ACKNOWLEDGEMENT

The author expresses his deep gratitude to his research supervisor Prof. S. Moorthy Babu, Professor, Crystal Growth Centre, Anna University Chennai, for his inspiring guidance and fruitful discussions to carry out the research. The author would like to thank Prof. D. Arivuoli, Director, Crystal Growth Centre, Anna University for his support during this work. The author is deeply thankful to Prof. R. Dhanasekaran, Prof. J. Kumar, Prof. K. Baskar, Prof. S. Narayana Kalkura, Prof. R. Jayavel and non-teaching staff for their help and moral support in his academic progress.

The author bestows special thanks to Prof. Monica Ferraris, Dr. Massimo Olivera, PoliTo, ITALY for their encouragement to carry out part of this research work at their lab. The author is thankful to his Doctoral committee members Prof. P.K. Palanisamy and Prof. Mahaveer K. Jain for their valuable suggestion.

The author places on record his deep sense of indebtedness to Dr. S. Ganesamoorthy, Dr. Indranil Bhaumik, Dr. A. K. Karnal, Dr. R. Varadharajan for their kind support during crystal growth and cutting processes.

The author is grateful to Dr. M. Haris, Dr. A. Senthil Kumaran, Dr. P. Veeramani, Dr. R. Perumal, Mr. K. Senthilkumar, Mr. P. Samuel, Mr. J. Ramkumar, Mr. D. Thangaraju, Mr. S. Anantha Kumar, and Mr. A. Durairajan for their kind cooperation during my research tenure and special thanks to all research scholars of Crystal Growth Centre.

The author wishes to thank IUAC for Junior Research Fellowship, CSIR for Senior Research Fellowship and INDIA-ITALY government for “Borse a Favore di Giovani Ricercatori Indiani” fellowship. The author expresses his heartfelt thanks to his parents, sisters and friends who have been behind his research career.

P. KUMAR