

MD. ABRAR RAHMAN RAFAT

Dhaka, Bangladesh

(+880) 1708782430 | abrarrahmanrafat37@gmail.com | linkedin.com/in/abrarrahmanrafat

Website: sites.google.com/view/abrarrahmanrafat

ACADEMIC CREDENTIALS

Bachelor of Science(B.Sc.) in Mechanical Engineering

[Mar 2018-May 2023]

Bangladesh University of Engineering and Technology

Cumulative GPA: **3.69**/4.00(3.78 in final term), among the top 24%

STANDARDIZED TEST SCORES

GRE general test: 330/340

[Aug 13, 2024]

Quantitative Reasoning: 167

Verbal Reasoning: 163

Analytical Writing: 3.5

TOEFL iBT: 107/120

[Sep 01, 2024]

Reading: 30/30

Listening:26/30

Speaking26/30

Writing:25/30

RESEARCH INTERESTS

Heat and Mass Transfer

Thermal Analysis

Energy Storage

Fluid Mechanics

Nano Materials

Machine Learning

RESEARCH EXPERIENCE

Undergraduate Thesis:

Topic: Thermal analysis of a CSP(Concentrated Solar Power) plant co-generation cycle for the simultaneous production of electric power by using Supercritical CO₂ as working fluid and low temperature refrigeration by Ejector-Absorption refrigeration cycle

DOI: 10.13140/RG.2.2.29986.24006

Supervisor: Dr. Md. Zahurul Haq, Professor, Department of Mechanical Engineering, BUET

Summary: Performed Pinch Point Optimization and Thermodynamic Analysis on:

- sCO₂ Brayton cycle utilizing solar power for electric output
- Ejector absorption refrigeration system utilizing low grade waste heat

PROJECTS

1. Electromechanical System Design for Temperature Controlled Fan

Used **Proteus Design Suite** to simulate the circuit. The final model was built using **Arduino UNO**.

Project Members: **MAR Rafat**, MI Bulbul, Eshan Dey

DOI: 10.13140/RG.2.2.24146.98246

2. Design and Fabrication of Shell and Tube Heat Exchanger

Used **SolidWorks** to design a prototype; the final model was fabricated using low cost materials and thermal performance was evaluated

Project Members: **MAR Rafat**, NA Mini, MSH Pulok, Anusree Sen

DOI: 10.13140/RG.2.2.12556.69769

PROFESSIONAL EXPERIENCE

Industrial Trainee, IBN SINA Pharmaceutical Industry Ltd.

[Oct 2022-Nov 2022]

- Gained expertise in processes such as Central HVAC system, Boiler and Compressor Operation, Water Softening, Water Filtration, Effluent Treatment Process, Quality Control etc.
- Thoroughly observed and analyzed production process of Tablets, Capsules and Injectable Medicine in Cephalosporin Department, General OSD and Pharma Department and Herbal Department.

TECHNICAL SKILLS

Programming Language: Python, MATLAB, HTML, C

Post Processing: Tecplot 360

Design: AutoCAD, SolidWorks

Documentation: MS Office

HONORS & AWARDS

Dean's List Scholarship

[Jan & Jul 2018]

Recipient of **University Stipend Based on Merit**

[Jan & Jul 2018]

Dhaka Education Board Merit Scholarship based on Secondary School Certificate exam

[2015]

Dhaka Education Board Merit Scholarship based on Junior School Certificate exam

[2013]

INTERPERSONAL SKILLS

Presentation

Team Management

Project Planning and Management

Teaching

OTHER NOTABLE ACTIVITIES

- **Private Tutor**

[2018-Present]

Instructed 80+ students from Standard 9 (Secondary) to Standard 12 (Higher Secondary) for their School, College, Board and University Admission Exams.

- **AI Image Generation**

Well versed in operating latent diffusion models such as Stable Diffusion, Flux etc. locally in Web Interfaces such as A111 WebUI, ComfyUI, ForgeUI etc.

REFERENCES

Dr. Md. Zahurul Haq

Professor

Department of Mechanical Engineering, BUET

Email: zahurul@me.buet.ac.bd

Phone: (+880) 1552541994

Dr. Md. Afsar Ali

Professor

Department of Mechanical Engineering, BUET

Email: mdafsarali@me.buet.ac.bd

Phone: (+880) 1552415088

Dr. Md. Aman Uddin

Assistant Professor

Department of Mechanical Engineering, BUET

Email: amanuddin@me.buet.ac.bd

Phone: (+880) 1313547070