بسمه تعالی

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جناب آقای / سرکار خانم دکتر یزدانبخش

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Title: Synthesis and X-ray study of a new oxo-bridged heterotrinuclear compound …
Author/Authors: Mohammad Yazdanbakhsh [a*], Haman Tavakkoli [a] and maryam Taherzade[a]
No:IICC-117
Title: Synthesis and Crystallography of a new oxo-bridge complex Cr, Mn with p-Chloro benzoate ligand
Author/Authors: Mohammad Yazdanbakhsh[a*], Iman Khosravi [a]
No:IICC-120
Title: Synthesis and characterization analysis of new oxo-bridged, trimer of mixed-metal complexes with …
Author/Authors: Mohammad Yazdanbakhsh*, Nahid Lotfian, Iman Khosravi
No:IICC-121
Title: Synthesis, characterization and IR investigation of novel oxo-centered, trinuclear of transition metal …
Author/Authors: Mohammad Yazdanbakhsh* , Nahid Lotfian , Haman Tavakkoli

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۱- تکمیل فرم ثبت نام (در سایت کنفرانس موجود است) (شماره ۱۱۷و۱۲۰)

به امید دیدار شما در دهمین کنفرانس شیمی معدنی ایران

با احترام

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Synthesis and X-ray study of a new oxo-bridged heterotrinuclear compound $[Fe_2NiO(CH_3CH_2COO)_6(H_2O)_3]$

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Oxo-centered triangular complexes of the general type $[M_3O(OOCR)_6L_3]^{n+}$ are particularly valuable as frameworks for systematically studying metal-metal interactions in clusters. They have been characterized with a wide variety of first-row and heavier transition metals, with mixed-metal combinations and with mixed-valency combinations [1]. The geometry of the central cluster remains relatively constant throughout the series and is often very close to 3-fold symmetry with a planar OM_3 unit, so that quite small deviations can be highly significant. Among the issues of interest are antiferromagnetic coupling in mixed-metal clusters, [1,2] electron delocalization in mixed-valence clusters [3,4[a]] and symmetry lowering, of electronic origin, in homonuclear paramagnetic clusters. A problem with the acetate series however is that most of them crystallize with extra solvent molecules which profoundly influence the physical properties [3,4[b]].

The mixed-ligand complexes of transition metals are also important due to their novel structural features, unusual magnetic properties, and catalytic activities. In many studies, unsaturated carboxylic acid, acrylic acid has been used as bridging groups in trinuclear oxo-centered complexes [5].

In this study a new oxo-centred heterotrinuclear complex $[Fe_2NiO(CH_3CH_2COO)_6(H_2O)_3]$ was synthesized and characterized by X-ray crystallography, IR Spectroscopy and elemental analysis .

Crystal data are reported for this complex and are as follows:

system monoclinic, space group P-1, a = 13.2516(4) Å, b = 14.2676(5)Å, c = 16.2900(5)Å, $\alpha = 86.304(2)^{\circ}$, $\beta = 89.684(2)^{\circ}$, $\gamma = 66.570(2)^{\circ}$, V = 2819.42(16) $Å^3$, Z = 4, $R_1 = 0.04$, $R_w = 0.11$.

The IR spectra of this compound shows intensive absorption bands at 1560 and 1430 cm^{-1}, which are assigned to $\upsilon_{as}(COO)$ and $\upsilon_s(COO)$ vibration, respectively.

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