

Report on Industrial Visit to Junna Solar Systems Limited

An industrial visit was organized for the students of Electrical and Electronics Engineering Department, Bharat Institute of Engineering and Technology on to Junna Solar Systems Limited, a leading company specializing in the design and development of solar photovoltaic (PV) cells and panels. The objective of the visit was to gain practical exposure to the working of solar energy systems, understand the manufacturing process of PV cells, and explore current innovations in the field of renewable energy.

Objective of the Visit

- To understand the design and fabrication process of solar PV cells and modules.
- To observe the real-time implementation of solar technology.
- To learn about the materials and equipment used in solar panel production.
- To understand quality control and testing procedures.
- To explore the applications and market trends in the solar energy sector.

Company Overview

Junna Solar Systems Limited is a reputed manufacturer and designer of high-efficiency solar PV cells and panels. The company integrates advanced semiconductor technologies and sustainability practices to produce both monocrystalline and polycrystalline panels. Their products cater to residential, commercial, and industrial solar installations.

Visit Highlights

- **Presentation Session:** The visit began with a briefing session where company engineers gave a presentation about the basics of solar energy, types of PV cells, panel configurations, and industry trends.
- **Design and Simulation Lab:** The students were shown how PV cells are designed using software tools for performance prediction, shading analysis, and electrical output estimation.
- **Manufacturing Area:** A tour of the manufacturing floor provided insights into:
 - Silicon wafer cutting and doping processes
 - Cell interconnection and lamination
 - Framing and encapsulation
 - Use of automated machinery for precision assembly

- **Quality Control Lab:** Students observed the various electrical and mechanical tests conducted on the solar panels to ensure durability, safety, and efficiency standards.
- **R&D Department:** The company's research team explained their work on improving cell efficiency, using perovskite materials, and integrating smart monitoring systems.

Learning Outcomes

- Gained first-hand knowledge of solar PV technology from concept to final product.
- Understood the importance of clean energy and its practical challenges.
- Learned about innovations like bifacial solar panels, thin-film technologies, and hybrid inverters.
- Improved understanding of industrial safety, project management, and quality assurance in manufacturing.

The industrial visit to Junna Solar Systems Limited was an enriching experience that enhanced our theoretical knowledge with practical exposure. It not only deepened our understanding of solar PV systems but also inspired interest in sustainable energy solutions. We express our sincere thanks to the faculty coordinators and the company staff for their support and guidance throughout the visit. Below are some photographs of the visit.



1. Industrial Visit to Junna Solar Systems Limited



2. Solar Panel Design Unit

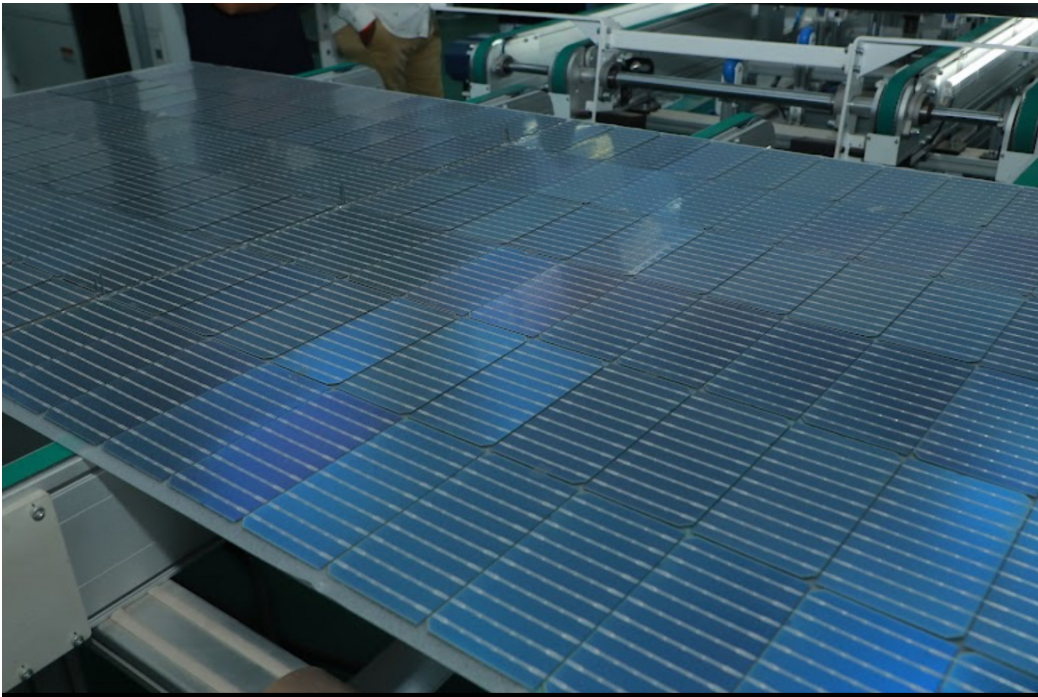


3. 90 Degree Flip Visual Inspection

Solar Pump Set



4. Solar Water Pump



5. Premium Solar Modules, Cells and Mounting Structures



6. Students understanding the design of Solar PV Cells