

ACKNOWLEDGEMENT

This present form of this thesis is the result of cumulative effort of many individuals besides me. I cannot reach this destination without their inspirations and encouragements. I have no hesitation to say that a few words are not enough to explain the co-operation, inspiration, guidance and direction, which I got during this period.

First of all, I take this opportunity to express my deep sense of gratitude and sincere thanks to my supervisor Dr. Arnab Sen, Associate Professor, Department of Botany, North Bengal University for his mature, able and invaluable guidance and persistent encouragement.

I also express my sincere thanks to Dr. Asim Kr. Bothra, Associate Professor, Department of Chemistry, Raiganj University College, for the constant support and guidance throughout the work. I am extremely thankful to him for his invaluable suggestions and advice.

I am also thankful to my teachers, Prof. AP Das, Prof BN Chakraborty, Prof. PK.Sarkar Prof U Chakraborty, Dr. A Saha, Dr. SC Roy and Sri. P Mondal for their continuous support and encouragement.

I express my gratefulness to Prof LS Tisa, Department of Microbiology, University of Hampshire, USA, and Prof P Normand, University of Lyon, France for their kind help.

My sincere thanks to my lab mates Dr. BS Bajwa, Dr. Manprit Gill, Dr. BC Basistha, Sri Molay Bhattacharya, Dr. Saubashya Sur, Smt. Ritu Rai, Smt Subarna Thakur, Sri Arvind Kr. Goyal, Smt Tanmaye Mishra, Sri Ayan Roy, Smt Sanghati Bhattacharya, Sri Manas Ranjan Saha and Krishanu Ghosh, whose presence was helpful and cooperative. I am also thankful to all the persons whose name is not in the figure out here for their help and support.

Lastly, I feel it very important & appropriate to acknowledge the contribution of my family, Smt Kakali Basu (elder sister), Er. Amitabha Basu (Brother-in-law), Ms Debleena Basu (niece), my wife Amrita Bose and especially my mother Smt Dali Bose. This septuagenarian noble lady did every bit of thing for me without caring her personal comfort. It was indeed difficult days in our family at that time & she did everything gracefully & silently for my carrier. Unfortunately I cannot bring back those days for her. I have no hesitation to say that I have taken away some valuable days from her life and returned nothing to her. I am sorry, Mom. Today, I also missed my father, Late Sri Baidyanath Bose, who wanted to see me at this position and I am sure he is enjoying this moment somewhere in heaven. I can visualize his smiling face when I look at the night skies, I can hear his soundless whisper "My son, my blessing is always with you" with every breezes passing by. My parents, my almighty, your blessing is my inspiration.

Dated:

Place:



(Debaddin Bose)