ACKNOWLEDGEMENT

I dedicate my work to –

To My Family Members

My Mother: For her guidance from the very beginning of my life. I remember that she taught me to hold the chalk rightly between my fingers at the very tender age of one year and to write the alphabets as well as the numerical on the floor repeatedly while she used to cook. But her guidance and love for education helped me to travel such a long distance.

My Father: For his tremendous support to my likings and liberty. His experience, suggestions and appreciation for the way I chose to walk helped me till date.

My Uncle (Chhoto kaku): For his strong shoulders on which I used to depend whenever my father was busy.

My Two Sisters: Chintu – I will never forget the day when my Madhyamik (School final) result was out and I was hugged by you to hear that I have scored good marks. Your eyes and cheerness told me that my exam result made you proud, and you really care and respect me. Pakhi – Probably it was difficult to complete my Ph.D without you during my life in Kolkata. You took care of me as an elder sister rather than being a younger one.

Jaydeep – For being a dedicated friend of mine, whose support in my lab and life has helped me to take a step ahead always.

To My Friends and other family members

To every one of them, whose appreciation and confidence has helped me to walk in the right path always.

To My Teacher

My Guide, Prof. Anjan K. Dasgupta: He appreciated me always for the strength I took to be away from my home to continue my studies. His love and passion towards work will always encourage me to set an example.

To My Juniors (Shibsekhar, Shanti, Tapan, Suryyani, Hirak and also Sinu, Mohor, Pradipto, Pritha) - For being so kind and helpful to me. As well as to keep the lab atmosphere so healthy and cheerful.

I hereby acknowledge to Dr. Prabir Lahiri, Prof. Soumen Basak, Prof Chanchal K. Mitra, Dr. Pranab K. Bhattacharya, Prof. Krishanu Chakraborty and Prof. D. J. Chattopadhyaya for their helpful suggestions and the laboratory facilities. I acknowledge the staffs of the Library, office and laboratory members especially Chiranjibda for their co-operation. I also thank to other faculty members of this department for their support.