



*Dedicated
To
Ama & Papa*

DECLARATION

I declare that the thesis entitled "**STUDY ON THERMODYNAMIC AND TRANSPORT PROPERTIES OF SOME SOLUTION SYSTEMS WITH REFERENCE TO MANIFESTATION OF SOLVATION EFFECT**" has been prepared by me under the guidance of Dr. Mahendra Nath Roy, Professor of Chemistry, University of North Bengal. No part of this thesis has formed the basis for the award of any degree or fellowship previously.

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PREFACE

The work in this thesis entitled ""STUDY ON THERMODYNAMIC AND TRANSPORT PROPERTIES OF SOME SOLUTION SYSTEMS WITH REFERENCE TO MANIFESTATION OF SOLVATION EFFECT" was initiated in 2008 under the supervision of Dr. M. N. Roy, Prof. of Chemistry in the Department of Chemistry, University of North Bengal. This research was realized within the framework of the Programme: "UGC Research Fellowship in Science for Meritorious Students" Ref UGC Letter No. F.4-1/2008 (UGC-BSR).

The work is an attempt to explore molecular interaction in non-aqueous electrolytic solutions by studying their thermodynamic, transport and acoustic properties.

I was highly inspired by my listening and interacting with distinguished experts and scientists during the course of my research work through participation in several meets and seminars across the country. I was even fortunate enough to publish the works in the thesis in International Journals of repute.

In keeping with general practice of reporting scientific observation, due acknowledgement has been made whenever the work described was based on the finding of other investigators. I must take the responsibility of any unintentional oversights and errors, which might have crept in spite of precautions.

I hope that I will be given more challenges in my life so that the knowledge that I have earned during my work can be put into action in the future.

Acknowledgement

At the outset, I am exceedingly delighted to express my most sincere gratitude to my respected teacher and Guide, Dr. Mahendra Nath Roy, Professor, Department of Chemistry, University of North Bengal, Darjeeling. Throughout my research period, I have received constant guidance, valuable suggestions, inspiration and constructive criticism from him. I am deeply indebted to him for his keen interest, strong motivation, constant encouragement and sympathetic consideration. Without his loving care, meticulous guidance and priceless supervision, the formulation of my work associated with my thesis in its present form could not have been possible.

I express my profound sense of gratitude to all the respected teachers, Department of Chemistry, University of North Bengal for their helpful assistance and continual inspiration during the course of my research work. I am thankful to the non-teaching staff of my Department for their cooperation and help.

The inspiration, encouragement and whole-hearted cooperation that I received from my family and friends especially Mr. Anand Pariyar, Research Scholar of my Department are most elegantly acknowledged.

My special thanks go to Mr. Deepak Ekka, Miss Ishani Banik and Mr. Palash Chakraborti of my research laboratory for their

valuable assistance and cooperation during my research work.

I am constantly aware of what a huge debt I owe to the sources of the information required for my research work: the numerous books, monographs, articles, computer website, etc. I put on record some measure of my gratitude to those whose references I have cited in this thesis.

Finally, I would also like to record my thankfulness to the University Grants Commission for sanctioning Research Fellowship in Science for meritorious student Ref. No. F.4-1/2008 (BSR) and providing financial aid in order to continue my research work. I am also thankful to the Departmental Special Assistance Scheme under the University Grants Commission, New Delhi (No. F 540 / 27 / DRS / 2007, SAP-1) and the 'ONE TIME GRANT' Ref No. F.4-10/2010(BSR) awarded to my Supervisor, Prof. M. N. Roy, under Basic Scientific Research (BSR), UGC, New Delhi for financial and instrumental assistance in connection with my research works.

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