Acknowledgement

At the end of my thesis, it is a pleasant task to express my thanks to all those who contributed in many ways to the success of this study and made it an unforgettable experience for me.

First of all, I am extremely grateful to my research guide, **Prof. Satish K. Shah**, for his valuable guidance, scholarly inputs and consistent encouragement I received throughout my doctoral research work. I am also thankful to **Dr. S. K. Joshi**. Head of Electrical Engineering Department. Faculty of Technology and Engineering, The M.S.University of Baroda.

Words fail me to express my appreciation to **Dr. Dharmishtha Vishwakarma**, my best friend for her support. She was always beside me during the happy and hard moments to push me and motivate me whenever I couldn't able to find exact root. I can see the good shape of my thesis because of her help and suggestions in formatting the entire thesis.

Jignesh Rane, my husband, without whom this effort would have been worth nothing. His love, support and constant patience have taught me so much about sacrifice, discipline and compromise.

My parents **Ms. Jeshthaben Tank** and **Mr. Jaysukhbhai Tank**, my in-laws **Ms. Sunandaben Rane** and **Mr. Rameshbhai Rane** who have always supported, encouraged and believed in me, in all my endeavors and who so lovingly and unselfishly cared for **Dhairya**.

Dhairya Rane, my son, who was born before this dissertation was completed and who spent many days with relatives to allow me to focus. I am deeply sorry for the time we spent apart.

Jeshthaben Jaysukhbhai Tank, my mother and my sister Charul Tank, for looking after Dhairya at a moment's notice and for all their encouragement and profound understanding. My brother, Umang J. Tank, he supported me when sometimes I confused with technical knowledge.

I would like to thanks **Mr. Jayesh Bhatt**, my colleagues for their help and throughout support, teaching and non-teaching staff of Electrical Engineering Department, Faculty of Tech. & Engg., The M.S.University of Baroda for providing me co-operative environment.

Above all, I owe it all to **Almighty God** for granting me the wisdom, health and strength to undertake this research task and enabling me to its completion.

Sonal J. Rane