Supplementary Material (ESI) for Journal of Materials Chemistry

Electronic supplementary information (ESI)

Giant magnetoresistance response by the π-d interaction in an axially ligated phthalocyanine conductor with two-dimensional π–π stacking structure

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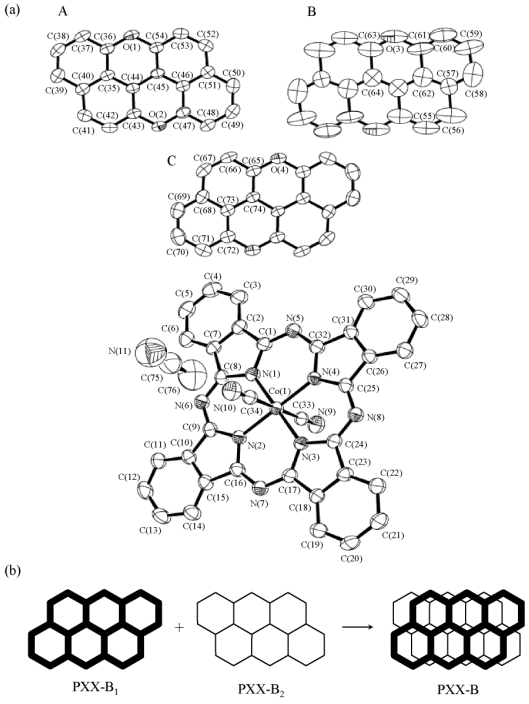

Fig. 1S (a) Thermal ellipsoids of the component molecules of **1** at 298 K. (b) Schematic representation of the disorder of PXX-B.

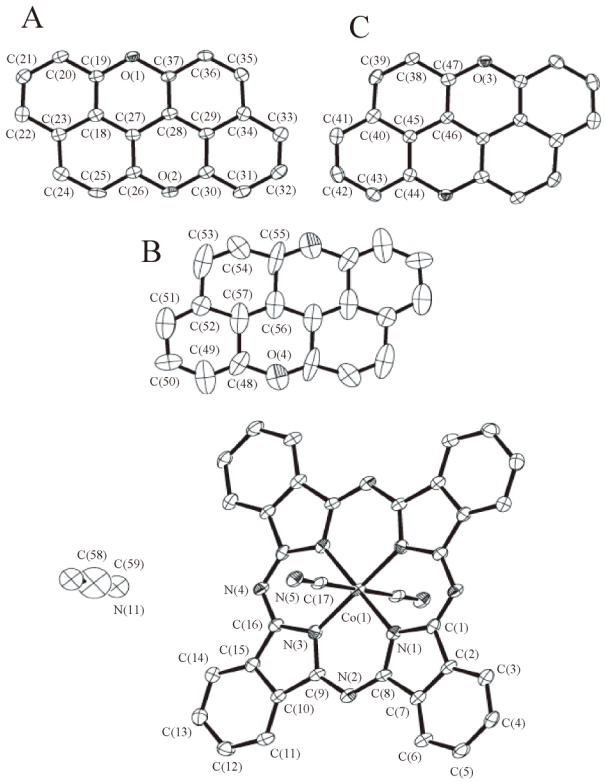

Fig. 2S Thermal ellipsoids of the component molecules in **3**.

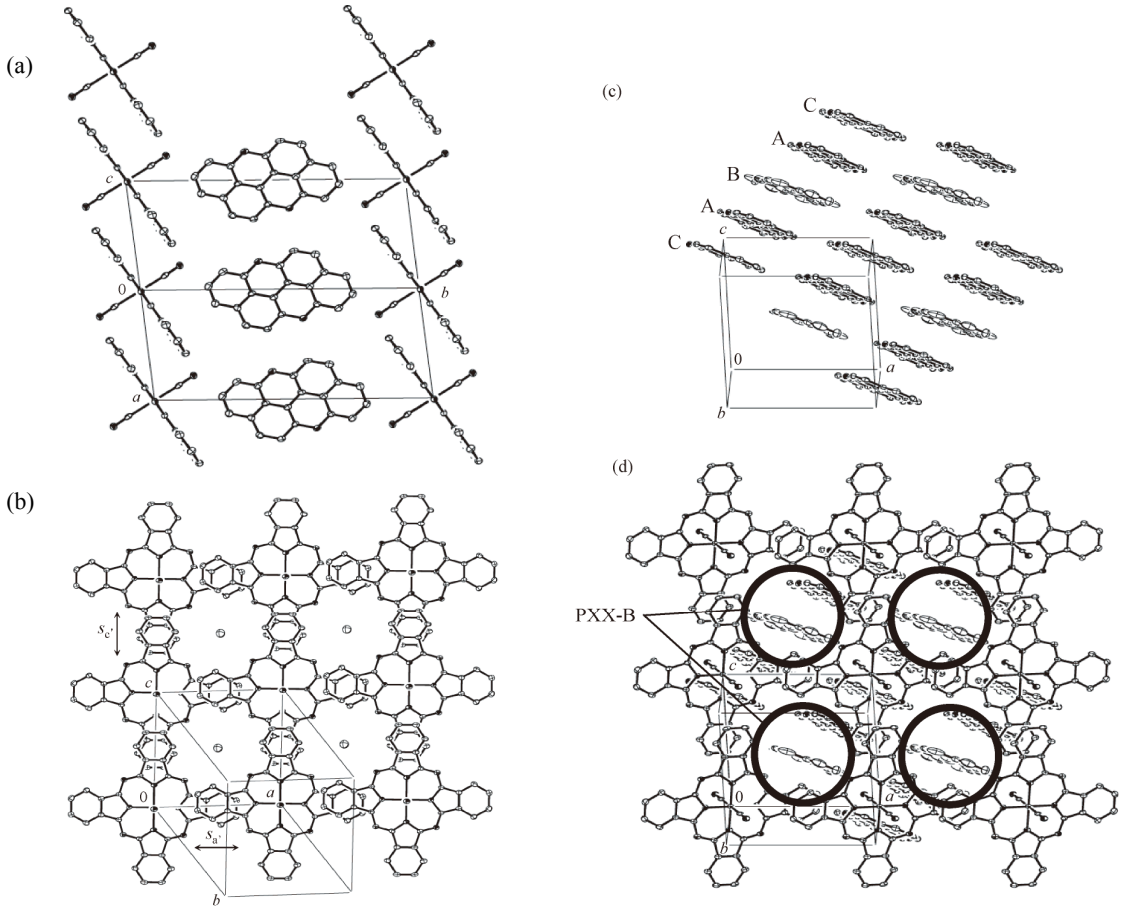

Fig. 3S (a) Crystal structure of **3**. (b) Molecular arrangement in the two-dimensional Pc sheet in **3**. (c) Molecular arrangement of PXX in **3**. (d) Relation between the Pc sheet and the PXX columns in **3**.

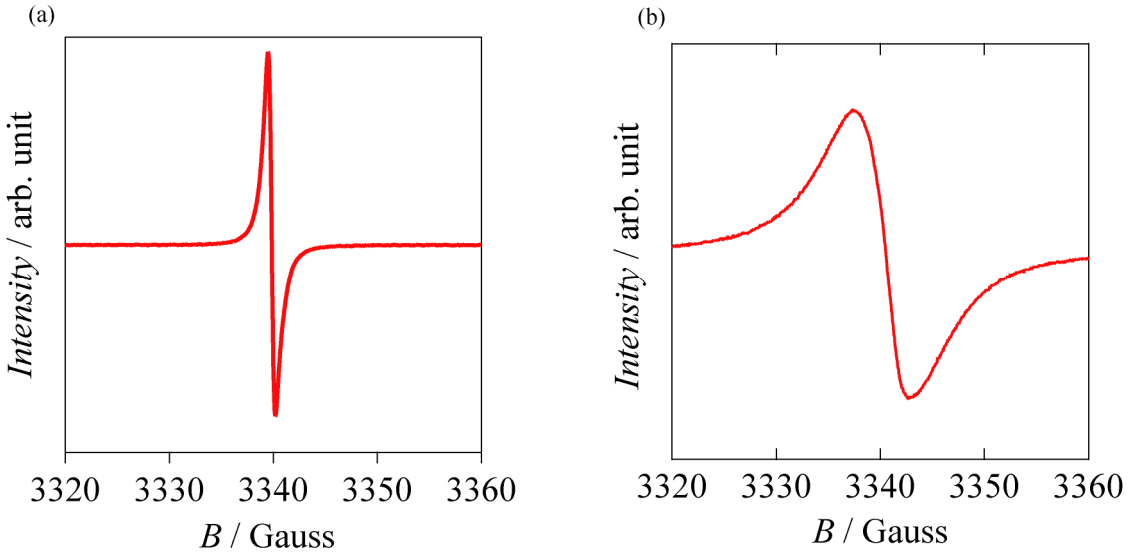

Fig. 4S (a) ESR signal of the single crystal sample of **3** at room temperature. (b) ESR signal of the single crystal sample of **1** at room temperature.

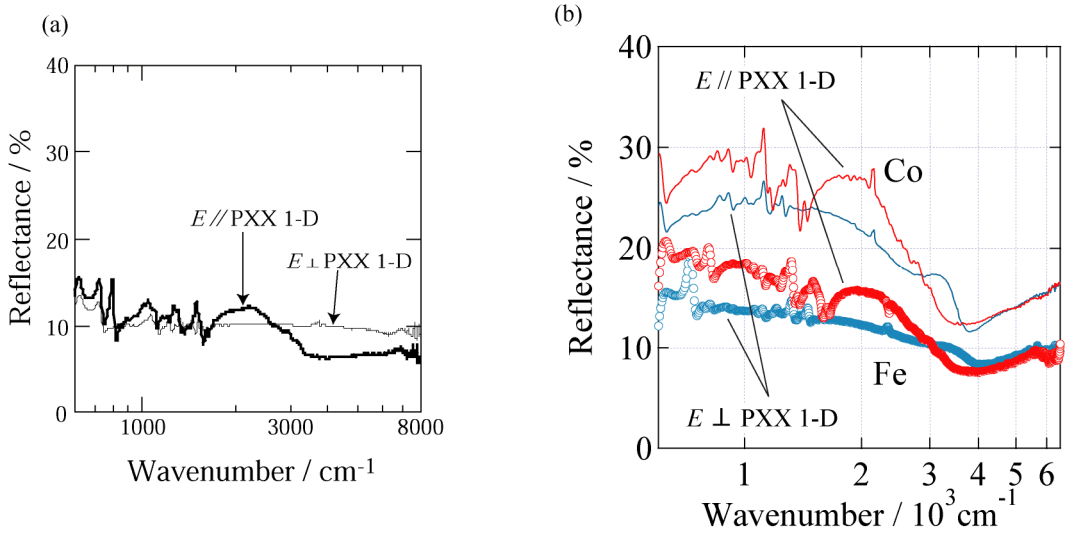

Fig. 5S (a) Reflectance spectra of **3**. (b) Reflectance spectra of **1** and **2**. In (a), dispersion due to electronic transition can be seen only when the polarization is parallel to the PXX 1-D column, while in (b), electronic transitions are seen in both polarizations parallel and perpendicular to the PXX 1-D column.

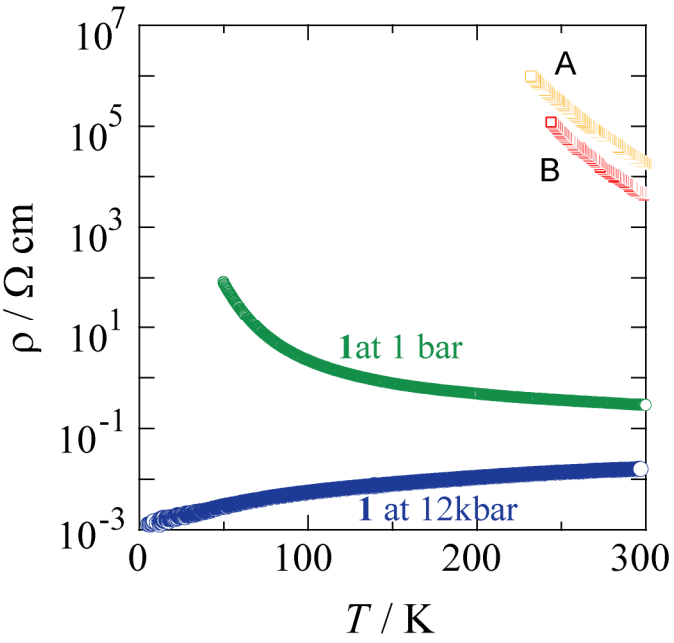

Fig. 6S Temperature dependence of the electrical resistivity of **3** at 1 bar (A) and 12 kbars (B). The resistivity decreases slightly due to the pressure, but the activation energy does not change. Therefore, conduction through the PXX column does not contribute to metallic conduction in **1** at 12 kbar.

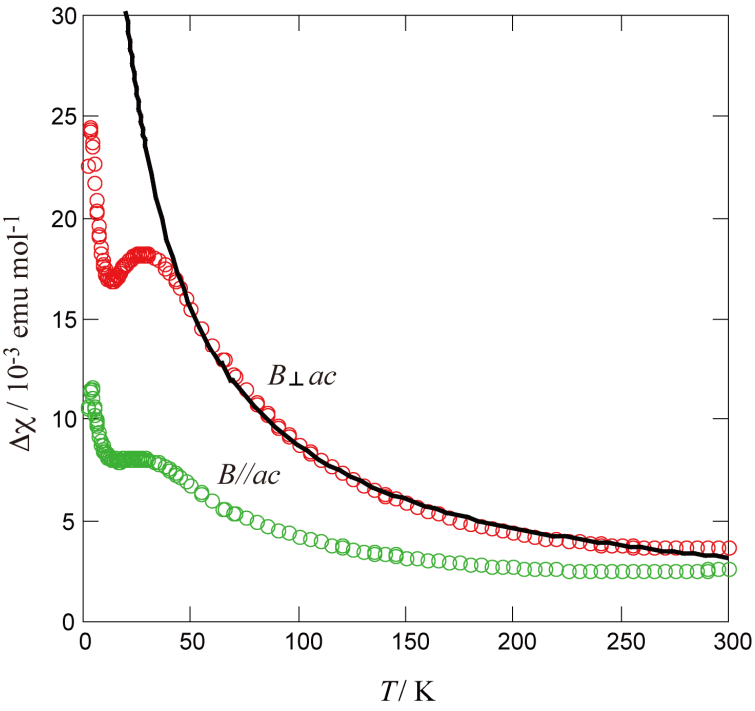

Fig. 7S Curie-Weiss fitting of Δχ. The solid line is the fitting curve of Δχ(*B*⊥*ac*) with the Weiss temperature θ = -11.1 K (fitting region: 40-200 K) .