ACKNOWLEDGEMENT

The submission of this Ph.D. thesis gives me immense pleasure, satisfaction and unique sense of accomplishment despite many difficulties and troubles that came in its way. Of course it is a fact that such endeavour is never possible without the help of many persons in one way or the other. Naturally I cannot miss this opportunity to convey my sincere thanks and heart-felt gratitude to all those who helped me to make this task possible in its present fruitful form. The first and foremost I offer my sincerest gratitude to my guide Dr.D.P.Bharambe for his systematic guidance and expert suggestion throughout my work. His receptive attitude, untiring enthusiasm and positive approach always remain a source of inspiration. His erudition and rich experience shaped the course of the research and sharpened its outcome.

I wish to express my deepest thanks to, Head, (Prof) R. C. Tandel and Dean, Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda, Vadodara, Applied Chemistry Department for providing necessary facilities throughout this work.

I extend my sincere gratitude to, my colleagues and friends of Applied Chemistry Department, for every help they did and for keeping good environment during the research work.

I am highly thankful to Teaching as well as Non-teaching Staff of Applied Chemistry Department for their standing help and guidance.

I am greatly thankful to Dr.Vimal Patel for providing help and guidance. I am highly thankful to Dr.Jitendra Kaila to carry out experiment work in his laboratory. I am very much thankful to my colleagues Mr.Kalpesh Hedapara, Dr.Arun Suthar, Mr.Lalit Katariya, Mr.Rohit Jadhav, Mr. Mahesh Parmar, Mr.Biren Shah, Mrs.Khyati Mistry, Mr.Yashraj, Dr.Hardevsinh Vala, Mr. Bharat Paghdar, Dr. J. B. Sainani, Mr.Gaurav Patel, Mr.Anil Savaliya, Dr. Dhanji Rajani, Dr. Vipul P.Patel and Mr.Paresh Rasadiya.

My deep gratitude to my mother Mrs. Urmilaben P. Davadra, father Mr. Pravinchandra R. Davadra, my sisters, brother Mr. Hiren Davadra and his family. My deep gratitude to my beloved wife Mrs. Chital M. Davadra for being with me all the time and showing immense faith in me to carry out this work. Without their support this thesis would not have been possible. I would like to appreciate my children Palak and

Aaditya for their love and sacrifice which was important to the successful realization of thesis. I would like to thank my in laws and my entire family for constant encouragement.

Once again my gratitude, thankfulness and appreciation to each and every one who has contributed to this research endeavour in one way or the other.

Maheshkumar P. Davadra

Dedicated to My Parents, Wife and Children