

Postdoc Position in Optoelectronics VCSELS and Transmitter Integration for WDM Optical Interconnects

Chalmers University of Technology, Göteborg, Sweden

Application deadline: March 15, 2018

The laboratory

The Photonics Laboratory at the Department of Microtechnology and Nanoscience, with about 30 members, conducts application oriented research in optoelectronics and fiber optical communication. We are part of the Fiber Optic Communications Research Center (FORCE) at Chalmers. Research in optoelectronics, with an emphasis on semiconductor lasers, started at Chalmers in the early 1980's. Today we master everything from laser design and fabrication to laser characterization and system evaluation. We are among the leaders in the development of vertical-cavity surface-emitting lasers (VCSELS), which is a key component for optical interconnects: the short-reach optical links and networks used in datacenters and supercomputers. We participate in European projects and work closely with academic and industrial partners world-wide. To further strengthen our efforts we will now expand our team with a postdoc to work on VCSELS and silicon photonics integration for wavelength-division-multiplexed (WDM) optical interconnects.

The project

To substantially improve the capacity of optical interconnects beyond the limits of current technologies, the wavelength dimension has to be unleashed. For the short-reach VCSEL-based interconnects, this calls for the development of new multi-wavelength VCSEL array technologies and integration schemes for building high-speed and high-efficiency coarse-WDM transmitters. The project deals with the development of such VCSEL technologies and integration schemes using silicon photonic platforms for multiplexing and interfacing. The project is supported by a large grant from the Swedish Research Council.

Job description

We seek a postdoc to work in a team of senior researchers, other postdocs and PhD students with complementary skills and tasks. The postdoc will actively participate in the research and development of new VCSEL technologies and integration schemes. The work is mainly experimental and involves VCSEL fabrication and evaluation at the device level as well as integration on silicon photonic platforms for WDM optical interconnects. In addition, a limited amount of efforts on laser design and modelling is expected. Your responsibility as postdoc is to lead and conduct research and to assist PhD students under your guidance. You are expected to develop your own scientific concepts and communicate the results of your research verbally and in writing. We offer a competitive salary, excellent working conditions, and state-of-the-art infrastructures in a dynamic and international environment at the forefront of research.

Qualifications

By the starting date, the applicant should have a PhD degree in Engineering Physics, Applied Physics, Electrical Engineering, Photonics, or equivalent. Extensive experience from optoelectronic device fabrication in a cleanroom environment and device characterization using advanced measurement equipment is required. Previous work on VCSELS is a clear merit. Solid knowledge in the areas of semiconductors, optoelectronics and photonics is required. A good command of English is also required.

For questions, please contact

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