

Figure 1. Supramolecular motifs in complexes: 3 (a), 1 (b) and 5 (c).

Keywords: molybdenum(VI) complexes, Schiff bases, supramolecular assembling

MS30-P40 Novel complexes of copper(II) with tridentate hydrazone ligands

Alen Bjelopetrović¹, Marina Cindrić¹, Višnja Vrdoljak¹, Gordana Pavlović²

1. University of Zagreb, Faculty of Science, Chemistry Department

2. University of Zagreb, Faculty of Textile Technology

email: alen.bjelopetrovic@mail.com

New complexes with different structures and properties were obtained by the reaction of *tetrakis*(μ -acetato)diaquadicopper(II) with appropriate hydrazone ligand.

Hydrazones represent the most common type of tridentate ONO donors. They are stabilized by ketamine-enolimine tautomerization as shown by scheme 1.

Hydrazone ligands H_2L^1 , H_2L^2 and H_2L^3 , used in this investigation, were prepared by condensation of benzohydrazide with different aldehydes: salicylaldehyde ($R_1 = H$, $R_2 = H$), 3-metoxysalicylaldehyde ($R_1 = OCH_3$, $R_2 = H$) and 4-metoxysalicylaldehyde ($R_1 = H$, $R_2 = OCH_3$), respectively.

Reactions of *tetrakis*(μ -acetato)diaquadicopper(II) with H_2L^1 , H_2L^2 or H_2L^3 in methanol resulted in formation of polymers of the general formula $[Cu(L)]_n$ while in the case of reaction with H_2L^2 a cuban type tetranuclear cluster $[Cu(L)]_4$ is also obtained. Addition of pyridine to the reaction mixtures of $[Cu(OAc)_2(H_2O)]_2$ and H_2L^1 , H_2L^2 and H_2L^3 resulted in formation of dimeric complexes $[Cu(L)(py)]_2$ with pyridine molecules coordinated to copper atoms. Mononuclear complex $[Cu(L^3)(D)]$ was isolated when in reaction mixture 1,10-phenantroline was added. These complexes are unstable and upon standing at room temperature lose pyridine molecules yielding $[Cu(L)]_2$. After exposure of $[Cu(L)]_2$ to pyridine vapours, it is possible to recover the starting complex. This is accompanied with colour change from pale green to original dark green.

Preliminary magnetochemical measurements of prepared dinuclear and tetranuclear complexes indicate antiferromagnetic arrangement of spins at low temperatures.

All isolated complexes were identified by elemental and thermogravimetric analysis, IR spectroscopy and powder X-ray diffraction method. In case of $[Cu(L)(py)]_2$ ($L=L^1$, L^2 or L^3), $[Cu(L^2)]_4$ and $[Cu(L^3)(D)]$, single crystal X-ray diffraction was additionally used.

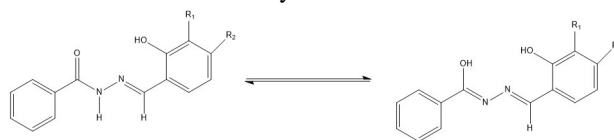


Figure 1. Scheme 1. Ketamine-enolimine tautomerization of hydrazones

Keywords: hydrazones, dimeric complexes, cuban type clusters