

Detailed information regarding the Project

◆ Prof. Shailendra K. Varshney (IIT Kharagpur)

Prof. Varshney is offering an internship on “**Microring resonators for entangled photon pair generation**”, a **simulation-based project** focused on the design and development of silicon-based microring resonators for quantum photonics applications. The internship duration is open to **B.Tech students** from **ECE, CS, or Engineering Physics backgrounds**. The work involves computational modelling and design optimization of resonator architectures to generate entangled photons efficiently.

◆ Prof. Gopalan Rajaraman (IIT Bombay)

This internship focuses on a “**Machine Learning Approach to Growth Prediction of Quantum Materials**”, emphasizing **simulation and data-driven modelling** of material growth processes. The project integrates quantum chemistry with machine learning to optimize synthesis pathways. It is open to **M.Sc. students**, preferably with a background in **Physics or Chemistry**.

◆ Prof. Anirban Mitra (IIT Roorkee)

Prof. Mitra’s project titled “**Simulation for Fabrication of Avalanche Photodiode**” provides hands-on computational exposure to device simulation and process modelling. The interested candidates in semiconductor device fabrication and simulation can apply.

◆ Prof. Prasana Kumar Sahoo (IIT Kharagpur)

Prof. Sahoo’s **experimental internship** on “**CVD Growth of 2D Semiconductors for Quantum Light Sources**” offers students the opportunity to engage in **chemical vapor deposition (CVD) growth** and **characterization** of quantum-grade 2D materials. It is intended for **B.Tech students** with experience or interest in experimental nanomaterials work.

◆ Prof. Dibyajyoti Ghosh (IIT Delhi)

This internship, “**Modelling Quantum Emitters Using Atomistic and Continuum Approaches**,” focuses on **simulation-based studies** of quantum emitters and nanoscale optical properties. The candidate will employ atomistic modelling tools and continuum techniques to predict emission characteristics of 2D materials. Open to **M. Tech students**.