

### Acknowledgements

*The accomplishment of this research work would not have been possible without the support and cooperation of many people. First and foremost, I would like to express my sincere gratitude to my guide, Prof. Anuradha S. Nerurkar, for giving me the opportunity to work under her guidance. Her constant guidance, support and encouragement made this journey beautiful. Her caring behaviour and soft spoken nature makes her one of the best Ph.D. guide. I have been a great admirer of her dedication and commitment to work. No words can be enough to acknowledge her contribution to my growth.*

*I am also thankful to Prof. Upendra D. Patel, from the Department of Civil Engineering, Faculty of Technology and Engineering, The Maharaja Sayajirao University of Baroda, for all his help with the MBBR studies. His advice and help have been valuable assets to this research work. I acknowledge the contribution of Prof. Upendra D. Patel in the design of MBBR.*

*My sincere thanks to Prof. Sanjay Ingle and Dr. Jayshree Pohnekar for being members of my Doctoral Advisory Committee and for giving me valuable suggestions and comments during annual presentations.*

*I am extremely grateful to Prof. G. Archana, HOD, Department of Microbiology and Biotechnology Centre, Dr. Pranav Vyas, Dr. Nandita Baxi, Prof. Devarshi Gajjar, Dr. Ratika Srivastava, Prof. Mrinalini Nair, Dr. Rajesh Patkar, Dr. Pushpendra Singh and Late Dr. Johannes Manjrekar for their valuable suggestions and all the help they provided.*

*I am also thankful to Prof. Datta Madamwar and Dr. Prachi Singh, from the Post Graduate Department, Department of Bioscience, S.P. University, for providing me the opportunity to learn about Sanger sequencing.*

*I am grateful to my senior lab members Dr. Vihang Thite, Dr. Mihir Sarang, Dr. Abhi Shah, Dr. Mansi Agrawal and Swati Telang for their constant support and guidance. I am also thankful to Dr. Abhi Shah who has supported throughout. I am also thankful to my junior lab members, Ajinkya Thakre and Shivani Raval for their help.*

*I am also thankful to my senior, Ashtaad Vesuna, for proofreading my thesis. Other respected seniors from the department are Dr. Sweta Talreja, Dr. Jitendra Gosai, Dr.*

## Acknowledgements

---

*Jaswinder Kaur Saini, Dr. Siddhi Vora, Shubhangi Pandey, Juliya Thomas, Anand Dave, Dipeksha Hansoti, Prachi Gandhi, Dr. Niralee Patel and Dr. Hasmatbanu Buchad for helping me whenever needed.*

*I am also thankful to my juniors, Krishna Patel, Vipul Bhinsara and Santosh Burud for their help.*

*I am also thankful to my friends Hiral Patel and Humayara Khan for their help and support whenever needed. I would also like to thank Yagnesh Thakkar for providing me with carriers and effluent for my research work.*

*Special thanks to the M.Sc. dissertation students who came as dissertation students and became good friends, Debasmita Mohanty, Harita Parmar, Rinal Chavda, Debarshi Mukherjee, Gaurav Patekar, Sandesh Telang and Shivani Singh for providing me helping hand with my work.*

*I am thankful to the non-teaching staff members, Mr. Shirish Nagarkar, Mrs. Aparna Shirsat, Mr. Praveen Vankar, Mr. Bharat Talati, Mr. Nirmalkumar Mandwekar, Mrs. Sima Patel and Dr. Harsukh Tank who were always ready for help whenever needed.*

*I am grateful to DBT, University Research Scholarship and SHODH for providing me with a fellowship; MEDGENOME, Bangalore for metagenomic sequencing; ERDA for SEM analysis; Department of Chemistry M.S.U Baroda for FTIR analysis and LiberAnnex for analytical training and service for GC analysis. I am also thankful to DST, GOI and the FIST programme for instrumentation facilities.*

*My gratitude is inestimable towards my parents, Jagdish Patel and Heena Patel, and my younger brother, Aadarsh, for being my constant support.*

*Finally, I would like to thank God for giving me the strength to complete my work successfully.*

*Roshni J. Patel*