

SWAMI VIVEKANANDA INSTITUTE  
OF  
MODERN SCIENCE



Affiliated to Maulana Abul Kalam Azad University of Technology, WB  
Sonarpur Station Road, Karbala, P.O. - Narendrapur, P.S. - Sonarpur, Kolkata-700103

TO WHOM IT MAY CONCERN

This is to certify that the project entitled **"OPTIMIZATION OF PROCESS PARAMETERS VIA RESPONSE SURFACE METHODOLOGY (RSM) IN THE BIOLOGICAL TREATMENT OF PHENOL AND 4-CHLOROPHENOL AS A MIXED COMPOUND BY INVOLVING FOUR DIFFERENT BACTERIAL SPECIES."** with reference to **Swami Vivekananda Institute of Modern Science, Sonarpur, Kolkata-700103** is submitted by **Debojit Sarkar** [2<sup>nd</sup> year, 2<sup>nd</sup> semester, registration no. 212641899210011 year 2021-22, roll no. 26499221018] under the Department of Biotechnology for the partial fulfilment of the degree of **M.Sc Biotechnology**, under **Maulana Abul Kalam Azad University of Technology, WB**, embodies the work has been done by him under our supervision.

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Date:  
Place: Kolkata



DEPARTMENT OF FOOD TECHNOLOGY & BIO-CHEMICAL ENGINEERING

No. SA/FTBE/190523

Date 19/05/2023

CERTIFICATE

This is to certify that the M.Sc. Thesis entitled “**OPTIMIZATION OF PROCESS PARAMETERS THROUGH RESPONSE SURFACE METHODOLOGY (RSM) IN THE BIOLOGICAL TREATMENT OF PHENOL AND 4-CHLOROPHENOL AS A MIX COMPOUND BY INVOLVING FOUR DIFFERENT BACTERIAL SPECIES**” has been submitted by **Mr. Debojit Sarkar**, a student of final year M.Sc. in Biotechnology, Department of Biotechnology, Maulana Abul Kalam Azad University of Technology, west Bengal.

This project work is the outcome of the work carried out by him from January (02/01/2023) to April (28/04/2023) in the laboratory of Food Technology & Biochemical Engineering, Jadavpur University.

The thesis is result of original work done by him and I am satisfied with keenness and interest shown by him during the project execution.

He is a sincere student and suitable candidate for the degree of Master of Science in Biotechnology. I wish him all the best for his future career.

With regards,

*Sunita Adhikari (Nee Pramanik)*

[Dr. Sunita Adhikari (Nee Pramanik)]

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