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FULL PAPERS

两种新型四金属配合物的合成，结构及性质研究： **$[M_2(phen)_4(FCA)_2](ClO_4)_2\cdot(H_2O)_2$(M = Zn or Co, phen =邻菲罗邻, FCA =二茂铁丁烯酸阴离子)**

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摘要 本文报道了两种新型的配合物$[Zn_2(phen)_4(FCA)_2](ClO_4)_2\cdot(H_2O)_2$

(1) 和$Co_2(phen)_4$

$(FCA)_2](ClO_4)_2\cdot(H_2O)_2$ (2)

的合成，并用元素分析、红外、热分析以及单晶X-射线衍射等手段对化合物进行了分析表征；配合物中金属离子通过两个二茂铁丁烯酸阴离子桥连成双核，每个金属离子与两个邻菲罗邻分子中的四个N及两个μ_2-羧酸O以六配位模式形成畸变八面体，且1和2中两金属之间的距离分别为0.4391 nm和0.4462 nm；同时本文还对配合物的电化学性质进行了详细的研究。

关键词 组装,晶体结构,二茂铁衍生物,羧酸桥连, 电化学

分类号

Synthesis, Crystal Structures and Properties of Tetrametallic Complexes: $[M_2(phen)_4(FCA)_2](ClO_4)_2\bullet(H_2O)_2$(M=Zn or Co, phen=1,10-phenanthroline, FCA=anion of 3-ferrocenyl-2-c

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Abstract Two new complexes $[Zn_2(phen)_4(FCA)_2](ClO_4)_2\bullet(H_2O)_2$ (1) and $[Co_2(phen)_4(FCA)_2](ClO_4)_2\bullet(H_2O)_2$ (2) (FCA＝anion of 3-ferrocenyl-2-crotonic acid, phen＝1,10-phenanthroline) have been synthesized, and characterized by elemental analysis, IR, UV-Vis spectra, thermal analyses, and single-crystal X-ray diffraction. Two M(II) (M＝Zn or Co) ions are bridged by two FCA anions with *syn-anti* bridging ligands, leading to dimeric cores, $[M_2(phen)_4(FCA)_2]^{2+}$, and each M(II) ion is six-coordinated in a distorted octahedral geometry by two chelate phen ligands and two m_2-carboxylate oxygen atoms from two FCA groups. The M(II)…M(II) intradimer distances are 0.4391 and 0.4462 nm in 1 and 2, respectively. Electrochemical properties of the complexes have been discussed.

Key words assembly crystal structure ferrocene carboxylate-bridged complex electrochemistry

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