
ACKNOWLEDGEMENTS

During my stay in Department of Chemistry I had the incredible fortune of being surrounded by a supportive and luminous community of advisors, friends, students, and staff. In the interest of brevity, I can't thank everyone personally; but it takes a very few number of people to grow a PhD from seed to fruit and I extend my gratitude to everyone who has been part of life throughout my research tenure.

I bow down to Lord for showering his blessings on me for the successful completion of this phase of my life. You have made my life more meaningful and beautiful.

I would like to thank my family. I feel great proud of my parents Chaturbhai and Sharadaben who supported me throughout my life and especially in the tough time during my research. I cannot find any suitable words to describe the trust of my parents for believing in me. I really believe this thesis is the product of my family's devotion and dedication like everything else I thank my sister Alka, for her love and support. I am also thankful to my parents-in-law Mr. Sureshbhai Bhimani and Mrs. Vasantben Bhimani and family for every possible help.

I can not find words to express my heartily gratitude towards Mital because without her love, support and constant encouragement to tackle the tough situations in life it would have not been possible. I appreciate her for making me feel like everything is possible. She helped me to concentrate on completing this thesis and wholeheartedly supported the life.

I am highly indebted to my research supervisor, Prof. Dipak. K. Raval for accepting me as his student. I have been very fortunate to have him as an advisor who believed in me and my ability; and he encouraged me to be the best that I could be. He taught me how to question thoughts and express ideas. I do sincerely acknowledge the freedom rendered by him for independent thinking, planning and executing the new ideas in research. His ever encouraging promethean words, timely guidance, moral boosts have always been

my backbone, my pillar of strengths under all odds. I bow to the Sir. It is a matter of great pleasure for me to offer my profound gratitude to him and his family, Alka Mam and Jashu Baa, for their constant support and all they have done for me. I thank him not only for strengthening me directly and indirectly in many ways, but also for changing my basic outlook towards life. He made me feel proud of my achievements thus instilling in me the much needed confidence.

I am grateful to Dr. Vasudev Thakkar and his research students Parth Thakor, BRD School of Biosciences Department, for helping me in collaborative work needed for biological study included in the thesis.

I would like to express my profound sense of gratitude to the Heads of the Department of Chemistry, whose keen interest and optimistic approach has been a constant source of inspiration for me. I am also thankful to all teaching and non-teaching staff for their generous support.

I cannot forget the research enjoyed with the outstanding seniors Dr. Jemin, Dr. Bhautik, Dr. Umesh, Dr. Devji, Dr. Piyush and Dr. Shailesh for their extensive discussions around and about my work. Their interesting explorations in operations have been very helpful for this study. I am indebted to many lab mates, colleagues for providing a stimulating and fun environment, Vishal, Harsh, Nirav, Beena, Rahul, Ronak, Gaurav, Tushar, Atul and Kaushik who encouraged me to pursue my work and made even my little free time highly enjoyable during these intense four years in the department.

Some of friends are like roots of tree, they never show their existence but they are responsible for the development; Thank you very much Narendra (Lalji), Gaurav (Guru), Mehul, Harshad (Bond), Hiren (Bati), Dilip, Harsukh (Bhai), Kapil (Bapu), Vishal, Nirav, Kalpesh (Madan), Piyush, Shailesh for providing me financial support during my Ph.D when I was not getting the fellowship. Special thanks are due to my friends near and far, Kalpesh Menpara, Hiren (Balo), Paras, Raj (Meman), Arpit, Bhavin, Sagar, Pratik, Kanji,

Tulsi Patel, Deval Patel, Deepali, Bhavesh bhai and Rahul for their love and support during my Ph.D work.

I gratefully acknowledge the funding source UGC, New Delhi for UGC meritorious fellowship that made my Ph.D. work smooth.

I sincerely apologize for any unintentional omissions and sincerely thank all concerned.

- Sharad C. Karad
