

## RECOMMENDATION OF THE BOARD OF SUPERVISORS

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The thesis titled “Thermo-hydraulic analysis of helically corrugated geometry using single phase and hybrid nanofluids” submitted by Ashraf Mustakim, Student No: 180011134 and S.M.Naqib-Ul-Islam, Student No: 180011221 has been accepted as satisfactory in fulfillment of the requirements for the degree of B Sc. in Mechanical Engineering on 21<sup>st</sup> June, 2023.

## BOARD OF EXAMINERS

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1.   
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Dr. Mohammad Monjurul Ehsan  
Associate Professor  
MPE Dept., IUT, Board Bazar, Gazipur-1704, Bangladesh.

(Supervisor)

2.   
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Dr. Shamsuddin Ahmed  
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(Examiner)

### Candidate's Declaration

This is to certify that the work presented in this thesis, titled, "Thermo-hydraulic analysis of helically corrugated geometry using single phase and hybrid nanofluids", is the outcome of the investigation and research carried out by me under the supervision of Dr. Mohammad Monjurul Ehsan, Associate Professor, Islamic University of Technology.

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.

Mustakim

Ashraf Mustakim

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