ACKNOWLEDGEMENTS

I express my deep sense of gratitude to my highly revered guide Prof. L. RAMA MOORTHY, Department of Physics, Sri Venkateswara University, Tirupati for his treasured, sustained guidance and help throughout the period of the present investigation. His encouragement, valuable guidelines, pragmatic approach to life has helped me a lot in completing this thesis.

I am indebted to Prof. C.K. Jayasankar, Department of Physics, Sri Venkateswara University, Tirupati for all his encouragement and timely help in completion of my research work.

I am extremely thankful to Prof. Ashok Kumar Sharma, Head, Department of Physics, Sri Venkateswara University, Tirupati Prof. S. Buddhudu, Chairman, Board of Studies, Department of Physics, Sri Venkateswara University, Tirupati, and Prof. M. Krishnaiah, Department of Physics, Sri Venkateswara University, Tirupati for their encouragement during the tenure of the present work.

I am also thankful to Prof. N. Prabhakar Rao, Vice-Chancellor, Sri Venkateswara University, Tirupati and Prof. K. Jayantha Rao, Principal, Sri Venkateswara University College of Sciences for their co-operation and provision of necessary infrastructural facilities to carry out my research work.

It gives me an immense pleasure to thank, Dr. B.C. Jamaliah, Post Doctoral Fellow, Pukyong National University, Republic of Korea for his encouragement and kind co-operation. I thank my senior-research scholar Dr. J. Suresh Kumar for his encouragement during the tenure of the present work.

My thanks are due to my senior and co-research scholars Dr. M. Jayasimhadri, Dr. S.A. Saleem, Dr. D.V.R. Murthy, Dr. D. Uma Maheswari, Dr. R. Vijaya, Ms. T. Sasikala, Mrs. K. Pavani, Ms. T. Subasini, Mr. M. Reddi Sekhara, Mr. G.V. Lokeswara Reddy, Mr. Ch. Srinivasa Rao, Mr. T. Chennaiah, Dr. V. Venkataramu, Dr. R. Praveena, Mrs. Ch. Basava Poornima, Dr. L. Jyothi, Mr. C.R. Kesavulu, Ms. N. Vijaya, Mr. K. Linganna, Mr. K.V. Krishnaiah, Mr. D. Ramachari, Mr. Sk.N. Rasool and Mr. M. Murali Mohan.
I place on record my deepest sense of respectful and affectionate gratitude to my parents Sri. A. Jayaramaiah and Smt. A. Eswaramma who gave birth to me and whose inspiration and aspirations about my academic pursuits have been a source of constant motivation in completing this thesis. I extend my thanks to my uncle Mr. M. Siddaiah, brother Mr. A. Damodara, my sister-in-law Mrs. A. Sunitha for their help, encouragement and silent co-operation during the course of my higher studies. I owe my special thanks to my sister Mrs. Lakshmiraj Kumar, for her pray, help and encouragement. I am thankful to my nephews Chi. A. Madhu Sudhan and Chi. B. Monish Kumar for their cheerful cooperation during the period.

I am thankful to two towering personalities Dr. Pasupulati Hari Prasad Director, BOTH Hospital and Dr. Chadalawada Sucharitha, Correspondent, Krishna Teja Educational Institutes, Tirupati, for inculcating in me values like time sense, work culture, ethics and dedication to the task and the profession.

I am also thankful to Mr. A. Janardhana Reddy for his assistance in the laboratory during this period.

I acknowledge with thanks the support in the form of financial assistance from Defense Research and Development Organization (DRDO), New Delhi for sanctioning the fellowship.

I conclude with my sincere prayers to the Almighty whose kind blessings and divine direction have made my research work a rewarding reach experience.

A. MOHAN BABU