

Dated: 25/02/2026

REPORT

Industrial Visit to SSPL, DRDO

Date of Event: 25th February 2026

Venue: Solid State Physics Laboratory (SSPL), DRDO, Delhi

Objectives: The objective of the industrial visit was to provide students with practical exposure to advanced research and development activities carried out in defence laboratories.

Activities: The visit began with a warm welcome at SSPL, where students were addressed by Dr. Ravindra Pal, OS & Sc 'H' and Associate Director. He provided valuable insights into the vision, mission, and key contributions of SSPL in strengthening India's defence sector. Students were then guided through various specialized laboratories such as the Single Crystal Generation Lab, where they learned about semiconductor crystal growth and its significance in electronic and defence applications. The visit also included exposure to research in advanced materials such as piezoelectric materials, acoustic materials, and emission sensors. Students gained knowledge about how SSPL develops high-performance semiconductors and advanced sensors used in defence technologies. They also explored the integration of Artificial Intelligence and Machine Learning in material research, predictive analysis, and smart sensor systems.

Key Takeaways:

- Understanding of semiconductor production and its strategic importance.
- Exposure to single crystal growth and advanced material technologies.
- Insights into piezoelectric, acoustic, and emission sensor applications.
- Awareness of how Artificial Intelligence and Machine Learning are applied in defence research.
- Motivation towards innovation, research, and contributing to national development.
- Knowledge about the role of SSPL in strengthening India's self-reliance in semiconductor and defence technology.

Description:

The Department of Artificial Intelligence and Machine Learning organized an industrial visit to SSPL, DRDO on 25th February 2026. A total of 29 students along with 2 faculty members participated in the visit. The visit provided students with an opportunity to observe cutting-edge research in semiconductor technology and advanced defence materials. The session began with an interactive talk by Dr. Ravindra Pal, who explained the importance of indigenous research and technological advancements in achieving self-reliance in defence. Students were

taken to multiple laboratories, where scientists demonstrated the process of semiconductor fabrication, material characterization, and sensor development. The visit highlighted the interdisciplinary role of Artificial Intelligence and Machine Learning in defence applications such as predictive modelling, smart sensors, and data-driven decision-making. Students also learned about ongoing projects and future research opportunities in the field of advanced materials and semiconductors.

Outcomes: 29 students, along with 2 faculty members, benefited from the event.

Beneficiaries: AIML students.

Photographs of event with title: Industrial Visit to SSPL, DRDO







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