
LIST OF TABLES

Table 1.1: Classification of Ferritic stainless steel on the basis of chromium content and their market share	22
Table 1.2: Effect of various strengthening mechanism on the room temperature erosion of single-phase material	36
Table 2.1: Chemical composition of Type 446 stainless steel	45
Table 2.2: Processing parameters for ultrasonic shot peening	46
Table 2.3: Operating parameters for solid particle erosion testing	52
Table 2.4: Physical properties of Aluminium Oxide erodent	53
Table 3.1: Elemental data of EDS for base material.....	59
Table 3.2: Material constants for the base material in relation to the high-temperature test.....	63
Table 3.3: Physical properties of Aluminum Oxide erodent	64
Table 4.1: Properties of the eroded surface at 650°C.....	72
Table 5.1: Erosion parameters and their levels.....	83
Table 5.2: Experimental results for Erosive Wear of Type 446 stainless steel	84
Table 5.3: Analysis of variance for Erosion rate	85
Table 5.4: Surface roughness of un-eroded and eroded surfaces	89
Table 5.5: ANN training parameters	91
Table 5.6: Comparison of experimental and neural network output for test data set....	92
Table 5.7: Predicted values of the model for erosion rate	94
Table 5.8: Experimented values for erosion rate	94
Table 6.1: Tabulated data of Point wise depth for Corroded-Eroded surface at 90° impact angle at 750°C.....	107

Table 6.2: Standard Gibbs Free Energies of product formation at 650 and 750°C ... **112**

Table 7.1: Average crystallite size in SNC region of USSPed specimen **121**

Table 7.2: ΔG_T of corrosion products formed at 650 and 750°C **133**