

PhD, master, senior undergraduate research projects available in Quantum Nano-Photonics

We have multiple exciting projects available at the newly-established Hybrid Integrated Quantum Photonics Lab, Birck Nanotechnology Center, Purdue. Examples of the currently available projects are listed below.

- 1- Implementing FPGA-based embedded control and monitoring system to remotely run a quantum photonic experiment (pre-knowledge of Labview and digital control system is desirable)
- 2- Design and nano-fabrication of photonic crystal devices (Prior experience with nano-fabrication or photonic crystal waveguides is advantageous)
- 3- Theoretical study of quantum optical noise in atomic systems (pre-knowledge of atomic physics and quantum mechanics is desirable)
- 4- Modelling surface plasmon resonances in nano-mechanical objects
- 5- Independent study of interaction of light with crystals hosting rare-earth materials for application in quantum information
- 6- Design and implementation of optical measurement setup
- 7- Design and assembly of electronic circuits necessary to construct an infra-red diode laser (pre-knowledge of electronic circuits is desirable)

Students may choose one of these projects credited towards their degree. Research assistantship for PhD students may be available based on student's performance during the first 3 months.

Interested students may contact Dr. Mahdi Hosseini via email mh@purdue.edu to setup an appointment and discuss the project of interest.