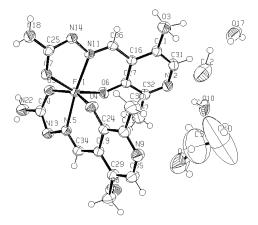
configuration with two non-equivalent tridentate ligands with O,N,O donors:

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.



[1]Leovac V.M., Jevtoviv V.S., Jovanovic Lj.S., Bogdanovic G.A, J.Serb.Chem.Soc. 2005, 70 (3), 393.

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.

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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.

Uchino, K., Piezoelectric Actuators and Ultrasonic Motors.
Kluwer Academic Publishers, Massachusetts, **1997**. [2] B. Jaffe,
W.R. Cook, H. Jaffe, Piezoelectric Ceramics, Academic Press Inc.,
New York, **1971**. [3] T.Ohno, M. Takahashi, N. Tsubouchi, J. Jap.
Soc. Powder Metall. 20, **1973**, 154. [4] T. Yamaguchi, S. H. Sho,
M. Maomori, H. Kuno, Ceramurrgia Int. 2, **1976**, 76.

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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