APPENDIX 2 : Abstracts of the publications based on the present work.

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Solution and solid state studies of some ternary complexes of Cu (II) involving heteroaromatic N-bases and o-hydroxy aromatic carbonyls

- Canadian J. Chem. , 1987 , **65** , 348.

Stability constants of some ternary complexes of o-hydroxy aldehydes (HL) with Cu (II) as central metal ion and bis(2-pyridyl)amine (dpa) and 5-nitro-1,10-phenanthroline (5-N-phen) as primary ligands (A) have been determined potentiometrically in 50% aqueous dioxane medium using a computer technique. The values of Δ log K (log K^{MA}_{MAL} - log K^{M}_{MA}) have been compared within the series as well as with the corresponding bipyridyl complexes. The stability order has been explained on the basis of the electron repulsion concept. The complexes have been isolated in the solid state and characterized by elemental analysis , conductance and magnetic measurements , and ir and electronic spectral studies. Shifts in ligand field absorption wave numbers of the mixed ligand complex from the average value of the ligand field absorption wave numbers of $[MA_2]^{2+}$ and $[ML_2]$ have been correlated with the potentiometrically determined Δ log K values.

Study of binuclear copper(II) complexes involving bridging Schiff bases - I

- Transition Metal Chemistry (accepted)

The synthesis of binuclear complexes obtained by the reaction of aromatic diamines with the ternary complexes of copper(II) with bis-(2-pyridyl) amine (dpa) as primary ligand and salicylaldehyde or 2-hydroxy naphthaldehyde as secondary ligand have been reported. The complexes have been characterized by elemental analyses, conductance, electronic and IR spectral studies. Magnetic measurements indicate antiferromagnetic exchange between two copper(II) centres. ESR spectra exhibit a Δ Ms = 2 transition, supporting the antiferromagnetic coupling.

Study of some mixed ligand complexes of tertiary diimines and bidentate amide ligands.

The stability constants of the ternary complexes of copper(II) with tertiary diimines, bis(2-pyridylamine) (A^1) and 5-nitro-1, 10-phenanthroline (A^2) as primary ligands and bidentate amides , $MeCOCH_2CONHPh$ (HL^1), $MeCOCH_2CONHC_6H_4Me$-o (HL^2), $MeCOCH_2CONHC_6H_4OMe$-o (HL^3) , $PhCOCH_2CONHPh$ (HL^4) , salicylamide (HL^5) , salicylanilide (HL^6) and 5-bromosalicylamide (HL^7) , as secondary ligands have been determined by potentiometric titrations at 30°C in 50% (v/v) aqueous dioxane and 0.2M [$NaClO_4$] . The log K_{MAL} values have been determined using the computer programme SCOGS. The complexes have been isolated in solid state and characterized by elemental analyses , conductivity and magnetic measurements and electronic and ir spectral studies. The order of stabilization in the ternary complexes (i.e. $\Delta \log K = \log K^{MA}_{MAL} - \log K^{M}_{ML}$ values) has been explained on the basis of the electron repulsion concept. This has also been correlated with the shift in the energy of the ligand field transition in the ternary complex from the average value for the corresponding binary complexes.