## ACKNOWLEDGMENTS

First and foremost, I praise God, the almighty for providing me this opportunity and granting me the capability to proceed successfully. This piece of work will never be accomplished without His blessings.

I would like to express my deepest sense of gratitude and indebtedness to my eminent supervisor, Dr Arun Pratap, Professor in Applied Physics, for his benevolent supervision and able guidance to carry out the present investigation. I thank him for all of the opportunities I was given to conduct my research and further my thesis. His vision of a research problem and ways to tackle them helped me a lot during my research work. He provided me with the tools that I needed to choose the right direction and successfully complete my thesis.

I want to express my deep appreciation for the help and support to Miss. Supriya Kasyap, my friend and colleague, during my research work. Without your help, I doubt I would have been able to complete my research work in such a proficient and timely manner. I could never have a best colleague and very dear friend than you.

I express my sincere thanks to Ashmi T. Patel, Prapti Pandya and Purvi Bhatt, my senior colleagues, for their motivational support and enthusiasm.

I am truly thankful to Dr. B. S. Chakrabarty, Head of Applied Physics Department, for his motivational support.

My sincere gratitude goes to every faculty and staff member of the Applied Physics Department who helped me lot in various ways.

Most importantly, none of this could have happened without my family. I wish to thank my mother, Mrs Jyostnaben Prajapati for her love, unconditional support and freedom to pursue my interests. She is backbone of my patience and strength. I truly

adore her for her loving nature, simplicity and always been a source of inspiration and

encouragement. My special thanks to Chirag and Dipak, my brothers, for providing

me lively atmosphere, assistance and strength whenever required. I can't express my

feelings for them in mere words. They have always been there for me. Their immense

love and blessings have made me complete my Ph. D.

I owe my deepest gratitude towards my husband, Mr. Girish Arya for his eternal

support and understanding of my goals and aspirations. His infallible love and

support has always been my strength. His patience and sacrifice will remain my

inspiration throughout my life. Without his love and support I would not be able to

complete my doctoral work.

I sincerely thank all my in-laws for their perpetual support and understanding. It is

their love and blessings, so that I can pursue and finish my research work.

Finally, thanks to all my research friends in the department for providing lively

atmosphere and happily talking about things other than just our papers.

Last but not the least, I offer my regards and wishes to all those who supported me in

any respect during the completion of my work.

Thank you very much, everyone!

Sonal Prajapati

Vadodara, Sept 17, 2016.