Acknowledgements

I don’t have words to thank my Lord for His help in accomplishing this work. This dissertation took years from conception to completion. All extol to Almighty Allah for incarnating timely strength, courage and concentration which enabled me to complete this work, after all the challenges and difficulties.

I feel that I have been quite fortunate in pursuit of this academic endeavor. Inspiration, guidance, direction, cooperation and support came in my way in abundance and it seems almost an impossible task for me to acknowledge the same in adequate term.

I feel privilege in expressing my profound sense of gratitude, high esteem and indebtedness to my venerable supervisor, Prof. Wajid Husain Ansari, Department of Chemistry, Aligarh Muslim University, Aligarh, for his excellent spirit, illuminative and precious guidance, keen interest, critical opinion and invaluable suggestions, during the course of my work.

I express my infinite and inexpressible indebtedness to Prof. Kabir-ud-Din, UGC – BSR Faculty Fellow (Formerly: UGC Emeritus Fellow). Words are inadequate to express my gratitude to him for his eminent guidance, intellectual stimulations, undivided attention and helping hand and remaining for me a source of encouragement throughout the progress of this work.

I express my sincere thanks to all my teachers who helped and guided me in my endeavor especially Dr. Mohd. Akram, Dr. Iqar Ahmad Khan and Prof. M. Mushif. Thank you for sharing your knowledge and experience with me. It would have been really difficult to complete this work without your support.

I would like to thank Dr. Andleeb Zehra Naqvi, for all interesting scientific discussions in the field of surface chemistry that we have had during the years.

I also convey my special thanks to the Chairman, Department of Chemistry, Aligarh Muslim University, Aligarh.

I would like to thank my seniors, former and current colleagues from our group for providing a good working atmosphere namely Dr. Manorama Panda, Dr. Umme Salma Siddiqui,
Dr. Abdul Bashar Khan, Dr. Malik Abdul Rub, Dr. Farha Khan, Dr. Ahmad Jahan Khanam, Dr. Zahid Yaseen, Mr. Dileep Kumar, Mr. Gaurav Sharma, Ms. Sabreena Yousuf, Ms. Kahkashan Anjum, Mr. Gamal Ahmed, Mr. Adel Ahmad and Mr. Imtiyaz Bhatt for their cordial company healthy discussion and helping attitude during the whole study.

I am also indebted to my co-workers, Ms. Jeenat Aslam and Ms. Nazish Fatma, who squeeze time from their busy schedule to help me finish my thesis. Both of them were busy with their own work and thesis, but they always extended their helping hand.

Special thanks to one person to whom I owe everything that I am today, my mother, Yasmin Nikhat, for instilling in me the love of reading and the pursuit of knowledge from my early sapling years. If it were not for her, I would not be sitting here today. I appreciate the support of my brothers, Sharukh and Hussain for being sincere and loyal brothers. A special thanks to my sister Ms. Suzaira Fatima and grandmother who are always there for me.

I would like to thanks UGC Govt. of India for providing me Financial support in the form of MANF (JRF) scholarship and thanks are due to SAIF (CDRI, Lucknow) for providing NMR facilities.

Finally, I would like to take this opportunity to thank my best buddies, Mr. Arsalan Yousuf, Mr. Mohd Rafi, Ms. Muskan Singh, Mr. Shishir, Ms. Saleha Beg, Ms. Binish Arif, Ms. Saiqa Shah, Ms. Anamika, Ms. Nishat Qaiyoom and Mr. Mudasir Handoo for their encouragement and support. Once again, all praise is due to Almighty Allah, the Lord of the worlds.

Hopefully, this work will not be the end of my journey in seeking for more knowledge to understand the meaning of life.

“If you always set a new goal and strive to accomplish it, your desire to live will never end.”

(Sahar Noori)