ACKNOWLEDGEMENT

First of all, I would like to express my gratitude to Dr. B. K. Saikia for his guidance to complete this thesis work. I have enjoyed an atmosphere of complete freedom to imagine and carry out the experiments under his supervision.

I would also like to thank Prof. K. S. Goswami for his keen interest in my work and critical response to various topics that helped me to develop better understanding of the subject.

I am thankful to my parents and my two brothers for their constant support and encouragement during the tenure of my PhD work.

The critical evaluation provided by the Academic committee of CPP-IPR certainly helped me to shape my PhD work and I express my thanks to Dr. B. J. Saikia, Dr. M. Kakati, Dr. S. R. Mohanti, Dr. T. K. Borthakur and Dr. M. Chakravorty for their valuable suggestions.

Throughout my stay at CPP-IPR, I have received helped from a number of people from various section of CPP-IPR. I thank Mr. N. Kathar for his technical help during various stages of my experiments and the administrative stuff of CPP-IPR, which helped me in procuring the experimental components.

My tenure at CPP-IPR have been memorable for which I owe my gratitude to my seniors Kaushik Da, Neog Da, Pranjal Sir, Arindam Da, Minal Da, Biswa Da, Hemen Da, Manas Da, and Kamal Da. I have enjoyed the company of my friend Bharat Da, Bidyut Da, Amoa, Nayan, Mousumi, Basanti, Rakesh, Akshay, Angshuman, Nayan-jyoti a lot for the whole duration of my stay at the hostel. The weekend’s parties at the hostel revitalized me and provided the necessary fuel to carry out work with more energy. I have learnt a lot from them. During the later part of my PhD years, arrival of my juniors Trinayan, Nilanjan,
Neelam, Narayan, Sayan, Sudamoni, Deiji, Porismita, Annanya and Achyana have made it a truly wonderful experience at CPP-IPR.

I would also like to thanks my friends outside CPP-IPR Campus specially Arundhoti, Arnab, Subrat, Sunny who all encouraged me at various stages of my life.

The helped received from Alphonsa Madam and Rane Sir in FCIPT for the XRD characterization of some samples and the valuable advices of Dr. S. Mukherjee is highly appreciated.

I owe a lot to Swapna for the fruitful discussions, and the rigorous proof reading of the thesis.

Partha