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Report on the Industrial Visit to STARC(SITAR)-"Fabrication unit under DRDO"

The department of **VLSI Design and Technology** conducted an **Industrial Visit** to **Fabrication unit of StarC** on **05-03-2026** at **09:00 AM to 01:00 PM**, in **StarC**.

Objectives of the Event

The primary objectives of the event were:

- To understand the fabrication process of MEMS and Infrared (IR) devices used in semiconductor industries.
- To observe the cleanroom facilities and advanced equipment used in microfabrication and device manufacturing.
- To gain practical exposure to semiconductor fabrication techniques and their real-time industrial applications.
- To bridge the gap between theoretical knowledge and industrial practices in MEMS, VLSI, and microelectronics.

Event Overview

An industrial visit was organised to the "STARC/SITAR fabrication unit", where advanced semiconductor devices such as "MEMS (Micro-Electro-Mechanical Systems) and Infrared (IR) devices" are fabricated. The visit provided students with an opportunity to observe a real semiconductor fabrication environment and understand how advanced microelectronic devices are developed. During the visit, the experts introduced the different "facilities available in the fabrication unit", including cleanroom environments, specialised equipment, and various fabrication sections used for device manufacturing. They explained the step-by-step fabrication process, starting from wafer preparation, photolithography, deposition, etching, and other microfabrication techniques involved in the development of MEMS and IR devices. The team also described the applications of MEMS sensors and infrared technologies, particularly in areas such as defence systems, sensing applications, and thermal imaging. Students were able to understand the importance of maintaining strict cleanroom standards and controlled environments for precise

Figure 1: Industrial Visit to StarC

semiconductor fabrication. Overall, the visit provided valuable exposure to real-time industrial practices, advanced fabrication technologies, and research activities carried out in the semiconductor field, helping students connect their academic knowledge with practical industrial applications.

Outcomes and Impact

- Enhanced understanding of semiconductor fabrication processes involved in MEMS and Infrared (IR) device development.
- Practical exposure to cleanroom environments and fabrication facilities, helping students understand real industrial practices.
- Improved knowledge of MEMS and IR technologies and their applications in areas such as sensing, defence, and imaging systems.
- Better connection between theoretical concepts and practical implementation in microelectronics and semiconductor technology.
- Increased awareness of research opportunities and career prospects in the semiconductor and microfabrication industries.

Conclusions

The industrial visit to the STARC/SITAR fabrication unit was a valuable learning experience for the students. It provided practical exposure to the fabrication

processes of MEMS and Infrared (IR) devices and helped students understand the advanced facilities and technologies used in semiconductor manufacturing. The experts' detailed explanations helped bridge the gap between theoretical knowledge and real-world industrial applications. Overall, the visit enhanced the students' understanding of microfabrication techniques, cleanroom practices, and semiconductor research, making it an informative and insightful experience.

Report by: Assistant Prof. Inchara K M

Affiliation: Faculty in the Department of VLSI Design and Technology.

MVJ College of Engineering