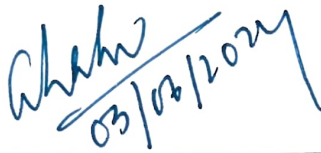


CERTIFICATE OF RESEARCH

This thesis titled "HYBRID GREY WOLF ALGORITHM DEVELOPMENT AND ANALYSIS FOR EFFECTIVE MULTI- OBJECTIVE OPTIMIZATION" submitted by MD. FAHIM TANVIR AZAD (190012128) and RIFAT BIN KAWSAR (190012131) has been accepted as satisfactory in partial fulfillment of the requirement for the Degree of Bachelor of Science in Industrial and Production Engineering.

Supervisor


03/03/2024

Dr. Mohammad Ahsan Habib

Professor

Head of the Department

Dr. Hamidur Rahman

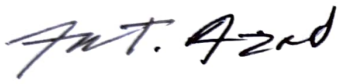
Professor

Department of Mechanical and Production Engineering (MPE)
Islamic University of Technology (IUT)

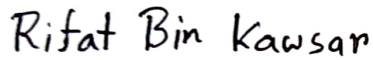
Candidate's Declaration

This is to certify that the work presented in this thesis, titled, “**Hybrid Grey Wolf Algorithm Development and Analysis for Effective Multi Objective Optimization**”, is the outcome of the investigation and research carried out by me under the supervision of **Prof. Dr. Mohammad Ahsan Habib, PhD**

It is also declared that neither this thesis nor any part of it has been submitted elsewhere for the award of any degree or diploma.



Md Fahim Tanvir Azad
Student No: 190012128



Rifat Bin Kawsar
Student No: 190012131