Supporting information

Self-assembly of copper complexes with ladder, bi-rack, rack-ladder-rack and layer structures by the directional-bonding approach using a T-shaped ligand

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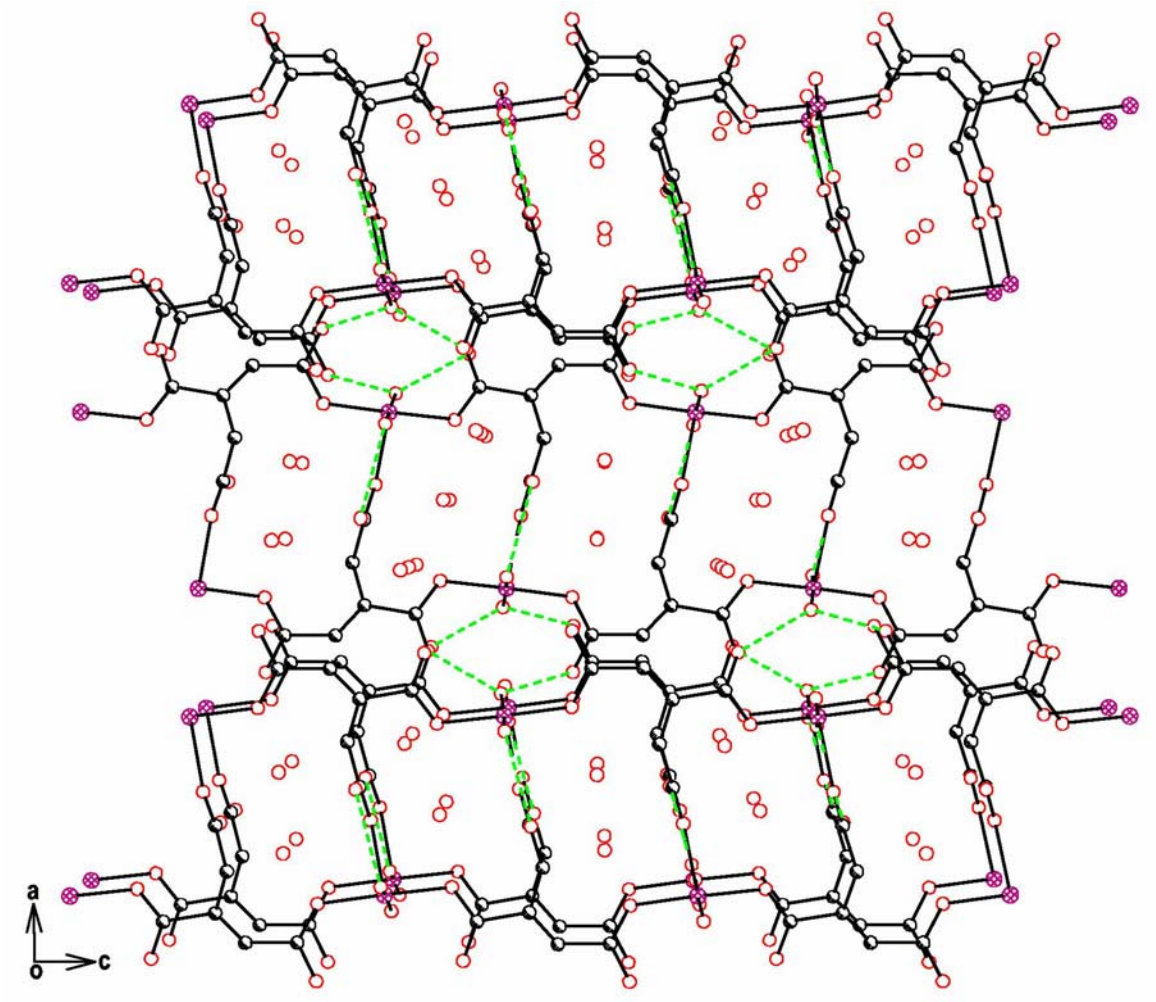

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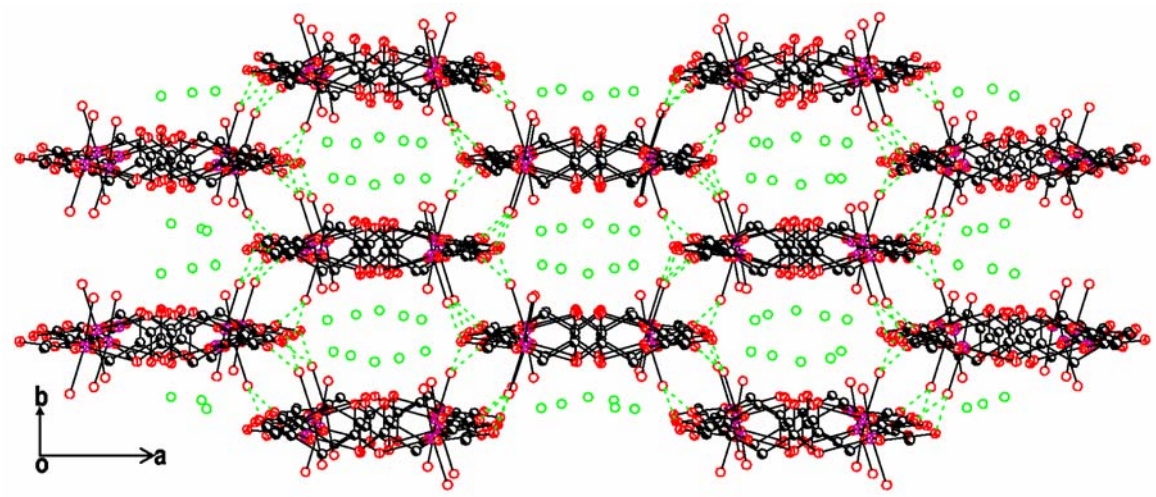

Fig. S1 3D packing diagram of **1** along the *b* (Top) or *c* (Bottom) direction with the dash lines showing the hydrogen bonds among the ladder-like chains.

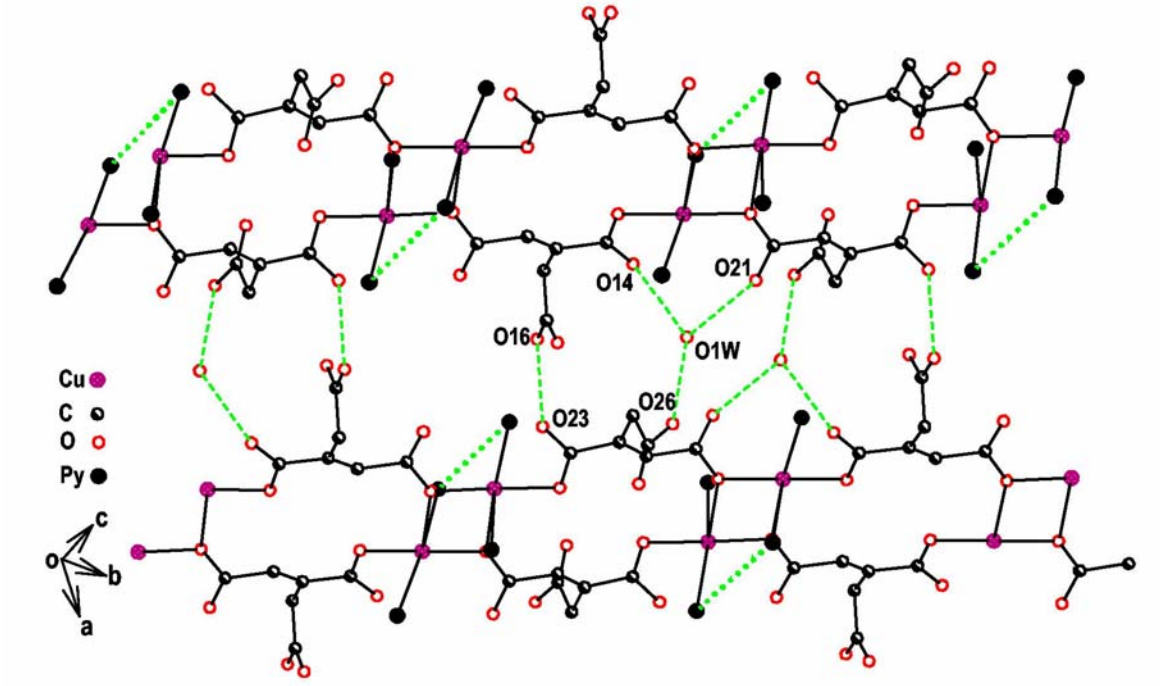

Fig. S2 2D layer of **3** lying in the [1 1 0]&[0 0 1] plane with the dotted lines showing the π-π stacking interactions between two py ligands that contain N41 and N51, respectively, and the dash-lines showing the hydrogen bonding interactions among the chains and lattice water molecules.

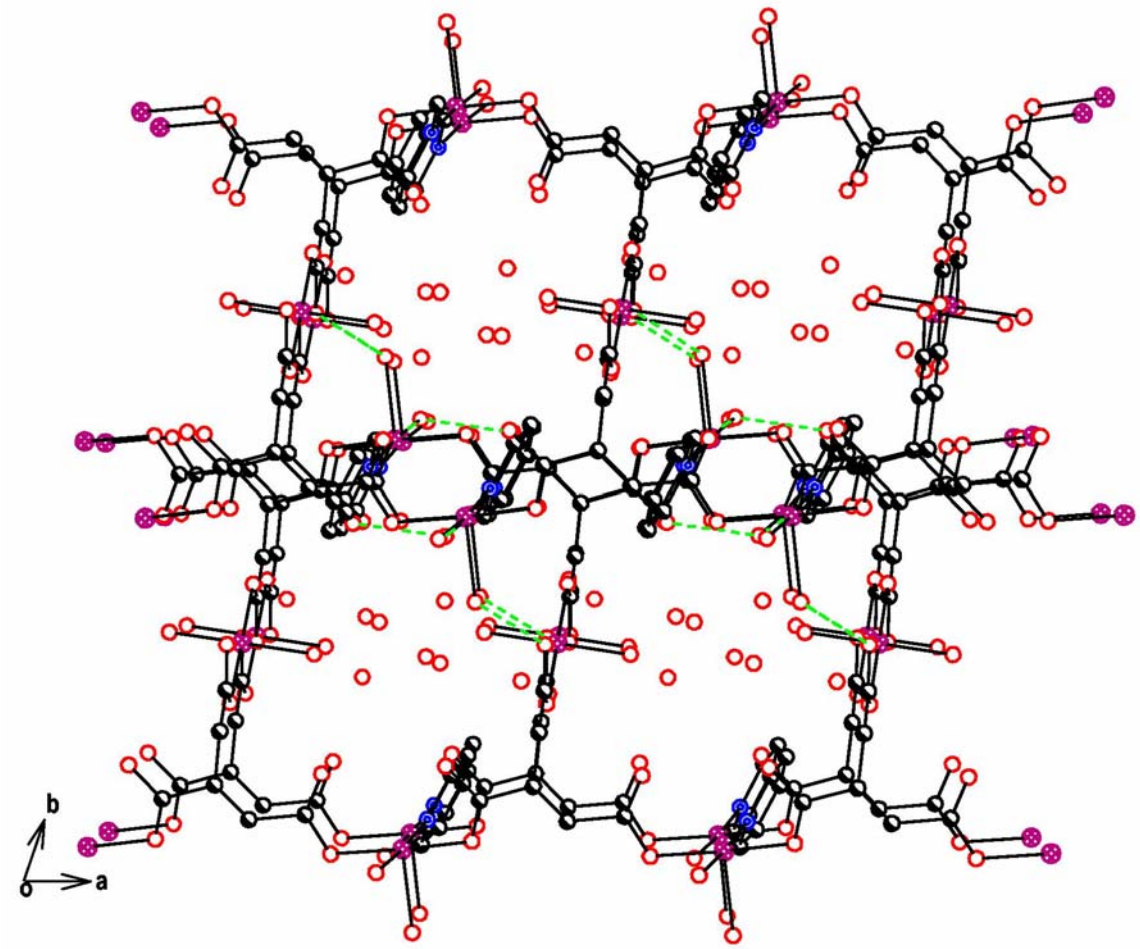

Fig. S3 3D packing diagram of **4** along the *c* direction with the dash-lines showing the hydrogen bonding interactions among the chains.

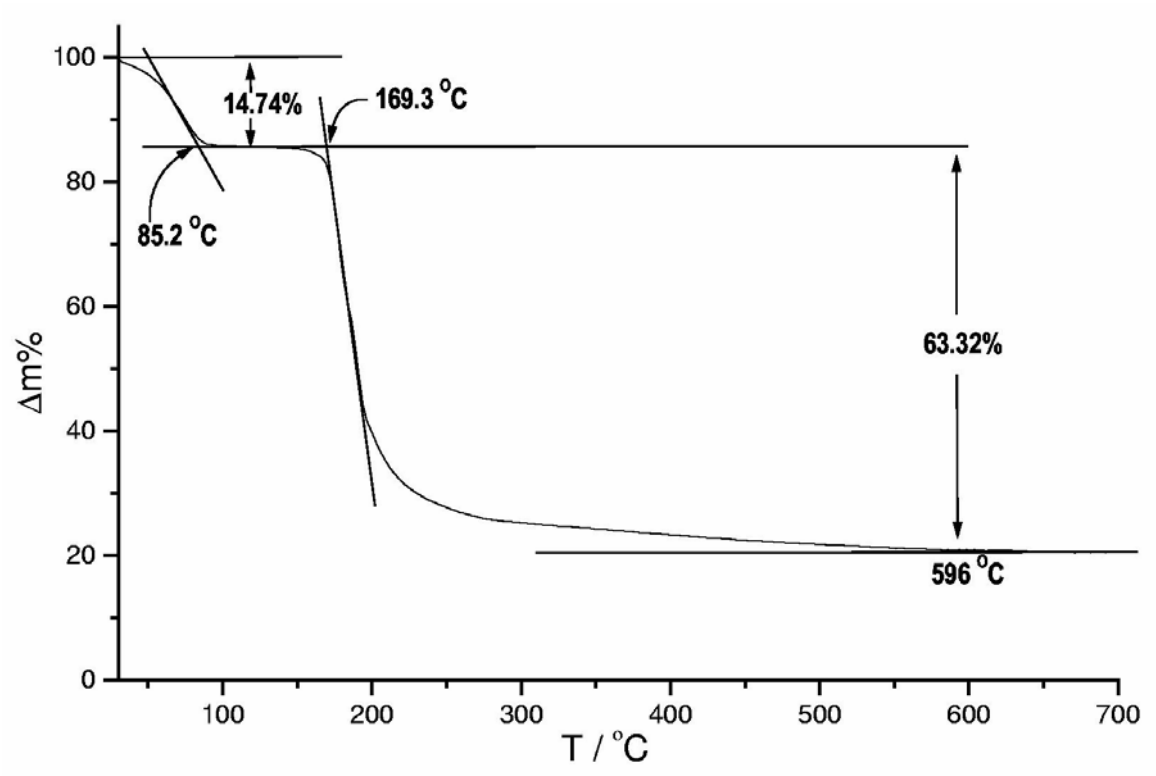

Fig. S4 TG curve of **4**.

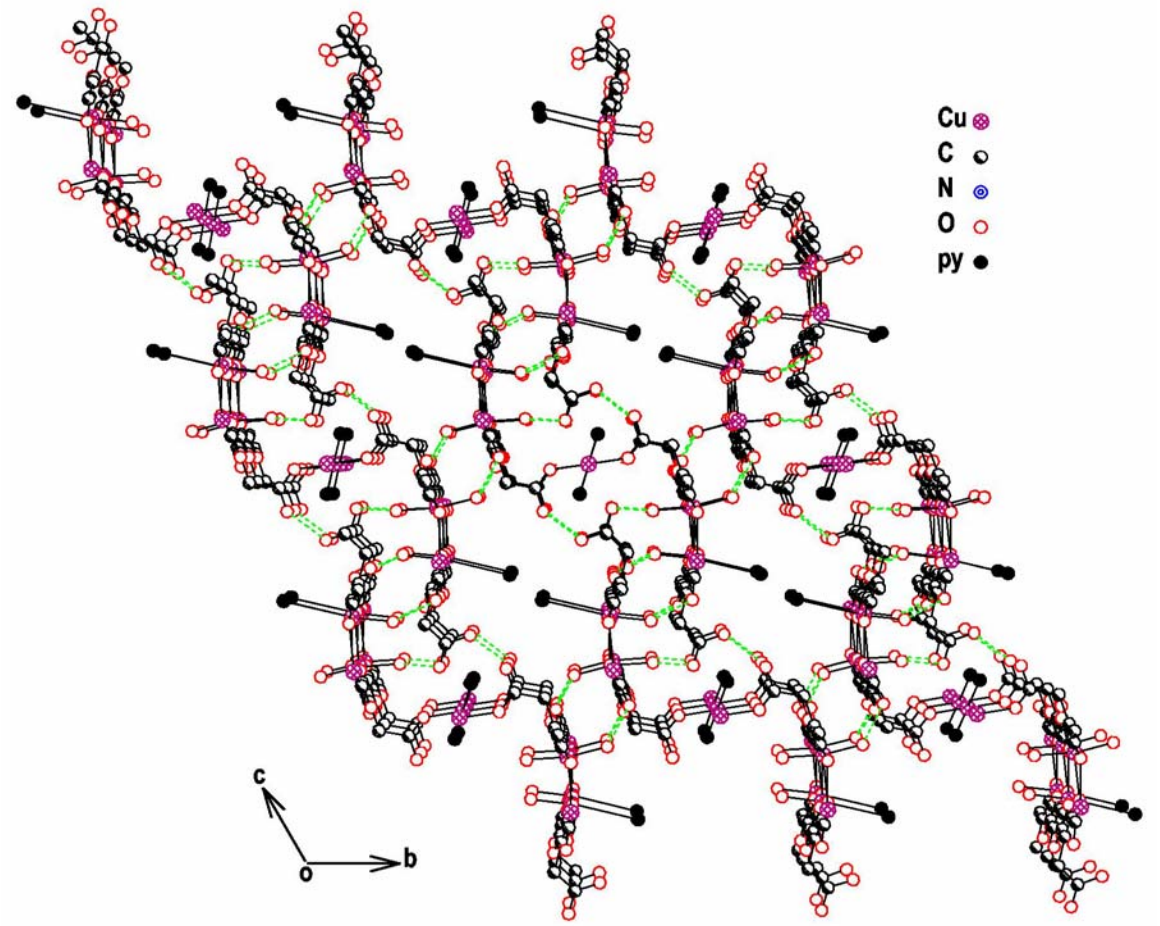

Fig. S5 3D packing diagram of **5** with the dash-lines showing the hydrogen bonding interactions. Hydrogen atoms are omitted for clarity.

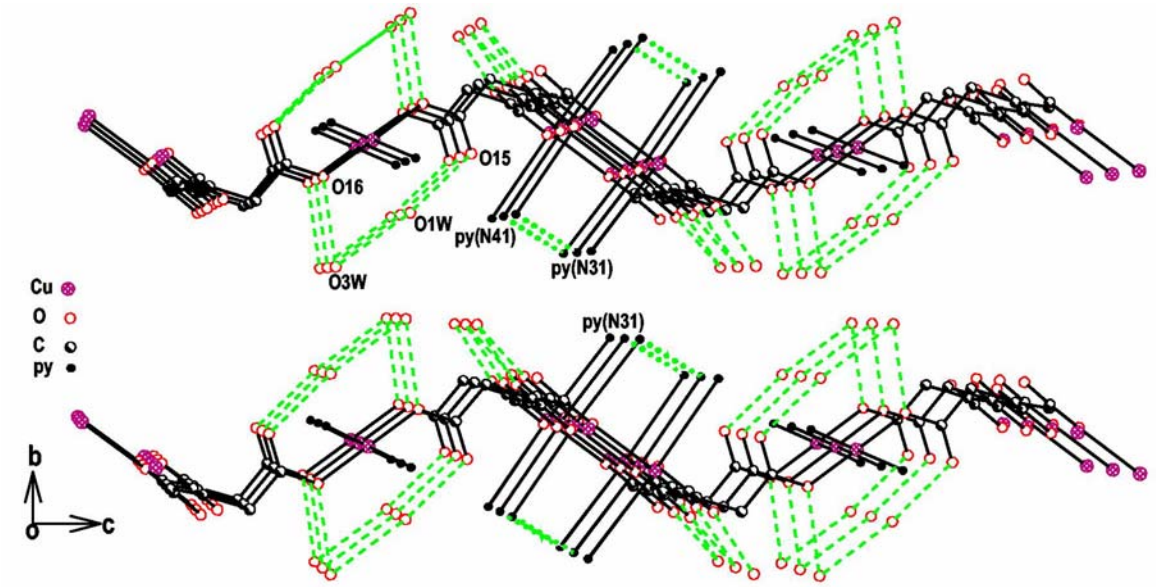

Fig. S6 3D packing diagram of **6** with the dash-lines showing the hydrogen bonding interactions and dotted lines depicting the π-π stacking interactions (centroid to centroid distance: *ca.* 3.637 Å; dihedral angle: 11.3(2)°). For clarity hydrogen atoms are omitted and the pyridines are showed as black solid dots.