

# Visit Report

Industrial Visit to BARC's Electron Beam Centre (EBC), Mumbai  
Organized under IIW Student Chapter - MET Bhujbal Knowledge City  
Date: 25th March 2025

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## Introduction

An industrial visit to the **Electron Beam Centre (EBC)** of **Bhabha Atomic Research Centre (BARC)**, Mumbai, was organized on **25th March 2025** under the banner of the **Indian Institute of Welding (IIW) Student Chapter** of **MET Bhujbal Knowledge City**. The purpose of the visit was to provide students with practical exposure to advanced welding and fabrication technologies, specifically electron beam applications, and to bridge the gap between classroom knowledge and industrial practices.

## Participation

A total of **32 students** from MET Bhujbal Knowledge City participated in the visit. The group was accompanied and guided by faculty members, ensuring smooth coordination throughout the program. The visit was a valuable opportunity for students to observe high-end research facilities and gain insights into the role of advanced technologies in modern engineering.

## Overview of the Visit

During the visit, students were introduced to the **fundamentals of electron beam technology** and its industrial significance. The staff and experts at the centre provided an overview of the principles behind electron beam processing, including its applications in **precision welding, additive manufacturing, and surface treatment**.

A key highlight of the visit was the opportunity to observe the **particle accelerator** and its role in generating high-energy electron beams. Students also gained an understanding of the specialized equipment and vacuum systems required for electron beam operations. The detailed demonstrations helped them relate theoretical concepts studied in academics to real-world technological applications.

## Key Learnings

The visit provided students with a clear understanding of:

- The working principle and industrial uses of **electron beam technology**.
- The importance of **precision and control** in welding and material processing.
- The role of particle accelerators in generating and directing electron beams.
- Safety measures, technical infrastructure, and industrial standards associated with advanced fabrication technologies.

## Outcome

The visit proved to be highly beneficial for the students. It broadened their knowledge about **cutting-edge manufacturing and welding processes** and motivated them to explore research and career opportunities in advanced material processing. Exposure to

such facilities also emphasized the importance of innovation and interdisciplinary learning in engineering.

## Conclusion

The **industrial visit to BARC's Electron Beam Centre** was a highly enriching experience. It enabled students to connect classroom learning with practical industrial applications and provided a deeper appreciation of the technological advancements in the field of welding and material sciences.

Such visits play a vital role in **enhancing students' technical knowledge, encouraging innovation, and inspiring them to pursue excellence in their academic and professional careers.** The initiative of the IIW Student Chapter of MET Bhujbal Knowledge City in organizing this visit was commendable, as it added immense value to the overall learning journey of the participants.

