Acknowledgements

I owe, my deep debt of heartfelt gratitude to my research supervisor Prof. G. V. Subba Reddy, Vice principal & Head of the department, Department of Chemistry, JNTUACE Pulivendula, YSR (Kadapa), A.P., for giving me a great opportunity to work under his valuable guidance, for his support throughout my research work and he also guided my maturation as an independent, confident and strong researcher. It is due, on my part, to express my heartfelt thanks to his good wishes and kind treatment shown on me.

An expression of gratitude will not bare paying my obligation to my research co-supervisor Prof. S. V. Satyanarayana, Department of Chemical Engineering, JNTUACE Ananthapuramu, A.P., who taught the careful research discipline, given valuable suggestions and guided patiently. Without his unstinted support, scholarly guidance and above all, his warm affection, this challenging study could not have taken a concrete shape. I am in great debt to my guru, philosopher, who not only instructed me in my work, but also opened the path for higher knowledge. His guidance is the next best thing to knowledge, which I will cherish throughout my life. It is due, on my part, to express my sincere thanks to all the family members and relatives of my co-supervisor for their good wishes, shown affection on me and treated me as a family member.

I am thankfully acknowledging the financial assistance [No. 2008/36/77-BRNS/4010, dated: 23/03/2009] extended by the Board of Research in Nuclear Science (BRNS), Mumbai, India to conduct this study.

I deeply express my thanks to Mr. A. Murad Basha, who is my colleague, Co researcher, roommate, well wisher and so on. I hereby record my deep sense of heartfelt thanks for his kind cooperation during the entire course of research.
I would like to express my deep thanks to the Principal, JNTUA College of Engineering, Ananthapuramu and The Head, Department of Chemical Engineering, JNTUACE, Ananthapuramu for providing the necessary facilities and the support to carry out the work.

My special thanks to Mr. A. Ram Subba Rao and Mr. B. Narasimhulu, Non-teaching, JNTUACE Ananthapuramu for their kind co-operation and valuable help to carry out field work in the sample collection.

I always convey my special thanks to my friends, Mr.G. Jayaramudu, Mr. G. Mallikarjuna, Mr. K. Nagarjuna, Mr. P. Ramanjaneyulu, who involved in my research, helped and gave sincere support to carry out field work and laboratory analysis, besides providing me healthy company in lab during the course of this research, they have also proved to be valuable friends.

I am extremely thankful to Dr. A. Vinod Kumar, Scientist, BARC, Mumbai, Mr. K. Viswa Prasad, Ms. P. Padma Savithri, Mr. Anil Balbude, Mr. R. Balaram, Mr. Srivastava Santhosh Kumar, Scientists, NFC, Hyderabad, for their kind cooperation and help during my research, particularly in radioactive analysis.

I also express my special thanks to Dr. V. Balaram, Director, Dr. M. Satyanarayana, Dr. A. Kesav Krishna, Mr. Saripoot Sawant, Scientists, NGRI, Hyderabad, for their kind help to estimation of trace metals in water and soil by ICPMS and XRF technique respectively.

I am thankful to the teaching and non-teaching staff of Chemical Engineering, JNTUACE Anantapur, especially for their moral support and stimulating discussions, friendly nature throughout the course of my research work.

I am very much thankful to my well-wishers, Mr. P. Jagan Mohan Reddy, Mr. V. Ramesh, Mr. B. Nagendra, Mr. K. UmaMaheshwar Reddy, Office Staff, IRP& SCDE, JNTUA for
their moral support, encouragement, friendly nature and made a pleasant stay at Anantapuramu.

I am deeply indebted and express profound sincere gratitude to my paternal Grand uncle Sri. Boga Lakshmi Kanth garu and his family, for their constant encouragement, given direction like “Diksuchi” to take chemistry subject, moral support throughout my education and highly influenced me by motivational suggestions in particular at the early stages of my studies.

I ever remember the good wishes, dignified support and encouragement and whole hearted support in each and every aspect of my entire academic career which I received from my ‘Guru Dhevullu’, Mr. S. Kesavaiah garu, Rtd. Head-master, ZPHS, Palamangalam, Dr. A. ArunKumar and Dr. K. Ramesh, Sri Sai Jyothi Jr. College, Puttur, Smt. P. Sreedevi and Mr. P.V. Ramana, Sheshachala Degree College Puttur, Chittoor (Dist), A.P.

I always convey my special thanks to my well-wishers Ms. K. Dhanalakshmi, Velammal Institute of Technology, Thathur, Chennai, Mr. C. Ravichandra and Dr. C. Ramachandraiah, SKIT, Sri Kalahasti, Chittoor (Dist) for their valuable information to join in this research at JNTUACE, Ananthapuramu.

In spite of all the efforts, I could not have finished this thesis without the constant support and encouragement of my beloved parents, I owe, my deep sense of gratitude and heartfelt thanks to my parents, Smt. N. Rathnamma and Sri. N. Vasudevaiah and to my dear sister Miss. N. Mothi Lakshmi for their well wishes and whole hearted support.

By N.YASOVARDHAN........