Supporting materials

Table S1 The C-O distances of the acylhydrazidate molecules in the title compounds.

	1		**2**				**3**		
	I	**II**	**I**	**II**	**III**	**IV**	**I**	**II**	**4**
C=O (Å)	1.238(7)	1.250(6)	1.243(7)	1.242(8)	1.270(6)	1.260(7)	1.249(3)	1.246(3)	1.245(2)
C-O$^-$ (Å)	1.293(6)	1.271(5)	1.335(7)	1.286(8)	1.297(6)	1.301(7)	1.274(3)	1.290(3)	1.316(2)

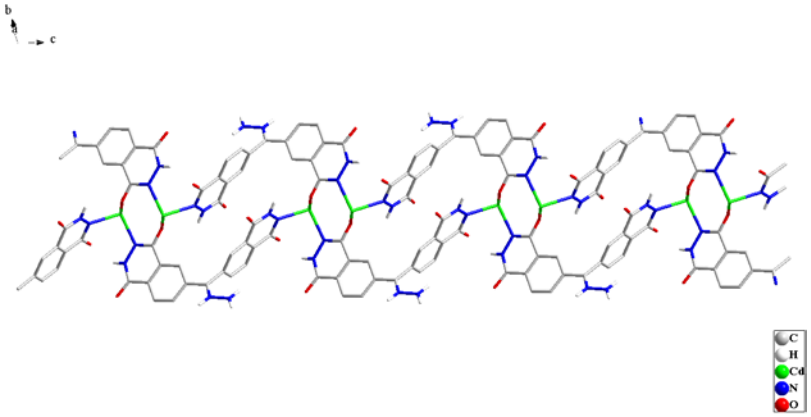


Fig. S1 The 1-D chain structure of compound **1** (phen is omitted for clarity).

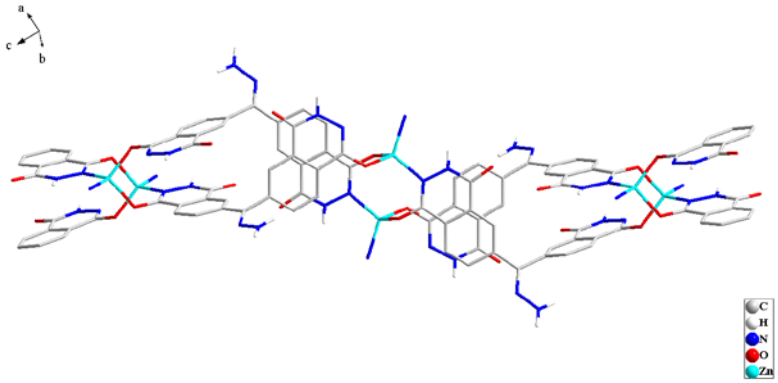
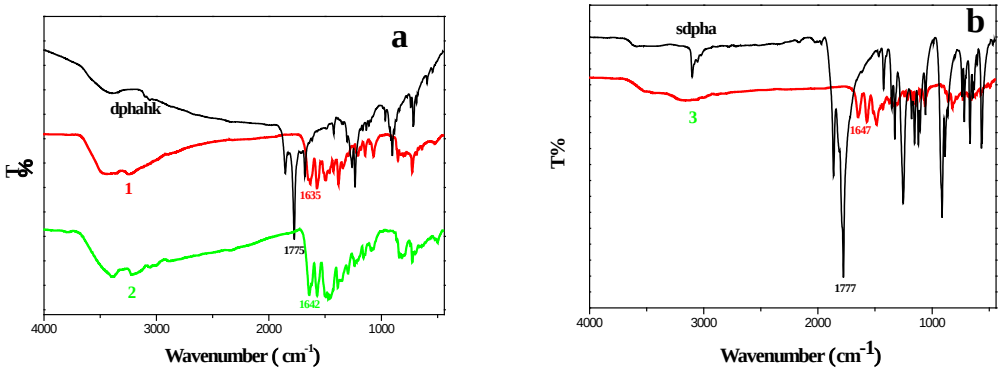


Fig. S2 The 1-D chain constructed up from Zn1 and DPHKH II for compound **2**.



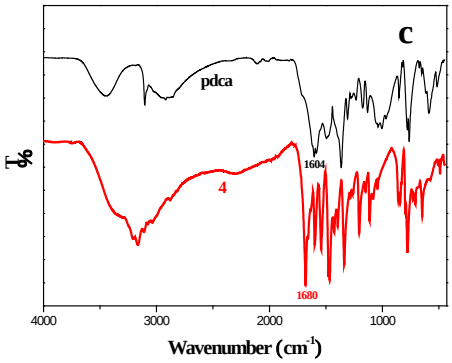


Fig. S3 The IR spectra for the title compounds and the corresponding organic acid molecules.

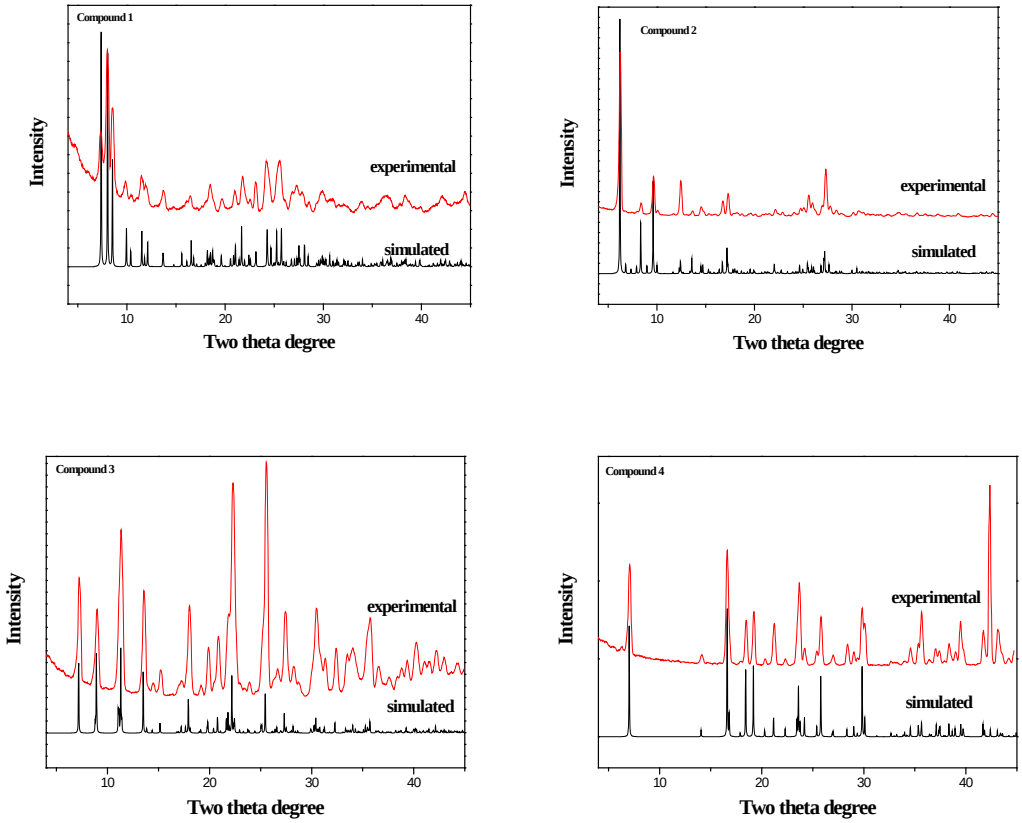


Fig. S4 The experimental and simulated powder XRD patterns for the title compounds.