Acknowledgement

These three years of continuous struggle has not only helped me to complete my Ph. D work but has taught me how to overcome hardships and made me realize many important things in my life. Along this way, I came across many people who helped me in their own ways in bringing out this thesis successfully. In fact, I got realized the value of team work, which got me to reach this level.

The person to whom I am greatly indebted is my research supervisor Dr. B. H. M. MRUDHYUNJAYASWAMY, Professor, Department of Chemistry, Gulbarga University, Gulbarga for his keen interest, useful discussion and affectionate encouragement. His spirit promoted me to work hard and find myself short of words to articulate my gratitude to him in guiding me, precising my flaws and enduring with insights in my tough times. His continuous support and encouragement made this thesis as one of the most important things to be cherished throughout my life.

I express my sincere gratitude to Dr. M. B. HALLI, Professor and Chairman, Department of Chemistry, Gulbarga University, Gulbarga, for providing laboratory facilities to carry out the present work.

I wish to express my warm and sincere thanks to my teachers, Prof. A. Venkataramana, Prof. N. M. Goudgoan, Prof. J. S. Biradar, Prof. K. Siddappa, Prof. A. R. Saundane and beloved teachers Prof. S. D. Angadi, Prof. B. K. Prabhakar, Prof. (Smt) S. S. Sangapure and Prof. V. R. Kulkarni for their help, advice and useful discussions.

I also thank Mr. Darley P. and all the staff of central computer center for providing unlimited internet facility. I also thank Dr. R. B. Gaddagimath, librarian and other library staff of Gulbarga University for providing Library facilities.

My sincere thanks to Dr. (Smt.) Vani, Sri. Sudheendra, Sri. Omprakash, Sri. Pandhary P. Dhane, and other staff members of University Science Instrumentation Center, Gulbarga University, Gulbarga for their help during my research work.

I am thankful to my senior colleagues Dr. Fazulur Reheman, Dr. S. M. Basavarajaiyah, Dr. Basavaran Hiremath, Dr. Adheer Kumar N, Dr. Guruprasad B.V, Dr. Razak Gaffor, Mr. Vivekanand D and Mr. Mahadev U for their unparalleled help in accomplishing many of the tasks. I extend my thanks to my beloved research colleague Nagesh G Y, for his encouragement and help throughout my research work.

It is my pleasure to thank my teachers Sri. Krishnapa, Sri. Police patil, Smt. Vijaylaxami, Smt. Rohini, Sri. S. B. Mathada, Sri. Elsikati, Sri. S. B. Rajoor, Sri. Murgendra, Sri. Bhilayiah Hiremath and Dr. Nagaraj, who found ability in me, molded me since from my childhood and encouraged to reach this stage.

I would like to thank my seniors and colleagues Dr. Jeelan Basha, Dr. Y. Manjunath, Dr. Sharanabasappa G, Dr. Mahesh I, Dr. Mallikarjun M, Dr. Sharanabasappa P, Dr. Shashidar B S, Mr. Verma, Mr. C. V. Reddy, Dr. Swathi, Dr. Vijayakumar, Dr. Prabhakar, Mr. Chandra Shekhar, Miss. Parveen R, Mr. Mallikarjun Kote, Mr. Mallikarjuna kimm, Mr. Nagabushan M, Mr. Sadusuryant, Mr. Prashant H, Mr. Sunil Kumar M, Miss Nagma Shaik, Mr. Shivakumar G, Mr. Basavaraj N, Mrs.
Rohini Reddy, Mrs. Annapurna Halu, Mrs. Puspa Hiremath, Mr. Kethan G, Mrs. Aasra and Mr. Anil and others who have helped in my research work.

I thank whole heartedly my M. Sc. Batchmates/Friends Dr. Shrishiala N, Mr. Reddy Ravindra, Mr. Rebabhar, Mr. Krishna Bodeppa, Mr. Manoj Sure, Dr. Shashikant B, Mr. Gururaj S, Mr. Ragavendra, Mrs. Sumathi R B, Miss. Kalpana R and Miss. Nabiya Sultana who were always there for me during my happy and hard times and supported me whenever I shared my personal and research problems.

My affectionate thanks to my friends/seniors Mr. Mahesh Divater, Mr. Kiran N M, Mr. Naveen S M, Mr. Narshimlu Meda Merched, Dr. Ajay Kumar Oli, Dr. Sadashiviah P, Dr. Grish C Math, Dr. Guruprasad Kulkarni, Dr. Sanjeev Kulkarni, Mr. Aswath Gowda, Mr. Majunath Chavadi, Mr. Akram Bhasha, Mr. Satish Koli, Mr. Nagabasava, Mr. Sagar Arali, Mr. Ramababu, Mr. Kiran beede, Mr. Param Biradar, Mr. Jayachandra, Mr. Basavaraj Tiger and Mr. Mallikarjun B for their unforgettable company.

Nrupatunga hostel, room number 102, was my home and my friends were my family since three years where I got many friends. I had an ocean of friends not only from my department but also from neighboring departments too. I will never be able to forget those sweet, enjoyable and crazy moments spent together which made my research life so memorable.

I would like to give my special thanks to a very special person in my life….my ever loving brother, Late Mr. Prabhuraj Karikal. We love him, miss him….

Where would I be without my family? My Parents, Sri. Basavaraj Karekal and Smt. Renuka Karekal needs a special mention, who scarified a lot for my upliftment and were the source of inspiration behind all my success. Their unconditional support, constant encouragement and prayers were my great strength. My many thanks to my family members, my brothers Mr. Manjunath Karekal and Mr. Ashok Karekal, my sweet sisters Mrs. Uma Devi and Mrs. Mallama, my brother in law Mr. Bheemana Gouda, Cousin sister Miss Rekha Patil, my sister in law Mrs. Gayathri Karekal and my nephew Shrishail Karekal for their love, support and motivation.

Words can’t express the deep sense of gratitude towards Karekal family, Police Patil family and my relatives for their care and encouragement since from my childhood at Ankushadoddi and Mathapalli.

I express my sincere thanks to Smt. B. H. M. Somakka, Mrs. H. B. M. Soumya and Mr. Rudramini Bennikallu Hiremath for their affectionate encouragement.

I also acknowledge the services provided by IIT Chennai; IIT, Bombay; SAIF Chandigarh; SAIF, Kochi for providing spectral data and BIOGENICS, Hubli for biological evaluations.

I would like to thank the non-teaching staff of our Department for their cooperation.

Finally, I thank one and all who have helped me directly or indirectly in the course of my research work.

Mahendra raj K