ACKNOWLEDGEMENT

It is with pleasure, I express my deep sense of gratitude to Prof. A.K. TALUKDAR for his enlightening discussions and unfailing guidance at every stage of the research programme. He is really a sense of my guide, philosopher and more than a friend. Also I profusely thank him for the opportunity that he gave me to work with him.

I also express my thanks to Prof. P.J. Das (former Head, Department of Chemistry, Gauhati University) and Prof. D.C. Deka, Head, Department of Chemistry, Gauhati University for providing all necessary infrastructural facilities during my research tenure.

I am thankful to Prof. Arun Chattopadhyay, Head, Department of Chemistry, IIT Guwahati, for helping me during the characterization of the synthesized samples.

I am also grateful to the Centre for Nano Technology, IIT Guwahati, Department of Physics, Tezpur University, USIC, Gauhati University, CIF, IIT Bombay, CIF, NEHU, Shillong, IASST, Guwahati and also the Department of Chemistry, Gauhati University for helping me during characterization of the synthesized samples.

My heartfelt thanks go to Dr. S. U. Ahmed, Principal, ADP College, Nagaon for his permission to carry out the research and for his advice, suggestions and constant encouragement during the period of the research.

I am also thankful to my lab mates Dr. M.N. Thakuria, Dr. R. Patgiri, Dr. B. Kalita, Mrs. D.M. Pathak, Mr. J. Saikia, Mr. D. Saikia, Mr. N. Barman and all others for constant help and support during the period of research without which it would have been quite difficult for me to complete the research work.

I sincerely thank Dr. N. Pattanayak, Mr. B. K. Borah, Mr. A. N. Sarma, Dr. M. K. Hazarika, Dr. A. Bharali, Mr. S. Saikia and Mr. H. Bhuyan for their suggestions and help at various stages of my research.

Finally I am extremely grateful to my Parents whose unfailing courage and counsel nurtured and motivated me to pursue this research. I am more than indebted to my brothers, whose sacrificial love and affection made me to stand at this juncture. I am also thankful to my wife for her constant support during the period of the research.

Last but not the least, I bow my head in front of the Almighty for providing such an opportunity to work in science.

Finally, I apologize for the omissions I made in my attempt to enumerate those who have contributed.

Kishor Kr Shah