



PhD position on Development of integrated gratings for DIC microscopy applications

UGent/imec - Photonics Research Group
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<http://photonics.intec.ugent.be/>

Differential interference contrast (DIC) microscopy is a standard optical technique to image transparent biological phase objects such as cells and tissues. It measures the phase difference between two points in the sample, which provides information about changes in sample thickness and refractive index. Quantitative phase imaging is currently difficult to implement. However, large scale integrated silicon photonic may offer new opportunities to improve the quantitative analysis of DIC images.

The current project will consist to design, process and characterize integrated silicon nitride gratings that enable to implement a common path lateral shear interferometry that is compact, robust to vibration noise and produces highly spatially resolved phase images.

Application:

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

More information:

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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.