



دانشگاه سیستان و بلوچستان



بسمه تعالی

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جناب آقای سرکار خانم دکتر زاهدانی

سلام و احترام،

توابع علم را اطلاع برسانیم که ستاد اساتید ارشدی با همکاری دبیر ستاد همکاران شیمی معدنی ایران با مشخصات زیر:

No:ICC-116

Title: Synthesis and X-ray study of a new oxo-bridged heterotrinnuclear compound ...

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No:ICC-117

Title: Synthesis and Crystallography of a new oxo-bridge complex Cr, Mn with p-Chloro benzoate ligand

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No:ICC-120

Title: Synthesis and characterization analysis of new oxo-bridged, trimer of mixed-metal complexes with ...

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No:ICC-121

Title: Synthesis, characterization and IR investigation of novel oxo-centered, trinuclear of transition metal ...

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پس از درود می‌توسط کمیته علمی برای ارازه کتوش بصورت پوستر مورد پذیرش قرار گرفتند.

لذا خواهشمند است جهت تکمیل مدارک زیر تا تاریخ ۱۳۸۷/۱۲/۲۰ اقدام فرمایید و اصل مدارک مربوط را با ذکر شماره مقاله به دبیر ستاد ارسال فرمایید.

۱- تکمیل فرم ثبت نام (در باب کتوش موجود است) (شماره ۱۱۲۰۸۱۷)

به امید یادگار ماندگار همکاران شیمی معدنی ایران

دبیر ستاد  
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Synthesis, characterization and IR investigation of novel oxo-centered, trinuclear  
of transition metal complexes with 2-propenoic acid

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Oxo-centered trinuclear carboxylates are a well-established class of complexes, referred to as "basic carboxylates" of the general formula  $[M(\mu_3-O)(RCOO)_6L_3]$  ( $M$  = metal;  $L$  = terminal ligand (for example: Pyridine derivative, THF, water, etc.);  $R$  =  $CH_3$ , Ph,  $CF_3$ , H, ...)[1-2]. Complexes of this structure contain a triangular arrangement of metal ions bridged by a central  $\mu_3$ -oxo atom. Each carboxylate anion spans two metal centers at the periphery of the  $[M_3(\mu_3-O)]^+$  core, while the neutral monodentate ligands occupy the remaining coordination sites on each metal centre, and as a result the coordination around the metal centre is approximately octahedral [3].

In this work  $[Cr_2FeO(C_3H_3O_2)_6(H_2O)_3]NO_3 \cdot 3H_2O$  (1) have been synthesized by reaction of metal nitrate with the sodium propenoate in aqueous solution; and then  $[Cr_2FeO(C_3H_3O_2)_6(CH_3OH)_2(H_2O)]NO_3$  (2) have been prepared through substitution of water molecules in (1) with methanol. The isolated complexes were characterized by elemental analysis, infrared and electronic spectroscopy. The observed frequencies  $\nu_{sym}(CO_2)$  and  $\nu_{asym}(CO_2)$  for the carboxylate ligand support the presence of bidentate coordinated carboxylates in complexes. For the identification of the metal oxo-bridged bonds of  $M_3O$  groups, IR spectra in the range of  $800-400\text{ cm}^{-1}$  were used [4]. The visible spectra of pseudo-octahedral Cr (III) complexes are expected to display two dominant d-d bands, corresponding to the spin-allowed  ${}^4A_{2g} \rightarrow {}^4T_{2g}$  and  ${}^4A_{2g} \rightarrow {}^4E_g$  transitions. The reflectance spectra of complexes show moderate broad bands in the U.V region that shows  $\pi \rightarrow \pi^*$  double bond in 2-propenoate ligand.

References:

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