DIRECTED DESIGN OF HOMOCHIRAL Co (II) AND Zn (II) ONE-DIMENSIONAL COORDINATION POLYMERS FOR APPLICATION IN FUEL CELLS

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The various organic functional groups in MOFs can be employed as active sites to promote asymmetric catalysis. The incorporation of ferrocene units into coordination polymeric arrays has attracted much attention due to the electronic donating ability, reversible redox chemistry, steric properties and ready functionalization of this stable fragment. A large number of ferrocene-based ligands have been exploited in the field of coordination chemistry to produce multimetal-containing complexes.[1] Furthermore, the incorporation of phosphorus atom into ferrocene containing ligand can lead to chirality, which we observed in this work.

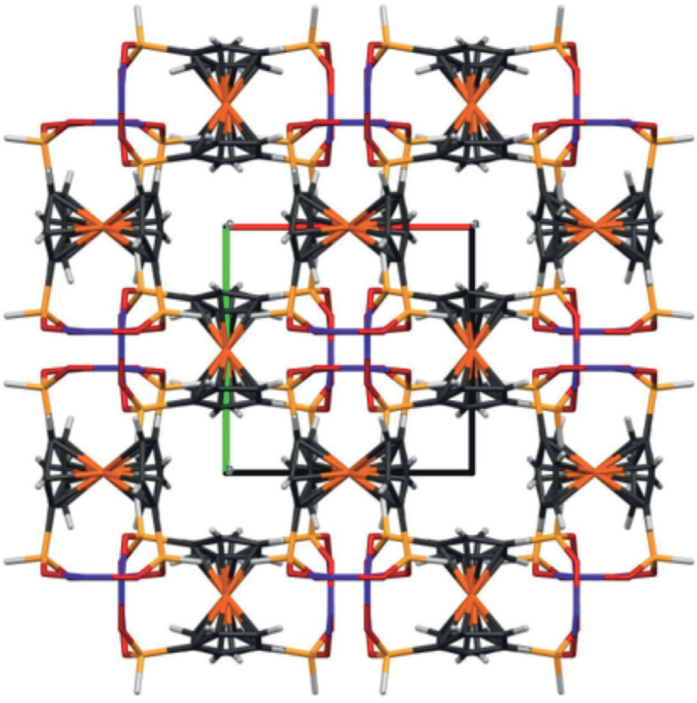

Fig. 1. A fragment of crystal structure of CP with Co nodes (view along c axis).

Herein we report on synthesis, crystal structure, spectroscopic and magnetic properties of homochiral Co(II) and Zn(II) one-dimensional coordination polymers on the basis of ferrocene-containing diphosphinate ligand with axial chirality. Either of the enantiopure pairs of chiral CPs can be synthesized as a conglomerate by spontaneous resolution occurring into the methanol/DMF solution of ligand and metal nitrate.

References

1. Miluykov, V. ; Sinyashin, O.; Zverev, A.; Podlesnov, S; Krivolapov, D.; Litvinov, I.; Gubaidullin, A.; Kataeva, O.; Ginzburg. A. Eur. J. Inorg. Chem. 2000, 1, 225.

The financial support from the Russian Foundation for Basic Research (project 18-29-04004) are gratefully acknowledged.