ACKNOWLEDGEMENTS

It would not have been possible to write this doctoral thesis without the help of the kind people around me, to only some of whom it is possible to give particular mention here.

This thesis would not have been possible without the help, support and patience of my principal supervisor, Dr. S. Kalainathan, Dy. Director, Center for Crystal Growth (CCG), SAS, VIT University, who was abundantly helpful and offered invaluable assistance and guidance.

I am very grateful to Dr. G. Viswanathan, Chancellor, VIT University, Vice Presidents, Vice-Chancellor, Registrar, VIT University, for providing me the necessary support for this research and Department of Science and Technology (DST), India for financial assistance and Dr. S. Babu, Associate Dean (Academic Research), Dr. V. M. Chandrasekaran, Director, SAS, VIT University, for providing the lab facilities and for their support during the research.

I am extremely thankful to Dr. G. Bhagavannarayana, Head, MCD, National Physical Laboratory, New Delhi, Dr. U. Madhusoodanan, HSL, IGCAR, Kalpakkam, Dr. K. Anitha, MKU, Madurai, and Research centres TBI, VIT University, SAIF, IIT Madras to do the characterization work.

I would like to thank Dr. A. Ruban Kumar, Internal member, VIT University for all his advice and encouragement. Also, I would like to thank my friends D. Bharath, R. Palanivel, K. Senthil, G. Murugasean, N. Sivanandhan, P. Ramesh, M. Nirosha, K. Shakeela, Mrs. Gayathri, Ms. Senthamizselvi, K. Boobalan, R. K. Balachandar and organic research group researchers for which my mere expression of thanks likewise does not suffice.

I sincerely acknowledge to my Doctoral Committee members K. Srinivasan, Bharathiar University, Coimbatore, N. Vijayan, NPL and Delhi for their right direction to carry out this work.

I would like to thank my parents M. Mohan Das, D. Martheenal, S. Abel, S. Prema manormani, my sisters M. Mohana Kavitha, M. Mohana sudha, A. Jaba Deva Krupa, my brother M. Prabu Das especially my beloved wife A. Nithya Deva Krupa and my daughter M. P. Prarthana Paul for supporting and encouraging me to pursue this degree.

M. Paul Dinakaran