**Abstract**

Reaction of hydrazine and 3-hydroxy-2-naphthoic acid with some transition metal ions forms complexes of the type[M(N2H4)2{C10H6(3-O)(2-COO)}]where M = Cd, Zn, Cu and Mn in alcoholic medium.Analytical data confirms the compositions of the complexes. The acid shows dianionic nature in these complexes. IR data indicates the nature of hydrazine in the complexes. Simultaneous TG-DTA studies shows thermal degradation patterns for the complexes. All the complexes follows uniform degradation pattern with the respective metal hydroxy naphthoate as intermediates. The final productsis found to be metal oxides of nano size. The surface morphology and quantative analysis of metal oxides were determined by using SEM analysis. The shape of the 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.