Co4-N9	1.914(6)
Co1-N4	1.908(6)	Co4-N10	1.894(6)
Co2-O1	1.907(5)	Co4-N11	1.931(5)

Co2-O9	1.901(5)	Co4-N12	1.899(6)
Co2-N5	1.911(6)	Co5-O6	1.948(5)
Co2-N6	1.901(6)	Co5-O10	1.911(5)
Co2-N7	1.917(6)	Co5-N13	1.921(6)
Co2-N8	1.907(6)	Co5-N14	1.886(6)
Co3-O1	2.104(5)	Co5-N15	1.908(6)
Co3-O4	1.946(5)	Co5-N16	1.908(6)
Co3-O5	1.942(5)		
Angles			
O3-Co1-N4	173.9(2)	O4-Co3-O5	108.1(2)
N1-Co1-O9	172.0(2)	O7-Co4-N9	174.5(2)
N2-Co1-N3	178.3(2)	O10-Co4-N11	170.0(2)
O1-Co2-N7	174.0(2)	N10-Co4-N12	176.2(2)
N6-Co2-N8	175.3(3)	O6-Co5-N16	174.1(2)
O9-Co2-N5	170.1(2)	O10-Co5-N13	171.1(2)
O1-Co3-O7	173.50(18)	N14-Co5-N15	178.0(3)

Table S3. Selected interatomic distances (Å) and angles for **3**.

Bonds			
Co1-O4	1.947(7)	Co3-N7	2.114(6)
Co1-O6	1.908(6)	Co3-N12	2.114(6)
Co1-O24	1.927(6)	Co4-O12	1.878(8)
Co1-N2	1.900(6)	Co4-O16	1.908(6)
Co1-N4	1.907(7)	Co4-O18	1.913(9)
Co1-N11	1.888(7)	Co4-N6	1.907(7)
Co2-O2	2.004(6)	Co4-N8	1.889(7)
Co2-O20	1.980(6)	Co4-N10	1.840(8)
Co2-O25	2.030(6)	Co5-O8	2.011(6)
Co2-N1	2.058(6)	Co5-O10	1.992(6)
Co2-N9	2.114(7)	Co5-O25	1.986(5)
Co3-O14	1.994(6)	Co5-N3	2.086(6)
Co3-O22	2.004(6)	Co5-N5	2.122(6)
Co3-O25	1.997(5)		
Angles			
O4-Co1-N4	171.8(3)	O14-Co3-O25	130.9(3)
O6-Co1-N11	171.7(3)	O12-Co4-N10	169.8(3)
O24-Co1-N2	170.9(3)	O18-Co4-N8	171.2(3)
N1-Co2-N9	176.2(3)	O16-Co4-N6	171.3(3)
O2-Co2-O25	129.1(2)	N3-Co5-N5	175.8(3)
O20-Co2-O25	126.0(3)	O8-Co5-O25	129.9(2)
N7-Co3-N12	176.6(3)	O10-Co5-O25	128.2(2)

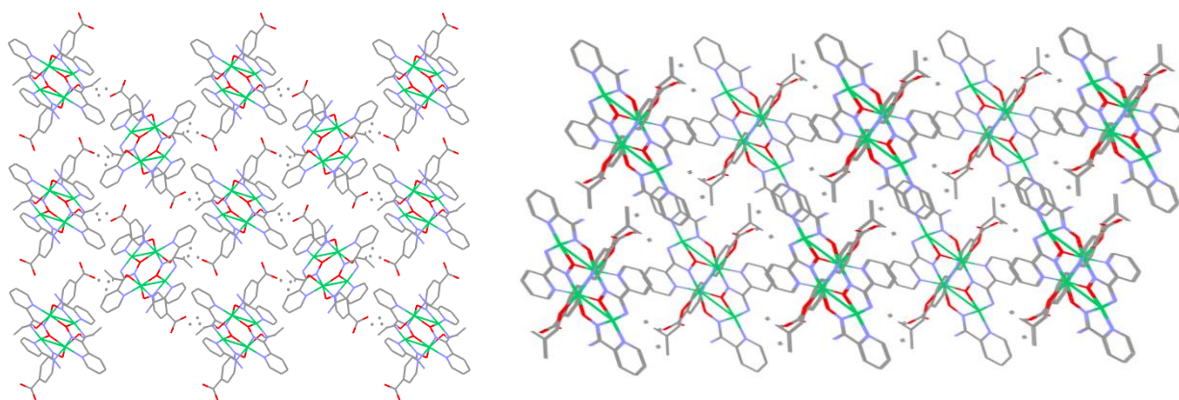
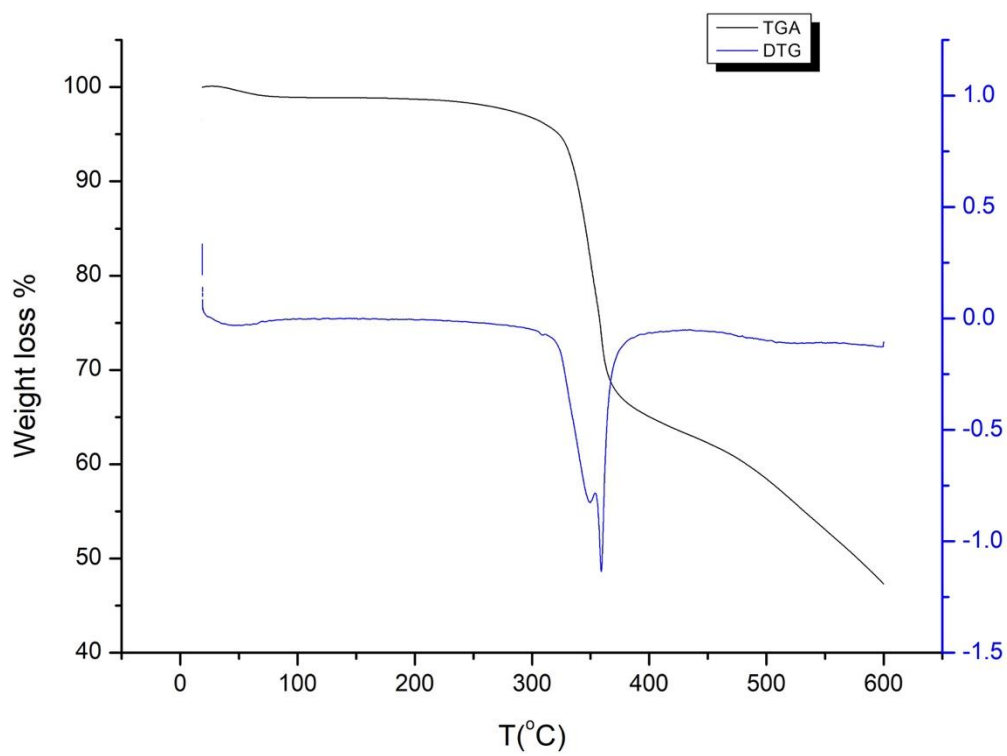


Figure S1. The 2D supramolecular network in **1** coming from the arrangement of Ni₄ clusters through H-bonding interactions (left), and the arrangement of two parallel 2D supramolecular planes (right).



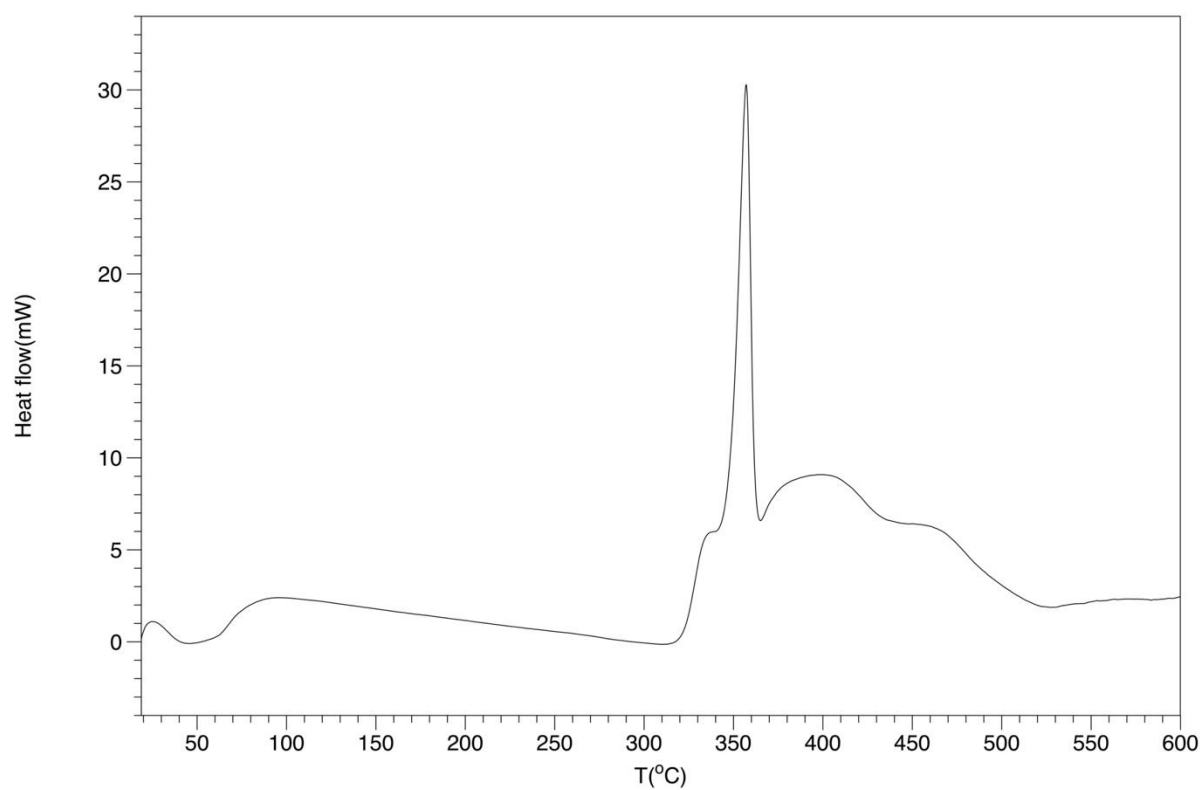


Figure S2. TGA-DTG (top) and DSC curves (bottom) of compound **1**.

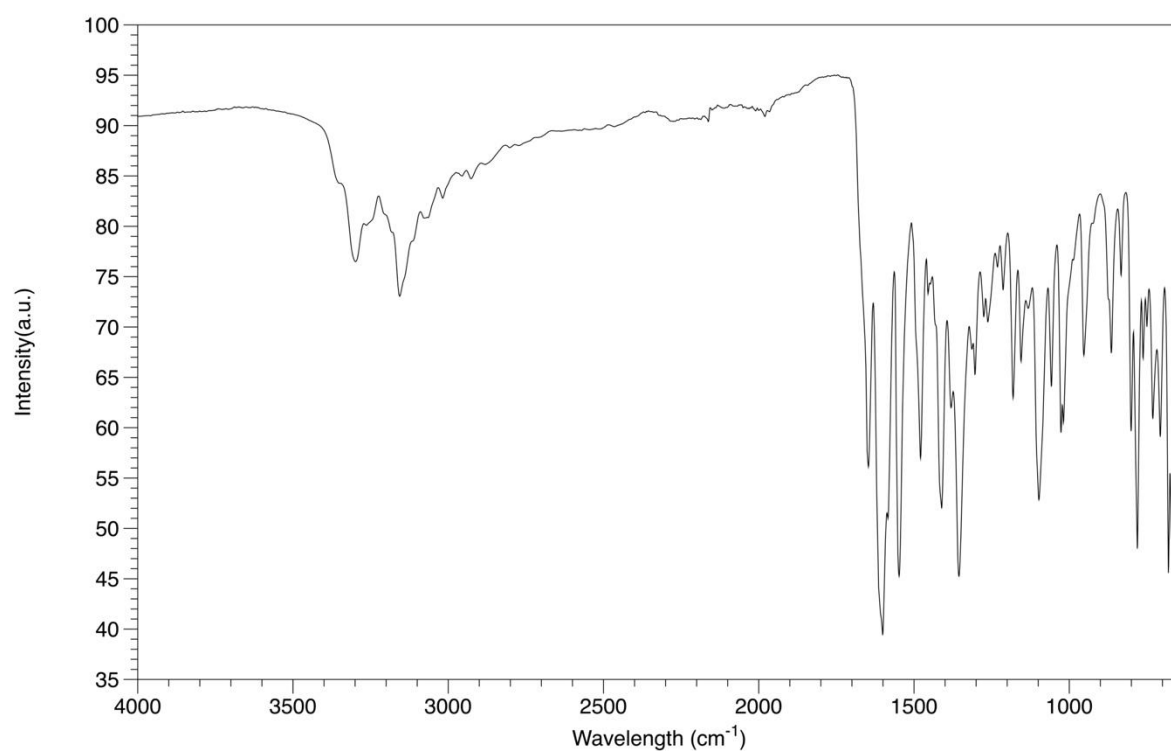


Figure S3. IR spectrum of compound **1**.

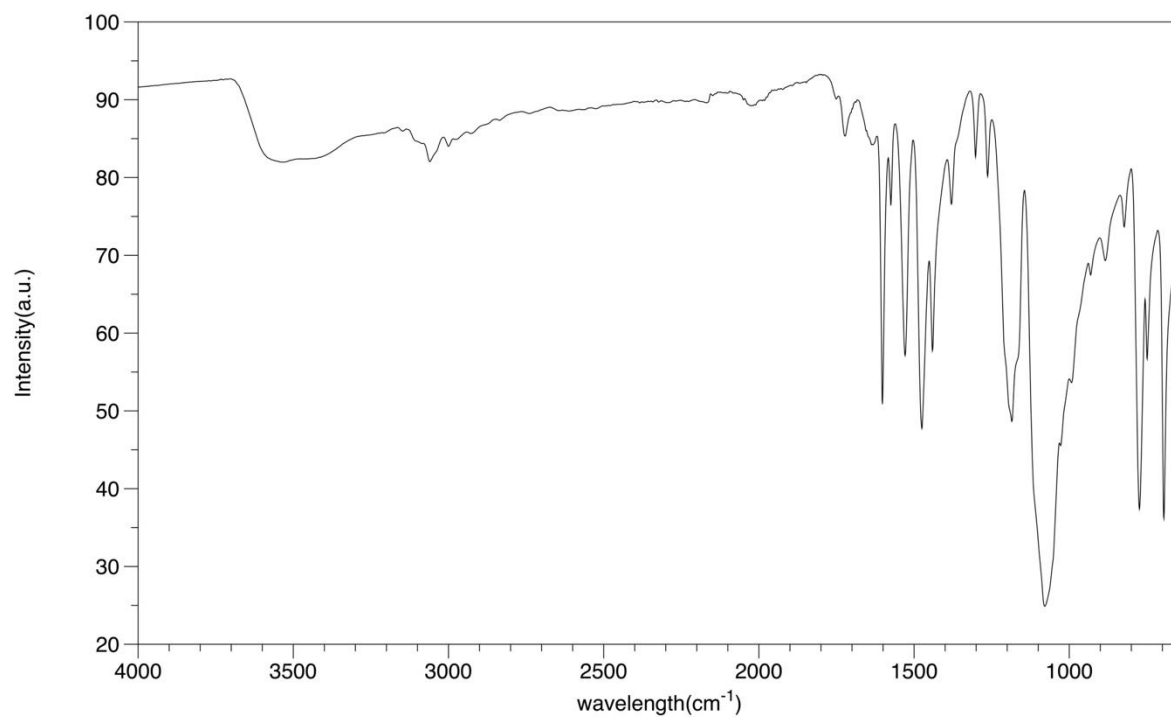


Figure S4. IR spectrum of compound **2**.

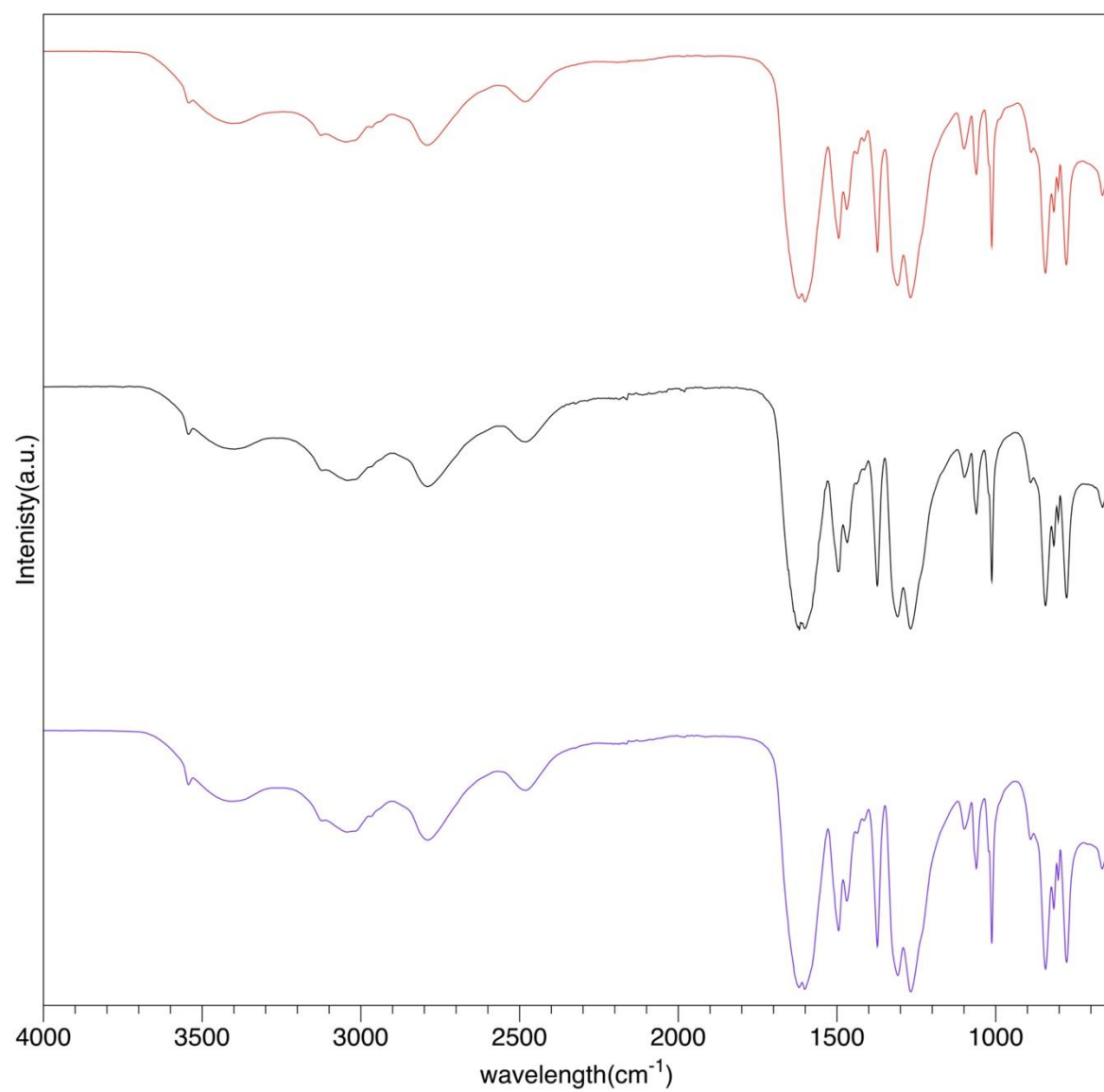


Figure S5. IR spectra of compound **3**: crystals from method A, top; crystals from method B, middle; crystals from Method C, bottom.

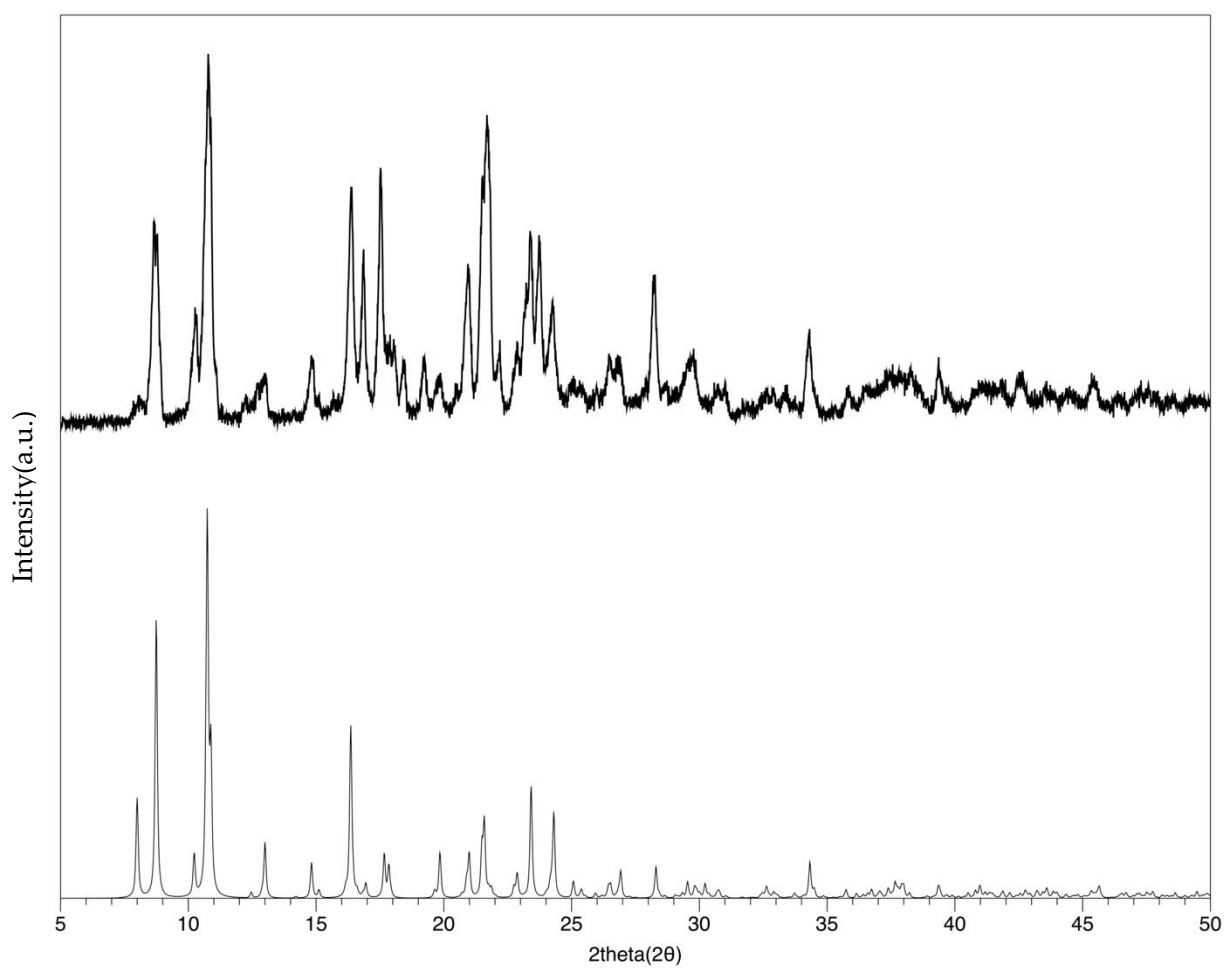


Figure S6. Powder XRD patterns of compound **1**: experimental powder pattern, top; simulated, bottom.