

List of Tables

3.1	Characteristics of chemicals used.	38
3.2	Composition and nomenclatures used for $\text{Fe}_{(100-x)}\text{Ni}_{(x)}$ alloy specimens. . .	39
3.3	Composition and nomenclature used for $(\text{Fe}_{70}\text{Ni}_{30})\text{-ZrO}_2$ composites. . .	39
3.4	Characteristics of chemicals used for auto-combustion.	43
3.5	Composition and nomenclatures used for chemically synthesized $\text{Fe}_{(100-x)}\text{Ni}_{(x)}$ alloy powders.	43
3.6	Amount of chemicals used for synthesis for different alloy powders. . . .	43
3.7	Nomenclatures used for nano ZrO_2 particles reinforced $(\text{Fe-Ni})\text{-ZrO}_2$ composites.	44
4.1	Electrochemical parameters obtained from potentiodynamic polarization curves.	92
5.1	Electrochemical parameters obtained from potentiodynamic polarization curves.	123
6.1	Refined structural parameters for all the compositions.	137
6.2	Coercivity and saturation magnetization values of obtained Fe-Ni alloy powders.	143
7.1	Electrochemical parameters obtained from potentiodynamic polarization curves.	155
8.1	Comparative results of prepared specimens	167