

Maharaja Surajmal Institute Of Technology, New Delhi

Report on Industrial Visit to NPL (National physical laboratory) Patel Nagar, New Delhi

Visited - 17th October 2025

Organized by- Department of Applied Sciences, 2nd Shift

Participants: 40 Students (IT 2nd shift)

Faculty In -Charge: Dr Sobinder Singh, Dr Malvika Chaudhary, Dr Rashmi Gupta

Introduction

The industrial visit to the National Physical Laboratory (NPL), New Delhi was organized to provide students with practical exposure to advanced scientific instruments and research techniques. NPL is one of India's premier research institutions working in the field of metrology, physics, and material science. The visit helped us understand how theoretical concepts studied in classrooms are applied in real-world measurements, calibration, and standardization processes.



Objective of the visit

- To understand the working principles of modern scientific instruments used in precise measurements.
- To gain knowledge about temperature and humidity metrology and their industrial applications.
- To learn about the functioning and significance of the atomic clock in maintaining accurate time standards in India
- To develop an awareness of the importance of research and innovation

Activities and Observations

During the visit, students were guided by NPL officials explained

- We visited the Temperature and Humidity Metrology Lab, where we learned how environmental parameters are measured and controlled with precision.
- The Atomic Clock Section demonstrated how India's national time is maintained with nanosecond accuracy.
- The Alcohol and Gas Metrology Unit showcased instruments used for testing and calibration in industries related to chemical and petroleum products.
- We observed how calibration standards are maintained, and how data accuracy is ensured through continuous monitoring and verification.
- The staff members also discussed various ongoing research projects and career opportunities in the field of physics and metrology.



Conclusion

The visit to NPL was an enriching experience that bridged the gap between theoretical knowledge and practical application. It provided valuable insights into how precision measurement plays a crucial role in scientific and industrial development. The interaction with experts inspired students to take interest in research and innovation.

Acknowledgment

We express our sincere gratitude to the National Physical Laboratory (NPL) authorities for allowing us to visit their prestigious facility. We also thank our faculty members and organizers for arranging this educational tour and guiding us throughout the visit. Special thanks to the NPL scientists and staff for their informative sessions and warm hospitality.

Future visits could include:

- Workshops on more such innovations
- Interactive sessions with industry experts.

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