

*Dedicated*  
*to*  
*My Beloved Parents, Supervisor*  
*and Husband*

## ***ACKNOWLEDGEMENT***

At the beginning of writing, I bow down to the Almighty for providing this opportunity in my life. With immense pleasure, I wish to express my deep sense of gratitude and indebtedness to my respected supervisor **Prof. Jiten Chandra Dutta** (Ex-HoD), Department of Electronics & Communication Engineering, Tezpur University for his valuable guidance, constant encouragement, constructive criticism advice and countless help throughout the period of my research work and preparation of the thesis.

I would like to express my sincere gratitude to Prof. Satyajib Bhattacharyya, HoD, Department of Electronics & Communication Engineering, and Tezpur University for his kind suggestions. I am also thankful to doctoral committee for their proper encouragement in my research work.

I am grateful to all the faculty members and staff members of this department for their moral supports in my research work. I am grateful to my senior research scholars: Monaj Kumar Sarma and Taslima Ahmed for their valuable suggestion in this work. I am highly grateful to my research colleagues: Md. Abdul Barik, Kuntala Boruah, Hiranya Ranjan Thakur, Purnima Kumari Sharma, Gaurav Keshwani for their helps and support to my research work. I am also thankful to Pranjal Barman, Koushik Dev Sarma, Chinmayee Hazarika and all the research scholars of this Department for their support in this work.

I would like to acknowledge Tezpur University for providing laboratory facilities for this work.

Finally, I express my deepest gratitude to my parents, Sister, and Husband for their unconditional love and faith, co-operation and moral support during the entire period. Thanks to the Almighty for his blessings bestowed upon me to complete this thesis.