

# PURVA SHARNAGAT



## Contact

---

**Address:**

Centre of Sensors instrumentation  
and cyber-physical systems  
engineering (SeNSE)

**Phone:**

+91 8989101375

**Email:**

[purvasharnagat5@gmail.com](mailto:purvasharnagat5@gmail.com)  
idz218511@iitd.ac.in

## Languages

---

English  
Hindi

## Technical Skills

---

- MATLAB
- Python
- C (Basics)
- COMSOL  
Multiphysics
- LATEX
- Microsoft  
Office

## Summary

Experienced in optical metrology with a focus on laser systems, cavity design, and thermal analysis. Proficient in both computational and experimental research, dedicated to advancing knowledge in this specialized field.

## Area of research work

---

Optics, Optical metrology, laser, Optical cavity, Cavity ring-down spectroscopy for gas molecule detection and reflectivity measurement, Multilayer dielectric structures, thermal modelling

**PhD. thesis:** Optical metrology of high-power laser optics

**Master's thesis:** Generation of numerical model and graphical user interface for image reconstruction in super resolution optical microscopy using Structured Illumination (SIM)

## Education

---

**PhD. (Pursuing):** 2021- (present), SeNSE, Indian Institute of Technology, India

**Master:** MSc. in physics, 2019-2021, Department of physics, Indian Institute of Technology, India

**Bachelor:** BSc. Honours in mathematics, 2015-2018, Institute for Excellence in Higher Education Bhopal, India

## Awards And Achievements

---

Dr. P.L. Kapur and Mrs. Pushpa Kapur Memorial Award Best research project award, Physics department Indian Institute of Technology Delhi (2021).

National level-National children science congress NCSC In case study on power consumption and different measures for power saving, Department of Science and Technology (DST), Govt of India

## Academic Projects

---

Interference filter stabilized external cavity diode lasers and its advantages over other configurations for laser stability (Ph.D. minor project/Guide: Prof. Bodhadiya Santra)

Different Holographic techniques used for specific applications specifically for holographic imaging (M.Sc. minor project/Guide: Prof. Bhasker Kanseri)

Done a case study on working and modification on advanced Laser interferometry gravitational wave observatory (LIGO) to increase the detection sensitivity. (M.Sc. minor project/Guide: Prof. M.R. Shenoy)