Acknowledgement
I kneel before almighty Allah to thank him for the kindness he has shown to his humble slave and for bestowing upon me the ability to comply with his first command “IQRA” (READ!)

It gives me a great pleasure to express my deep sense of gratitude to Dr. Shamsuzzaman, Reader, Department of Chemistry for his keen interest, supervision, encouragement and inspiring guidance throughout the work reported in the thesis.

I am also grateful to Prof. Arunima Lal Chairman, Department of Chemistry for providing necessary facilities. I am also thankful to Prof. Kabir-ud-din, former Chairman Department of Chemistry for providing help and facilities necessary to complete the work.

I would like to accord my sincere thanks to Prof. M. Mushfiq for his benevolent guidance, invaluable suggestion, useful discussion and affectionate behaviour.

It is with immense pleasure that I record my indebtedness and heartful gratitude to my loving parents, brother Mohd. Wasif Alam, Sister Shabina Nahid for their constant encouragement throughout my career. I am forever grateful to my parents, father, and mother, whose foresight and values paved the way for a privileged education, and gently offer counsel and unconditional support at each turn of the road.

I gratefully acknowledge Tabassum Siddiqui for her advice, valuable suggestions, and crucial contribution, which made a backbone of this research career and so to this thesis. Her involvement with her originality has triggered and nourished my intellectual maturity that I will benefit from, for a long time to come. I am grateful in every possible way and hope to keep up our collaboration in the future.
I am also thankful to my research colleagues and departmental staff for their cooperation, advice and their willingness to share their bright thoughts with me, which was very fruitful for shaping up my ideas.

It is a pleasure to express my gratitude wholeheartedly to Mohd. Aslam waris and his family and also Mr. Shivnarayan uncle and his family who’s together showed me how generosity flows so naturally from a sense of being blessed.

Finally, to the rest of my friends Mr. Abdul Abbas, Mohanish Ranjan, Mohd. Aman Azeem, Mohd. Zakarya, Mohd. Arshad, Dan Bahadur singh, etc, thanks so much for making these past five years so enjoyable and memorable. I wish all of you the best of everything in the future.

At the end I would like to say thanks to Mr. Qutub-u-ddin for preparing glass ware, Mr. Aftab Ahmad and Fakhrul Alam for editing the Manuscript and Nabi Ahmad (Khan Baba) for binding this thesis.

Mohd. Gulsam Alam