



高スピン鉄(III)を含むオクタヘドラル配位ポルフィリンからなる伝導性結晶

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An electrically conducting crystal composed of an octahedrally ligated porphyrin complex with high-spin iron(III)

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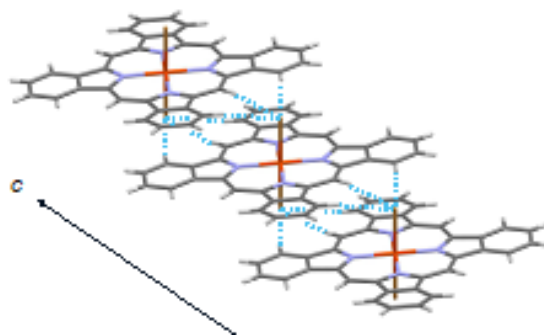


Figure 1. Crystal structure of 1 as viewed along the *a* axis.

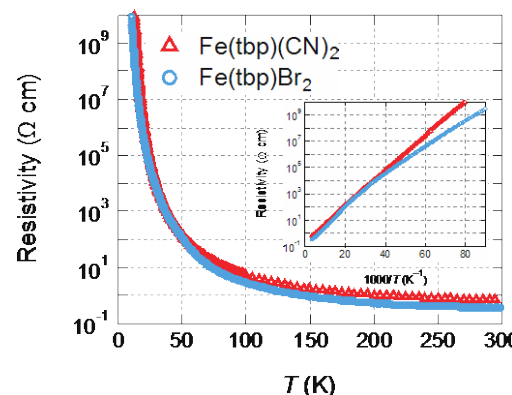
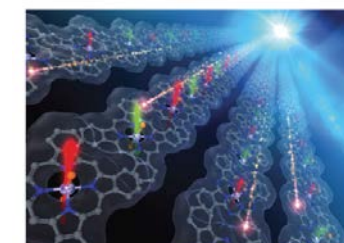


Figure 2. Temperature dependence of the electrical resistivity.

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A porphyrin-based octahedrally ligated complex with high-spin iron(III) was designed, and the resulting electrically conducting crystal was synthesized. The nature of iron is a crucial factor for the electrical properties of porphyrin-based materials.

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A porphyrin-based, octahedrally ligated complex with high-spin iron(III) was designed, and the resulting electrically conducting crystal TPP[FeIII(tbp)Br₂]₂ (**1**) was synthesised. The spin state of Fe was high-spin in crystal **1**. The nature of iron is a crucial factor for the electrical properties of porphyrin-based materials, just as hemoproteins change their functionality by changing the state of iron.

オクタヘドラルに臭素が配位した高スピン鉄イオンを含むポルフィリン誘導体を設計し、電気伝導性のTPP[FeIII(tbp)Br₂]₂ (**1**)結晶を作製した。結晶**1**中の鉄イオンは、高スピン状態であった。ポルフィリン誘導体では、鉄のスピン状態が結晶の伝導性に大きな影響を与え、これはヘムタンパクが鉄の状態変化でその機能性を変化させるのと同様な結果である。