ACKNOWLEDGEMENT

First and foremost I give thanks and praise to God.
Through him all things are possible.

I would like to express a wealth of gratitude to my guide, advisor and
philosopher Prof. P. Ramamurthy. Your imagination is an inspiration, your work,
ethic and dedication to science are unparalleled, and the delicate balance that you
keep between career and family is most commendable. Thank you for your patience
and guidance throughout my time here. For whatever goals I have achieved during
this course was only because of his encouragement and the useful discussions, which
took place in the context of the meetings of group of researchers.

I express my sincere thanks to Prof. P. Natarajan, F.N.A., F.A.Sc., National
Centre for Ultrafast Processes, University of Madras, for his constant encouragement
during the course of my study. I especially thank him for appreciation and
encouragement over the years of my study.

My special thanks to Prof. V. Durai, Emeritus Professor, Department of
Inorganic Chemistry, University of Madras for his help and blessings during my
course of study

It is my great pleasure to thank my brother Dr. C. Sekaraju, Lecturer,
National Centre for Ultrafast Processes, University of Madras, for the matured
comments and for the thought provoking discussion.

I wish to express my whole hearted thanks to Prof. M. Kandasamy, Head,
Department of Inorganic Chemistry, University of Madras, for his valuable help and
moral support during my course of study.

I wish to thank Prof. V. R. Ramakrishnan, Retd. Professor, Department of
Organic Chemistry, Dr. E. J. Padma Malar, Reader - UGC, NCUFP, University of
Madras, for her theoretical work, Dr. V. Narayanan, Department of Inorganic
Chemistry, Prof. S. Rajeshwari, Prof. S. Sriman Narayanan, Department of Analytical Chemistry and Prof. K. Chandrasekara Pillai, Prof. V. R. Vijayaraghavan, Department of Physical Chemistry, University of Madras, for their constant encouragement and valuable suggestions. I would also like to express my sincere gratitude to all my teachers in the School of Chemical Sciences, who have contributed their time, helpful discussion and friendly atmosphere to the successful completion of the work.

I wish to express my gratitude to Dr. N. Subramaniam, and Mr. R. Parthasarathi, Chemical Lab, CLRJ, Chennai, for their valuable help rendered to utilize the molecular modeling facilities.

I would like to express my indebtedness to all my teachers and sisters in my undergraduate level for their constant encouragement, prayers, moral support and blessings extended to me throughout my life.

I express my sincere thanks to Prof. R. Swaminathan, IIT, Guwahathi, for having taught me the fundamentals of photochemistry and instrumentation during the initial stage of my work.

I express my sincere thanks to my seniors Dr. N. Srividya, Mr. P. Karunanithi, Dr. B. Venkatachalahathy, Dr. S. S. Jayanthi, Dr. N. Sivakumar, for having taught the fundamentals of photochemistry and constant encouragement throughout my work.

It is my great pleasure to thank my friends Er. J. Ramesh, Mr. V. Karunakaran, Mr. P. Ganesan, Dr. C. Raja, Dr. H. Prakash, Dr. V. Thiagarajan, Dr. S. Eswaramoorthi, Mr. R. Lakshmanan and to all my friends both far and near who have made the effort to stay in touch. You make the hard times a little easier.

I have no words to express my heartfelt thanks to my juniors Mr. K. Anantha Narayanan, Ms. I. Sadhiya Banu, Ms. T. Shanmugapriya, Mr. R. Kumaran,
Mr. R. Velu, Ms. A.Arlin Jose Amali and Mr. Dheenadayalan for their help, kind co-operation and moral support during my course of investigation.

I wish to extend my heartfelt thanks to Late P.S.Mohan Babu, Mr. Selvamani, National Centre For Ultrafast Processes, Mr. S. Sampath and Mr. V. Krishnan, Office Staffs, Dept. of Inorganic Chemistry, University of Madras, for their immeasurable help during my research period.

To my father Mr. R.Kesavan, mother Mrs. K.Anjali, sister Mrs. A.Lathanandhini, brother Mr. V.K. Mohankumar, and sister's children Vijay and Roshini, my sincere gratitude and appreciation for their support and encouragement over the years of my study for gently pushing me along my entire life to pursue something greater.

My special thanks and appreciation to my husband Mr. N.Saianand, who has been there through my time and who will be with me no matter where this journey through life takes us. I am blessed to have such a good husband by my side and my child S.Sai Pooja, for their love, encouragement and patience to complete this work.

I take this opportunity to express my heartfelt thanks to my grandparents, in-laws and other family members for providing me all the needs to the best with love and affection at all times.

I gratefully acknowledge my non teaching staff from Central Office, I.B.M.S. Taramani Campus, University of Madras, for their kind co-operation and timely help.

I would like to record my sincere thanks to DST and CSIR for their financial assistance, which has enlightened the task of this tenure.

(V. K, Indira Priyadharshini)