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 60 days, beginning around May 2026, and 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. (Maximum 5 students will be accepted.)

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, for a duration of six months starting November 2025. (One position available.)

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 **six-month project** begins in **December 2025** and is suitable for **M.Sc. students** interested in semiconductor device fabrication and simulation. (One student will be selected.)

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. The internship duration is eight months, starting October 2025, and is intended for B.Tech students with experience or interest in experimental nanomaterials work. (Two positions available.)

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, the internship will last for six months starting November 2025. (Two students will be accepted.)