Acknowledgement

This thesis dissertation marks the end of a long and eventful journey for which there are many people that I would like to acknowledge for their help, support, and guidance. I could not have done what I was able to do without them. The moments are rare when one gets the opportunity to look back and thank all those people who have directly or indirectly helped at the time of need to make ones work a success. I, today, grab this opportunity to gratefully thank them all.

First and for most, I want to thank my research guide, Prof. (Mrs) Meenu Saraf who has always been supportive. Without her, this thesis would not have been possible. Above all and the most needed, she provided me unflinching encouragement and support in various ways. Her ideas and passions in science exceptionally inspire and enrich my growth as a student and a researcher want to be.

I express my thanks to Prof. S.R. Dave, Head of the Microbiology Department for his sincere and useful suggestions and for providing me whole hearted encouragements.

I would like to express my sincere appreciation to Dr. B.V. Patel, Dean, Faculty of Sciences, Gujarat University for his constant support and suggestions in academic as well as administration work whenever I needed.

I would like to thank Dr. Devyani Tipre as well for all of her advice and support.

My special thanks to Mr. Bharat Trivedi, Mrs. Deepti Shah, Mr. R. K. Parikh, Mrs. Yamini Savalia for maintaining our academic schedule and reminding us of official things to be done and providing us with needed chemical available in the store.

I grab this opportunity to thank our non-teaching staff Mr. Khandubhai Rathod for their continuous support and Mr. Dharamshi Solanki for his valuable help during my pot and field study.
I also sincerely appreciate the support from all the members from workshop department especially to Mahendrabhai, Pratapbhai, Rajubhai and Ranchhodkaka.

I would like to put on record the good times spent with my laboratory colleagues Chaitanya, Dhara, Urja, Ankita, Stuti, Shabnam, Shradha and Tisha for their constant encouragement, support and help during my work.

Many thanks to present research scholars of this department Faisal, Dipali, Tarlika, Monal, Kruti, Mamta, Avanididi, Darshanadidi, Kinjal, Riswana, Sufia, and the past Ph.D students Neelam, Viral, Riddhi who encouraged me, supported me, and gave me help with my thesis work.

My thanks to Prof. (Mrs) S. K. Menon, Head, University School of Sciences, for helping me in VOC’s from Mass spectrum.

My sincere thanks to Dr. Ujval Trivedi, Dr. Rachan Bhatt and Mr. vimal Prjapati Biosciences Department, Vallabh Vidhyanagar for helping me in statistical optimization of cellulose enzyme which really helped me in my research work.

I would like to express thanks to Mr. Hardik Shah, Assistant Professor, Shri A.N.Patel P.G.Institute, Anand for helping me to study Bioinformatic approach of cellulase protein.

I would like to express thanks to my colleagues Miss Deepa Thomas and Mr. Pankit Shah, Assistant Professor, Rai University for helping me in thesis writing.

Where would I be without my family? My parents deserve special mention for their inseparable support and prayers. My Father, Vasantial Thakkar in the first place is the person who put the fundament my learning character, showing me the joy of intellectual pursuit ever since I was a child. My Mother, Sarmista Thakkar is the one who sincerely raised me with her caring and gentle love. They managed to pull trough and did whatever they could do best in taking care of my very small daughter Lali, given the daughter in question! Their love and kindness fill up my heart. I sincerely feel proud
of being a part of this family. Any words of thanks will reduce the sacrifices they have
given for me. My elder brother, his wife and their son, thanks for being supportive and
caring. Many thanks to my younger brother for helping me in thesis writing.

How can I forget Twara, my Daughter, my friend and my source of entertainment during
busy and sometimes boring schedule of work! She has been a constant source of
strength and power in all circumstances.

Words fail me to express my appreciation to my husband Deepak whose dedication,
love and persistent confidence in me, has taken the load off my shoulder. I owe him for
being unselfishly let his intelligence, passions, and ambitions collide with mine. He
always encouraged me to work hard and it is only due to his patience and persistence
that I could achieve dream in my life.

I have no words to describe the efforts of my family in law. Indeed I consider myself very
lucky to have such a supportive and helpful family and therefore I am lovingly thankful
to my mother-in-law and father-in-law.

Last but not the least I would like to thank the Almighty God for blessing me with
strength, intelligence and patience to conduct this research.

If I did not mention someone’s name here, it does not mean that I do not acknowledge
your support and help. Thanks to all those who have helped me in all small and big
possible manners Again, I would like to thank everyone who supported and helped me
during my Ph.D. study.

(Aarti Thakkar)