Abstract:

The interaction of 1-benzoin-4-phenylthiosemicarbazone (H2BPS) with some transition metal ions has been investigated. The ligand can function as a tridentate chelating agent, giving M(HBPS)2 and M(BPS). Potentiometric studies proved that the mechanism of chelation is based on hydrogen ion libration. Spectral studies in solution show that the ligand could be used for the microdetermination of Cu11 ions. On the basis of magnetic and spectral data, an octahedral structure is proposed for the Co11 and Ni11 complexes and a square-planar structure for the Cu11 complex. The corrosion inhibition of aluminium in Cl3CCO2H using H2BPS is studied. The electrical conductivity of H2BPS and of its complexes have been measured. The ligand shows an activation energy in the range of semiconducting materials. The antimicrobial activity of all compounds has also been demonstrated.