ACKNOWLEDGEMENT

The author expresses his profound gratitude and deep sense of indebtedness to his research supervisor Dr. S. Moorthy Babu, Asst. Professor, Crystal Growth Centre, Anna University Chennai, for his inspiring guidance to carry out the research work.

The author expresses his deep sense of gratitude to Prof. Masaya Ichimura, Professor, Nagoya Institute of Technology, Nagoya, Japan for the valued guidance and support. The author is very grateful to Prof. J. Kumar, Director and Prof. P. Ramasamy and Prof. R. Dhanasekaran, Former Directors, Dr. R. Jayavel, Dr. K. Baskar, Dr. S. Narayana Kalkura and other staff members of Crystal Growth Centre for their kind help and encouragement during the course of this investigation. The author is thankful to Dr. S. Ganesamoorthy, Dr. A. K. Karnal, Dr. I. Bhaumik, RRCAT, Indore, and Prof. Prem B. Bisht, IITM, Chennai for their scientific association, appropriate suggestions and personal, contribution during this work.

The author wishes to thank DAE-BRNS and MHRD for the financial support and award of Japanese fellowship respectively. The author expresses his heartful thanks to his Friends, Parents, Brothers and Sister who have been inspiring behind all his career advancements.

(A. Senthil Kumaran)