ACKNOWLEDGEMENTS

It was a great pleasure to work in an environment like Tezpur University. First and foremost, I extend my deep gratitude to the Honorable Vice Chancellor, Professor Vinod Kumar Jain Sir of Tezpur University for giving me such a platform to carry out my research work.

I deem it to be my prerogative to express my sincere and heartfelt sense of gratitude to my supervisor and mentor, Prof. K. K. Baruah Sir for his intellectual and inspiring guidance throughout my Ph. D journey. Without you, it won't be possible anything on my part. You are a great source of inspiration for me, a person of ceaseless dedication, discipline and an influential teacher. Thank you sir for guiding me through thick and thin. I am highly indebted to you.

I extend my sincere thanks to my Doctoral Committee members; Dr. Nirmali Gogoi Ma'am and Dr. Amit Prakash Sir of the Department of Environmental Science, Tezpur University and Dr. Rulee Baruah Ma'am of Prince of Wales Institute of Engineering & Technology, Jorhat, Assam for their valuable suggestions and critical comments, which helped me to improve my thesis works.

I am also very grateful to the Head of the Department of Environmental Science Dr. Ashalata Devi Ma'am along with other teachers of the Department viz. Prof. K. P. Sarma Sir, Prof. A. K. Das Sir, Prof. R. R. Hoque Sir, Dr. S. S. Bhattacharrya Sir, Dr. Sumi Handique Ma'am, Dr. Nayanmoni Gogoi Ma'am, Dr. Santa Kalita Ma'am and Dr. Pratibha Deka Ma'am for their support.

I express my deep sense of gratitude to the staff of the Department of Environmental Science, particularly Jintu (Sarma) da for his every possible unconditional helps, support and constructive advice whenever I needed, especially for his help in identifying the plant species of the study site; Jayanta (Bora) da for his technical guidance during servicing of the instruments, Pranjal (Goswami) da and Partha (Basumatary) for their all-round help and support during this journey.

Thanks are due to Indian Institute of Tropical Meteorology (IITM), Pune for providing me a fellowship through the project under Metflux India "Soil plant atmosphere study in relation to net CO_2 flux from terrestrial ecosystem of Assam" and for giving me opportunity to participate in various workshops on Eddy Covariance technique which helped me a lot in solving the technical problems related to the Ph.D work. I worked as JRF and SRF in the project and it was part of my research work. Thanks to my supervisor and Principal Investigator, Prof. K. K. Baruah Sir for having confidence upon me. Thanks are due to the administrative and financial staff of Tezpur University for their co-operation during the course of my work.

I would like to acknowledge Dr. Anand Karipot Sir of Savitribai Phule Pune University and Dr. Supriyo Chakraborty Sir of Indian Institute of Tropical Meteorology, Pune for their generous help during my research work.

No research is possible in isolation. My heartfelt thanks goes to my lab mates of Research Lab-I (Environmental plant physiology & greenhouse emission) Parijat ba, Leena ba, Anushree ba, Ashmita ba, Nirmali ba, Dipti, Abhijit and Tadyut for their every point help. Working in forest and laboratory requires a friendly and supportive environment, which was provided by you all.

I will remain ever grateful to all my friends Saurabh, Bikash, Anjalu, Nilutpal, Debabrat, Mandeep and Manab for their continuous support and motivations. Thank you for being with me in my good and bad times too. I am very much thankful to Dr. Rajesh Shah for preparing the map of the experimental site.

I acknowledge the help and support provided by the Forest Department, Govt. of Assam for giving necessary permission to carry out the research work at Kaziranga National Park. Thanks are due to the Range Officer of Burhapahar Range Office and all the forest guards for helping me in each and every site visit, without their support frequent site visit inside the forest would have not been possible.

I accolade my highest respects to Maa and Deuta for their sacrifices, blessings, love and care towards me. Without them, this thesis is null and void. I also thank my entire family members for their unconditional support. I will always remain indebted to you all.

I am also very grateful to those peoples, who directly or indirectly helped me during this long journey. Finally, I thank almighty for the blessings upon me and keeping me in the pink of my health so that I could complete my work successfully.

(Dipankar Sarma)