

## Supporting information

### A Tri-layer Structure Consisting of Novel Heptacobaltate Clusters and Single Cobalt Centers Bridged by 5-*tert*-butyl isophthalate

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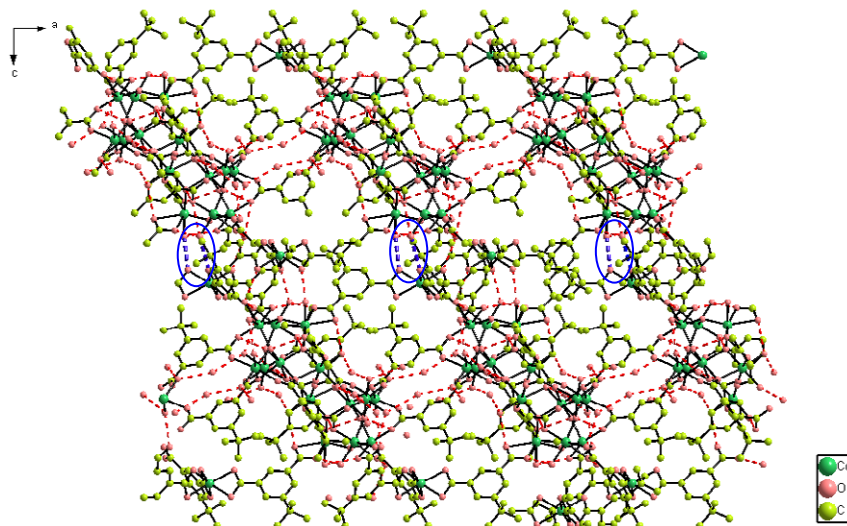


Fig. S1 Hydrogen bonding network exist in 1, hydrogen bonds are indicated with dashed lines. Blue-violet dashed lines represent the inter-trilayer hydrogen bonds that extent the 2D trilayer to form the 3D structure.

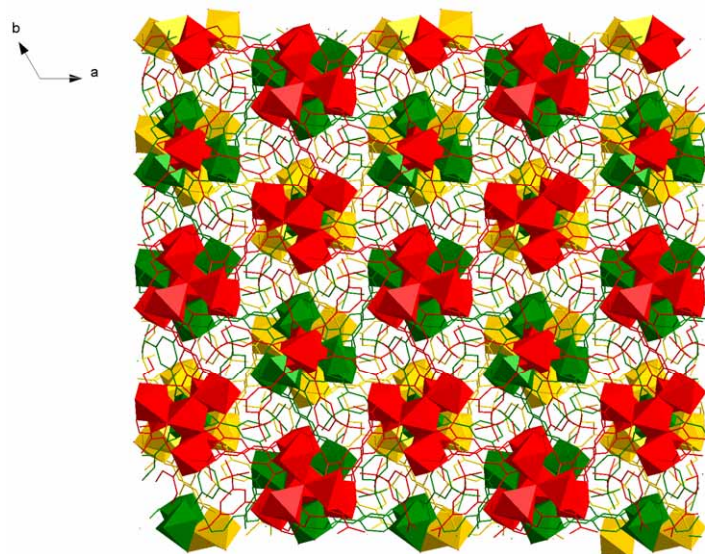


Fig. S2 View of the stacking of trilayers along the c-axis of **1** (different colors represent distinct trilayers)

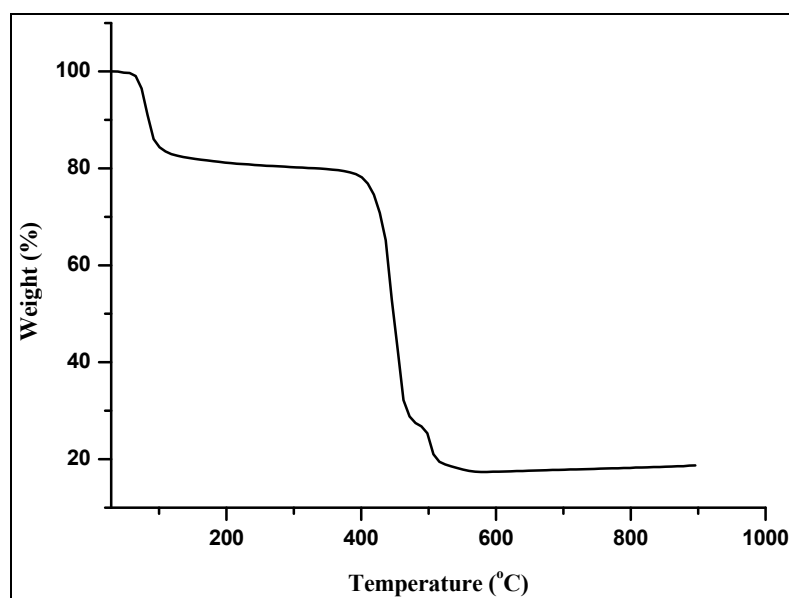


Fig. S3 The TG curve of compound **1**