**ABSTRACT**

A new series of transition metal complexes of Cu(II) and VO(IV) were synthesized from the ligand 2,3-diphenyl quinoxaline. The structural features were arrived from the elemental analysis, magnetic susceptibility, molar conductance, FT- IR, UV-Vis, 1H-NMR and ESR spectral studies. The data show that the Cu (II) and VO(IV) complexes are of ML2 type . The UV-Vis., magnetic susceptibility and ESR spectral data suggests a square planar geometry for Cu (II) complex and a square pyramidal geometry for VO(IV) complex. The antimicrobial screening tests were also recorded and gave good results in the presence of ligand system with the metal.