

ACKNOWLEDGEMENTS

I take this opportunity with immense pleasure to express my deepest sense of gratitude to my research guide Prof. Javed Iqbal, who has helped me a lot to learn and think more about chemistry. I will never forget his encouraging words and patience when my motivation was low. I sincerely acknowledge not only for the endowed confidence and freedom in the choice of my research and the execution of my own ideas, but also for his excellent guidance and unstinted support during all the tough times of my PhD life. I consider it very fortunate to be associated with him, which has given a decisive turn and significant boost to my career.

I am profoundly grateful to my co-supervisor Dr. K. Mukkanti, Professor & Head, Centre for Environment, IST, JNTU, for his technical support to complete the formalities at JNTU.

I am extremely thankful to Dr. Mohamed Takhi for his kindness, his patience, his help and encouragement. His support was invaluable to me, his enthusiasm and encouragement inspired me to upgrade my academic qualifications.

I am extremely thankful to Dr. Santanu Maitra and Dr. Parthasarathi Das for their valuable support.

I am indebted to Dr. K. Anji Reddy, Chairman of Dr Reddy's Laboratories Limited and Dr. Rajinder Kumar, President, Discover Research, Dr Reddy's Laboratories Limited and Dr. A. Venkateswarlu, Technical Advisor, Dr Reddy's Laboratories Limited for giving me an opportunity to upgrade my academic qualifications leading to PhD degree.

I also thank Director and staff of Institute of Science and Technology, Jawaharlal Nehru Technological University for their timely help.

I would like to thank my colleagues Gurpreet, Nirvesh, Bhaskar, Murugan, Chandrashekar, Soma, Praveena for their support and encouragement.

I would also like to express my gratitude to the my friends I. Nageswara Rao, K. Anant Reddy, Joykumar, A. Chandrashekar, C. Vamsee Krishna, V. Saibaba, N. Vijay Kumar, P. Srinivas, N. M. Sekhar for useful discussion and support.

It is a pleasure to acknowledge the support extended by colleagues in Analytical Department, Biology department, Knowledge management (Library), Intellectual Property Management, SCM Department, Accounts & Administration and Human Resource.

To my parents, I am indebted for their love and support during days of difficulties that helped me to reach at this stage. Without their vision and selfless agenda this thesis would not have seen the light of the day. Blessings of my parents Sri. C. Narasimhulu & Smt. Saraswathi was always inspiration for me.

Finally, I would like to thank my wife Ratna and children Ramya and Priya for the years of sacrifice, encouragement and continual support that have led to my accomplishments. Completion of this PhD would have been difficult without them.