

Master thesis / industrial internship

Characterization techniques for silicon photonics



Background

Over the years, we developed a unique technology to bring a material with extremely strong Pockels coefficients into a scalable silicon photonic platform. Having such physical effect available in integrated photonics circuits has been a scientific and technological breakthrough, which enables the realization of advanced photonic structures and completely new applications, e.g. for photonic AI networks and quantum computing. At Lumiphase, we are bringing this new technology to market, while at the same time developing new scientific and technological concepts. The master project is placed in the heart of our R&D activities and bridges topics related to materials development, optical characterization and photonic devices design and simulations.

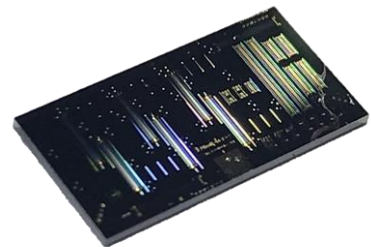
Details about the project

During this master or internship project, you will work in tight interaction with the Lumiphase R&D team to develop techniques to analyze the performance of Pockels-enhanced silicon photonics circuits. You will perform theoretical and practical work and get a broad background into industrial driven R&D activities in the field of integrated photonics for optical communication.

The work during the internship is technology driven, and includes

- Electro-optical simulations of photonic devices using advanced simulation tools (e.g. COMSOL)
- Working on a customized electro-optical setup, including the design and assembly of hardware components
- Performing (electro-)optical measurements using fiber-optical characterization setups
- Analyzing experimental data, including the development of scripts, data visualization, and error analysis.

The duration of the project work will be determined in accordance with the regulations of your university but needs to be at least 6 months.



What we are looking for

We are seeking for a highly motivated candidate with strong interest in difficult topics in the field of micro- and nano-scale photonics. What you should bring

- Scientific and technological interest in simulation and experimental work in cutting-edge integrated photonics
- Good programming knowledge
- Drive to solve difficult technological challenges with practical applications in industry in mind
- Excellent communication skills and the desire to contribute within a dynamic deep tech startup
- A superior academic record

To start your thesis with us, you need to be enrolled in a master's program in physics, electrical engineering, micro- and nano-systems, materials science, or a similar department and ready to start your master's thesis or an internship.

About us

With our recently founded startup with roots at IBM Research – Zurich, we create a new photonic platform with unprecedented electro-optical performance for data- and telecom applications. At Lumiphase, our young and highly skilled technical team offers an open, international, diverse, agile and very dynamic working environment. Our track record in supervising and educating interns, master thesis, PhD students, and postdocs is long, with previously many awarded theses (e.g. ETH medal). To perform cutting edge R&D, we have access to state-of-the-art laboratories. At Lumiphase, we are dedicated to creating a superior technology to solve hard problems in the field of communication – jointly as a big team effort. Be part of our team and our adventure!



How to apply

Please send your application containing a cover letter, CV, and transcripts to Stefan Abel (students@lumiphase.com).