छोटुभाई गोपालभाई पटेल प्रौद्योगिकी संस्थान, बारडोली
Chhotubhai Gopalbhai Patel Institute of Technology, Bardoli

Uka Tarsadia University

Chhotubhai Gopalbhai Patel Institute of Technology

Report on Industrial Visit
at
"Palsana Enviro Protection Ltd."

Date: 24/01/2026

Place: Umbhel, Surat

Time: 10:30 AM to 03:00 PM

Total No. of Students: All students of B Tech Chemical Engineering

Visit Coordinator: 1 Dr. Susmit Ilame, Group Head, (Chemical/Civil), UTU

2. Mrs. Renuka Modi, Assistant Professor, Chemical Engineering

Program Objective:

To provide students with firsthand exposure to the complete industrial-scale process of Effluent Treatment Plant and its integrated by-product processing, bridging theoretical knowledge of chemical and mechanical engineering principles with practical plant operations, automation, and sustainable waste management practices.

Program Outline:

1. Introduction & Safety Briefing: Overview of the factory layout and safety protocols.
2. Core ETP plant Tour:
    - Preliminary Process: Observation of inlet waste water, screening, and imbibition.
    - Primary Process: Visit to theThickening and sludge Process station.
    - Secondary Process: Viewing Sequential Batch Reactor systems and Bio-film for advanced treatment.

- Sludge Management: Heat Exchangers, Drying, and Bagging Process.

3. **Auxiliary & Co-Generation Operations:**
    - **Boiler Operation:** Understanding steam generation for both power and process heating.
4. **Sustainable By-Product Management:**
    - **Ethanol Plant Spent Wash Processing:** Studying **Biogas Production** from anaerobic digestion, highlighting environmental sustainability and circular economy.

Program Outcomes:

Upon completion of the program, students will be able to:

1. Map the sequential unit operations in a conventional ETP plant.
2. Identify the key machinery (like boilers, evaporators, centrifugals, digesters) and explain their basic working principles.
3. Appreciate the integration of chemical processes (like sulphitation, sedimentation) with mechanical operations for mass production.
4. Recognize the importance of energy management and waste-to-wealth initiatives in modern agro-industries.

Schedule of Events:

Time	Activity
10:30 am to 10:50 am	Arrival and Safety briefing at the factory
11:15 am to 1:30 am	**Guided Tour of Wastewater treatment Process:** • Collection tank, screening, sludge separation. • Primary, secondary and tertiary treatment process • Sludge Separation and management.
01:30 pm to 2:00 pm	**Expert session from Authority of PEPL**
2:30 PM to 03:00 PM	Lunch
03:00 pm	Departure from the factory.

List of students visited

Sr. No.	College	Branch	Sem	Enrollment No	Name of Student
1	CGPIT	Chemical	4th	202403103510059	Priyanshukumar Bharatbhai Surati
2	CGPIT	Chemical	4th	202403103510060	Shahid Mohamad Mustak Mansur
3	CGPIT	Chemical	4th	202403103510336	Raj Sandeep Desai

4	CGPIT	Chemical	4th	202503103520069	Shivam Dhaneshkumar Rai
5	CGPIT	Chemical	4th	202503103520070	Yashvi Patel
6	CGPIT	Chemical	6th	202303103510268	Kishorbhai Shiroya Rashesh
7	CGPIT	Chemical	6th	202303103510340	Jay Bharatbhai Patel
8	CGPIT	Chemical	6th	202403103520002	Nirmalsinh Dilipsinh Yadav
9	CGPIT	Chemical	6th	202403103520005	Jayeshbhai Patel Dhyey
10	CGPIT	Chemical	6th	202403103520092	Ansh Rakeshkumar Modi
11	CGPIT	Chemical	6th	202403103520118	Karankumar Ajitsinh Patel

Significance of the Visit

The industrial visit to PEPL was a pivotal experiential learning opportunity with multi-layered significance:

1. Bridged Theory & Practice: It transformed textbook concepts (evaporation, crystallization, centrifugation) into tangible, large-scale operations, deepening technical understanding.
2. Demonstrated Integrated Engineering: Students witnessed the synergy of chemical, mechanical, and environmental engineering in a live plant, from boiler operation to process control.
3. Highlighted Sustainable Innovation: The biogas plant using spent wash was a live case study in circular economy and environmental responsibility, showcasing waste-to-wealth technology.
4. Provided Career Context: It offered a realistic preview of industry scale, safety, and potential engineering roles, aiding professional orientation and motivation.

In essence, the visit connected academic knowledge to real-world industry, emphasizing both technical processes and sustainable engineering practices.

Key Highlights of the Visit

1. End-to-End Process Observation: Witnessed the complete ETP chain—from wastewater to bagging—in a single, integrated facility.
2. Core Technical Processes:
   - Sedimentation for waterwater treatment.
   - Heat Exchanger and Boiler operations,
   - Sludge Management and utilities.
3. Sustainability in Action:
   - Biogas production from spent wash of the ethanol plant, demonstrating effective waste-to-energy conversion and circular economy practices.

4. Utility and Power:
    - Observed Boiler Operation, understanding its critical role in providing steam for both power and process heating across the plant.
5. **Scale and Automation:**
    - Experienced the magnitude of industrial-scale equipment and automated control systems, highlighting modern agro-processing efficiency.

Photos of the Visit

This industrial visit to Palsana Enviro Protection Ltd successfully transformed theoretical engineering concepts into tangible, real-world understanding. By witnessing the complete wastewater process alongside innovative sustainability practices like bio-aeration generation, the visit bridged classroom learning with industrial application. It effectively highlighted the integration of technology, efficiency, and environmental responsibility, leaving students with practical insights and reinforced academic knowledge essential for their professional development as per **NAAC's accreditation criteria**.

Report prepared by: Dr. Susmit Ilame, Head-Chemical/Civil Engg. UTU

Date: 24/01/2026

Sign of the Head