ACKNOWLEDGEMENTS

I would like to express my profound gratitude to my parents, Mr. Elumalai and Mrs. Parvathi, whose sacrifice provided me with an education and opportunities they never enjoyed and whose love provided me with substantive strength to live in this challenging world.

I have an immense pleasure in expressing my deep sense of gratitude to my supervisor Dr. C. R. Ramanathan, Assistant Professor, Department of Chemistry, Pondicherry University, for introducing me to this exciting field of asymmetric synthesis and suggesting me this interesting research problem. I greatly owe a favor to him for his outstanding guidance, valuable ideas, and enthusiastic encouragement with patient and parental affection and for his involvement with the research work. I am delighted to express my gratitude to him for this opportunity.

My sincere thanks to Prof. N. Satyanarayana, Dean, SPCAS, Prof. K. Anbalagan, Head, Department of Chemistry for making available all the facilities required for the research work. I am thankful to my Doctoral Committee Members Dr. G. Vasuki, Associate Professor, Department of Chemistry and Dr. R. Krishna, Assistant Professor, Centre for Bioinformatics for monitoring the progress of my research work and endowing with useful suggestions during my course of research.

My special thanks to Prof. P. Sambasiva Rao (Late) former Head, Department of Chemistry, for providing all necessary facilities to carry out my research work.

I express my deep sense of gratitude to all the faculty members of the Department of Chemistry, Prof. H. Surya Prakash Rao, Prof. Bidhu Bhusan Das, Prof. K. Tharanikkarasu, Dr. R. Venkatesan, Dr. Bala. Manimaran, Dr. C. Sivasankar, Dr. M. Bakthadoss, Dr. N. Dastagiri Reddy, Dr. M. M. Balakrishnarajan, Dr. Binoy Krishna Saha, Dr. R. Padmanaban, Dr. S. Sabiah and Dr. Toka Swu for their valuable discussions, which helped me in enhancing my comprehension.

I am very much indebted to Prof. M. Periasamy, University of Hyderabad for his valuable suggestions and Dr. P. Raghavaiah, University of Hyderabad, Dr. Babu Varghese and Dr. Jagan, SAIF, IIT-Madras, for their valuable assistance in single crystal X-ray data collection and analysis. I gratefully thank Mr. Suman Bhattacharya who has also helped me in collecting X-ray crystal data.
I thank Prof. K. R. Prasad, IISc-Bengaluru, Dr. K. Bakthadoss, University of Madras, Dr. A. Ilangovalan, Bharathidasan University, Dr. A. Ramasubbu, Govt. Arts College, Coimbatore, Prof. M. L. N. Rao, IIT Kanpur and Dr. C. V. Ramana, NCL, Pune for their valuable suggestions and encouragements. I would like to take this as an opportunity to thank my teachers, Mrs. T. Kousalya Bai, Mr. Prabhakaran, Dr. V. Rajendran, E. M. Subramanian, Krishnan, Prof. P. Ramesh, Prof. S. Muthusubramanian, Prof. Gandhidasan, Prof. S. Perumal, Prof. A. Ponnusamy, Prof. K. Pitchumani, Prof. S. Rajagopal, Prof. Sivakolundhu, Prof. R. Ramaraj for their motivation and encouragement.

Special thanks go to my lab colleagues J. Selvakumar, J. Sanjeevi, S. Mangalaraj, A. Harikrishan, N. Someshwar, R. Srinvas, K. Venkatanna, A. M. M. Achari, C. Yuvaraj and former M.Phil and M.Sc Students for their cooperation during my entire Ph.D tenure.

With great pleasure, I appreciate my seniors, N. M. Rajendran, Dr. S. Karthikeyan, Dr. Sivakumar, Dr. E. Poonguzhali, Dr. Rafi, Dr. K. Geetha, Dr. K. Vasantham, Dr. S. Sabarinathan, Dr. K. Kumaravel, Dr. Stephan, Dr. K. Velavan, Dr. A. Vanitha Dr. B. Natarajan, Dr. S. Boobalan, Dr. N. Venkatramaiah, Dr. S. Vivekanandhan, Dr. S. Vaithinathan, Dr P. Saravanan, Dr. Krishnaveni, Dr. E. Sanjeevi and Dr. C. M. Perumal for their prolonged moral support.

I am thankful to all my friends and well wishers, Dr. K. Parthiban, M. Karthikeyan, Dr. M. Tamilselvan, B. Rajarathinam, K. Palanisamy, K. Padmavathi, G. Srinivas, Natramiz rajavendan, C. Guravaiah, K. Bakthavachalam, T. Venkatasamy, R. Nagaraja Prakash, B. Bhagyaraj, Ramesh, R. Rajesh, M. Mahalakshmi, Ganeshraja, Manjunathan, B. Ramakrishna, Chowan Ashok Kumar, R. Govindarajan, Jayaraj, Maheshwari, Muthu augestria, P. Sakhivel, Krishnan, M. Harikumar, Ezilarazu, Selvam and other research scholars for their cooperation and support during my research period.

I thank my MKU friends, seniors and juniors Dr. M. Viji, Dr. S. Purusothaman, M. Santhanaraj Prabhu, Mr. H. Vigneshbabu, P. Prasanna, R. Prasanna, S. Manivannan, Ragu Kumar, S. Akbar, P. Muthukumar, S. Nagarajan, Naveen Raj, Dr. I. Panneer Muthu Selvam, Bakiyaraju, Muniasamy, Dr. Murugadoss, Dr. Jayachandran, Dr. T. Shankar, Dr. Edayathula, Dr. Annalakshmi, Dr. S. Suresh, Dr. Sridhar, Dr. Bala, Dr. R. Ranjithkumar, Dr. B. Natarajan, Dr. S. Karthikeyan, Dr. Jayapradha, Dr. Kalidasan, Maruthesvaran, Manochira, Yogapiya, Balaraman, Balamurugan, R. Rajesh, Jamuna Rani, Indumathi, and Dr. P. Elumalai for their motivation.
I would like to thank my hostel seniors and friends Sureshraja, Kandhasamy, B. Shanmugavelu, P. Vinayagam, V. Somasundaram, Maria Immanuvel, Bala, Vijayaraman, Ranjithkumar, C. Perumal, Muthukamaran, Jayakanthan, Suresh, Sunil, Lingan, Uthayakumar, Vikramathithan, Sankaran, Kanmani, Pattukumar, Raman, Paari, Yuvaraj, Lalitha, Subasri, Rajamanikkam, Rajasekar, Velumurgan and I thank Bhardhidasan hostel warden Dr. S. Bathra, hostel clerk Yusef, Anbu and mess workers Vijayakumar, Ramu for providing pleasant atmosphere in the hostel.

I thank my best well wishers, Mr. C. Ramaraj, Mrs. Tamayandhi Ramaraj, Dr. Sethuraman, Mrs. Jaya Sethuraman, Dr. C. R. Mariappan, Mrs. Pandiarani Mariappan, Rajaram, Priya Rajaram, Srinivasapriyan, Kurunji, Sesu and M. Ravikumar.

I sincerely thank the non-teaching staff of the Department of Chemistry, Mrs. R. Nirmala Devi (Dean Office), Mr. G. Gugan, Mr. V. Shanmugam, Mr. Anbu, Mr. L. Elumalai, Mr. Chandru, Mrs. Victoria, Mr. B. Prem Aravind, Mrs. K. Rekha, and Mr. D. Dhandapany for their help during my research work. Furthermore, I am very much thankful to the Coordinator, Central Instrumentation Facility, staff members, especially Mr. Gopalakrishnan, Mr. S. Prabhakaran Mr. S. Ramasamy, Mr. P. Kasirajan, Mrs. R. Jayanthi, Mr. Thillaimani and Mr. R. Elumalai for their technical assistance. I thank glass blower Mr. S. Chinnadurai for his glassware fabrication work.

I wish to express my profound gratitude to my brothers Inbamani, Venkatasubramanian, Anbu, Murugan, Palani, Harikumar, Annamalai, Ramu, Deivasigamani, Vadivelu, Dr. V. Dhayalan, Dr. K. Parthasarathy, Kumaresu and Kalidasan, sister-in-laws D. Sasikala, Bhuvana, Vembuli, Nithiya, sisters Valli, Kovindammal, Kanniayammal, brother-in-laws Swaminathan, Venugopal and other relatives for their constant support and affection throughout my academic carrier.

I would like to acknowledge the DST, New Delhi for the support through research projects. The financial support by UGC and CSIR, New Delhi made me to become financially independent during my Ph.D. studies is gratefully acknowledged. I thank The Vice-Chancellor, The Registrar and all the Authorities of Pondicherry University for providing the necessary facilities to carry out research work. I thank many individuals, friends and colleagues who have not been mentioned here personally in making this research process a success.

E. Gnanamani