ACKNOWLEDGEMENTS

At the beginning I express my deep sense of gratitude to my supervisor Prof. R.P. Tiwari, Department Geology, Mizoram University, Aizawl, Mizoram for his invaluable guidance, help and encouragement which has been the source of inspiration throughout the course of my research work.

I am heartily thankful to my joint supervisor, Dr. Saurabh Baruah, Scientist and Head, Geoscience Division, North-East Institute of Science and Technology (NEIST), Jorhat, Assam, whose encouragement, advice, guidance and support from the initial to the final level enabled me to develop an understanding of the subject. His truly scientist intuition has made him as a constant oasis of ideas and passions in science, which exceptionally inspire and enrich my growth as a student and as a researcher. I am indebted to him more than he knows.

It is an honor for me to thank the Principal, Pachhunga University College, Aizawl, Mizoram for his kind permission and necessary assistance during my research work. I must acknowledge the direct encouragement, help and support that I received from him during my research.

I express my sincere thanks and gratitude to Dr. P.G. Rao, Director, North-East Institute of Science and Technology, Jorhat, Assam, for his kind permission to let me used a CSIR laboratory to carry out my research. Also my sincere thanks go to the Vice Chancellor, Mizoram University for his support.

I would like to thank the Head, teachers, research scholars and staffs of Department of Geology, Mizoram University for their invaluable advice and assistance.

I am indebted to my colleagues and staffs at Geology Department, Pachhunga University College for their unflinching encouragement and support in various ways.

I would like to show my gratitude to Dr. Pabon Kumar Bora, Scientist, Geoscience Division, NEIST-Jorhat for his interest and his crucial contributions.

It is a pleasure to pay tribute to Mr. Santanu Baruah, Mr. Aditya Kalita, Mr. Dipok Kumar Bora and Mrs. Sumana Goswami, Research Scholars, Geoscience Division, NEIST, Jorhat. Throughout my constant visits at NEIST, they are always there to support me, been overly generous with their time and I will always admire their enthusiasm, keen interest in the subject, friendship and the cordial reception which I received from them.
My parents deserve special mention for their inseparable support and prayers. I was fortunate to have all supports from my father, Mr. Lalmalsawma Sailo and my mother Mrs. Vanlalchhuani, who sincerely raised me with their caring and gently love and showing me the joy of intellectual pursuit ever since I was a child.

I express my deepest appreciation to my wife Rita and my daughters Amawitei and Zualtei whose dedication, love and persistent confidence in me, has taken the load off my shoulder. I thank them for all the support that they gave me during the years I have been working on this thesis, especially during my long and constant visits at NEIST, Jorhat.

Lastly, I expressed my gratitude to the Almighty God for the reason that this thesis would not have been materialized without His presence.

Aizawl (SAITLUANGA)

Date