ACKNOWLEDGEMENT

First of all, I would like to express my sincere gratitude to Dr. N. Thirupathi, my mentor and thesis supervisor for whatever good I have been able to produce in this work which would not have been possible otherwise. His able guidance, constructive criticism, and tender encouragement throughout this programme have always strengthened my morale. I wish to extend gratitude towards Dr. M. Nethaji, Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore-560 012 for the much needed help in unlocking the secrets of X-ray crystallography.

I sincerely thank Prof. V. S. Parmar, Prof. A. K. Bakshi (former Head) and Prof. S. M. S. Chauhan (present Head), Department of Chemistry, University of Delhi for their academic support.

I would also like to express my gratitude to Dr. Mahendra Nath and Dr. M. Thirumal, members of the advisory committee for their invaluable support and encouragement.

I am extremely grateful to Prof. K. Sreenivas, Director, University Science Instrumentation Centre (USIC-CIF) for financial support as well as his time to time suggestions and encouragements and for the infrastructure facilities.

I also extend my thanks to Prof. N. K. Kaushik, Prof. Pavan Mathur, Dr. R. Nagarajan, Dr. K. Tharanikarasu, Dr. M. Sathiyendiran, Dr. P. Venkatesu, Dr. S. Murugavel (Department of Physics), University of Delhi for their kind moral support and suggestions. I would like to acknowledge Prof. U. P. Singh, Department of Chemistry, IIT Roorkee for single crystal X-ray diffraction data for some compounds.

I am extremely grateful to Dr. P. Elumalai, (Pondicherry University) for his supports since my B. Sc. I also extend my thanks to Mr. R. P. Mittal, (USIC-CIF) for his kind support during the work hours in USIC-CIF.

I also extend my thanks to Profs. R. Murugasan, K. Pitchumani, S. Perumal, S. Muthusubramanian, R. Ramaraj, (Madurai Kamaraj University) for their kind moral support and suggestions.
I would like to thank Dr. R. Anjappan, Mr. S. Srinivasan, Mr. T. Kulasegaran, Mr. V. Jayasankar and Mr. C. T. Ravichandiran (Arignar Anna Govt. Arts College, Cheyyar), for their moral support and encouragements to pursue research.

I am extremely grateful to the madam Mrs. Nithya Devi Thriupathi, for her help and support during my research work.

I sincerely thank my lab mate Priya Saxena for her support during my research work. I would like to thank my lab mates Drs. Brijesh, Umesh, Gopi, Taruna Singh, Mrs. Ani, Mr. Pierre, Manisha, Arun, Ramkishan, Pallavi, Robin, Vishwesh and friends Dr. P. Boobalan (USA), Shankar, Velmurugan, Mohanraj, Chandhru, Amit, Rajakannu, Vilvamani, Mohan (Germany), Dr. Babu (MKU), Nazima Begam, Sakthilatha, Revathi, Yuvarj (Italy), Guna, Senthil, Arumugam, Dr. Kasi Shankar, J. J. Prakash (Germany), Nithya, Keerthy, Vijayarangamuthu, Vijayakrishnavelan, Karthi, Chelian, Anand (South Africa), Viji (HCU), Deepak Gupta, Sarathbabu, Natrajian, Kumaravel, Raman, Karam Chand, Meera, Mahadihasan, Kuldeep, Chamman Singh, Neeti, Pankaj, Rohit, Kapil, Anil, Imtiyaz and Madhu Reddy for their invaluable help and encouragement.

I also sincerely thanks to my friends Keshav, Nem Singh, Nagarajan, Ganesan, Dheeraj (IIT Delhi), Karthi (IIT Kanpur), Senthilkumar (Singapore), Dheeraj, Sandeep Tiwary, Sandeep Katariya, Navineet, Shoib, Mishra, Vijay Rajpal, Alam, Sarbudin, Arun, Ravinder, Seema, Dospa, Jitender, Rahul, Harsh, Manish, Amit, Sarita, Smily, Dinesh, Hari Om, Ashokan (USIC-CIF), Vasantha Gowda (IISc Banglore), Mr. Harsh Mohan (CDRI Lucknow) for their help and encouragement.

I also thank non-teaching and technical staffs of Department of Chemistry and Central Science Library (CSL) for their timely support.

I would like to thank to authorities of Mansarowar Hostel, lovable workers and friends, Pandiayan anna and Vishwanathan anna for providing good and healthy food and friendly environment during my research life in New Delhi.

Last but not least, I am sincerely grateful to my family members brother Mr. P. Sankar, sisters Mrs. Rani, Shanthi, Vijaya and anni Viruthambal who constantly extended their support and love since my childhood.
Acknowledgement

Besides, I am extremely grateful to my father “Palani” and mother “Alamelu” for giving me good health and education. Without their blessings nothing is possible in my life and career.

Elumalai Palani
New Delhi, India
May-2012