UNIVERSITY OF NORTH BENGAL

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CERTIFICATE

I certify that Miss. Esmita Chhetri has prepared the thesis entitled "SYNTHESIS, CHARACTERIZATION AND INCLUSION COMPLEXATION OF SOME ISOXAZOLIDINE AND ISOXAZOLINE DERIVATIVES FOR ADVANCED APPLICATIONS EXPLORED BY PHYSICOCHEMICAL APPROACH", for the award of Ph. D. degree from University of North Bengal, under my supervision. She has carried out the work at the Department of Chemistry, University of North Bengal.

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a Nath Roy PROF. (DR.) MAHENDRA NATH ROY,

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Date: 30 . 01. 2021



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12/03/2021

CERTIFICATE

I certify that Miss Esmita Chhetri has prepared the thesis entitled "Synthesis, Characterization and Inclusion Complexation of some Isoxazolidine and Isoxazoline derivatives for Advanced Applications Explored by Physicochemical Approach" for the award of Ph.D degree of the University of North Bengal, Siliguri, West Bengal under my guidance. She has carried out the entire research work under my supervision at the Organic Chemistry Laboratory, Sikkim Government College (NBBDC), Tadong, Gangtok.

This is also to certify that the research work is original and completely new.

I wish her all the success in completion of her Ph.D programme.

Bhaskar Chakraborty Dr. Bhaskar Chakraborty (Co-Supervisor)

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https://www.researchgate.net/
publication/299255830_Microwaves_in_Organic_Synthesis_Third_Edition
https://www.oma-trutnov.cz/22322/cemuj2/2018-07-18/
https://ajrconline.org/HTML_Papers/Asian%20Journal%20of%20Research%20in%
20Chemistry__PID__2011-4-2-29.html
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