ACKNOWLEDGEMENT

It gives me great pleasure to express my deepest sense of gratitude and respect to my research supervisor Dr. R. Jeevan Kumar Professor, Department of Physics, Sri Krishnadevaraya University Anantapur, Andhra Pradesh India, for his constant help, persistent encouragement, inspiration and guidance throughout the course of this work. I am very much thankful to him for his co-operation, valuable discussions during the course of work and thought provoking suggestions, for which I am very fortunate and indebted to him.

I express my sincere gratitude to Dr K. A Krishnamurthy, Principal, Sri Siddhartha institute of Technology, Tumkur-5 for extending the necessary facilities and for his constant help in academic and research work. I am very much thankful to him for his special interest in my research work.

I am very much thankful to Dr. Ramananjanappa, BOS, Dr.Raghavendra Rao, HOD, Dr.Ramakrishna Reddy, Professor, Dr.Ramagopal, Assistant Professor, Department of Physics, Sri Krishnadevaraya University, Anantapur.

I would like to thank Dr. K. Jayanna, Chairman, Department of Physics, Kuvempu University B.R.Project Shimoga for his timely suggestions, encouragement and keen interest in my research work. Thanks are also due to Dr.Mahesh, Associate Professor, Department of Physics, Bangalore University, Bangalore.

From the core of my heart, I express a deep sense of gratitude to Dr. S.L.Bhat Professor, Indian Institute of Science, Bangalore.

I hereby acknowledge his help with gratitude. I have learnt a lot from him through the discussions that I had with him. I sincerely thank him for his timely and valuable suggestions and for going through the manuscript of the thesis.
It is pleasure to thank Dr. M.K. Veeraiah, professor and Head, Department of Chemistry, Sri Siddhartha Institute of Technology, Tumkur for granting permission to use pH meter and electrical conductivity measurement equipment for the water samples.

I can never forget the great help from Mr. G.E. Rudreshappa, Asst. Professor, Department of Chemistry, Sri Siddaganga Institute of Technology, Tumkur for providing Atomic absorption spectrophotometer to measure the trace elements from water samples.

I thank Prof. Veerabhadrappa, HOD Department of Physics, Sri Siddhartha First Grade College, Tumkur for extending lab facility to carry out some experiments and for the useful discussions.

I am very much thankful to Dr. Rangaraju, Professor, Department of Civil Engineering, Sri Siddhartha Institute of Technology, Tumkur, characterizing and analyzing the results of Physico-Chemical characteristics of borewell waters in and around Tumkur City.

I express my sincere thanks to Dr. Jagadeesh, Principal, Professor, Department of Civil Engineering, H.M.S. Institute of Technology, Tumkur, has given valuable suggestions for theoretical work. A logic diagram for using the Briggs equations to obtain the plumerise trajectory of bent over buoyant plumes.

Special thanks to Dr. Sanjeev Murthy, Dr. Ramamurthy, Dr. Harish Kumar, Dr. George Milton, Dr. T.K. Chandrashekar, Professors, Department of Mechanical Engineering, Sri Siddhartha Institute of Technology, Tumkur for their encouragement and help in many ways.

I am extremely grateful to Prof. D. Ramesh, HOD and Mr. Raviram, Assistant Professor, Department of Master of Computer Applications, Sri Siddhartha Institute of Technology, Tumkur given valuable suggestions for computer programming and regression analysis.

I express my sincere thanks to Dr. B. Siddalingappa, Professor & Head, Department of Physics, Raja Rajeshwari College of Engineering, Bangalore. Dr. H.K.T. Kumar, Professor and Head of the Department of Physics, Siddaganga Institute of
Technology, Tumkur and Dr. Fakruddin, Professor and Head of the Department of Physics, Gousia College of Engineering, Ramanagara, for their valuable suggestions through discussions.

I wish to thank Research Scholars Mr. Vasu Babu, Mr. Paul and Mr. Lingaraju and Mr. Muralidhar for their company and encouragement.

I also remember the enjoyable moments; I spent with Dr Shiva Kumar Professor and Head Department of Chemistry, P.E.S. College of Engineering, Shimoga, Dr Shashidhar Associate Professor, Department of Chemistry, S.D.M. College of Engineering, Dharwad, Dr. H.M.Suresh Kumar, Assistant Professor Siddaganga Institute of Technology, Tumkur the constant emotional support and encouragement.

The sacrifice of my parents Sri M.Shivalingappa and Smt. Rudramma, brothers, sisters and my father in-law are worth recalling at this juncture. They have been a constant source of inspiration without whose encouragement this work would not have been possible.

Words fail to express the patience with which my wife Smt. Sunitha and my son Master Anush supported all through, their constant encouragement gave me the moral and mental support, which I needed in large measure during the course.

Last but not the least, I acknowledge my sincere thanks to those who were my source of inspiration and joy.

M.S.Rudresha