
Seven samples of the system $\text{Cu}_{1-x}\text{Cd}_x\text{Fe}_2\text{O}_4$ were prepared by thermal decomposition of mixed metal oxalates with $x = 0.0, 0.1, 0.3, 0.5, 0.7, 0.9$ and $1.0$. The formation of the ferrispinel was studied by XRD, FT-IR, Mössbauer spectroscopy, electrical conductivity and magnetic susceptibility measurements. XRD showed single cubic spinel phase for all the samples except for $\text{CuFe}_2\text{O}_4$ sample which shows a tetragonal structure. An increase in the lattice parameter of the ferrispinel was observed with increasing the cadmium content. The temperature variation of ac conductivity showed four definite regions with three transitions which attribute to the change in the conduction mechanism with increasing temperature. Magnetic properties of the sample with $x \leq 0.5$ showed a decrease in the effective magnetic moment with the increase in the cadmium content which means that the ferromagnetics are widely separated and enclosed by non-magnetic cadmium ions. A well defined hyperfine Zeeman spectrum is observed for samples with $x \geq 0.3$ at room temperature and resolved into two sextets corresponding to the octahedral and tetrahedral sites. The propable ionic configuration of the system proposed is $(\text{Cd}_x\text{Cu}_y\text{Fe}_{1-x-y})[(\text{Cu}_{1-x-y}\text{Fe}_{1+x+y})]_4\text{O}_4$. 