Foremost, I would like to thank Professor Bijoy Bandyopadhyay of Institute of Radiophysics and Electronics, University of Calcutta for all his kind guidance during these past few years. It has been a great pleasure working with you, and appreciates all that you have done for me.

It will be worthwhile to mention that during the time of preparation of this thesis, I freely consulted the existing literatures and published journals. This selection of citations from such a wealth of excellent work is more random than calculated. I extend my earnest apologies for those omitted through the action of law of chance.

My heartiest thanks go to all the teaching and non-teaching staffs of Radiophysics and Electronics, University of Calcutta for their kind cooperation throughout the journey.

To my parents for supporting me and praying for me every step of the way, I will be grateful forever for your love and guidance. My love and gratitude go to my wonderful siblings for always asking about my thesis, thereby motivating me to keep working hard.

Thanks to all of my friends for their constant inspiration throughout the journey. My heartiest thanks to Sudipta Chatterjee for her sincere cooperation and unconditional help while preparing this thesis. She has given up many other activities so that my work could be carried out. Her encouragement, sacrifice and support of the project never faltered, and without it this work could not have been completed.

Most importantly, I thank God Almighty for his grace, favor and most of all his peace throughout the completion of this project.