## Acknowledgment

"If I have seen further than others, it is by standing upon the shoulders of giants."-Isaac Newton

As I have arrived at the day of submission of my thesis, I feel extremely fortunate to have worked with so many brilliant people and I have learned so much from them, both in academic and in life. There are many people that I would like to acknowledge without whom, I would not have succeeded in completion of this work.

First and foremost, I would like to offer my gratitude and admiration to my supervisor Prof. Partha Pratim Sahu for his constant support, trust, valuable feedback, encouragement and innumerable advice. He was always there to discuss various problems and at the same time, gave freedom to pursue my ideas and work in my own way. I shall remain ever grateful to him for enabling me to complete this work expeditiously and shaping finally to the thesis.

I also express my indebtedness to the members of departmental research committee Prof. Satyajib Bhattacharyya, Prof. Manabendra Bhuyan, Prof. Jiten Ch. Dutta, Dr. Dilip Datta and Dr. Manuj Kr. Hazarika and to the members of doctoral committee of my research Prof. Nityananda Sarma and Dr. Santanu Sharma for their insightful comments and valuable feedback during the review meetings. I extend my sincere thanks to the other faculty members, Department of Electronics and Communication Engineering, Tezpur University for their help in various ways in the past few years.

I am truly thankful to Mr. Anukul Baishya Sir, for the valuable technical suggestions and support throughout my stay in this University, both on academic as well as personal level.

Thanks to the technical staff and the office staff, Department of Electronics and Communication Engineering, Tezpur University, who are enthusiastically waiting for me to finish my degree and proceed towards a bright career.

I take the opportunity to offer my gratitude to my fellow research scholars of the department, specially Bidyut Deka, Aradhana Dutta, Nimisha Dutta, Anup Bordoloi, Mahipal Singh, Awadhesh Pachauri, Madhurjya Pratim Das, Pranjal Borah, Shashikala Kalita, Hemanga Kr. Das, Lachit Dutta, Champak Talukdar, Polash Phukan, Mukut Senapati, Abdul Barik, Pranjal Barman, Soma Chakrabarty, Kuntala Baruah and Rashmi Deka for their help and support throughout this period.

I would like to express my gratitude to my friends Monalisha Boruah, Aditi Saikia, Krishna Gogoi, Sikha Ozah, Prarthana Baruah, Momina Khannam, Nivedita Paul, Shyamalima Sharma and Rajiv Biswas da for their support while writing this thesis.

A very special mention goes to my family members Jayanta Gogoi, Jahnabi Neog Gogoi, Jyoti Gogoi, Rajesh Chetia Patra, Dasarath Thakuria, Hiran Thakuria, Debika Thakuria, Mukut Thakuria, Ranjana Thakuria, Deepjyoti Deka and my lovely nephew and niece Anshu, Geet, Gunjan and Jeeu, encouraging and supportive as ever and thanks for trusting me, as always. I certainly do not forget to mention my spouse Pankaj, whose unending help, inspiration, understanding, and constant urge to complete this work made me pursue my dream.

At the last but not the least, I would like to offer my sincere gratitude to my home institute Tezpur University.

Nilima Gogoi