

## **CERTIFICATE**

*It is certified that the thesis entitled “ENVIRONMENTAL STUDIES ON COALMINING ACTIVITIES AROUND LEDO COLLIERY OF NORTHEASTERN COALFIELDS” submitted for the degree of PhD, has been completely by Ms Madhulika Dutta under our supervision and guidance. No part of the thesis has been submitted by the investigator in any other University or Institution. The work has fulfilled all the criteria laid for the degree of PhD under the Faculty of School of Applied Sciences, University of Science and Technology, Meghalaya.*

*The thesis is the outcome of the investigator’s own rigorous research on the subject and we are pleased to forward the thesis for award of the degree of Doctor of Philosophy (PhD) of the University of Science and Technology, Meghalaya.*

Dr. Binoy K Saikia (Co-guide)  
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## **DECLARATION**

I, Ms. Madhulika Dutta do hereby declare that the thesis entitled “**Environmental studies on coalmining activities around ledo colliery of Northeastern coalfields**”, submitting to University of Science and Technology, Meghalaya (USTM) in fulfillment for the award of the degree of Doctor of Philosophy in Chemistry Under School of Applied Science, is the outcome of the original research work carried out by me.

I further declare that the findings incorporated in the thesis are the original and that the thesis as a whole or any part of it has not been submitted for the award of any other degree/diploma to any other University/Institution.

Place: USTM, Meghalaya

Date: 9<sup>th</sup> September

Madhulika Dutta

# **DEDICATION.....**

To my father **Late Lalit Chandra Dutta**,  
my mother **Mrs Aruna Dutta Saikia**,  
my father in law **Late Purneswar Bordoloi**,  
and  
my mother in law **Late Subarna Bordoloi**  
**for their inspiration, love and endless support.**

# ACKNOWLEDGEMENTS

I am very grateful to my guide Dr. Binoy K Saikia, Scientist, Polymer Petroleum and Coal Chemistry Group (MSTD) for guiding me during the entire period of my research work. His guidance and moral support in every step makes me strong to participate actively in my work. It would be impossible to complete my research work without his support and guidance he provided me.

I want to thank my guide Dr. Durlov Saikia, Assistant Professor, Department of Chemistry, University of Science and Technology, Meghalaya for guiding me during my research work with all supports.

I express my gratefulness to Dr. D. Ramaiah, Ex-Director, CSIR-NEIST, Jorhat, Assam, for giving me the permission to carry out my research work smoothly by providing me all the necessary facilities during the work. I am thankful to Dr. Pinaki Sengupta (Former HoD, Material Science and Technology Division) for supporting and encouraging me for doing my research work. I am very grateful to Dr. B. P. Baruah (Ex-Senior Principal Scientist, Polymer Petroleum and Coal Chemistry group) for his moral support and encouraging words. I want to thank Dr. R. L. Goswami (HoD, Material Science and Technology Division) for his inspiration during the course of my work. I would convey my thanks to Dr. Jayaramadu, Group Leader, PPCC, for his support to carry out my work without any problem. My special thanks goes to Dr. Prasenjit Saikia (Scientist, Polymer Petroleum and Coal Chemistry group), Dr. Manash Ranjan Das (Senior Scientist, Advanced Materials group) and Dr. Lakshi Saikia (Senior Scientist, Advanced Materials group) for their supporting words. I would like to convey my thanks to Dr. Tankeswar Das (Technical Officer) for his kind help during my work. I always grateful to Mr. Shahadev Rabha

(Research Scholar), Mr. Nazrul Islam (Research Scholar), Mr. Rantu Dutta (Ex- Laboratory Attendent), Mr. Jyoti Prakash Saikia, Mr. Pranjal Handique (Technician I) for helping me during the sampling period and also in my laboratory work by giving their helping hands. I am thankful to Mr. Paban Borah, Mr. Biren Saikia, Mr. Hari Chandra Dutta, Mr. Dilip Talukdar for their help during the period of my work.

I am very grateful to all the faculty members including Dr. Uttam Thapa (HoD, Department of Chemistry, USTM), Prof. Enamul Karim (Dean, SOAS, USTM), Dr. Sarifuddin Gazi, Dr. Moutushi Das, Dr. Jeshmin Begum, Dr. Nasifa Sahnaz, and Dr. Ramen Jamatia, Department of chemistry, USTM for their full co-operation during my research work. My special thanks goes to Dr. Ajmal Barbhuyan (Academic Registrar, USTM), Dr. Anup Kumar Bordoloi (Dy. Director, Research, USTM), Ms. Nilakshi Mahanta (Research Officer, USTM), Dr. Nurujjaman Laskar (Dy. Controller of Examination, USTM), Dr. Gautam Sharma (Ex- Controller of Examination, USTM). I am very thankful to my teachers Prof. J.N. Ganguly Sir and Prof. A.K. Mishra sir. I should mention the name of Dr. Shubhas Roy (Ex-faculty, Department of Chemistry, USTM) for his inspiration at the beginning of my research work.

My sincere thanks to Sjt. Sarat Chandra Dutta, Principal, C.N.B. College and all my colleagues for their encouragement and help in different steps of my work. My special thanks to Mr. Hari Prasad Nath, Mr. Pankaj Kalita and Ms. Champa Gogoi, Faculties of Chemistry Department, C N B College, for their encouragement during my research work. I also thankful to my friend Mr. Chandra Prakash Nath for his kind help in printing and editing my thesis by expending his valuable time.

I can never forget all the love and inspiration I received from my mother, my husband Dr. Ranjit Kumar Bordoloi, my daughters Disha and Diya, my sister Mrs. Mallika Dutta,

two brothers Priyombod and Dhruba Jyoti. I am very grateful to them for encouraging me to achieve my dream. I am very thankful to daughter-like Suman, of our family, without her endless help it would be impossible to complete my hope.

I want to thank God for giving me the mental and physical strength to complete the work without any problem.

Madhulika Dutta