ACKNOWLEDGEMENT
ACKNOWLEDGEMENT

I have a great pleasure in experiencing sincere gratitude to my guide Dr. B.E. Basavarajappa, Professor, Department of Chemistry and Environmental Science and Technology Study Center (ESTSC), Bapuji Institute of Engineering and Technology, Davanagere, for his supervision and valuable guidance during the present study period.

It is my privilege to express my sincere gratitude to my Co-guide Dr. E.T. Puttaiah, Professor of Environmental Science, Kuvempu University, Shankaraghatta for his valuable guidance and encouragement during the course of investigation.

My sincere thanks to Management of Bapuji Educational Association (Regd) Davanagere, Prof. Y. Vrushabhendrappa Director, and Dr. B.T. Achyuth, Principal, BIET, Davangere for having provided all facilities, encouragement and academic support.

It is my privilege to express my gratitude to Dr. S. Manjappa, Professor and Head of the Department of chemistry, Dr. S. Shanmukhappa, Professor of chemistry, Dr. Basavarajappa Professor and H.O.D of mathematics, Prof. S.A. Gangaraju, Geology Department, BIET, Davangere for their valuable suggestions and encouragement.
My thanks are due to **Smt. Shakunthala Basavarajappa** and **Chi. Meenakeshi B.** for their concern hospitality and encouragement throughout my research work.

My sincere thanks to **Smt. Susheela Puttaiah** and **Smt. Shobha Narayana** for their encouragement throughout the tenure of this research programme.

I am ever grateful and with the benign blessings of His Holiness **Sri Sri Sri 1008 Sri Shrisaila Jagadguru Umapathi Panditaradhya Shivacharya Mahaswamiji.** I remain ever grateful to Late **Sri G.M. Basavaraj,** former Vice President, **Sri. M.S. Basavaraja Swamy,** Vice President. **Prof H.A. Bhixavarthimath,** Principal, **Prof B.H. Vishwanath,** Principal S.J.P.V.V Peetha (R), Harihar for their support and their encouragement for my research work.

My sincere thanks to **Prof. P. Sudhamshumouli,** H.O.D. of chemistry, S.J.V.P. College, Harihar for his moral support encouragement during the course of this investigation. I owe success of my work to the encouragement and blessings of my professors in the chemistry department, **E. Rajanna** and **Dr. K.G. Kariyanna.**

I sincerely thank **Prof. B.B. Nandyal,** H.O.D. of Botany, S.J.V.P. College, Harihar for having provided all laboratory facilities, encouragement and academic support. I express my humble thanks to all of my friends, colleagues, **Smt. Rekha Ravikumar, Anjum**
Subhani, Shethal Naik and my lovely students Basavaraj and Prashanth for their timely help and encouragement and support.

With the great pleasure I express my thanks to Prof. Indumathi, Principal, for her moral support extended during this course of investigation. I express my thanks to Prof. M. Madhuramma, H.O.D. of chemistry, and all the staff members of the department of chemistry, A.V.K College for Woman, Davangere.

The help rendered by Dr. Sangam, Bio-Statistician, J.J.M. Medical College, Davangere and Dr. S.L. Arunkumar, Lecturer in Applied Geology, G.M.I.T College, Davangere are highly remembered.

The services and help by Dr. B. Suresh, Lecturer, K.B. Mahesh, Technical staff, K. Basavaraju, Mechanic and staff of ESTSC and chemistry, BIET, Davangere are rememberable.

I am thankful to the authorities of Taluk Health Office (THO) Harapanahalli, Office of Assistant Director of Agriculture department, Assistant Executive Engineer irrigation department, Harapanahalli for their help in providing relevant data for my research work.

The blessings of my father-in-law Dr. Chandashekarappa Angadi, Mother-in-law Smt. Rekha and moral support of my husband, Sri Jagadeesh Angadi, B.E, Brother-in-law Sri Prakash Angadi, B.E, Co-sister Savitha, M.Sc and daughter Chi. Raghavi Angadi, all Angadi family members, relatives during the course of study are unforgettable.
With great pleasure I am gratefully indebted to my parents Sri. H. Siddappa, A.E.E. and Smt. H. Rudramma, my younger brother Dr. H. Mallikarjuna, Senior Lecturer and H.O.D of chemistry, my elder brother Mr. H. Manjunath, M.Tech Lecturer in Civil Department, S.D.M.Jainmatt Trust (Regd). A.G.M.R. College of Engineering and Technology Navagrah Theerth, Varur, Hubli, for their timely critics and constant encouragement during the course of my Ph.D. studies.

With deep sense of gratitude, I thank Sri. V. K. Patil, B.E., Jalajakshi Patil and Son-in-law Rakshit Patil, and my grand father Sri. K. V. Patil, grand mother Smt. Girijamma Patil and all Patil family members for their support during the course of investigation and in my overall welfare.

(Smt. Vidyavathi. Hagaranur)