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**JORHAT 785 006, ASSAM, INDIA**

Phone : 0376+ 2370012 , 2372951 (O). 2370317 (R)

PABX : 2370117, 2370121, 2370139

Extn : 2341 (O), 2339 (R)

Fax : 0376+2370011

Gram : RESEARCH ; website : [www.rrljorhat.res.in](http://www.rrljorhat.res.in)

**Dr. B. G. Unni, FIAnSc, FISABc**

Chief Scientist & Area Coordinator (Biotechnology/Biological Sciences)

NEIST/BIO/BG/2011

**To,**

**The Controller of Examinations,  
Gauhati University  
Guwahati - 780014**

Sir,

I am herewith forwarding the **thesis** entitled “**Environmental And Molecular Studies Of Risk Factors of Lung Function Of Human Population Surrounding Open-Cast Coal Mines Of Ledo, Assam**”, submitted by Ms. Minakshi Bhattacharjee for the Degree of Doctor of Philosophy in Biotechnology of Gauhati University.

She has worked under my supervision at the Biotechnology Division, CSIR-North East Institute of Science and Technology, Jorhat and joint guidance of me and Dr.Manab Deka, Professor, Department of Biological Sciences, Gauhati University. She has been duly registered vide Memo No.GU/UGC/Acad/PhD/ B.T.- 27/09/3158/2011 dated 23/11/11. She has already fulfilled all the requirements under the PhD regulations of Gauhati University.

I also certify that the results incorporated in this thesis are original and to the best of my knowledge, she has not submitted her thesis work or any part thereof for any degree under any university.

**(B. G. Unni)**



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DEPARTMENT OF BIOLOGICAL SCIENCES

GAUHATI UNIVERSITY

GUWAHATI-14

**Dr. Manab Deka**

[d\\_bhaity@rediffmail.com](mailto:d_bhaity@rediffmail.com)

**Email:**

**Professor**

**Phone: +91-9954028440**

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To,  
The Controller of Examinations,  
Gauhati University  
Guwahati-781014  
Assam

Sir,

This is to certify that **Ms. Minakshi Bhattacharjee** did the present work entitled “**Environmental and molecular studies of risk factors of lung function of human population surrounding open-cast coal mines of Ledo, Assam**”, under joint guideship of mine and Dr. B.G.Unni, Chief Scientist, CSIR-NEIST, Jorhat. She has been duly registered vide Memo No. GU/UGC/Acad/PhD/ B.T.- 27/09/3158/2011 dated 23/11/11. She has completed the work and made it ready for submission in the form of a PhD thesis. Her thesis is the result of her own investigation. She has already fulfilled all the requirements under the PhD regulations of the Gauhati University.

I also certify that the results incorporated in this thesis are original and to the best of my knowledge, she has not submitted her thesis work or any part thereof for any degree under any university. The thesis may be accepted for adjudication.

Yours Sincerely,

Manab Deka

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## DECLARATION

I, Ms. Minakshi Bhattacharjee, hereby declare that the thesis entitled “**Environmental And Molecular Studies Of Risk Factors Of Lung Function Of Human Population Surrounding Open-Cast Coal Mines Of Ledo, Assam**” submitted for fulfillment of the requirements for the award of the Degree of Doctor of Philosophy in Biotechnology under the faculty of Technology, Gauhati University.

The research work has been carried out by me is original and independent, done during 2009-2011 under the joint supervision and guidance of Dr. B.G.Unni, Chief Scientist and Area Coordinator, Biotechnology/Biological Sciences, CSIR-NEIST, Jorhat and Dr. Manab Deka, Professor, Department of Biological Sciences, Gauhati University, Guwahati.

This thesis or part thereof was not submitted earlier by me for research degree to this University or any other institutions.

Minakshi Bhattacharjee

PhD Student

Department of Biotechnology

Gauhati University

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