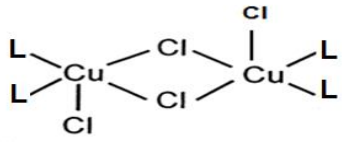
STOICHIOMETRY AND PROPERTIES OF TETRANUCLEAR OCTAHALO COPPER(II) COMPLEXES, $L_4CU_4X_8$; (L = 2-METHYLPYRROLIDINE, , X = CL OR BR) AND THE DIMER $L_4CU_2CL_4$ IN APROTIC MEDIA.

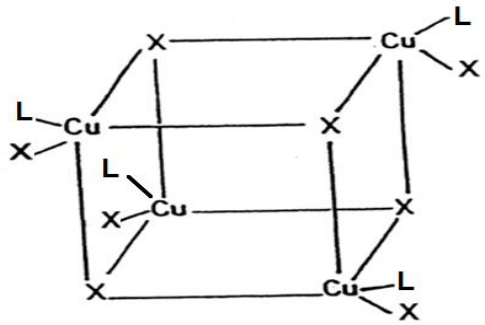
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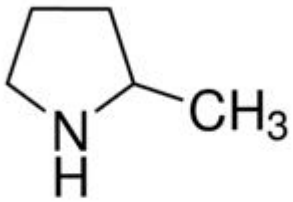
Abstract:- The chemistry of polynuclear halo(amine)Cu(I) complexes has fascinated chemists for many years ago. Progress in understanding the Stoichiometry, structural, chemical and photophysical properties of polynuclear halo(amine)Cu(I) complexes has advanced considerably over the last years [1-7]. This work reports a new family of tetranuclear Cu complexes $L_4Cu_4X_8$; L = 2-Methylpyrrolidine, X = Cl or Br. Two electron oxidant Br_2 has been used to prepare $L_4Cu_4Br_8$ from the respective $[LCuBr]_4$ complex. The dimeric complex, $L_4Cu_2Cl_4$ is also prepared by the direct reaction of anhydrous $CuCl_2$ with piperidine in O_2-free CH_2Cl_2. These complexes are isolated as stable solids. They are easily soluble in aprotic solvents as CH_2Cl_2 or $PhNO_2$. Cryoscopic measurements support tetranuclear core structure for $L_4Cu_4X_8$. Due to the importance of such class of compounds we aim to (i) Synthesize and characterize the new Octahalo copper(II) complexes of 2-Methylpyrrolidine (L) and (ii) Study their thermal behavior. The tetranuclear Copper complexes of the formula $L_4Cu_4X_8$; L = 2-Methylpyrrolidine, X =Cl or Br were synthesized and characterized. Two electron oxidant Br_2 has been used to synthesize $L_4Cu_4Br_8$ from the respective $[LCuBr]_4$ complex. The dimeric complex, $L_4Cu_2Cl_4$, was synthesized by the direct reaction of anhydrous $CuCl_2$ with L = 2-Methylpyrrolidine in O_2 - free CH_2Cl_2. Cryoscopic measurements support tetranuclear core structure for $L_4Cu_4X_8$. The formulas of the complexes were based on their microanalysis, FT-IR spectra and molar mass determination. The U.V-visible and ESR spectra were used to determine the geometry around the copper centers. Their thermal behavior was studied and related to their structure, Fig.1.



Dimer



Tetranuclear Octahalo Copper(II) Complexes



L= 2-Methylpyrrolidine

Fig.1

Fig.1: Proposed structure for $L_4Cu_4X_8$ and $L_4Cu_2Cl_4$ dimer

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