Electronic Supplementary Material (ESI) for Dalton Trans
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Supporting Information for:

Hydrogen bonds assisted homochiral lattice packing between inorganic helices built from heterometallic units

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Content

Experimental Section

Materials and Instrumentation. We collected the fourier transform infrared spectroscopy (FTIR) data on a Perkin-Elmer Spectrum 100 FT-IR Spectrometer. Thermogravimetric analyses (TGA) was performed on a Mettler Toledo TGA/SDTA 851e analyzer in N_2 with a heating rate of 10℃min^{-1} from 20 to 800℃. Powder X-ray diffraction (PXRD) data analysis was collected on a Rigaku Mini Flex II diffractometer using CuK_α radiation (λ =1.54056 Å) in the 2θ range of 5–50° with a scanning rate of 5° min^{-1}. The UV-Visible diffuse reflection data was recorded at room temperature using a powder sample with $BaSO_4$ as a standard (100% reflectance) on a Perkin-Elmer Lamda-950 UV spectrophotometer and scanned at 200-800 nm. The absorption data are calculated from the Kubelka-Munk function, (F(R) = (1-R)^2/2R), where R representing the reflectance.

Chemicals and Materials

All the reagents and solvents employed are purchased commercially and used as received without further treatment. $Ti(O^iPr)_4$ was purchased from Adamas, while isopropanol and formic acid were bought from Sino pharm Chemical Reagent Beijing.

General Methods for X-ray Crystallography. Crystallographic data of **1P** and **1M** were collected on a Mercury single crystal diffractometer with graphite-monochromatic Mo Kα radiation (λ = 0.71073 Å). The structures were solved with direct methods using OLEX^2 and refined with the full-matrix least-squares technique based on F^2 using the SHELXL-2014. Non-hydrogen atoms were refined by anisotropic thermal parameters. All of the hydrogen atoms were theoretical hydrogenation and were modified using isotropic thermal parameters and cross-type models. Non-hydrogen atoms were refined anisotropically, and all hydrogen atoms bond C were generated geometrically.

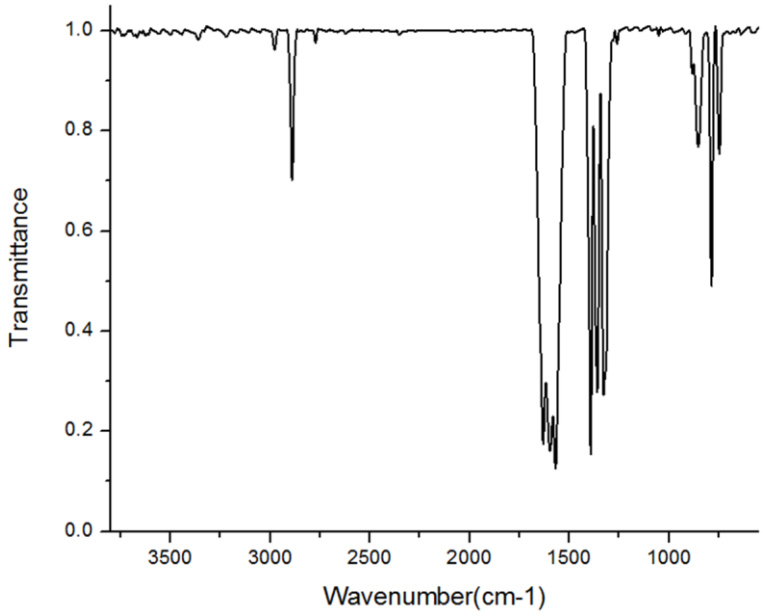

Figure S1 Fourier transform infrared spectroscopy (FT-IR) of the bulk samples of **1P** and **1M**.

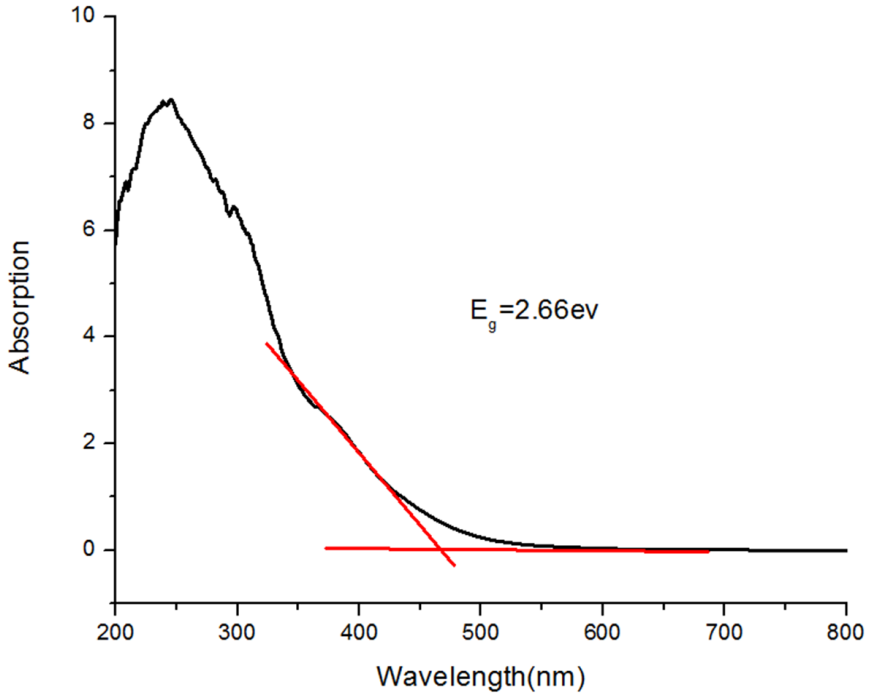

Figure S2 Solid-state UV-vis spectra of the bulk samples of **1P** and **1M**.

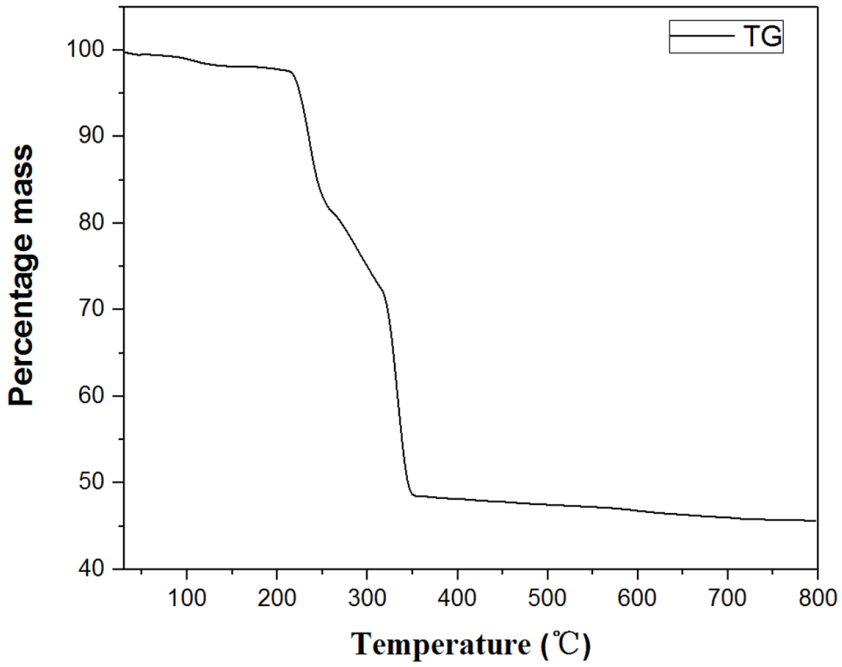

Figure S3 TGA of the bulk samples of **1P** and **1M**.

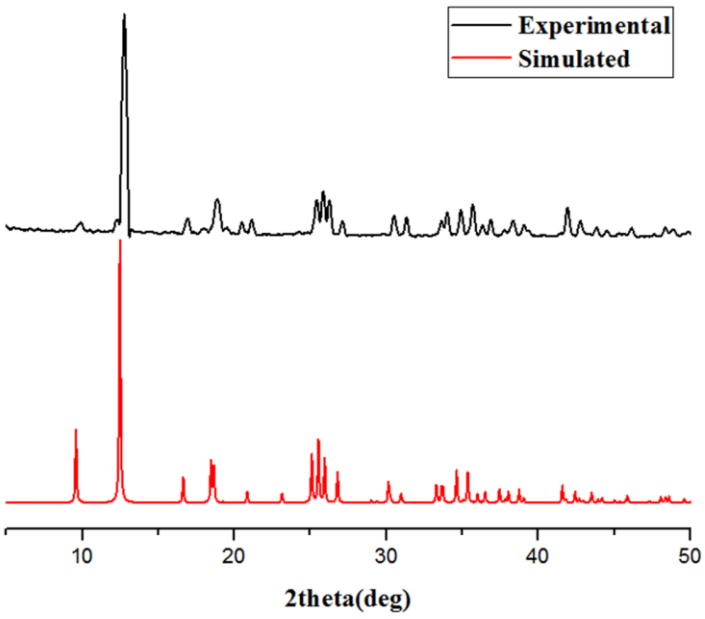

Figure S4 Comparative powder X-ray diffraction (PXRD) patterns of the bulk samples of **1P** and **1M**.

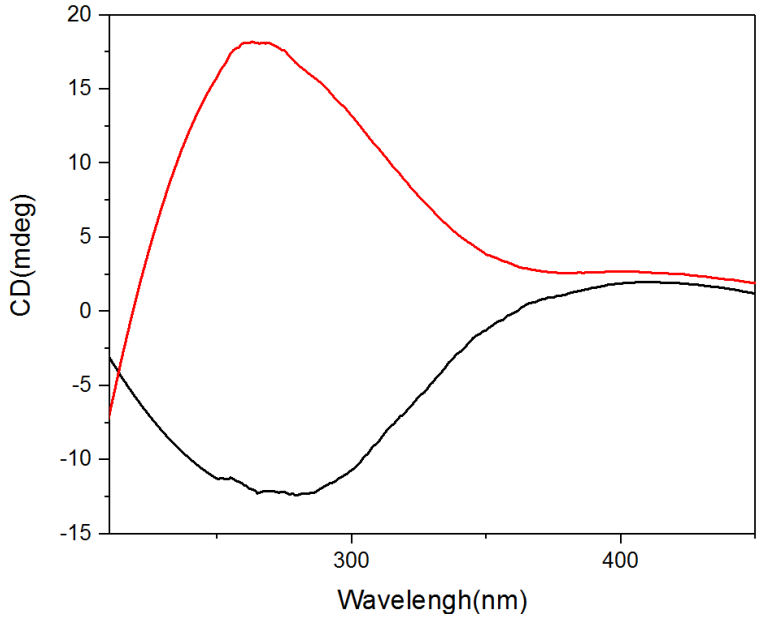

Figure S5 Solid-state circular dichroism (CD) patterns of the bulk samples of **1P** and **1M**.

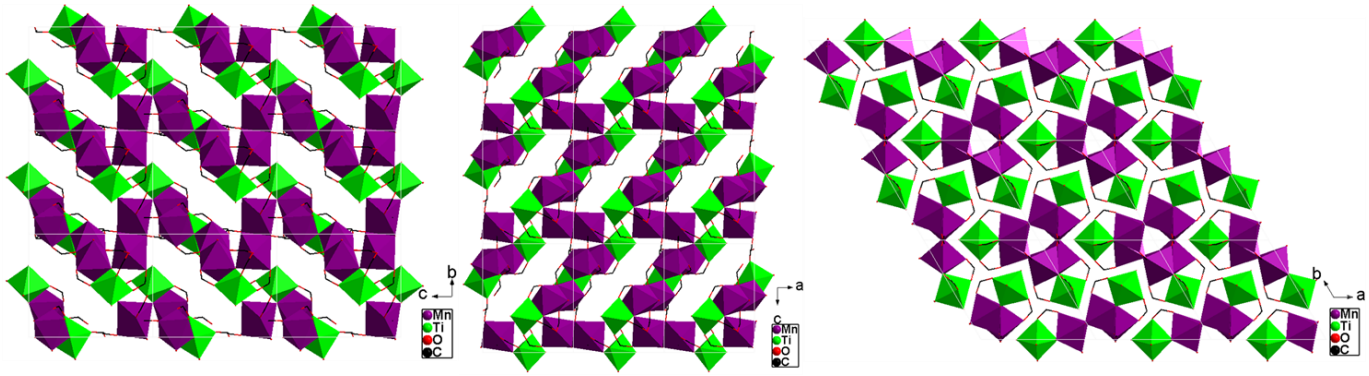

Figure S6 Packing view of **1M** along a, b, and c-axes.

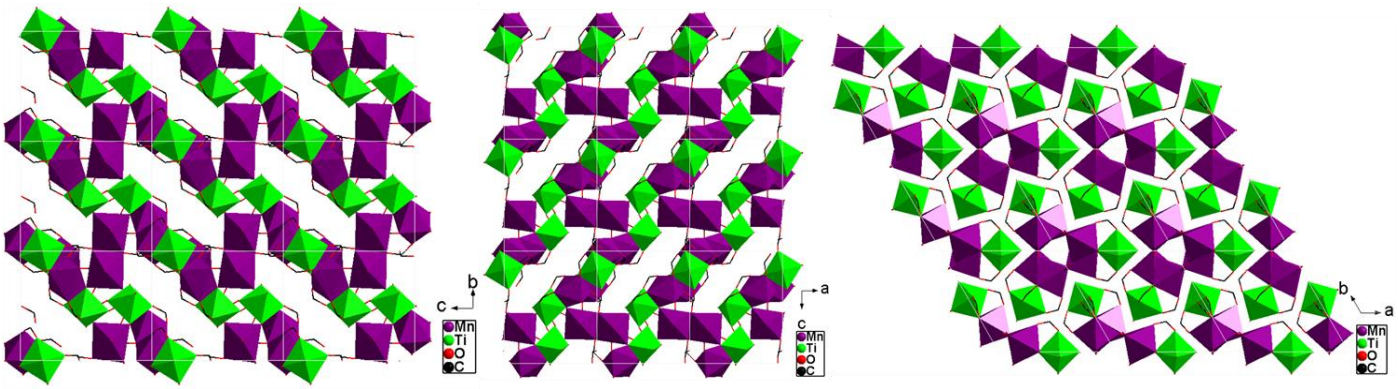

Figure S7 Packing view of **1P** along a, b, and c-axes.