UNIVERSITY OF KASHMIR

INSTITUTE OF TECHNOLOGY

ZAKURA CAMPUS

INDUSTRIAL VISIT REPORT

UPPER SINDH-II HYDROELECTRIC POWER PROJECT

Kangan, Ganderbal, Jammu & Kashmir

Installed capacity: 105 MW (3 × 35 MW)

Date of visit: 05 NOVEMBER 2026

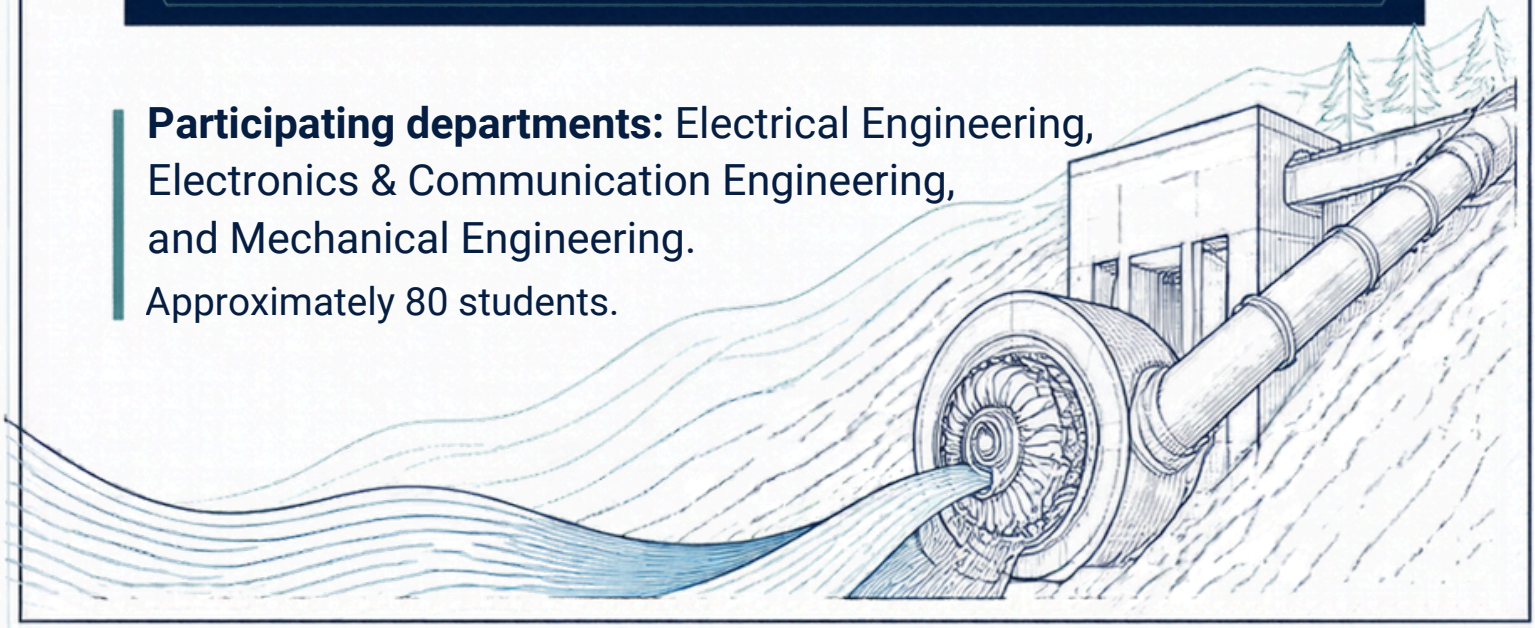
ORGANIZED BY

DEPARTMENT OF ELECTRICAL ENGINEERING

Institute of Technology, University of Kashmir, Zakura Campus

Participating departments: Electrical Engineering, Electronics & Communication Engineering, and Mechanical Engineering.

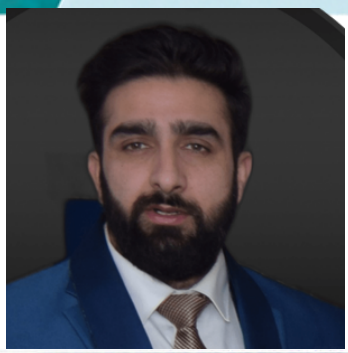
Approximately 80 students.



4. Faculty Members

The industrial visit was organised and supervised by the faculty members of the participating departments, who coordinated with the power station authorities and guided the students throughout the visit.

Faculty Coordinators



Dr. Ubaid Qureshi

Coordinator / Sr. Assistant Professor
Electrical Engineering Department



Er. Rouf ul Alam Bhat

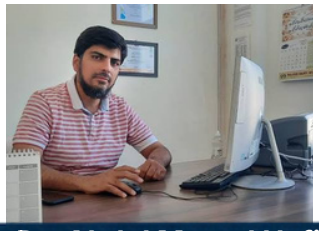
Coordinator / Sr. Assistant Professor
Electronics & Communication
Engineering Department



Dr. Farooq Ahmed Najar

Coordinator / Assistant Professor
Mechanical Engineering Department

Accompanying Faculty



Dr. Abdul Mueed Hafiz

Sr. Assistant Professor Electronics &
Communication Engineering
Department



Er. Malik Younis Ahmed

Assistant Professor
Electrical Engineering Department



Mr. GM Gudoo

Technical Assistant
Electrical Engineering Department



Dr. Summera Banday

Assistant Professor
Mechanical Engineering
Department



Dr. Ishfaq Amin Makaei

Assistant Professor
Mechanical Engineering
Department



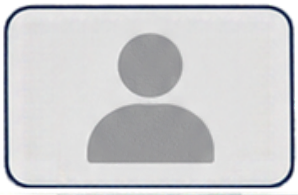
Dr. Irfan Ahmed Faiq

Assistant Professor
Department of Mathematics



Dr. Injila

Assistant Professor Electronics &
Communication Engineering
Department



Ms. Jasira

Technical Assistant
Electrical Engineering Department

1. Introduction

The Department of Electrical Engineering, Institute of Technology, University of Kashmir, organised an industrial visit to the **Upper Sindh-II Hydroelectric Power Project**, Kangan, Ganderbal, on **5 November 2026.**



The visit was organised as an academic initiative to provide students with practical exposure to the functioning of a hydroelectric power station and to strengthen their understanding of concepts studied in their respective engineering disciplines.

Approximately 80 students from the Electrical Engineering, Electronics and Communication Engineering (ECE), and Mechanical Engineering (ME) departments participated in the visit. Faculty members from the participating departments accompanied the students, while technical guidance and explanations were provided by the engineers of the power station.

2. Objectives of the Visit

- To understand the working principles of a hydroelectric power generation station.
- To gain practical exposure to turbines, generators and associated electrical equipment.
- To observe power generation, control, monitoring and protection arrangements.
- To understand the role of mechanical and electrical systems in hydroelectric power generation.
- To bridge the gap between theoretical classroom learning and practical industrial applications.
- To interact with plant engineers and gain insights into the operation and maintenance of a power station.

3. Visit at a Glance

Date of Visit	5 November 2026
Location	Kangan, Ganderbal
Facility	Upper Sindh-II Hydroelectric Power Project
Installed Capacity	105 MW (3 × 35 MW)
Participating Students	Approximately 80
Organising Department	Department of Electrical Engineering
Participating Departments	Electrical Engineering (EE), Electronics and Communication Engineering (ECE) and Mechanical Engineering (ME)
Guidance	Faculty members and plant engineers

5. About the Host Institution

The industrial visit was conducted at the **Upper Sindh-II Hydroelectric Power Project (US-II)**, located at Kangan in Ganderbal district of Jammu & Kashmir. The project is a run-of-river hydroelectric scheme developed to harness the hydropower potential of the Sindh River and contribute to the power generation capacity of the Union Territory.



Key Details of the Project

Installed Capacity	River	Location	Type	Commissioning
105 MW(3 × 35 MW)	Sindh River	Kangan, Ganderbal (J&K)	Run-of-River Hydroelectric Project	2018

Project Overview

The Upper Sindh-II Hydroelectric Power Project (US-II) is a run-of-river scheme with an installed capacity of **105 MW**, comprising **three generating units of 35 MW each**. The project utilises the water from the Sindh River through a diversion structure, head race tunnel, and a surface/underground powerhouse to generate clean and renewable electricity for the UT of Jammu & Kashmir.

- Generates clean and renewable hydropower.
- Enhances the power supply in Jammu & Kashmir.
- Contributes to sustainable and green energy development.

Major Components



Diversion Weir & Intake



penstock



Powerhouse (3 × 35 MW)



Step-Up Transformers



Switchyard & Evacuation System

6. Visit Photo Gallery

A glimpse of the industrial visit to the **Upper Sindh-II Hydroelectric Power Project,** Kangan, Ganderbal, conducted on **5 November 2026.**

Photographs from the Visit











Photographs from the Visit









Photographs from the Visit









7. Key Takeaways, Outcomes & Conclusion

Key Learnings

- Understood the complete working of a run-of-the-river hydroelectric power station.
- Gained practical exposure to major equipment such as turbines, generators, transformers, and control & protection systems.
- Learned about power generation, grid synchronization, and plant monitoring.
- Understood the role of civil structures (intake, penstock, powerhouse, and tailrace).
- Observed the operation and maintenance practices for safe and reliable power generation.

Outcomes of the Visit

- Bridged the gap between classroom theory and real-world application.
- Enhanced understanding of renewable energy and its importance in the region.
- Gained awareness about environmental and social benefits of hydroelectric projects.
- Developed an appreciation for the scale, planning and coordination involved in such projects.

Student Feedback

> "An insightful and enriching experience that helped us understand the real-world operation of a hydroelectric power plant."

> "The visit was highly informative and gave us valuable exposure to the practical aspects of power generation."

> "It was a great learning opportunity to see how the concepts we study in class are implemented at such a large scale."

Conclusion

The industrial visit to the Upper Sindh-II Hydroelectric Power Project was a highly valuable learning experience. It provided a practical understanding of hydroelectric power generation, familiarised us with major plant equipment and operations, and highlighted the significance of renewable energy in ensuring a sustainable and reliable power supply for the Kashmir Valley. The visit successfully fulfilled its objective of linking theoretical knowledge with real-world engineering practices.

Acknowledgement

We express our sincere gratitude to the management and engineers of the Upper Sindh-II Hydroelectric Power Project, Kangan, Ganderbal, for their warm hospitality, valuable time, and insightful guidance during the visit. We also thank the faculty coordinators and accompanying faculty members of the Institute of Technology, University of Kashmir, for organising this informative industrial visit and for their constant support and encouragement.