Synthesis and Spectral Studies of Macrocyclic Schiff Base Complexes by Template Reaction of Diamine with Metal(II) nitrate and 1,7-bis(2-formylphenyl)-1,4,7-trioxoheptane

Salih İLHAN1 and Hamdi TEMEL2

1 Department of Chemistry, Faculty of Arts and Sciences, Siirt University, Siirt, Turkey
2 Department of Chemistry, Faculty of Education, Dicle University, 21280 Diyarbakir, Turkey

In this study, six new macrocyclic complexes were synthesized by template reaction of (±) trans-1,2-diaminocyclohexane or 1,4-bis(3-aminopropoxy)butane with metal(II) nitrate and 1,7-bis(2-formylphenyl)-1,4,7-trioxoheptane and their structures were proposed on the basis of elemental analysis, FT-IR, UV-Vis, magnetic susceptibility measurements, molar conductivity measurements and mass spectra. The metals to ligand molar ratios of the complexes were found to be 1:1. The complexes are 1.2 electrolytes as shown by their molar conductivities ($\lambda_m$) in DMF at $10^{-3}$ mol.L$^{-1}$. Due to the existence of free ions in these complexes, such complexes are electrically conductive. The configurations of Cu(II) complexes were proposed to be probably square planer and Co(II), Ni(II) complexes were proposed to be probably tetrahedral.

![Diagram of complexes]

Figure 1. Suggested structure of the complexes

References: