ACKNOWLEDGEMENT

I feel it my sacred duty to put on record my unfettered sense of gratitude and indebtedness to my supervisor Prof. M.S. Tiwari for his inspiring and valuable guidance and constant encouragement to me all through this work. To have carried out this work under his able guidance and vigilant supervision is both pleasure and privilege to me.

I feel highly indebted to Dr. (Miss) Poornima Varma, Co-Principal investigator, DST Project, Deptt. of Physics, Dr. H. S. Gour University, Sagar for his valuable guidance, moral support and encouragement to complete my work. In truth, it is her guidance which was available that led to the completion of this work.

I also seize this opportunity to express my heartfelt gratitude and most sincere thanks to Prof. R. S. Kasana, former Head, Deptt. of Physics, Dr. H. S. Gour University, Sagar and Prof. R. Nath, former Head, Deptt. of Physics, Dr. H. S. Gour University, Sagar, for imparting all necessary facilities within the means through out this work. I could feel handicapped and their constant encouragement and able guidance extended had been a source of inspiration to me.

My sincere thanks and gratitude are due to Prof. J. L. Thakkar, Deptt. of physics, Dr. H. S. Gour University, Sagar, whose unnerved help and valuable advice were always available to me.

My sincere thanks and gratitude are due to my seniors Dr. Anand Dwivedi (NPL, New Delhi), Miss Jaya Shrivastva, JRF in ISRO Project and Mr. Pavan Pathak, JRF at PRL, Ahmedabad, whose unserved help and valuable advice were always available to me.
Thanks are also due to the department employees and other staff of my department for their excellent cooperation and helpful behavior extend to me.

I express my thanks to my research colleague Mrs. Ruchi Misra, Mr. Shri Prakash Misra, Mr. Ram Kumar Nagarch, Miss Kirti Soni, Mr. Ganpat Ahirwar and Mr. Ashutosh Misra for helpful co-operation and fruitful discussions.

I am thankful to my friends Mr. Manish Khare, Mr. Rajendra Jain (MBBS), Mr. Prabhat Jwaria (BHMS), Mr. Bharat Lal Upadhayay, Mr. Rajendra Dixit and Mr. Kuldeep Tiwari for helpful behavior and assistance in the research work.

I am grateful to my honorable grand father Late Shri Jwala Prasad Shandilya (Freedom Fighter), who had inspired me with great enthusiasm much earlier for academic career through out my life which led to me for research work.

I am grateful to my Guru Mother Mrs. Parwatee Tiwari and her family members for their affection, support and sacrifices that enabled me to reach at my present position.

There is no friendship, no love, like that of the parents for the child, words rather sound sham and shallow to my thankfulness and gratitude for my parents because they are too fragile to carry out my colossal indebtedness. I owe them. I am and will remain ever indebted to my JiJi Mr. A. B. Rawat and my Didi Mrs. Ram Kumari Rawat for their affection and moral support during the odd times.
Above all I express my deep sense of gratefulness to my younger sisters Miss Rashmi Tiwari, Miss Deepti Chobey and Miss Ratna Tiwari for their affection and good wishes.

I would also like to express my thank for the award of Junior Research Fellowship by DST, New Delhi for the financial help provided to me, in the lack which this could not have been possible.

It is unvarnished truth that this treatise would have ever materialized in the absence of my dearest one, with whom I shared my joy and sorrows I am likely to miss many of those who have contributed in different ways, I am extremely thankful to those persons.

I express my thanks to Mr. Rajesh Pandey, Sai Computer Centre, Sagar for typing the manuscript.

(Rameshwar Prasad Shandilya)