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**Sarvajanik University  
Sarvajanik College of Engineering &  
Technology, Surat**

***A report***

***on***

***Visit to***

**M/s MANTRA, Surat.**

(The Man-Made Textiles Research Association)

**on**

**28<sup>th</sup> March 2025**

**Shree Dhanshukhlal Thakordas**

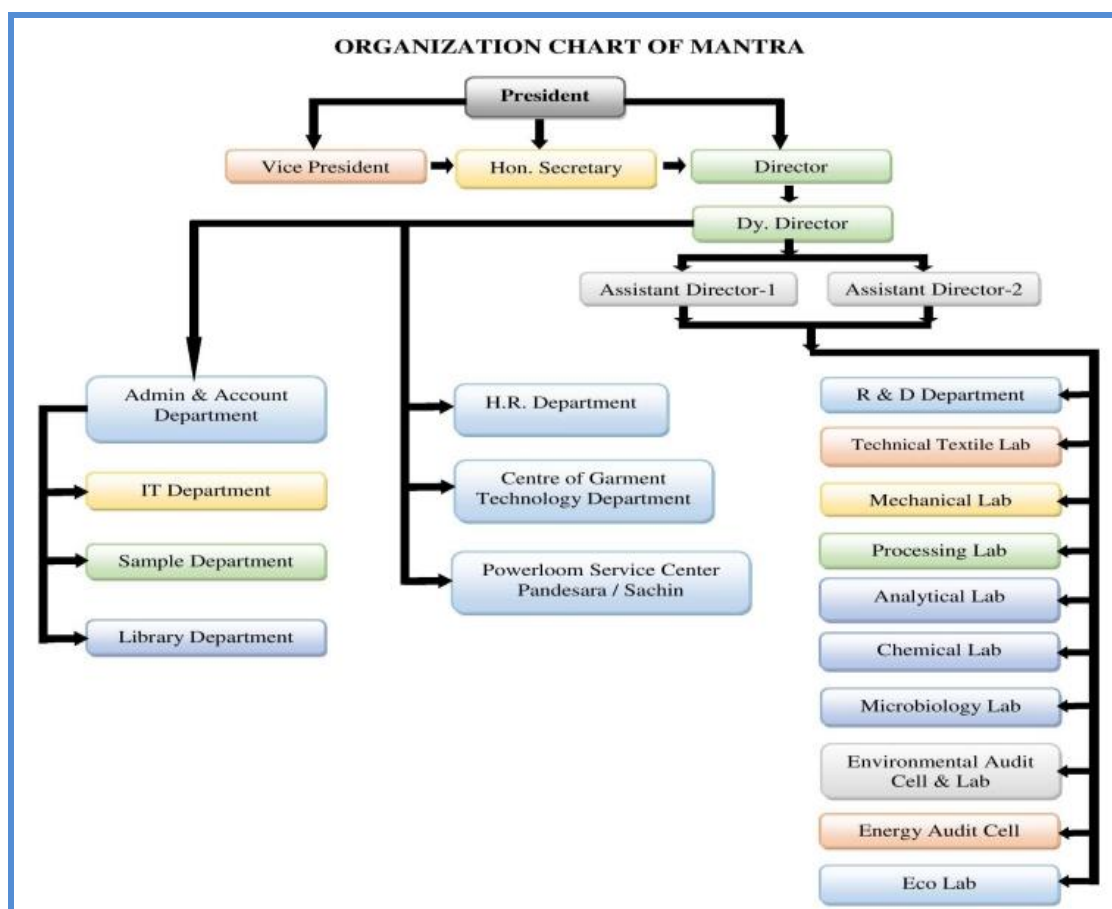
**Department of Chemical Engineering  
Sarvajanik College of Engineering & Technology,**

Dr. R. K. Desai Marg, Athwalines, Surat- 395001

- **Objectives of the visit:** A visit to a research organization helps the students to visualize the role of research in shaping the future. Further they are able to understand the concept/significance of testing and analysis of samples in the laboratory which are crucial in every stage of Industrial manufacture. Also that students are able to see the technological innovations in machinery, limitations in the field of testing and learn how such research houses play a key role serve in solving the problems faced by industries.

**Resource Person:** Mr. Hitesh Jariwala Deputy Director.  
**Location:** M/s. MANTRA, Ring Road, Surat.  
**Date and Time:** 28.03.2025 12:00 noon onwards  
**Participants:** B TECH II SEM IV SU students (11)  
**Faculty Coordinator** Dr. Swati Sharma, Professor, Chemical Engineering Department.

The Man-Made Textiles Research Association (MANTRA) in Surat, was established in 1981. Being one of the eight national level Textiles Research Associations (TRAs) and one of the leading TRAs in man-made fibres, approved by the Ministry of Textiles, Government of India. MANTRA is also recognized as SIRO by the Department of Scientific & Industrial Research, Ministry of Science & Technology, Government of India. MANTRA, a premier institution dedicated to research and development in man-made fibers and textiles was established with a view to carry out research and development activities as well as to provide testing and technical service facilities to the man-made fibre textiles industry, in particular, and other allied industries of South Gujarat in general.



A visit to the M/s MANTRA, Surat was organized by Department of Chemical Engineering SCET on 28.03.2025 for UG chemical engineering students, 12:00 noon onwards.

A very warm welcome was accorded to all by Mrs. Khushbu Gandhi, HR Executive, MANTRA. All students were led around in the various divisions by concerned staff who tried their best to explain and resolve the queries of the students.

### **1. Visit to the Chemical Laboratory**

The tour commenced at the Chemical Laboratory, where there were various testing processes essential for ensuring fabric quality. The tests included pH Value Test: Determining the acidity or alkalinity of fabric samples, Colorfastness Tests, Water Repellency and Absorbency Test, Oil and Stain Resistance Tests, Flammability Test, Formaldehyde Content Test, Antimicrobial/Antibacterial Test.

### **2. Fabric Production from Cotton Fiber**

The transformation of cotton fiber into fabric was being done stagewise as follows:

Fiber Cleaning: Removing impurities to purify the cotton.

Fabric Formation Techniques:

- Water Technique: Utilizing water-based methods to align and bond fibers.
- Needle Knitting: Interlocking loops of yarn using needles to create fabric.

Moisture Removal: Employing a large oven to eliminate residual moisture from the fabric.

### **3. Visit to the Mechanical Laboratory**

The Mechanical lab department head provided insights into the testing of dyed and printed fabrics. Here, the students had observed assessments of tensile strength, tear resistance, and abrasion resistance, which are crucial for determining fabric durability.

### **4. Tour of the IT Department**

In the IT Department students were explained about the management of computer systems supporting MANTRA's research and administrative functions.

### **5. Environmental Laboratory**

At the Environmental Lab, students observed the following tests:

Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Dissolved Solids (TDS), Total Suspended Solids (TSS), pH Levels.

Here the students had the opportunity to meet a chemical engineering (SCET) alumnus, who shared valuable experiences and insights from his professional journey.

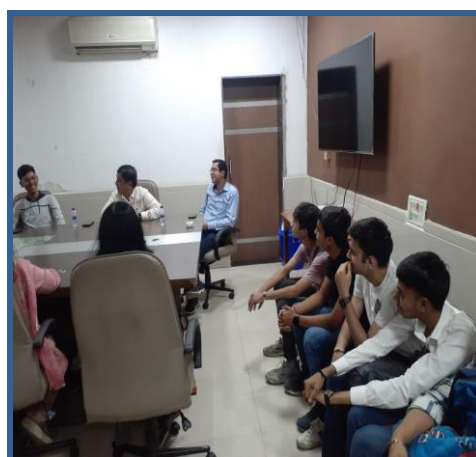
### **Interaction with MANTRA Leadership**

The visit concluded with an enlightening session with the esteemed Director, Dr. Arup Rakshit and the Deputy Director, Dr. Hitesh Jariwala. They emphasized the importance of continuous learning, adaptability, and staying abreast of technological advancements in the textile industry. Their advice underscored the significance of integrating academic knowledge with practical industry exposure.

The visit to MANTRA provided a valuable opportunity to witness the intersection of textile technology, chemical processing, and environmental considerations. Engaging with industry professionals and seeing real-world applications of studies reinforces the importance of innovation and research in every sector and further motivates the students to explore new

horizons of research.

➤ **GLIMPSES OF THE VISIT: (No elaborate pictures as photography was strictly prohibited)**



**Acknowledgments:** The Chemical Engineering Department, SCET would like to acknowledge, the following for making this visit possible.

- Managing trustees and office bearers of the Sarvajanik University
- Prof. (Dr.) Hiren Patel, Principal, SCET
- Dr. Srujal Rana, Head, Chemical Engineering Department
- Mr. Hitesh Jariwala Deputy Director and Mrs Khushbu Gandhi HR, MANTRA.

*-Compiled by Dr. Swati Sharma, Professor, Chemical Engineering Department.*