Technical Report of Laboratory Visit -M.Tech Students 2021-2023
Department of Applied Physics

Laboratory name: Optica, Optics & Allied Engineering, Electronic city, Bommasandra, Bengaluru

Date of Visit: 01/06/2022

Total number of students visited: 10
Specialization of M.Tech: LEOC, OCP, ST

Our day began with an early morning car ride to Optics and Allied Engineering Pvt. Ltd., an established Indian company since 1985, supporting Medical, Aerospace, Astronomy, Automation, R & R&D Labs, and IR Optics. Their focus has been on Indian and global customers in Precision Optics and Polymer Optics. They Manufacture a wide range of optical components Viz: Lenses, Achromatic Doublets, Precision Windows, Optical Domes, Spherical & Parabolic Mirrors, Off-Axis Parabolic Mirrors, Diamond Turned Metal Mirrors, Silicon & Germanium Aspheric Lenses, Diffractive Optics, Wedges, Axicons, Optical Flats up to accuracy Lambda/20. All types of Prisms, Laser Optics, HR Laser Mirrors, Interference & Color Glass Filters, Plate & Cube Beam Splitters, Spherical & Parabolic, Mirrors up to Dia. 1200 mm, Machined Optical Glass Parts, Reticles, Optical Assemblies, Schlieren Systems and Turnkey Projects.

Their manufacturing facility includes:

1. Diamond Turning Machines Nano form X up to Dia. 420mm
2. 5 Axis High-Speed Ultrasonic Glass CNC Machining Center
3. 6 Axis High-Speed Large Size CNC Machining Center 1600mm
4. Optical Grinding and Polishing Machines
5. Curve Generators and Centering and Edging Machines
6. Thin Film Coating Plants for Optics & Polymer OPtics
7. High Speed Lens Polishing Machines
8. Large Optics Grinding Polishing Machine 1200mm

9. NC Turning Center & other conventional Machines like Milling, EDM, High Precision Surface Grinding M/C
10. Ultraprecision Lens Moulding M/C 30T - 350T

Laminar Flow Assembly and Inspection Tables

We learned about the company's growth from 1985 to the present day and how the company evolved from working in aerospace optics to the wide array of fields mentioned above. We were given a tour of the manufacturing facility which is divided into various segments where we also learned about management skills and safe manufacturing practices. We were also given an insight into how a technical idea gets converted into a viable commercial product.

A glimpse of the manufacturing facility at Optica (Photograph provided by the company)

Group photo outside the manufacturing facility


Optica
WARNING
CCTV
Surveillance