ACKNOWLEDGEMENT

I take this opportunity to express my immense gratitude to Prof. S. Selvasekarapandian, my research supervisor & Professor of Physics, Bharathiar University, for his patient guidance, consistent support and profound interest towards the entire course of the investigation. He has been the guiding light in realizing my career dreams.

❖ My sincere thanks are due to Prof. Sa.K. Narayandass, Professor & Head, Department of Physics, Bharathiar University, for providing facilities to carry out the present work and the staff of the department of physics, Bharathiar University.

❖ Financial support rendered by Bharathiar University in the form of URF and by Department of Science & Technology, Govt. of India, in the form of JRF are gratefully acknowledged.

❖ I thank Dr. T. Mukherjee, Head, Radiation chemistry and Chemical dynamics division, BARC, Mumbai, for permitting me to carry out experimental work.

❖ Words cannot substitute the timely assistance rendered by Dr. H. Pal, Scientific officer ‘G’, Radiation chemistry and Chemical dynamics division, BARC, Mumbai. Dr. Pal’s interest in my work and persistent encouragement made me to accomplish my target. I take this opportunity to thank all the scientific officers associated with Dr. H. Pal.
My beloved uncle Prof. U.S. Sreeramulu, has been the fountain head of inspiration throughout my career. I would like to express my heartfelt gratitude to him & his family for his patient suggestions in betterment of the thesis.

I am extremely thankful to the Director, Crystal growth center, Chennai for permitting me to carry out crystal growth. I am indebted to Mr. Arul Chakravarthi, Research scholar, Crystal growth center, Chennai for his help in crystal growth.

My thanks are due to Mr. J. Balakarthikeyan and friends for their kind hospitality during my stay in Chennai.

My sincere thanks are due to my teachers who have taught me in school days, under graduation and post graduation.

I am thankful to my Senior and former research scholars of my laboratory Dr. J. K. Radhakrishnan, Dr. P. Christopher Selvin, Dr. B. Nalini, Dr. K. Vivekanandan, Dr. R. Chitradevi, Dr. R. Sarojini, Dr. N. Muguntha Manikandan, Dr. R. Sivakumar, Dr. K. Lakshmi, for their kind words of advice and my lab mates, Mr. C. Palanisamy, Mr. M. Vijayakumar, Mr. V. Ramiesh Mr. G. Hirankumar, Ms. M. S. Bhuvaneswari, Ms. G. Bhavani, Mr. R. Baskaran, Ms. S. Krishnaveni, Ms. J. Malathi, Mr. G. M. Brahmanandan, Ms. R. Amuda, Ms. R. Sarida, Mr. M. Gowtham and Mr. R. Vijayshankar for their help in many ways.

My friends Nand, Sri, Judy, Nag and Sudha, and glittering inmates in the hostel have been the source of moral support. I take this opportunity to thank them all for their support.
I would like to express my whole hearted gratitude to Dr.R.Srinivasan & family, Dr.US.Srinivasan & family, Mr.HS.Ramamurthy & family, Mr.UA.Viswanathan & family for their continued support and help throughout my career and all my relatives for their help in one way or the other.

Finally, I thank the ubiquitous almighty for giving me strength and courage to overcome ups and downs in my life to complete this task successfully.

N.GANAPATHI SUBRAMANIAM