**Abstract**

Synthesis of Cd(II), Cu(II), Mn(II) and Zn(II) complexes are achieved by adding hydrazine hydrate and 3,5-dihydroxy-2-naphthoic acid in the ratio 1: 4 to the corresponding metal nitrates. The synthesized complexes are characterized by elemental analysis, IR, UV, TG-DTA and XRD analysis. The nano metal oxides are obtained by decomposing the complexes at 800 °C in the muffle furnace. The nano metal oxides are characterized by IR and XRD studies. The surface morphology and quantative analysis of metal oxides were determined by using SEM analysis. The shape of nano zinc oxide is rock like hexagonal structure while that of nano Mn oxide is rod like structure which was confirmed by transmission electron microscopy analysis.