T = 800 °C being limited with $Pt_{0.64}Re_{0.36}$ and $Pt_{0.40}Re_{0.60}$ compositions [1]. Figure shows the correlation between V/Z and the composition for all known reference materials. The Pt_{0.40}Re_{0.60}-Pt_{0.33}Re_{0.67} interval is unusual because of the V/Z value which is lower than that for pure rhenium. The solid solutions $Re_{0.67}Pt_{0.33}$ and $Re_{0.75}Pt_{0.25}$ have been obtained by thermal decomposition of $[Pt(NH_3)_4](ReO_4)_2$ and [Pt(NH₃)₅Cl](ReO₄)₃·2H₂O [2,3].



In the present work, we have used $(NH_4)_2[PtCl_6]_x[ReCl_6]_{1-x}$ as the precursor because of the ability to form double complex salts with a required metal composition. The compounds $(NH_4)_2[PtCl_6]_x[ReCl_6]_{1-x}$ (x = 0.40(I), 0.50(II), 0.60(III)) have been synthesized by adding NH4Cl to aqueous solutions of $K_2[PtCl_6]_x[ReCl_6]_{1-x}$. The latter have been obtained by mixing aqueous solutions of the isostructural complex salts K₂[PtCl₆] and K₂[ReCl₆] in required quantities. Thermal decomposition of the title compounds has been studied. The prepared solid solutions have been characterized by X-ray electron spectroscopy. It shows the pseudomorphism of the crystals of double complex salts. The final products of thermal decomposition are different for each precursor and depend on the initial metal proportions. Compounds II and III decompose to yield two phases. One of them is a solid solution based on the platinum cell and the other is the metal rhenium. Thermal decomposition of I gives a solid solution based on the rhenium cell with the parameters similar to the initial metal proportion.

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Keywords: platinum compounds; solid solutions; thermal decomposition

FA4-MS06-P18

Copper (II) Risedronate: the Importance of Structure Validation on the Correct Solution. Miriam Rossi^a, Bruno Demoro^b, Lucia Otero^b, Dinorah Gambino^b, Francesco Caruso^c. ^aDepartment of Chemistry, Vassar College, Poughkeepsie, NY, 12604, USA. ^bCatedra de Quimica Inorganica, Facultdad de Quimica, UDELAR, 11800 Montevideo, Uruguay. Istituto di Chimica Biomolecolare, CNR,

c/o Universita di Roma "La Sapienza" Ple. Aldo Moro5, 00185, Rome, Italy. E-mail: rossi@vassar.edu

Chagas' disease (American Trypanosomiasis) is a major cause of death and hardship in the impoverished regions of the developing world. It is the largest parasitic disease burden in the American continent being endemic in 21 countries from southern United States to Argentina and

Chile. Our preliminary results show that sodium risedronate has activity against Chagas' disease; therefore, interest in developing effective drugs against this disease has led to using risedronic acid and sodium risedronate (Actonel) as ligands in metal complexes. These compounds are bisphosphonates used to strengthen bone, for osteoporosis,

and Paget's disease. In this meeting, we present the crystal structure of copper(II) risedronate.

The paramagnetic nature of the Cu(II) metal precluded NMR spectra from being collected and the chemical composition analysis, for C, H and N content, could not provide absolute certainty of crystal composition. For instance, the sodium ion and water hydrate composition could not be a priori defined. From our data, we were able to obtain 2 potential structural solutions. One had the copper (II) complex and included Na ions; it had a satisfactory R_e of 0.0538 (Rw 0.0561) although some structural features appeared suspicious.

In the other, we replaced the Na+ by a water oxygen, and obtained an R_f of 0.0253 (Rw 0.0282), with satisfactory geometrical, structural and intermolecular interactions showing it to be the real structure.

In this poster, we wish to address the problem of interpreting reasonable looking, but wrong, structures. What parameters are best used in judging the correctness of a crystal structure? Crystallographers have grappled with this issue [1], [2] and PLATON and CIF validation methods are highly useful. However, we wonder about structures deposited in the CSD having R_{e} even larger than 5%, are all of them correct?

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Keywords: coordination crystal chemistry; copper (II) coordination complexes; structure validation

FA4-MS06-P19

Synthesis and Crystal Structure of [Fe(HL) (L)]CICH,CH,OH 2H,O (H_L=Pyridoxalsemicarbazone). Violeta S. Jevtovic. University of Novi Sad, Faculty of Sciences, Department of Chemistry, Novi Sad, Serbia. Stevan Jankov, University of Novi Sad, Faculty of Sciences, Department of Physics, Novi Sad, Serbia. E-mail: Violeta@ih.ns.ac.yu

Brown single crystals of the title compound $C_{20}H_{31}ClFeN_8O_9$, werw prepared by reaction of MeOH solutions of FeCl, 6H,O and H₂L H₂O in mole ratio 1:2. The complex has octahedral

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configuration with two non-equivalent tridentate ligands with O,N,O donors:

one of the ligands having deprotonated semicarbazido fragment, whereas for the other additional deprotonation involves the pyridine nitrogen.

The compound crystallizes in the P-1 space group with a=8.7273(3)Å, b=12.3030(4)Å, c=14.3589(6)Å, α =109.118(3), β =100.490(3), γ =101.860(3), V=1372.79 Å³.



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Keywords: iron(IV) complex; pyridoxal semicarbazone; octahedral configuration

FA4-MS06-P20

Study of Solid State Reaction in Pb (Zr, Ti) O₃ Ceramics Doped with (Fe²⁺, Ni²⁺, Sb³⁺) Ions. C. Benhamidéche^a, H. Allal^b, A. Boutarfaia^c, S. E. Bouaoud^b. ^aInstitut des sciences fondamental, Université de Skikda, Route d'El-Hadaiek-Skikda, Skikda (21000)-Algérie. ^bLaboratoirede chimie moléculaire du contrôle de l'environnement et des mesures physico-chimiques, Université de Mentouri-Constantine, Route Ain El Bey, Constantine (25000)-Algérie. ^cLaboratoire de chimie appliquée, Université de-Biskra (07000)-Algérie.

E-mail: <u>chahrazedb2002@yahoo.fr</u>

Lead zirconnate titanate $Pb(Zr_x, Ti_{1-x})O_3$ or (PZT) ceramics are of great technological interest due to their excellent piezoelectric and ferreoelectric properties. Such piezoelectric materials often used in ultrasonic generators, hydrophones, electronic buzzers and ringers, pressure and stress sensors, etc [1]. In general, the PZT are processed by the traditional solid-state reaction. However, there are undesirable features such as nonstoichiometry, compositional fluctuation and poor microstructure because of the high-temperature processes [2]. Therefore, it is necessary to process PZT ceramic at a temperature as low possible. Low firing temperature processing ceramic fabrication demands fine precursor powders of high homogeneity of components. The formation of Pb(Zr, Ti)O₃ has been studied with several kinds of starting materials by several authors who suggested a large number of reaction mechanisms[3], [4]. The phase assemblages and appearance of intermediate reaction products will depend on the precursor powders that have been employed (specifically, their purity and particle size) and the time and temperature at which the solid state reaction has been allowed to proceed. To investigate the reaction sequence through which PZT solid solutions are formed by solid-state reactions in a mixture of PbO+TiO₂+ZrO₂, researchers have performed several series of calcinations tests, but came up with different conclusions. There have been contradictory observation, particularly with respect to the presence or absence of intermediate products like PbZrO₃, PbTiO₃ solid solution (PT)_{ss} and a PbO solid solution (P)_{ss}.

The purpose of this study was to investigate lead zirconate titanate PZT and addition a small amount of Fe_2O_3 , Ni, Sb_2O_3 were synthesized by single phase perovskite PZT powders were obtained afther treatment at low temperature, the effects of calcination temperature on lattice parameters and tetragonality of PZT powders have been discussed, differential thermal analysis (DTA) and thermal gravimetric analysis (TGA).

The formation of PZT is accomplished through several steps: decomposition of PbO_2 to PbO; formation of $PbTiO_3$ above 400°C and of its solid solution at 600°C.

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Keywords: PZT; RX; thermal properties

FA4-MS06-P21

Crystal Stracture of Bipyridine Type Ligand LL=N,Ń-bis-pyridin-2-ylmethylene-naphthalene-1,5-diamine. Niloofar Akbarzadeh. T^a, Ali R. Rezvani^a. ^aDepartment of Chemistry, University of Sistan and Baluchestan, P. O. Box 98135-674, Zahedan, Iran E-mail: ni_akbarzadeh@hamoon.usb.ac.ir

The current interest in the crystal engineering of polymeric coordination networks stems from their potentional applications as zeolite like materials for molecular selection, ion exchange and catalysis as well as in the variety of architectures and topologies [1-2].One of the basic strateries for crystal engineering utilizes metal-ligand bonding between transition metals and organic ligands to create coordination polymers.

In designing these polymers the properties of linking ligands such as various coordination modes, variable lengthsS and relative orientation of donor atoms obey a fundamental role in determining the structural outcomes of target polymers. A novel bipyridine-type linking ligand L ((2-py)-CH==N- $C_{10}H_6$ -N==CH-(2-py)) (Fig. 1) was prepared by the Schiffbase condensation and fully characterized by spectroscopic methods and single-crystal X-ray diffraction. The unit cell parameters are : space group P21/c with a = 4.8666(8) Å, b

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