ACKNOWLEDGEMENT

I have the pleasure to acknowledge with deepest sense of gratitude, the help and advice given to me, by many people, without which this work would not have been possible. To begin with, my sincere thanks goes to my guides Prof. (Mrs.) Pranayee Datta, Head, Department of Electronics Science, Gauhati University and Prof. Kanak Chandra Sarma, Head, Department of Instrumentation and USIC, Gauhati University, for their invaluable guidance, suggestions and encouragement they have provided me, along the whole research work. I am thankful to Prof. P.K. Baruah for allowing me to work in the lab and also to utilize the characterization facilities present in the Department of Instrumentation and USIC during my research work and his tenure as the Head of the Department. I am grateful to Dr. (Mrs.) D. Sarkar, Reader, Department of Physics, Gauhati University for allowing me to work in her lab and utilize the facilities present there. Thanks are due to all the teaching, office and working staffs of the Department of Electronics Science and Department of Instrumentation and USIC, for their generosity in devoting their time to help me with the research work. I have been fortunate enough to receive support and suggestions from Dr. T. Bezboruah, Dr. A.K. Kalita, Mr. P. Nath, Mr. K.K. Sarma, Mr. H.K. Singh and Mr. S. Rajbongshi of Department of Electronics Science. Thanks are also due to Dr. S. Karmakar of Department of Instrumentation and USIC for his necessary help. Special thanks are due to Dr. P.K. Baruah, Scientific Officer, Chemistry Department, Gauhati University, for his invaluable suggestions and help during my research period. I am grateful to the scientific officers and research scholars in the labs of Department of Physics, Gauhati University and CIF of IIT Guwahati for their help provided to me. My special thanks are due to Ms. Purobi of
Department of Physics, IIT Guwahati and Dr. Vidya Nand Singh of IIT Delhi, for providing the facilities and suggestions. I have been benefited greatly from the perspectives and inputs from them.

Needless to say, without the help and encouragement from the other research scholars, it would have been impossible to complete the work. I would like to thank, Ms. K.R. Sinha, Ms. S. Sarma, Ms. G. Sarma, Mr. Rajesh, Dr. R. Bordoloi, Ms. K. Sarma, Kaustubh, Mitashree, Jolly, Jumi, Lipi, Rajib, Kakoli, Dr. J. Barman and J.P. Borah for giving me continuous support during my research work.

I express my deepest sense of gratitude to my father and mother and the other family members, for their constant support during the whole research period. Thanks are also due to my father in-law and mother in-law and all the other in-laws for their encouragement and support to complete the present work. Finally, I would like to acknowledge the help, support and encouragement I got from my husband, Mr. Vikas Sharma, during the research work.

Date: Rinki Bhadra

Rinki Bhadra