Happiness is the real sense of fulfillment that comes from hard work. It is not possible to express my profound gratitude in words, to my research guide Dr. (Mrs.) R. S. Salunkhe, Associate Professor, Department of Chemistry, Shivaji University, Kolhapur, for her most competent and foreseeing guidance coupled with incessant encouragement at all phases of this work. Her involvement in the minutest of the details has given this thesis in the present form. It gives me immense pleasure to express my deep sense of gratitude and indebtedness to my research guide.

I express my sincere thanks to Honorable Vice Chancellor, Prof. N. J. Pawar, Shivaji University, Kolhapur, for his constant encouragement during the research period.

I am very much thankful to Prof. M. A. Amuse, Head, Department of Chemistry, Shivaji University, Kolhapur and Prof. S. R. Patil, former head, for providing facilities to carry out the experiment and complete this work. I am also thankful to Prof. M. B. Deshmukh, Head, Department of Agrochemical and Pest Management, Prof. (Dr.) P. N. Bhosale, Co-Ordinator, Applied Chemistry and Prof. P. P. Hankare, former head for their good wishes and whole hearted support.

My sincere thanks to Prof. G. S. Gokavi, Dr. U. V. Desai, Dr. D. M. Pore, Dr. K. M. Garadkar, Dr. G. B. Kolekar, Dr. S. S. Kolekar, Dr. S. S. Chavan, Dr. D. H. Dagade, Dr. P. V. Anbhule, Dr. S. A. Sankpal and other teaching staff for their kind support during my research work. I am also thankful to the non-teaching staff of the Chemistry Department and all the members of the university office. I take this opportunity to thank the staff member of USIC and CFC for their kind assistance in providing characterization facilities.

I must acknowledge my sincere thanks to Council of Scientific and Industrial Research, New Delhi for awarding me the Junior Research Fellowship for my Research work.

I owe tremendous debt to Dr. Mama Deshmukh Sir and Dr. P. P. Wadgaonkar, Scientist, NCL, Pune, for their valuable suggestions and encouragement during this work. I am grateful to Dr. G. S. Rashinkar for his valuable help, suggestions and advice in carrying out my research work during the course.

My special thanks to my laboratory colleagues Dr. P. Salokhe, Dr. K. Mote, Dr. S. Kamble, A. Kumbhar, S. Pore, A. Suryawanshi, A. Mane, M. Barge, S. Arde, S. Jadhav, S. Ramat, V. Gaikwad, R. Kurne, J. Jadhav, for their cheerful co-operation and help in every aspect
throughout this work, I am deeply grateful to Makarand, Dr. Anand, Dr. Kedar, Dipak, Pandav, Dr. Prathamesh, Namdev, Netaji, Prakash, Suvarna, Dhanashri, Seema and Neeta for providing me help.

I would like to extend my thanks to Dr. D. S. Bhange, Prakash Sane, Ankush, Rahul (NCL-Pune) for fruitful discussion and suggestions during the course. My special thanks to my friends Pallavi, Sunita, Prema, Dr. Taru and Pragati for their friendly suggestions.

On this occasion, I must remember my younger sister, Dr. Sharmila. She is not only my sister but also a best friend, a good critic and strong supporter whom I love a lot. I am thankful to my Aaka-Tatya, Bharat, Mama-Mami, Mohanbhou, Suraj, Sujata, Swapnil, Kalpesh, Snehal, Sagar, Rohan, Pratik, Sujit-Sumit, Sonu, Manisha, Anuja, Shrikant, Rohit, Parth, Viraj, Sris & Aniket for every kind of help and back-up they given.

I am deeply grateful to my parents Aai-Pappa, Anna-Aai & my husband Mr. Popatrao for their encouragement and support throughout my carrier.

Finally I bow to the almighty for bestowing upon me the necessary strength, patience and competence to complete my assignment successfully.