

Md Zahidul Haque

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EDUCATION:

Jan, 2017 - present **Bachelor of Science in Mechanical Engineering**
Rajshahi University of Engineering and Technology (RUET)

RESEARCH EXPERIENCE:

2023 **Review & Economic Analysis of a Solar Powered Water Pumping System for Crop Irrigation**

This is a research paper that evaluates the feasibility and performance of a solar powered water pumping system (SPWPS) for irrigation purposes. The paper compares the SPWPS with a conventional diesel powered water pumping system (DPWPS) in terms of technical, environmental, and economic aspects. The paper also proposes a mathematical model to estimate the optimal size and cost of the SPWPS based on the irrigation requirements and solar radiation data. The paper concludes that the SPWPS is a viable and sustainable alternative to the DPWPS, especially in remote areas where grid electricity is unavailable or unreliable.

Supervisor: **Dr. Mohammad Rofiqul Islam**, Professor, Mechanical Engineering, Rajshahi University of Engineering and Technology

PROFESSIONAL EXPERIENCE:

Feb, 2022 – March, 2022 **Bangladesh Power Development Board (BPDB)**

1-month-long Industrial Attachment in Bangladesh Power Development Board (BPDB), An enterprise of the Ministry of Power, Energy and Mineral Resources, Government of the People's Republic of Bangladesh. Gained detailed knowledge of power generation, transmission, and Company distribution systems. Visited and observed the operation and maintenance of the Barapukuria Coal Mining Limited and the Barapukuria Coal Power Plant in Dinajpur.

PROJECTS:

2019 **Automatic street light system based on Light-Dependent Resistor (LDR):**

Designed and implemented a circuit that uses an LDR and a transistor to control the switching of street lights based on the ambient light intensity. The circuit can save energy and reduce maintenance costs by automatically turning on and off the street lights at the appropriate time. The project involved using Arduino, LED, LDR, resistor, relay, and breadboard

- 2018 Design and fabrication of a hydraulic ram pump**
 Developed and tested a device that uses the energy of flowing water to pump water to a higher elevation without any external power source. The project involved using PVC pipes, valves, springs, and fittings. The pump can be used for irrigation, domestic water supply, or rural development
- 2017 Automatic braking system using fuzzy logic**
 Implemented and simulated a system that can automatically apply brakes to a vehicle based on the distance and speed of the obstacle ahead. The project involved using MATLAB, Simulink, and Fuzzy Logic Toolbox. The system can improve road safety, reduce human error, and prevent collisions.
- 2017 Solar-powered refrigeration system using adsorption technology**
 Designed and constructed a prototype of a refrigeration system that uses solar energy to produce cooling effect. The project involved using activated carbon, methanol, copper tubes, and a solar collector. The system can be used for food preservation, medical applications, or air conditioning.

TECHNICAL SKILLS:

- **Software:** Solidworks, Auto-CAD (2D, 3D), Ansys Workbench, Ansys Fluent, MS Office Tools
- **Programming Languages:** Python, C++
- **Networking and communication:** Leadership, Networking and Communication, Team Management, Critical Analysis, Problem Solving ,Time-Keeping, Punctuality, Responsibility

LANGUAGES:

- **Bengali-** Native language
- **English-** Fluent