This is probably the most difficult part of this work to write, because printed words fail to express the depth of feelings hidden behind them and convey the actual extent of influence others cast on one’s work or life. First and foremost, I would like to express my deepest faith in Almighty ALLAH, the Omnipotent, the Omnipresent for it is indeed His blessings which provided me enough zeal to complete this work.

A debt of gratitude to my supervisor, Prof. Mehtab Parveen, Department of Chemistry, Aligarh Muslim University, Aligarh, for her generosity, faith, encouragement and excellent guidance, that has been instrumental in completion of this thesis. The discussions with her were always a lifeline for new thoughts. Her valuable suggestions added to the output of the research, inspired me to have a better grip over my research field.

I am thankful to Prof. M. Shakir, Chairman, Department of Chemistry, Aligarh Muslim University, Aligarh, for providing the necessary research facilities.

It is a matter of great contentment for me to recompense my sincere and deep sense of appreciation to Prof. M. Mushfiq (Ex. Chairman), Department of Chemistry, A.M.U., Aligarh for his momentous advices and suggestions during my research. I cordially express my gratefulness to Dr. Mahboob Alam, Division of Bioscience, Dongguk University, South Korea, for his persistent encouragement and support.

I gratefully acknowledge the financial help from UGC in the form of Maulana Azad National fellowship.

Thanks are due to USIF, Aligarh Muslim University, Aligarh for SEM analysis and SAIF Punjab University, Chandigarh, for providing XRD, NMR and Mass spectral facilities. Thanks also to CEMDRX Physics Department, University of Coimbra, Portugal, for carrying out X-ray analysis.
I render my special thanks to my lab colleagues Dr. Ali M. Malla, Dr. Faheem Ahmad and Afroz Aslam for their help, and coordination extended by them.

Thanks to all my dear friends Zeba Nasir, Shama Yasmeen, Nausheen Bano, Mumtaz Riyasat, Saira Khatoon, Shahnaz Rahman, Saba Samreen Ansari, Mohd. Danish, Mohd. Asif, Khairu, Abad Ali, and my seniors, Dr. Saima Tarannum, Dr. Nayeen Ahmad, and all those who have always stood by me.

Putting into words is rather restrictive, still I would like to owe my deep sense of gratitude to my respected and beloved father Late Azaj Ahmad and mother Aquila Khatoon with whom my learning process started and who encouraged me to proceed along a path where untiring determination stretches its arms towards perfection. I would like to express my profound gratitude to all the family members especially my sisters and brother, Shagufta Azaz, Shaheen Azaz, Shadab Ali and my brother-in-law Dr. Mohd. Khalid who have always been a source of inspiration and encouragement for me. A Special thanks to my cousin, Shahid Jamal who has been played a role of elder brother for me during this journey.

Shaista Azaz