Progetto Laurea Magistrale Plus

(Students enrolled for the first time in the Academic Year 2019/20, undertaking the internship in the company in 2020/2021)

University infos

Laurea degree: LAUREA MAGISTRALE IN PHYSICS
University tutor / Thesis supervisor: Prof. Matteo Galli
Courses / Expertize of the university tutor: Integrated photonics for classical and quantum applications

Company infos

Company name: CEA-Leti
Company Tutor(s): Segolene OLIVIER
Role in the company of the tutor(s): R&D engineer in silicon photonics

Contents and infos on project and internship

Project title: Development of silicon photonics multiplexers/demultiplexers for quantum information processing
Activity scenario and targets of the internship - Area/Department/office/lab (where the trainee will be involved): First six months (2021) : The student will be guided to perform numerical simulations to design Si and/or SiN multiplexers/demultiplexers at near-infrared and visible wavelength, addressing the specifications of multiplexed quantum transmitters. He will be familiarized with design layout on a maskset and will partially contribute to the CMOS fabrication in clean room. Last six months (2022): In the second part of the internship, the student will carry out wafer-level characterization of the devices (spectral transmission) and compare the results with simulations.
Background / Expertize of the student required for the internship: Master studies including semiconductors, photonics, nanotechnologies
Potential thesis topics: Silicon photonics integrated transmitters of high-dimensional qubits for quantum information processing
Company location and place of work: (Full address) CEA-Leti – Optics and Photonics Department – 17 rue des Martyrs – 38054 Grenoble - France
Time length of the internship: **12 MONTHS**
Benefits provided by the company (at least reimbursement of 500€ per month): Reimbursement >500€ per month
Specific company requests: Strongly motivated students with good exam scores, team working and flexibility skills to work in a multi-disciplinary environment (photonic component design, pre-industrial clean room fabrication, optical characterization)
Other comments: The student will work with several highly-qualified people in the the field of design, CMOS fabrication and optical characterization, with state-of-the-art equipment. He/She will get a pratical insight of the various aspects of integrated silicon photonics technology in one of the largest technological R&D institutes in Europe.