

## PHD POSITION ON THE INTEGRATION OF HIGHLY NONLINEAR MATERIALS ON SiN.

Ghent University – IMEC, Photonics Research Group  
Tech Lane Ghent Science Park – Campus A  
Technologiepark – Zwijnaarde 15, B-9052 Gent, Belgium



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Mode-locked lasers find applications in novel sensors as well as high bandwidth telecom and datacom systems. The performance of the lasers can be improved by making ultrashort pulses with ultrafast saturable absorbers. This would allow for more broadband combs and hence more broadband communication links. There is a continuous quest for finding optimal materials and structures to realize this. One approach that we want to perceive here is the use of highly nonlinear materials to make ultra-short pulses.

### JOB DESCRIPTION:

The researcher would in close collaboration with other PhD students work on the integration of GaP on silicon nitride structures. He would characterize the structures in the lab and report on them internally and externally. This work will fit in the ERC project Electric which aims to miniaturize optical combs on a chip

### PROFILE:

We are looking for a persons with a Master in optics or integrated photonics with experience in nano-fabrication techniques. The candidate will be able to gain experience in areas such as chip design, clean room processing, mode-locked lasers and characterization.

### APPLICATION:

Apply online at <http://photonics.intec.ugent.be/contact/vacancies/Application.htm>

### MORE INFORMATION:

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### ABOUT THE PHOTONICS RESEARCH GROUP

The Photonics Research Group (about 85 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 research directions are silicon nanophotonics, heterogeneous integration, optical communication, photonic (bio)sensors 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 Photonics Research Group has been coordinating the network of excellence ePIXnet and is involved in a number of EU-projects, including the FP7 projects ActPhast, PLAT4M, Cando, and Pocket and the H2020 projects TOPHIT, TeraBoard, PIX4Life, MIRPHAB and Phresco. Furthermore, the group is partner of the Center for Nano- and Biophotonics of Ghent University and the group has been awarded four ERC Independent Researcher Starting Grants, one ERC Consolidator Grant and two ERC Advanced Investigator Grants.