

具有铁磁偶合的新型草酸根桥联Cu(II)-Cr(III)-Cu(II)三核配合物

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**摘要** 合成和表征了两种新的异三核配合物, $[\text{Cu}_2(\text{phen})\text{Cr}(\text{OX})_3\text{NO}_3]$ 和 $[\text{Cu}_2(\text{Mebpy})\text{Cr}(\text{OX})_3\text{NO}_3]$ (phen表示1,10-邻菲咯啉,Mebpy表示4,4'-二甲基-2,2'-联吡啶,OX表示草酸根阴离子).基于变温磁化率测量(4.2~300K)和自旋哈密顿算符 $H = -2J(S_1 \cdot S_2 + S_2 \cdot S_3 + S_1 \cdot S_3)$ 已推出交换积分 $J = 35.18 \text{ cm}^{-1}$ (Mebpy)和 $J = 30.24 \text{ cm}^{-1}$ (phen),表明配合物中Cu(II)和Cr(III)离子间为铁磁偶合

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## Ferromagnetic oxalate-bridged trinuclear Cu(II)-Cr(III)-Cu(II) complexes

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**Abstract** Oxalate-bridged  $[\text{Cu}_2(\text{phen})\text{Cr}(\text{OX})_3\text{NO}_3]$  and  $[\text{Cu}_2(\text{Mebpy})\text{Cr}(\text{OX})_3\text{NO}_3]$  ( $\text{H}_2\text{OX} = \text{oxalic acid}$ , phen = 1,10-phenanthroline, Mebpy = 4,4-dimethyl-2,2'-bipyridyl) were prepared and characterized. The temperature dependence of magnetic susceptibilities of complexes was studied in 4.2-300 K range, and the exchange integral  $J_{\text{Cu-Cr}}$  is  $35.18 \text{ cm}^{-1}$  for  $[\text{Cu}_2(\text{Mebpy})\text{Cr}(\text{OX})_3\text{NO}_3]$  and  $30.24 \text{ cm}^{-1}$  for  $[\text{Cu}_2(\text{phen})\text{Cr}(\text{OX})_3\text{NO}_3]$  on the base of spin Hamiltonian  $H = -2J(S_{\text{Cu1}} \cdot S_{\text{Cr}} + S_{\text{Cu2}} \cdot S_{\text{Cr}})$ . The results are commensurate with ferromagnetic interactions between the Cu(II) and Cr(III) ions.

**Key words** [COPPER COMPLEX](#) [OXALATO COMPLEX](#) [PHENANTHROLINE](#) [P](#) [BIPYRIDINE](#) [P](#) [CHROMIUM COMPLEX](#)

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