

September 2015

Yearly Report of the Swiss Photonics National Lab on Optical Sensing

Mission

To facilitate the interaction and the exchange of information between industry (KMUs) and academia. Provide advice and support related to optical sensing, ranging from the infrared to the UV frequency range.

Team

Prof. Dr. Lukas Novotny, Laboratory of Photonics, ETH Zurich.

Dr. Lukas Emmenegger, Abteilung Luftfremdstoffe / Umwelttechnik, EMPA Dübendorf.

Main achievements

- 1) Novotny and Emmenegger have organized a one-day workshop on Optical Gas Sensing. This workshop has been held at EMPA Dübendorf on 15. January 2015. The workshop has been attended by over 100 attendees. Besides featuring talks by academia and industry, this event offered excellent networking opportunities. Presentations of the event can be downloaded from <http://www.swissphotonics.net/workshops.html?744>. The event was a great success and we consider repeating it in a similar format in two years.
- 2) Novotny has met with representatives of Camlin Technologies to discuss applications of II-VI semiconductor lasers and the possibility of using their fabrication techniques for novel applications.
- 3) Novotny served as the academic adviser of Bojun Cheng who did his MS thesis at Axetris AG, Kägiswil on "Development of a tunable diode laser spectrometer with multipass cells".
- 4) Novotny has organized an international conference "Frontiers in Photonics" at Monte Verita (Ascona), Switzerland that featured an Optical Sensing session, and which was attended by several Swiss industrial representatives. The conference was held August 30 – September 4.
- 5) Novotny is the PhD advisor of
 - Luc Duempelmann, working at CSEM Basel on Plasmonic Sensing
 - Cynthia Gruber, working at IBM Rüschlikon on Optical Antenna Fabrication for Chemical Sensing Applications
- 6) Industrial Projects: There are no industrial projects in place. No funds have been spent so far.
- 7) Emmenegger and Novotny have met twice to discuss strategies for increasing participation of Swiss KMUs.

Next steps

Novotny and Emmenegger continue to be the contact persons and liaisons for Swiss KMUs interested in Optical Sensing applications. However, the response was rather weak, with only few inquiries from the industry.