ACKNOWLEDGEMENTS

It gives me immense pleasure to express in words my heartfelt gratitude and indebtedness to all those who have been there all the while during my research period, lending their help in every possible way.

It is with all sincerity and high regards that I express my deep sense of gratitude to my guide Dr. Rija N Kumar, HOD, Department of Biological and Environmental Science, NVPAS, Sardar Patel University, for her meticulous guidance, persistent encouragement, inspiring discussions and valuable suggestions throughout this investigation. I consider myself fortunate that during this formative period, I got a chance to associate with her who has given me the much needed boost. I will ever remain grateful to her for her wise counsel, unfailing attention and for suggesting me an interesting problem and guiding through its solutions. I owe her a great deal for instilling in mean uncompromising sense of perseverance in the quest for success. This thesis would not have seen the light of the day without her support and care.

It is my pleasant duty to express my gratefulness and sincere thanks to my co-guide Dr. Nirmal Kumar, J.I., Professor and Head, P.G. Department of Environmental Science and Technology, ISTAR, Sardar Patel University, for providing me the necessary facilities to carry out the research work apart from his inspiration throughout this investigation. I am also thankful to Dr. Nirmal Kumar, J.I. for selecting me and giving me an opportunity to work as Project fellow in FES, Anand sponsored project and providing me fellowship during my tenure of research period.

I am greatly indebted to Director, Sophisticated Instrumentation Centre for Applied Research and Testing (SICART), Vallabh Vidyanagar for his encouragement, valuable suggestions and allowing for instrumental analysis during my research tenure.
My special thanks to Dr. Basudeb Bakshi, Principal, NVAS and Dr. B. G. Patel, Ex VC, SPU and Ex Director, Institute of Science and Technology for Advanced Studies and Research (ISTAR), Vallabh Vidyanagar for their moral support and providing research facilities throughout this work.

I am thankful to my research group members Dr. Shajish P.R., Dr. Basil George, Dr. Cini Oommen, Dr. Shailendra Vidyol, Dr. Anubhuti Bora, Dr. Manmeet Kaur Amb, Dr. Manishita Das, Dr. Sudeshna Chakraborty, Dr. Hiren Soni, Mr. Narendra Patil, Dr. Kanti Patel, Ms. Mansi Banker, Ms. Annie Abraham and Mrs. Payal Desai for their help and providing a good working atmosphere.

I would also like to acknowledge to my best friend Dr. Sandip Patel, Mr. Manharsinh Raj, Mr. Kalidas Manchhi, Mr. Navjyotsinh, Mr. Raysinh Jadav and other staff members of my school for his valuable suggestions, moral support during the work.

I am grateful to FES, Anand (Foundation for Ecological Security) for providing me the fellowship to complete this research work.

My heartfelt gratitude to my parents, my wife Mrs Rekha Bhoi, my beloved daughter Nidhi and son Meet and other family members for their love and support during the tenure. My deepest gratitude goes to my family for their unflinching love and support throughout my life; this thesis is simply impossible without them. Last but not least, thanks to Almighty for being with me to clear all obstacles that came in my way during the tenure. You have made my life more bountiful. May your name be exalted, honored, and glorified.

Finally, I would like to thank everyone who directly or indirectly contributed to the successful realization of thesis, as well as expressing my apology that I could not mention personally one by one.

ROHIT KUMAR BHOI