

## ACKNOWLEDGEMENTS

I wish to record my deep sense of gratitude and profound thanks to my teacher and research guide, **Dr. P. Radha Krishna, FRSC, FAPAS** Chief Scientist, Organic and Biomolecular Chemistry Division, CSIR-Indian Institute of Chemical Technology, Hyderabad for his guidance, constant encouragement and valuable suggestions throughout this course, which greatly enhanced my interest in the frontier area of science. His remarkable scientific abilities, hard working, affectionate and friendly nature is always an inspiration for me towards achieving a good career. I am very much thankful for his unflinching support, affection, which helped me a lot in exploring my abilities and made it possible for me to carry out the present work which otherwise, would be very difficult.

It is indeed a privilege to associate myself with **Dr. G. V. Madhava Sharma, FNASc**, he deserves much more than a mere thanks for his support throughout my doctoral period.

I pay rich tribute to **Dr. B. Hari Babu** Assistant Professor, **Dr. D. Ramchandran**, the Coordinator and Head of the Department of Chemistry and other faculty of Department of Chemistry, Acharya Nagarjuna University, Guntur, for giving opportunity of my Ph.D programme in the university.

I express my gratitude to my school teachers, **Mr. Raju, Mr. N. Prabhakar, Mr. Ramesh, Mr. N. Manga Raju, and Mr. I. Apparao**, all my college lecturers **Mrs. Nagamani, Mr. Chirajeevi, Dr. M. Satyannarayana, Mr. Mahalaxmi Naidu, Mr. G. Satyannarayana**, and all my University professors **Prof. G. NageswaraRao (Vice Chancellor Andhra University), Prof. N. Someswara Rao, and Prof. Jaya Prakasha Rao**, who encouraged me to reach this level and it all is the fruit of their teaching and blessings.

I am thankful to my senior colleagues **Dr. G. Dayaker, Dr. R. Srinivas, Dr. A. Sreeshailam, Dr. K. Raghuram, Dr. Y. Laxmi Prapurna, Dr. T. Jagannadha rao, Dr. M. Alivelu, Dr. V. manohar, Dr. K. Srinivas Reddy, Dr. B. Shoban babu, Dr. S. Mallesham, Dr. A. Naresh kumar, Mr. E. Shiva kumar, Mr. D. Venkata Ramana, Dr. P. V. Arun kumar, Dr. N. Nagaraju, Dr. Anupama, Dr. S. Venkat Reddy, Dr. A. Bhasker, Mrs. B. Veena, Dr. D. Harinath** who have rendered their assistance whenever needed without a selfish cause.

It gives me a great pleasure to express my thanks to my colleagues, **Dr. K. Ramesh**, **Dr. K. Rajender**, **Dr. N. Rajesh**, **Dr. M. Venkata Satya Narayana**, **Dr. A. Rajesh**, **Dr. B. Karunakar Reddy**, **Dr. P. Srinivas**, **Dr. S. Prabhakar**, **Mrs. Ch. Sravanthi**, **Dr. N. Santhosh Reddy**, **Dr. T. Sridhar**, **Dr. T. Prashanth**, **Mr. B. Sudhakar**, **Dr. G. Venkateshwarlu**, **Mr. G. Srikanth**, **Mr. G. Anjaiah**, **Mr. M. Hanuma Sharma**, **Mr. A. Ramesh**, **Mr. A. Ravindar**, **Mr. G. Sridhar**, **Mr. T. Srinivas**, **Mr. B. Suresh kumar**, **Mr. G. Manikanta**, **Mr. B. Srinivas**, **Mr. J. Ranjith**, **Mr. K. Suresh**, **Mr. Jayaram**, **Mr. Mohan**, **Mr. Linga Swamy**, **Mr. Raghavendra**, **Mr. Shiva Nageshwara Rao**, **Mr T. NagaRaju**.

It gives me immense pleasure to express my heartfelt thanks to my close friends **Mr. A. Ravikiran**, **Mr. D. Srinivas**, **Mr. P. Veerababu**, **Mr. Ch. Ganesh**, **Mr. N. Venkatesh**, my close seniors **Dr. G. Dayakar**, **Dr. A. Sreesailam**, **Dr. T. JagannadhaRao**, **Dr. K. Raghuram**, Close friends in the lab **Dr. K. Ramesh**, **Dr. N. Rajesh**, **Dr. M. Satyannarayana** and **Dr. K. Satish** and finally my junior **Mr. G. Manikanta**'s encouragement during the entire period of my research.

I am also thankful to **Mr. L. Sudershan**, and **Mr. L. Bhanu** for their support throughout my work period.

I am also thankful to **Mr. Prasad**, **Mr. Venkatesh** and **Mr. Narendar**. I take this pleasant occasion to record my appreciation to spectroscopic and analytical divisions.

This thesis would not have seen the light of the day without the moral support, love and affection from my beloved parents **Mrs. Galla Chilakamma**, **Mr. Galla Suryanarayana (late)** my parent in laws **Mr. S. S. Dhora**, and **Mrs. Chittemma** my brothers **Mr. G. Satyannarayan** and **Mr. G. Appa Rao** my sisters **Mrs. K. Nagamani**, and **Mrs. Ch. Ramanamma**, and **T. Manjula** my brother-in-laws **Mr. K. Srinivas**, **Mr. Mr. Ch. Apparao** and **Mr. S. Srinivas** Co-Brother **Mr. K.R.P.B Chandramouli**, sister in law **Mrs. K. Sirisha**, for their incessant encouragement, constant support and continuous motivation that guided my life and remain the secret behind my success. I am thankful to my nephews **Mr. Ch. Shankar**, **Mr. Ch. Ramesh**, and **Mr. K. Akhil**, and my nieces **Mrs. Tulasi** and **Mrs. Sravanai** for their invaluable help and encouragement.

My appreciation goes to my wife **Dr. S. Sunitha** ( Radiologist ) for her extreme patience, encouragement, love, affection, caring and mainly belief on me, and I cherish the love of my two old year daughter **Tatvika Sri Aadhya**, which helped me in the completion of my thesis.

I would like to thank everybody who was important to the successful realization of this thesis and apologize for my inability to mention their names individually.

Financial assistance from **Council of Scientific and Industrial Research (CSIR), New Delhi**, in the form of Fellowship is gratefully appreciated.

Finally, I am thankful to **Director, CSIR-IICT** for giving me an opportunity to work towards my doctoral degree in CSIR-Indian Institute of Chemical Technology, Hyderabad.

**G. RAJU**