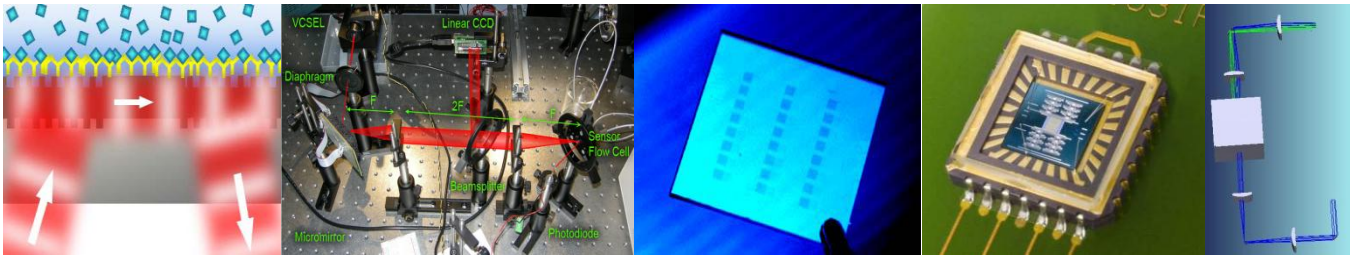
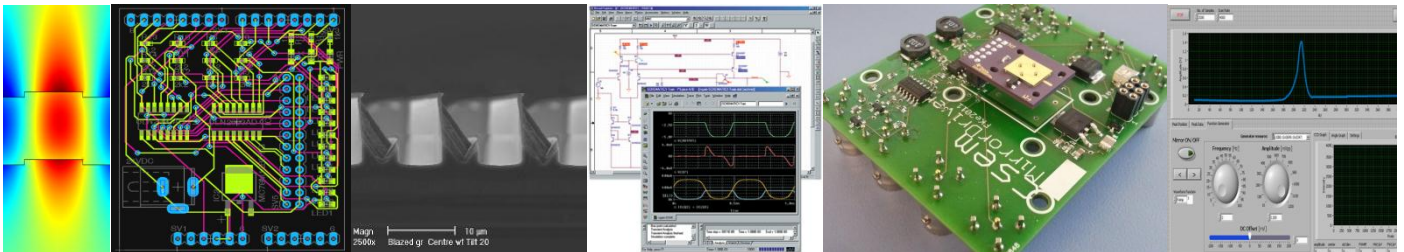


Project Offer



The Microdiagnostics section within the CSEM Nanomedicine division in Landquart (GR) is offering a Project / Bachelor / Master Thesis entitled:

Development of novel, label-free optical biosensor platform, based on MEMS actuated angular interrogation of a nanostructured waveguide grating coupler sensor.



Overview

Evanescent field sensors based on waveguide grating couplers and surface plasmon resonance (SPR) play an important role in the investigation of surface-bound bioreactions. Due to the nature of the sensor, waveguide grating and SPR sensors are confined to processes at the surface and allow therefore discrimination between interactions close to the surface and in the depth of the bulk medium. The binding of molecules to the sensor surface results in changes in its optical and plasmonic properties.

Project Goals

The goal of the offered project is to develop, investigate and validate a novel optical reader system for monitoring of molecular interactions at best-in-class sensitivity and flexibility. The waveguide grating sensor is interrogated by an angular scan of the incident coherent light, performed by a tunable MEMS grating. A dedicated MEMS driving board with integrated feedback and an optical data acquisition board will be developed, as well as the optical setup and the software for the data readout itself. The highly interdisciplinary project ranges from biochemistry, integrated optics, electrical engineering, nano- and microtechnology to software engineering.

Your Profile

You are a motivated student in the field of electrical engineering, nanosciences, microtechnology, optics or physics and you are looking for a Project/Bachelor/Master Thesis or an industrial internship with strong interest in circuit design, optics and biosensors.

What we offer

- Insight into an industrial R&D environment with state of the art equipment
- Interesting and challenging project
- Profound knowledge and support in the field of waveguide grating and SPR biosensors

We look forward to receiving your application which you may send to florian.kehl@csem.ch