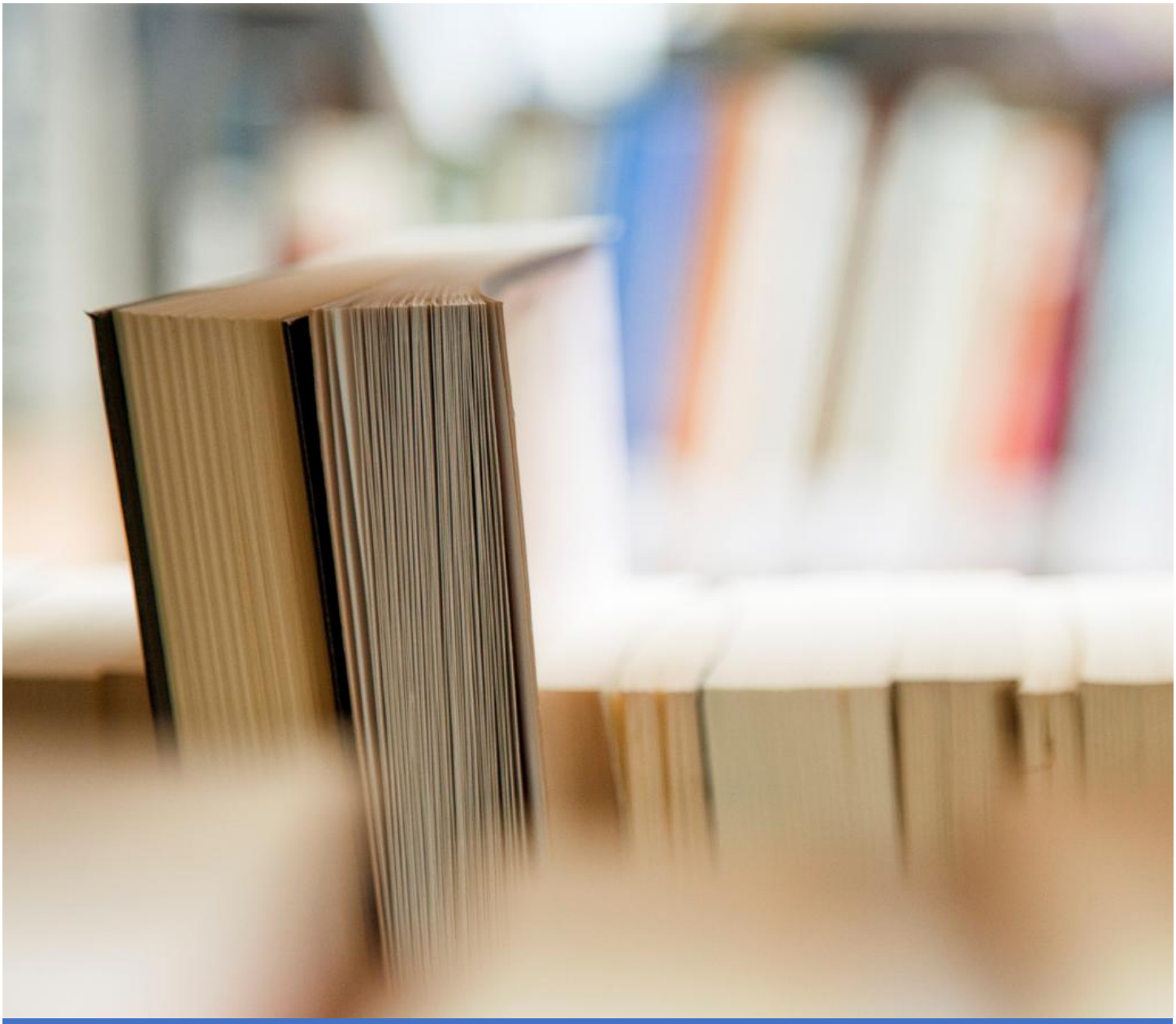

Industrial Visit Report

MDM-3D Printing (AY-2025-26, Sem-I)

Report on One Day Industrial Visit to Autocluster Development and Research Centre, Chinchwad, Pune

Date of Visit: 23rd September 2025

Subjects: MDM – 3D Printing

Participants: S. Y. B. Tech (AIDS), T. Y. B. Tech (COMP and AIDS)

The Department of Mechanical Engineering organized a one-day industrial visit to **Autocluster Development and Research Centre, Chinchwad, Pune** on **23rd September 2025**. The visit was arranged for the students of **Second Year B. Tech (AIDS)** and **Third Year B. Tech (COMP and AIDS)** as a part of the curriculum for the subject *MDM – 3D Printing*.

Objective of the Visit

The primary objective of the visit was to provide the students with practical exposure to **modern additive manufacturing techniques** and to bridge the gap between theoretical concepts and real-world applications of 3D printing. The visit also aimed to enhance the students' understanding of how 3D printing technologies are transforming industries such as automotive, aerospace, healthcare, product design, and prototyping.

Highlights of the Visit

1. **Introduction Session:**
   Students were welcomed by the technical experts at Autocluster. A brief orientation was given about the centre's mission, facilities, and its contribution to industrial innovation and research.

2. **Demonstration of 3D Printing Technologies:**
   The students were introduced to a variety of **3D printing technologies**, including:
   - **Fused Deposition Modelling (FDM)** for rapid prototyping using thermoplastic filaments.
   - **Stereolithography (SLA)** showcasing high-precision resin-based printing.
   - **Selective Laser Sintering (SLS)** for industrial-grade printing of durable parts.
   - **Metal 3D Printing** for applications in automotive and aerospace.

3. **Live Demonstrations:**

   The experts provided live demonstrations of the operation of 3D printers, explaining step-by-step processes like model preparation, slicing, printer calibration, and the printing cycle. Students also observed post-processing techniques such as curing, finishing, and surface treatment.

4. **Applications in Industry:**

   Case studies were presented on how **3D printing reduces lead time, minimizes waste, and enables design flexibility**. Applications in **biomedical implants, automotive spare parts, customized tooling, and prototyping** were discussed.

5. **Interaction and Q&A Session:**

   Students actively interacted with the technical staff, clarifying their doubts regarding material selection, design guidelines, cost implications, and the future scope of additive manufacturing.

Outcomes of the Visit

- Students gained **first-hand exposure to cutting-edge 3D printing technologies**.
- They developed an understanding of the **industrial relevance** of 3D printing in various domains.
- The visit enhanced their knowledge of **design-to-product workflows** and the importance of material and process selection.
- It motivated students to explore **research and project opportunities** in the field of additive manufacturing.

Conclusion

The one-day industrial visit to **Autocluster Development and Research Centre, Chinchwad, Pune** proved to be highly informative and enriching for the students of AIDS and COMP departments. It successfully met its objective of familiarizing the students with **practical aspects of 3D printing technologies** and their industrial applications. The students expressed that such visits complement academic learning and encourage innovation-oriented thinking.


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