ACKNOWLEDGEMENTS

I take this opportunity to owe my deep gratitude to my guide Dr. Ashok Kumar, Head, Department of Physics, Tezpur University for his unparalleled support and guidance. Overcoming his time constrains he has looked after the work and progress from time to time and provided me with all the resources and information. I am indeed very grateful to him.

I acknowledge my gratefulness to Mr. Biren Gohain, Scientific officer, Deparetment of Chemical science, Tezpur University, for his help in doing the FTIR- spectrum.

I am grateful to all my teachers and research scholars of Physics department for their unconditional help and co-operation during my work.

I am thankful to all my class-mates and hostel-mates for their co-operation.

My sincere thanks go to Mr. Pranjal Gogoi, Mr. Bhaskar J. Nath and Ms. Smritimala Sarmah for their advice and support.

Lastly I thank all my family members especially to my parents for their love, blessings, help and continuous support.

Madhuryya Deka

MOTIVATION OF THE WORK

From ionic conductivity point of view, liquid electrolytes have better ionic conductivity than solid electrolytes. This increases the size of the battery also lake of flexibility. So we need an electrolyte which show better ionic conductivity than liquid electrolytes and which have better mechanical strength. For this we better prefer gel electrolytes which have more ionic conductivity and very good mechanical property than liquid electrolytes.

So, I have chosen this project to prepare a gel electrolyte system with poly (ethylene oxide) polymer.