ACKNOWLEDGEMENTS

I take this opportunity to express my heartfelt thanks to the numerous people who have helped me to shape and write this dissertation. I will not be able to thank all of them adequately and can only try to outline the extent of their assistance and guidance and indicate the measure of my gratitude.

It has been my high privilege to work under the able guidance of my respected teacher Dr. S. SIVIRAMAN Prof. & Head, Dept. of Physics, Dr. Hari Singh Gour V.V., SAGAR. As a scientist, teacher and a philosopher he has not only helped me to discover scientific truths but has influence me in a more permanent way by inculcating in me a spirit of devotion and dedication to work. His valuable suggestions and constant encouragement will, I am sure, help me in all walks of life. I am particularly thankful to fate and circumstances which took me to him. Research which often involves sheer labour, became a creative and enjoyable activity influenced by his light hearted explanations of fundamental truths. It is with a deep sense of reverence and gratitude that I avail myself of this opportunity to thank him.

I express my thanks to Dr. R.K.PANDEY who as my co-guide helped me in doing my experimental work and was at my side whenever I required help. All that I can say is that it would be nothing short of the greatest privilege for anyone to begin a career in physics to have worked under his supervision and I am no exception.
I have had from time to time, in the course of this work, and otherwise, to turn to my learned teachers for counsel and have on every occasion found them approachable for the same. I take this opportunity to acknowledge the incalculable help and support obtained from Prof. A.P. Shrivastav, Prof. S.P. Banerjee, Head of the dept. of Chemistry; Dr. (Smt.) Shanti Sivaraman, Reader English deptt.; Shri Anil Bajpayee, Asstt. Professor, Dr. P.S. Diwan, Dr. H.V. Verma, Dr. M.S. Tiwari, Dr. S.R. Agrawal, deptt. of physics, Shri R.V. Subrahmanyan, Asstt. Professor Sharma college Ongole (A.P.); Dr. S.N. Limaye, deptt. of chemistry, U.T.D. Sagar.

It is beyond me to express my appreciation for the unflinching help accorded to me by Shri Yaduendra Rohan, research scholar, deptt. of chemistry; Shri Sandeep Jain, research scholar, Dr. Ashish Verma, Dr. Poornima Verma, Mr. Shalish Shah, Mr. Narish Mishra, deptt. of physics; Mr. Prabath Diwan research scholar deptt. of Geology U.T.D. Sagar.


I shall be failing in my duty if I do not express my gratitude to my parents, and other family members, who have been a constant source of inspiration and tolerated me.