



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 “Mahuva Sugar Factory, Mahuva.”

Date: 18/12/2025

Place: Bamania, Mahuva

Time: 09:00 AM to 03:00 PM

Total No. of Students: 33 (boys) 5(girls) students of Diploma Chemical / Civil / Mechanical / Environmental, BTech Chemical

Visit Coordinator: 1.Mr. Manish Mahadevwala, Lecturer, Diwaliba Polytechnic, UTU
2. Dr. Susmit Ilame, Group Head, (Chemical/Civil), UTU

Visit Companion: Mr. Vijay Vaghela, Mr. Parvez Dhensa (Diwaliba Polytechnic), Dr. Susmit Ilame, CGPIT, UTU

Program Objective:

To provide students with firsthand exposure to the complete industrial-scale process of sugar manufacturing 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 Sugar Process Tour:
 - Juice Extraction: Observation of cane feeding, milling, and imbibition.

- Juice Purification: Visit to the Clarification and Sulphitation Process station.
 - Concentration & Crystallization: Viewing multi-effect Evaporation systems and vacuum pans for Crystallization.
 - Sugar Recovery: Observing Centrifugal Separation, 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 sugar factory.
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, crystallization) 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
10:00 am to 10:15 am	Arrival and Safety briefing at the factory
10:15 am to 10:30 am	Guided Tour of Core Sugar Process: • Juice Extraction • Clarification & Sulphitation • Evaporation & Crystallization
10:30 am to 11:00 am	Sugar Recovery Section: • Centrifugal Separation • Drying & Bagging Process
11:00 am to 11:30 am	Boiler operation through Bagasse
11:30 am to 1:00 pm	Auxiliary Units: • Boiler House Visit (Steam & Power Generation)
1:00 pm to 1:30 pm	Sustainability Unit: • Biogas Plant (Spent Wash Treatment)
1:30 pm to 2:00 pm	Interactive Q&A session with plant engineers and supervisors.
2:00 pm	Departure from the factory.

List of students visited

Sr. No.	College	Branch	Sem	Enrollment No	Name of Student
1	Diwaliba Polytechnic	Chemical	4th	202402100510001	Makadiya Yash
2	Diwaliba Polytechnic	Chemical	4th	202402100510002	Mitrajsinh Bhavinsinh
3	Diwaliba Polytechnic	Chemical	4th	202402100510003	Yadav Anirudhdhsinh
4	Diwaliba Polytechnic	Chemical	4th	202402100510004	Daksh Prajapti
5	Diwaliba Polytechnic	Chemical	4th	202402100510005	Meghpara Yash Nareshbhai
6	Diwaliba Polytechnic	Chemical	4th	202402100510006	Katakiya Umang
7	Diwaliba Polytechnic	Chemical	4th	202402100510007	Vedant K Patel
8	Diwaliba Polytechnic	Chemical	4th	202402100510009	Modi Akshat
9	Diwaliba Polytechnic	Chemical	4th	202502100520001	Malek Umar
10	Diwaliba Polytechnic	Chemical	4th	202502100520002	Daivikkumar Kaushikbhai Patel
11	Diwaliba Polytechnic	Chemical	4th	202502100520003	Tusharkumar Nareshbhai Patel
12	Diwaliba Polytechnic	Env	4th	202402100310001	Saumya Singh
13	Diwaliba Polytechnic	Env	4th	202402100310002	Nidhi Gamit
14	Diwaliba Polytechnic	Civil	4th	202402100310002	Het Jethava
15	Diwaliba Polytechnic	Civil	4th	202402100310006	Dev Patel
16	Diwaliba Polytechnic	Civil	4th	202402100310008	Krish Patel
17	Diwaliba Polytechnic	Civil	4th	202402100310009	Prince Kanani
18	Diwaliba Polytechnic	Civil	4th	202402100310010	Prachi Chaudhari
19	Diwaliba Polytechnic	Civil	4th	202402100310011	Taj Vaghasiya
20	CGPIT	Chemical	4th	202403103510059	Priyanshukumar Bharatbhai Surati
21	CGPIT	Chemical	4th	202403103510060	Shahid Mohamad Mustak Mansur
22	CGPIT	Chemical	4th	202403103510336	Raj Sandeep Desai
23	CGPIT	Chemical	4th	202503103520069	Shivam Dhaneshkumar Rai
24	CGPIT	Chemical	4th	202503103520070	Yashvi Patel
25	CGPIT	Chemical	6th	202303103510268	Kishorbhai Shiroya Rashesh
26	CGPIT	Chemical	6th	202303103510340	Jay Bharatbhai Patel
27	CGPIT	Chemical	6th	202403103520002	Nirmalsinh Dilipsinh Yadav
28	CGPIT	Chemical	6th	202403103520005	Jayeshbhai Patel Dhyey
29	CGPIT	Chemical	6th	202403103520092	Ansh Rakeshkumar Modi
30	CGPIT	Chemical	6th	202403103520118	Karankumar Ajitsinh Patel
31	Diwaliba Polytechnic	Civil	6 th	202302100310006	Ahir Dhruv

32	Diwaliba Polytechnic	Civil	6 th	202302100310007	Chaudhari Megha
33	Diwaliba Polytechnic	Env	6 th	202302100610001	Prem Patil
34	Diwaliba Polytechnic	Env	6 th	202302100610003	Dipa Patel
35	Diwaliba Polytechnic	Mechanical	4 th	202402100210005	Patel Viraj S.
36	Diwaliba Polytechnic	Mechanical	4 th	202402100210006	Vasarkar Jay R.
37	Diwaliba Polytechnic	Mechanical	4 th	202402100210007	Nayka Sem M.
38	Diwaliba Polytechnic	Env	6 th	202302100610002	Gohil Chandradip J

Significance of the Visit

The industrial visit to Mahuva Sugar Factory 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 sugar manufacturing chain—from juice extraction to bagging—in a single, integrated facility.
2. Core Technical Processes:
 - Sulphitation for juice purification.
 - Multi-effect Evaporation and controlled Crystallization.
 - Centrifugal Separation of molasses and sugar crystals.
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 Mahuva Sugar Factory successfully transformed theoretical engineering concepts into tangible, real-world understanding. By witnessing the complete sugar manufacturing process alongside innovative sustainability practices like biogas 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: Mr. Manish Mahadevwala, Lecturer, Diwaliba Polytechnic, UTU

Date: 18/12/2025

Sign of the Head