ACKNOWLEDGEMENTS

Working for a PhD thesis is one of the most significant academic challenges I have ever had to face. However, the last four and half years had been very enjoyable and a number of people have helped me to reach this point. Without their patient support and guidance, this study would not have accomplished. It is to them that I owe my deepest gratitude.

I would like to express my sincere indebtedness to my mentors, Drs. Y.S. Prabhakar and S.B. Katti for giving me the privilege to associate and work with them. The freedom to try different ideas has made the research pursuit of last four and half years as more a fun than work. My mentors' advice during this period has helped me out of seemingly dead ends and I have certainly learnt a lot about the process and progress of research from their approaches. Words are inadequate to express my sincere thanks to Dr. Katti for his scientific management/temperament and intellectual inputs by providing new avenues which made me sail through and excel in research. The energy, enthusiasm and work-discipline set out by Dr. Prabhakar helped me in steering through large datasets which are otherwise simple numbers. I am obliged to have his affectionate nature, excellent working conditions and constant word of wisdom.

I express my heartfelt appreciation to Dr. W. Haq for benefiting me with his clarity of thought, problem solving ability and inspiration needed to a synthetic organic chemist. I am grateful to him for meticulous insights, help and valuable suggestions in my research work.

I am grateful to Dr. T.K. Chakraborty, Director, CDRI Lucknow, and former Directors, Dr. C.M. Gupta and Dr. R. Tuli, for providing me with the excellent research facilities. I am thankful to Dr. A.K. Saxena, Head, Medicinal and Process Chemistry Division, and former Head of Division Dr. Chandan Singh for their support and help whenever I needed.

I am greatly thankful to Prof. P.P. Thampi and Mrs. Thampi for motivating to pursue Ph.D and helping in this regard. They are the one who inspired me to do further studies.

I would like to thank Dr. S.K. Puri, Dr. Kumkum Srivastava and Dr. Suman Gupta, Division of Parasitology, for providing activity data and their generous support. I am equally grateful to the staff of SAIF, CDRI, for providing the analytical and spectral data.
My special thanks go to Mr. Mohammad Goodarzi, our collaborator in part of the ANN exercise. His untiring efforts and keeping up the time schedules helped in several ways to meet the targets. I owe my sincere regards to Drs. D.P. Sahu and K. Hajela for giving me an opportunity to associate with them in some research projects.

I sincerely thank Drs. G. Panda, A.K. Shaw, P.M.S. Chauhan, Atul Kumar, D.K. Dikshit, Ram Pratap, B. Kundu, S. Batra, V. Lakshmi, A. Goel, V.L. Sharma, T.G. Narender, R. Maurya, S.N. Suryavanshi, P.P. Yadav, K. Awasthi, K.V. Sashidhara, R.P. Tripathi, K. Bhandari, D. Koley, Scientists, Medicinal and Process Chemistry Division for their help and suggestions. The technical staff of the Division helped me in more than one way and made my work easy. I express my gratitude to one and all.

I am highly obliged to Drs. Ashish Arora, Vinod Bhakuni, Brijesh Kumar (SAIF), Imran Siddiqui (MSB Div), Alka Singh (JNU Cell), B. K. Sharma (Sikar), V. Uma (Hyderabad), Dr. R. Natarajan (Canada), Suman Malik, A. K. Srivastava and M. Chaurasia for their generous help during my research.

I am greatly thankful to Dr. Subhash Basak (USA), Prof. Utpal Tatu (IISc, B’lore), Prof. M. D. Karvekar, Prof. M. Lakshmana (Govt College of Pharmacy B’lore), Dr. Altaf and Prof. A. K. Gadad (KLES’s College of Pharmacy, Belgaum) for their moral support.

My special thanks go to Dr. Anand P. Kulami and Dr. Sripathi Rao Kulkarni for their affectionate treatment and cordial support.

It is a pleasure to pay my sincere thanks to my lab mates Drs. Manish K. Gupta, V. Raja Solomon, R. K. Rawal, Deepa, Ajay Sharma, Mrs. Nidhi Sethi, Saman, Meenakshi, Manish Sinha, V. Murugesan, Ram, Vasanth, Vinay, Subbaih and CDRI friends Dr. Ajay Srivastava, Ritesh, Awanit, Drs. Shagufta, Ramender, Anshuman, LVG Reddy, Mr. Saquib, Amit Varma, Manavi, Sarita, Timir, Bijay, Shraddha, Dimp, Alok, Somnath, Vikas, Chinmay, Nair, Pradeep, Bist, Arya, Sumit, Amit, Akanksha, Kailash, Amanatulla, Salil, Virender, Manmeet, Ravi, Sunduru, Shailendra, Kuldip, Amit, Subhal, Krishnanand, Sanjti, Priyanka, Sudipto, Saurabh, Jana, Sankolan, Tiwari, Raj, V. Singh, Venkat, Subhashish, Pinki, Pinto, Irfan, Partho, Khan, Siddarth, Pragya, Madhu, Manish and many more for their constant support throughout the association has helped in maintaining the balance between synthesis and the computation works.
I am highly indebted to my roommates Shyam R Yadav, Sameeran Hutait, Gaurav Taneja and my friends Drs. Deepak, Hans, Mr. Setty, Mahantesh, Somashekhar, Kuppad, Prakash, and my friends Drs. Deepak, Hans, Mr. Setty, Mahantesh, Somashekhar, Kuppad, Prakash, Koppad as well as ever smiling juniors Smriti Sharma, Srishti, Srinivas Rao, Neha, and Deepty for their constant support and encouragements.

I express my special gratitude to Dr. K.M. Shukla, Mrs. Deepali, Mrs. Renuka and Mr. Ram Lakhan for their unconditional support and help. They were responsible to maintain a pleasant environment in the lab.

Literature is backbone of research activity – I sincerely thank the staff of Library CDRI for giving me the needed scientific literature services.

Special thanks go to Mrs. Katti and families of Kulkarni and Kaujalgi for making Lucknow a home away from home.

This work could not have been accomplished without the encouragement and words of wisdom of my grandfather who had always wished me reach higher. I extend my sincere thanks from the bottom of my heart towards the Deshpande family including my parents, uncle, aunt, sister and brothers for their unfathomable love and for being always by my side in all the decisions taken and for what I am today.

Financial support in the form of fellowship from ICMR and CSIR, New Delhi is gratefully acknowledged. I also thank US Embassy for the financial support to present a paper “Is feature selection essential for ANN modeling?” in Univ. of Minnesota, Duluth, USA.

Shreekant Deshpande