Acknowledgements

All praises and endless thanks to Almighty "ALLAH" who only enabled me to complete this cherished dream.

I owe my most sincere gratitude to my supervisor Professor Tahir Ali Khan who gave me the opportunity to work under his esteemed guidance. His wide knowledge and logical way of thinking have been of great value for me and will continue to be so in future too. The exchange of ideas and views with him about the subject under taken made it a remarkable and unforgettable achievement. His unwavering faith and extreme patience has always helped me. My special thanks to Mrs. Afiya Sultana for her helpful attitude and sympathetic nature.

I express my sincere thanks to Professor Farukh Arjmand, Department of Chemistry, Aligarh Muslim University, Aligarh, for the continuous guidance and support to complete my research work.

I acknowledge the great support and facilities which chairperson, Department of Chemistry, provided during the course of my research work. Financial assistance provided by UGC (Non-Net) during this work is highly acknowledged.

I would like to express my special thanks to Dr. Anis Ahmad, Department of Neurosciences, Medical University of South Carolina, Charleston, South Carolina, United States of America, for invaluable guidance in biological studies for newly synthesized compounds. It gives me immense pleasure to express my sincere thanks to Dr. Asad Ullah Khan, Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh, for providing facilities for completing this work. And also thanks to Professor Haris M. Khan & Dr. Azam Ansari, Nanotechnology and Drug Resistant Research Lab, Department of Microbiology, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, India, & Dr. Shahid Husain, Department of Physics, Aligarh Muslim University, Aligarh, for provided necessary research facilities.

I would like to express my special thanks to my lab mates, Miss Sabika Parveen, Intiyaz Yusuf & Miss Surbhi Sharma for their unconditional help offered during my research work. My special thanks to Dr. Mehwash Zaki, Department of Chemistry, Aligarh Muslim University, Aligarh, for her help and support in completion of this work.
I am obliged to my sisters Dr. Fahmina Zafar, Department of Chemistry, Jamia Millia Islamia, New Delhi & Mrs. Shafina Zafar for their painstaking efforts to help me at the cost of their personal inconvenience which will always remain unforgettable. I also thank to my sisters-in-law Mrs. Farhat, Mrs. Sarwat Shanaz, Mrs. Shabana Parveen and Mrs. Sheerien Khan for continuous support to complete my research work. From the bottom of my heart I would like to thank my brothers Dr. Mohd. Atif Khan, Mohd. Adil Khan, Mohd. Badar Khan & also thanks to my brothers-in-Law Mohd. Shamim, Azeem Warsi, Mirza Farrukhi Beg, Mirza Obaid Beg & Mirza Naved Beg for their good wishes & prayers for completion of this work. I express my love and thanks to my loving mother Mrs. Haseena Begum who has made extraordinary efforts and sacrifices in nourishing my career and me as well. The blessing of my mother has always maintained my passion during my research work.

I am fumbling for words to express my feeling to my husband Mirza Junaid Beg, Al-Khobar, Kingdom of Saudi Arabia, who has been “Northern Star” in moments of darkness and pillar of strength in trouble times during every phase of my research work. And also being true friend, an extraordinary source of suggestion and for helping me during my research studies and also his morally support. Most Importantly, I cannot finish without acknowledging the valuable contribution of my son Mirza Humaid Beg for being so loving, caring, fully co-operative, moral and sympathetic support and the ultimate source of strength for me in completion of my research work. I thank GOD for blessing me with so cute son.

Thanks to all of you, and I pray GOD BLESS EVERYONE.

Hina Zafar
(HINA ZAFAR)