Syntheses and Characterization of Mixed-Ligands Lead(II) Complexes, [Pb(bpy)(CH_3COO)X] (X = I^-, NO_3^-, and ClO_4^-), Crystal Structure of [Pb(bpy)(NO_3)(CH_3COO)]$_n$ (A New 1-D Polymeric Compound)

Ali Morsali[a], Ali R. Mahjoub[a], Mohammad J. Soltanian[b], and Parisa E. Pour[b]

[a] Department of Chemistry, School of Science, Tarbiat Modarres University, P. O. Box 14155-4838 Tehran, I. R. Iran
[b] Department of Chemistry, Firoozabad Azad University, P. O. Box 74715-117 Firoozabad, I. R. Iran

Reprint requests to Dr. Ali Morsali. Fax: +98 21 8006544. E-mail: morsali_a@yahoo.com

Z. Naturforsch. **60b,** 300 – 304 (2005); received May 18, 2004

Lead(II) complexes with 2,2′-bipyridine (bpy) containing two different anions, [Pb(bpy)(CH_3-COO)X] (X = I^-, NO_3^-, and ClO_4^-), have been synthesized and characterized by CHN elemental analysis, IR-, ^{1}H NMR- and ^{13}C NMR spectroscopy. The structure of [Pb(bpy)(ClO_4)(CH_3COO)]$_n$ was confirmed by X-ray crystallography. The complex is a one-dimensional polymer as a result of perchlorate ligand bridging. The Pb atom has an unsymmetrical eight-coordinate geometry. The arrangement of the bpy, acetate and nitrate ligands leaves a coordination gap at the Pb(II) ion, occupied probably by a stereo-active lone pair of electrons. There is a π-π stacking interaction between the parallel aromatic rings that may be formed by influence lone pair activity.

Key words: Lead(II) Complexes, Crystal Structure, Mixed-Anion Complexes, 2,2′-Bipyridine Ligand