ACKNOWLEDGEMENT

I would like to take this great opportunity to express my utmost gratitude and indebtedness to my supervisor, Prof. K. Ismail whose simplicity, sincerity and extraordinary belief in seeking true knowledge has helped me in successfully completing the work. His words of wisdom and encouragement has shown a new direction in life. He will continue to inspire me for the rest of my life too.

I extend my immense gratitude to Prof. B. Myrboh, Head of the Department and former heads – Prof. K. Ismail, Prof. R. K. Poddar and Prof. R. H. D. Lyngdoh for having rendered all the facilities and assistance needed for carrying out this research work.

I wish to express my sincere thanks to all the faculty members, Department of Chemistry for their constant help and advices and also to all the staff of the department for their cooperation, especially Mr. Thomas and Madam Florescence.

I would like to acknowledge the support provided by Dr. P. A. Hassan, Dr. V. K. Aswal, Dr. Gunjan Verma and Jayita of the Bhabha Atomic Research Center (BARC), Mumbai, for their tremendous help in carrying out the SANS measurements. Thanks are also due to Dr. S. Sawant and Dr. R. Ganguly for constantly coming up with a helping hand during my stay in BARC.

I also thank Dr. S. Mahiuddin and his research students of NEIST, Jorhat, especially Namrita, Jayanta and Manashda for their help in carrying out zeta-potential measurements.
I also wish to acknowledge the cooperation and help rendered by my seniors Dr. Iohborlang, Dr. Teibor, Dr. Gobin, Dr. Sujit, Dr. Dippanita, Dr. Jutika and Dr. Snigdha.

I take immense pleasure in expressing my gratitude to my lab mates – who have always helped me out of trouble especially Uttam, Anirudh, Nazima and Tariq.

I would also like to express my gratefulness to all my teachers, who have been guiding me throughout my career.

I would like to take this opportunity to express my gratefulness to the two most important people in my life, My Sir (Mr. Subrojyoti Chowdhury) and My MISS (Mrs. Jona Chowdhury). It is because of their constant words of encouragement and support that I could finish my work today. They are the people who always believed in me and stood beside me, whenever I needed them. May GOD bless them and help them to touch the life of many others like me.

I express my gratefulness to Mr. Biswajit Nandi and Mrs. Runa Nandi for their constant moral support and encouragement.

I further acknowledge the co-operation and help rendered by my fellow Research Scholars, Department of Chemistry – Dr. T. Sanjoy Singh, Mithu, Moyon and all the scholars.

I sincerely express my gratitude and gratefulness to Madam Dr. (Mrs.) S. S. Islam for her words of instructions, suggestions and guidance. She has always been there to help and guide me during the difficult times and inspired me to continue my work.
My thanks go to the project students who have been working in our lab for their cooperation and friendly interaction.

I am also thankful to the Department of Science and Technology, New Delhi for financial support (Project No. SR/S1/PC-36/2006) and to UGC for providing the Non-Net fellowship during the early days of my research.

The financial support received from the Council of Scientific and Industrial Research as SRF is greatly acknowledged.

I am indebted to my parents, my brother, my sisters, and to all my family members. They have stood by me at all times and their prayer and support for me has helped me in achieving my goal.

I humbly apologize to those whose contribution should have been acknowledged but escaped mentioning inadvertently owing to lapse of memory. My heart full gratitude and thanks goes to them too.

Finally, I thank God, our Heavenly Father without whose love, compassion and blessings no dream is possible to realize.

Shillong

Dated

JAHAR DEY