ACKNOWLEDGEMENT
In the name of God, most Gracious, most Merciful.

I wish to express my sincere appreciation to those who have contributed to this doctoral thesis and supported me in one way or the other during this amazing journey.

Firstly, I am extremely grateful to my doctoral research guide Prof. Prafulla K. Jha, for his guidance, vision, encouragement, advice, useful discussions and brainstorming sessions, especially during the difficult conceptual development stage. His deep insights helped me at various stages of my research. He has been a kind and supportive adviser to me throughout my career.

I wish to thank Prof. S. P. Bhatnagar, Head, Department of Physics, Maharaja Krishna Kumarsinhji Bhavnagar University for his kind support and freedom for using the department facility. Sincere thanks to Dr. Rajesh Patel for his kind words and encouragement. Also, I am thankful to staff and administrative staffs of the Department and University for their generous support.

I would like to express my sincere gratitude to Mr. Shashi M. Patel, Mr. Jignesh M. Patel and Mr. Harendra M. Patel my trustees, Vadodara Institute of Engineering, Vadoara for giving me the opportunity to carry out my doctoral research and for their constant support. My sincere thanks to Dr. Jayeshkumar S. Patel, Principal of VIE for his support and encouragement. Also, I am thankful to the teaching staff and administrative staff of the VIE for their generous support.

My deep appreciation goes out to the Research Team members: Sanjeevbhai, Sanjaybhai, Shree, Venu, Himadri, Priyanka and Shweta for their excellent support and friendly atmosphere during my stay in BHAVNAGAR.

A special thanks goes to Mrs. Sunita Jha for her kind nature and home-spun hospitality.

Words cannot express the feelings which I have for my grandmother, parents, in-laws, uncle and aunty for their constant support - both emotionally and financially. It would not have been possible for me complete this task without their support. Special thanks to Dipali, Chetan Jiju, Prinsa, Dharmendra and Vikrant for their amazing support.

Finally, I would like to acknowledge the most important person in my life – my Husband Swetang M. Shah. He has been a constant source of strength and inspiration. There were times during my research journey when everything seemed hopeless I can honestly say that it was only his determination and unflagging encouragement that ultimately made it possible for me to see this thesis through to the end.

Date:   /02/2013
Place:   Bhavnagar
Nikita S. Shah