



## Postdoctoral position on Photonic integrated sensors based on a silicon nitride platform

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

---

In the **Horizon2020 PIX4life** project imec will develop a photonic IC platform based on silicon nitride waveguides for life science applications at short wavelengths (< 1 micrometer). With this platform several generic demonstrators will be implemented in close collaboration with industrial partners in the project. This includes the development of optical sensors for the monitoring of a multiplicity of vital bodily functions, to be integrated in smartphones or smartwatches, whereby low power consumption is one of the very challenging requirements.

The current vacancy is part of this project and encompasses the following tasks:

- Design of the silicon nitride photonic IC's for the sensing demonstrator.
- Integration of VCSEL's with these photonic IC's based on a transfer printing process.
- Close coordination with the project partners involved in this work.

### Profile:

The candidate has a PhD degree in the field of integrated photonics and has extensive experience with the design and technology of photonic integrated circuits. He/she is acquainted with both silicon photonics as well as III-V based photonic components. He/she has experience of working in a clean-room environment. He/she has excellent communication and project organization skills.

### Application:

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

### More information:

Prof. Roel Baets ([Roel.Baets@intec.ugent.be](mailto:Roel.Baets@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, B. Kuyken, 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, is involved in a number of EU-projects, including the FP7 projects ActPhast, PLAT4M, Cando, Pocket & SMARTFIBER and the H2020 projects MIRPHAB, PIX4Life & TERABOARD. 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.