



2D氢键网络镍配合物 $\{[\text{Ni}(4, 4' \text{-bipy})(\text{H}_2\text{O})_4] \cdot (\alpha\text{-furacrylic acid})_2 \cdot (\text{H}_2\text{O})\}_n$ 的水热合成、晶体结构及电化学性质

Hydrothermal Synthesis, Crystal Structure and Electrochemical Properties of 2D Hydrogen-bonded Complex $\{[\text{Ni}(4, 4' \text{-bipy})(\text{H}_2\text{O})_4] \cdot (\alpha\text{-Furacrylic acid})_2 \cdot (\text{H}_2\text{O})\}_n$

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中文关键词: 镍(II)配合物; 水热合成; 晶体结构; 电化学性质分析

英文关键词: nickel (II) complex; hydrothermal synthesis; crystal structure; electrochemical property

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中文摘要:

英文摘要:

A complex $[\text{Ni}(\alpha\text{-furacrylic acid})_2(4, 4' \text{-bipy})(\text{H}_2\text{O})_5]_n$ with $\alpha\text{-furacrylic acid}$, 4, 4' -bipy and Nickel perchlorate has been synthesized by means of hydrothermal way and characterized. Crystal data for this complex: monoclinic, space group $P2_1/c$, $a=1.122 2(2)$ nm, $b=1.084 1(2)$ nm, $c=1.081 6(2)$ nm, $\beta=98.37(3)^\circ$, $V=1.301 8(5)$ nm³, $D_c=1.524$ g·cm⁻³, $Z=2$, $\mu(\text{Mo } K\alpha)=0.813$ mm⁻¹, $F(000)=624$, $S=1.073$, $R_1=0.041 2$, $wR_2=0.093 4$. The crystal structure shows that the Nickel (II) ion is coordinated with two nitrogen atoms of two 4, 4' -bipy molecules and four oxygen atoms from four water molecules, respectively, giving a distorted octahedral coordination geometry. Adjacent Nickel (II) ion are bridged by 4, 4' -bipy groups and the adjacent Ni (II)...Ni (II) distance is 1.122 2 nm. The Nickel (II) ion isn't coordinated with $\alpha\text{-furacrylic acid}$. The complex molecules form 2D structure through hydrogen bonds. The cyclic voltametric behavior of the complex was also investigated. CCDC: 658849.

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