

论文

具有双螺旋链的新型二维无机-有机骨架晶体材料Ni(PDC)(H₂O)₂的合成与结构

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摘要:

本文报道由H₂PDC合成的新型层状无机-有机骨架晶体Ni(PDC)(H₂O)₂ (H₂PDC=吡啶-2,5-二羧酸), 该化合物的一层是由右手螺旋Ni—O—C链与左手螺旋Ni-pdc链组成, 而邻近的一层则是由左手螺旋Ni—O—C链与右手螺旋Ni-pdc链组成, 层与层之间通过氢键作用形成了三维超分子结构. 用ICP、TG、IR和X射线单晶衍射分析等手段对其结构进行表征.

关键词: 螺旋链 吡啶类羧酸 无机-有机骨架晶体材料

Synthesis, Structure of a Novel Two-dimensional Inorganic-organic Framework Ni(PDC)(H₂O)₂ with Double Helical Chains

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Abstract:

A novel coordination polymer [Ni(PDC)(H₂O)₂] was synthesized under solvothermal conditions and characterized by means of single-crystal X-ray diffraction(XRD) analysis, elemental analysis, IR analysis, TG analysis. Crystal data for C₇H₇NO₆Ni were obtained, i.e., monoclinic P2₁/c(No.14), a=0.720 2(3) nm, b=0.917 2(4) nm, c=0.128 79(4) nm, β=90.46(3)°, Z=4. The compound was a 2D layered coordination polymer with helical chains. In the compound, there are two helical Ni-O-C and Ni-pdc chains in one layer, and the opposite orientation of the helical chains in the adjacent layers. The layers are connected via hydrogen bonds into 3D supramolecular framework.

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Article by

收稿日期 2005-04-19 修回日期 1900-01-01 网络版发布日期

DOI:

基金项目:

通讯作者: 裘式纶

作者简介:

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