Fig. 4.1(a): XRD patterns of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for $x = 0.0$ and $0.2$
Fig. 4.1 (b): XRD patterns of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for $x = 0.4$ and 0.6
Fig. 4.1(c): XRD patterns of $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ for $x = 0.8$ and 1.0
Fig. 4.2: Variation of theoretical lattice constant with composition for $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$
Fig. 4.3: Variation of X-ray density with composition for Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$
Fig. 4.4: Variation of particle size with composition for $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$
Fig. 4.5: Variation of ionic radius \((r_A\) and \(r_B\)) with composition for \(\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4\).
Fig. 4.6: Variation of hopping length ($L_A$ & $L_B$) with composition for $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$
Fig. 4.7 (a): Variation of log $\rho$ with $1000/T$ of $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ for $x = 0.0$ and $x = 0.2$
Fig. 4.7 (b): Variation of log $\rho$ with $1000/T$ of $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ for $x = 0.4$ and $x = 0.6$
Fig. 4.7 (c): Variation of $\log \rho$ with $1000/T$ of $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ for $x = 0.8$. 
Fig. 4.8: Variation of Curie temperature with composition of the system $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$
Fig. 4.9 (a): Variation of a.c. susceptibility with temperature of Ni$_1-x$Zn$_x$Fe$_2$O$_4$ for $x = 0.0$ and $0.2$
Fig. 4.9 (b): Variation of a.c. susceptibility with temperature of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for $x = 0.4$ and 0.6
Fig. 4.9 (c): Variation of a.c. susceptibility with temperature of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for $x = 0.8$
Fig. 4.10 (a): Variation of log D with 1000/T of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for $x = 0.0$ and $0.2$
Fig. 4.10 (b): Variation of log D with 1000/T of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for x = 0.4 and 0.6
Fig. 4.10 (c): Variation of log D with 1000/T of Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$ for x = 0.8
Fig. 4.11: Variation of observed and calculated magneton number before and after irradiation with composition for Ni$_{1-x}$Zn$_x$Fe$_2$O$_4$