ACKNOWLEDGMENTS

First, I appreciate my God for life, strength and protection throughout the period of this program.

Though only my name appears on the cover of this work, a great many people have contributed to its production.

It is an immense pleasure to express my deep sense of gratitude and hearted indebtedness to my research supervisors, Dr Y. Munikrishna Reddy, Department of Physics, S.S.B.N. Degree & PG College, Anantapuramu for his esteemed guidance, invaluable help, constructive criticism and fruitful suggestions that are mainly responsible for the successful completion of the present work. It is indeed an extraordinary privilege for me to work under his inspiration and indomitable spirit. His enlightened, rich and varied experience helped me very much in understanding the complexities of the subject in the right perspective. He not only enriched my knowledge by his innovative ideas, concepts and suggestions but also gave moral support at various crucial stages from beginning to completion of the present work. I feel I really do not have words to fully express my thanks to him. I also thank his family for their affection.

My deepest gratitude and heartfelt acknowledgement is dedicated to my Co-supervisor Prof. K.T. Ramakrishna Reddy, HOD & Professor,
Department of Physics, Sri Venkateswara University, Tirupati, for his invaluable help and fruitful suggestions. His meticulous analytical approach, proficiency and prolificacy with the problem of the nature and broad outlook inspired my intellect greatly. I am deeply grateful to him for the long discussions that helped me sort out the technical details of my work. I am really thankful to him for his constant observation and continuous guidance. Because of his encouragement and support, this work has been completed successfully.

I express my special thanks to Sri P. L. N. Reddy, Correspondent, Dr. P. P. V. D. Naga Trisula Phani, Principal and Dr. K. Nirmalamma, former Principal, S. S. B. N. Degree & PG College, Ananthapuramu for providing the lab facilities and their continuous encouragement throughout the work. Also, my sincere thanks to Dr. K. Gopal Reddy and Dr. U. Venkata Ramana, Department of English, S S B N Degree College for their help in writing the thesis.

I express my profound thanks to all the members in the Department of Physics, S. V. University, Tirupati, for providing the experimental facilities in the department during my research.

I take this opportunity to thank my research colleagues, M. N. V. Prasad and T. Lakshmi Narasappa for their co-operation and timely help during my research work.

I would like to thank Dr. Padma Suvarna, HOD, Department of Physics, JNTU Ananthapuramu for her needful help.
My heartfelt regards to my beloved better-half Mr. G. Dinakar for his unbounded affection, sincerity truthful encouragement. He took more responsibility in order to complete not only this work but also my educational carrier to reach this level. I would like to place on record my deep sense of gratitude to him, with whose constant support and co-operation during this tenure. Because of his lovable encouragement, I completed this work without any interruption. Also, my lovable and unbounded affection to my lovely daughter G. Aasritha.

I am indebted to my respected and lovable parents and mother-in-law for their enormous support and strength throughout my research journey. Also, heartfelt thanks to all my family members and friends for their support and encouragement.

I extend my heartfelt thanks to all my colleagues in the Department of Physics, Sri Sathya Sai Institute of Higher Learning, Anantapur Campus.

I thank all the staff members in the department of Physics, JNTU Ananthapuramu who helped me directly or indirectly during my research work.

Finally, my sincere thanks are due to the authorities of Jawaharlal Nehru Technological University (A), Ananthapuramu for providing the necessary facilities to carry out this research work successfully.

Vedavathi Aluri