ACKNOWLEDGEMENT

I take this opportunity to express my gratitude to everyone connected to me, but a few names will appear here. Without their unstinted support and wishes, my PhD life would not have been memorable, successful and meaningful.

I would like to start with the person who made the biggest difference in my life, my mentor, Professor Anil Kumar Dikshit. He has been a living role model to me, taking up new challenges every day, tackling them with all his grit and determination and always thriving to come out victorious. I’m fortunate to get opportunity to work under him and am grateful for his patient supervision, unfailing support, encouragement and above all - freedom! freedom to think, freedom to try, freedom to fail. He inculcated in me the basic concepts of research and showed me ways to look at science. I thank him for his involvement in both my research and my personal development.

I extend my sincere word of thanks to the members of my thesis advisory committee, viz, Dr. A. M. Bhagwat, Dr. M. Sheshadri, Dr. Purvi Bhatt and Dr. Chhaya Sawant. Dr. Bhagwat provided me with valuable inputs in developing this project. He was always available and supportive for discussions, even after his retirement, especially during the infancy of the project. I am blessed to get an opportunity to learn from him. My sincere thanks are due to Dr. Sheshadri, for his suggestions, comments and guidance throughout this project. He was very supportive and gave valuable inputs that helped me finish my work. Thanks are also due to Dr. Bhatt & Dr. Sawant for valuable discussions from time to time.

My special words of thanks should also go to Dr. Aparna Khanna, Dean, School of Science, for her encouragement and support throughout my project. She is very
supportive, smiling, caring and I never had to return empty handed whenever I approached her for any help.

Words are not enough to describe the help rendered to me by Dr. Nancy Pandita, especially during my ‘not so good’ days! I wish to express my heart-felt gratitude to Nancy mam and I cannot forget her.

I would like to acknowledge the support provided by Prof. Sunil Shirvaiker, who has a unique ability to convince students in areas of statistics & personality development. Discussions with him are always enjoyable and motivating. Thanks are also due to Dr. Dhananjaya Sarnath for critical evaluation & helpful suggestions.

I am very grateful to Dr. Arindam Sarkar, Chemical Engineering Department, IIT Bombay, for providing me with an opportunity to learn and work on cyclic voltammetry in his laboratory. I am thankful to Dr. V. V. Ranade, Head of Microbiology Department, G. N. Khalsa College, for fruitful discussions during the initial stage of my project. I am grateful to Dr. Ulhas Kharul, Division of Polymer Science and Engineering, National Chemical Laboratory, Pune, for providing me with graphite plates. My sincere thanks to Mr. Lalit Negi, Momentive, India, for providing antifoam agent immediately and without any hesitation. Thanks are due to management and staff of the distillery for allowing me to take samples. I am very grateful to Prof. Prasad Joshi, Head of Electronics Engineering Department, D. J. Sanghvi College of Engineering, for the facilitating me in understanding and selecting the data logger for my work.

I would like to acknowledge the non-teaching staff of SOS, Mrs. Madhuri Khanolkar and Mrs. Manasi Naik for their friendly co-operation and taking my care in the administration part, which allowed me to focus on my project.
My acknowledgement will never be complete without the special mention of my dearest friend Harita Parikh for her unconditional support in my thick and thin, for all the discussions and being there for me all the time. I will never forget our joyful spare time and preparation of time tables, to-do lists and discussions during the coffee breaks. Special thanks are also due to my dear friend Ronak Khokhani, who was always available for me. His always supportive and encouraging talks helped me finish my project faster.

My heartfelt thanks to my fellow labmates from School of Science: Viraj Yele, Mayuri Pillai, Krishna Deshpande, Roshani Vyavaharkar, Viraj Gala, Ridhhi Jholapara, Vinita Apraj, Mugdha Kunte and Nirmla Thakur. Thank you all for great help in my daily life and make it more comfortable working at SOS. I would also like to express my gratitude to my colleagues & friends from IIT Bombay, Nagabhushan Billiangadi, M.A. Shabbiimam, Ramjee Chaudhary for their support, encouragement, nice discussions and precious friendship. I would also like to thank Sachin for helping me in cyclic voltammetry experiments and analysis.

Finally I would like to thankfully put on records the financial assistance gives to me by Department of Science and Technology, Government of India, though INSPIRE fellowship.