



PhD position on Integrated photonic structures for high-speed, wide-field and super-resolved microscopy

UGent/imec - Photonics Research Group
Sint-Pietersnieuwstraat 41, B-9000 Gent, Belgium
<http://photonics.intec.ugent.be/>

The purpose of the project is to develop integrated photonic structures for upgrading state-of-the-art wide-field microscopes. The two main targets consist to improve the optical resolution and the image acquisition speed of wide-field microscopes in order to image biological dynamic objects at a 100 nm scale with a 1 ms acquisition time. The proposed concept combines properties that are involved in structured illumination microscopy (SIM) and in total internal reflection (TIR) microscopy, namely the implementation of high spatial frequencies, the ability to tune the phase of the exciting beams and a dark-field illumination configuration.

The PhD project mainly includes the design and the characterization of integrated photonic structures, as well as the development of new digital tomography methods in line with the proposed approach.

Application:

Apply by filling in the [application form](#)*.

* You will be redirected to an external application page

More information:

Prof. Nicolas Le Thomas (nicolas.le.thomas@intec.ugent.be)

About Photonics Research Group

The Photonics Research Group (about 70 people) is associated with IMEC, and is part of the Department of Information Technology of Ghent University. The group is headed by Prof. R. Baets and has been active in photonics device research for many years. The other professors in the group are P. Bienstman, W. Bogaerts, N. Le Thomas, G. Morthier, G. Roelkens and D. Van Thourhout. The main applications under study are silicon nanophotonics, heterogeneous integration, optical interconnect, WDM optical communication, silicon photonics biosensors and photonic integrated circuits for biomedical applications in the near-infrared and mid-infrared wavelength range. More in particular, the silicon nanophotonics work focuses on the design and fabrication of SOI-based photonic devices using standard lithographic techniques compatible with CMOS-processing. The group is

also strongly involved in the development of heterogeneous technologies, whereby the silicon photonics platform is combined with other materials such as III-V semiconductors for efficient sources, nanocrystals and polymers.

The photonics research group has been coordinating the network of excellence ePIXnet and is currently involved in a number of EU-projects, including the FP7 projects ActPhast, PLAT4M, Cando, Pocket and SMARTFIBER. Furthermore, the group is partner in the Center for Nano- and Biophotonics of Ghent University and the group has been awarded with three ERC Starting Independent Researcher Grants and one ERC Advanced Investigator Grant.