

# Acknowledgment

*I can honestly say that conducting this research has entirely changed my life, and I would not have been able to achieve it without the assistance and guidance of numerous others.*

*It gives me immense joy to express my deep sense of gratitude to Dr. Jignesh N Pandya, my supervisor, for his unwavering support for my Ph.D. studies and research as well as for his patience, encouragement, excitement, and vast expertise. He offered me total autonomy and encouragement to pursue my goals. His advice was really helpful to me while I was conducting my research and writing the thesis. I consider myself exceptionally blessed to have him as my Ph.D. supervisor. I would like to dedicate a shloka for him.*

ॐ अज्ञानतिमिरान्धस्य ज्ञानाञ्जनशलाकया ।  
चक्षुरुन्मीलितं येन तस्मै श्रीगुरवे नमः ॥

*Besides my supervisor, I am deeply indebted to Dr. Nakul R Soni for his valuable time and efforts without which it was impossible to conclude my thesis. His constructive and insightful suggestions, along with in-depth discussions over the subject elevated my knowledge. I would want to thank him from the bottom of my heart for his generosity and readiness to help me complete my research work. I would also like to thank Janaki Patel and Harsh Rana for their help in reviewing my research work.*

*I'd like to take this opportunity to say thanks to Dr. B. S. Chakrabarty for his motivation, guidance, and encouragement, which helped me work effectively. I also want to thank Dr. C. G. Limbachiya, the Head of Department and Prof. Dhanesh Patel, Dean of the Faculty of Technology and Engineering for providing research facilities. I am also thankful to Prof. Arun Pratap, Dr. KVR Murthy, Dr. C. J. Panchal, Dr. Arun Anand, Prof. Kirit Lad, Dr. Ashwin Prajapati, Dr. Navin Acharya, Dr. D. R. Joshi, Dr. C. J. Panchal, Dr. Y. H. Gandhi, and Dr. N. D. Chavda for their kind and generous co-operation and inspiration during the research work.*

*I would like to convey deep sense of gratitude to my colleagues and friends Dr. Kevil Shah, Dr. Deepak Upadhyay and Mr. Kaushal Agheda, with whom I have shared all the joy and sorrows during my research period. They have always stood there regardless of any circumstances to back me up. I would like to thank Harsh Rana and Janaki Patel for their help in reviewing my research work. I would also like to thank my colleagues and friends Smruti, Neha, Pinal, Margi, Avani, Priyanka, Shivani, Ayushi, Chetana, Mugdha, Vismay, Subhash, Dhaval, Naveen, Harsh, Rahul, Piyush and Jitesh for their moral support.*

*I thankfully acknowledge the support provided by the DST-FIST program (SR/FST/PS-*

*II//2017/20 (C) Of Applied Physics Department, Faculty of Technology and Engineering,  
The M. S. University of Baroda, Vadodara.*