Acknowledgments

The research work of this thesis was conducted during my Ph.D. program at Department of Electrical and Electronics and Engineering (EEE), Birla Institute of Technology and Sciences (BITS), Pilani, India. There are many people without whom this work wouldn't be completed. Foremost, I would like to thank my thesis advisor Dr. Arnab Hazra, Assistant Professor, Department of EEE, BITS, Pilani, for his great support during the Ph.D. work. I especially admire him for providing time flexibility in work, always open to discussion environment, and excellent experimental facilities.

I would also like to thank my doctoral advisory committee members, Prof. Navneet Gupta, Associate Professor, Department of EEE, BITS, Pilani and Dr. Subhasis Gangopadhay, Associate Professor, Department of Physics, BITS, Pilani for their valuable technical inputs. I would like to thank Prof. V.K. Chaubey, Professor and Head, Department of EEE, BITS, Pilani for his constant support and motivation.

With gratitude, I would like to acknowledge the financial support from Science and Engineering Research Board (SERB), Government of India which enabled me to undertake this research. I would also like to acknowledge financial funding obtained from "International Travel Support" scheme of SERB for attending international conference. I would like to acknowledge Dr. Subhasis Gangopadhay for extending the laboratory facility and Material Research Center (MRC), Malviya National Institute of Technology (MNIT), Jaipur for providing partial characterization facilities.

Most importantly, I am very grateful to my parents for their constant support, love, inspiration, guidance, and provisions. I would like to thank all of my colleagues and technical staff at the Department of EEE, BITS, Pilani who have helped in the success of this work. Finally, without the support and fellowship of many other good friends, this doctoral study would not have been completed sanity intact; therefore, my sincere appreciation to all of you.

(Prateek Bindra)