

ACKNOWLEDGEMENT

I would like to express my gratitude to all who have provided me good support and motivation during my Ph.D. work. I would like to convey my heartfelt gratitude to my supervisor Dr. Hina B. Chandwani who has allowed me to work under her guidance. I am thankful to her for providing constant support and guidance in many technical issues at various stages of my research work. She provided her in-depth technical knowledge which helped me to define my research path.

I am extremely thankful to Dr. Sorum Kotia I/C Head, Electrical Engineering Department, Faculty of Technology & Engineering, Vadodara; Prof. S. K. Joshi Ex. Head, Dr. Jagrut Gadit, Dr. Pramod Modi, and other committee members, Faculty of Technology & Engineering, Vadodara for their valuable suggestions and support during my research work.

I would also like to express my gratitude to the management of my institute, C. K. Pithawalla College of Engineering and Technology, Surat, Dr. Naimish Zaveri, Ex-Head, Dr. Chetan Lad, I/C Head and staff members for providing me very good working environment, all kind of support and help in my research work. I am also thankful to my dear friend Urvi Patel for her constant moral support and encouragement during my research work.

This research is dedicated to my dearest husband Hemang, my son Karan and my beloved Parents. They have been a source of continuous encouragement and support without any voice of dissent or discomfort. The words are not enough to express my gratitude towards my parent, for their unconditional love and blessings. It is impossible for me to complete my research work without their valuable moral support.

Several other people have played a significant role during my research and whose names I have failed to mention. I extend my sincere thanks to all who have contributed directly or indirectly to achieve my ambition.

Above all, I am very much thankful to the almighty **GOD** for blessing me with a very happy and successful life.

Ms. Patel Hetal Vinodbhai