

POSTDOC POSITION ON GRAPHENE-BASED INTEGRATED OPTO-ELECTRONIC OSCILLATORS

Ghent University – IMEC
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Context

Funded by the European Commission, the Graphene Flagship (<https://graphene-flagship.eu>) aims to secure a major role for Europe in the ongoing technological revolution, helping to bring graphene innovation out of the lab and into commercial applications. Within this network, a large effort is directed towards the integration of graphene and other 2D-materials with silicon and silicon nitride waveguide systems, for realizing novel opto-electronic devices.

The imec-UGent Photonics Research Group is responsible for designing, fabricating and characterizing high-speed modulator systems and an integrated mode-locked laser using graphene devices as the active element. These devices, with multi-GHz repetition rate and below 100fs jitter will form the basis of a compact opto-electronic oscillator developed in collaboration with several international partners.

Job description

As a postdoctoral researcher, you will work in the framework of the Graphene Flagship project and strongly collaborate with other imec teams and international partners.

You will be responsible for the fabrication of the laser using the unique hybrid integration technologies developed by the Photonics Research Group, based on the so-called micro transfer printing process. Next you will carry out the in-depth characterization of the devices.

You will intensively collaborate with our international partners in defining the device specifications and exchanging samples. A research stay abroad could be considered.

Profile

- You have a Ph.D. degree in photonics, applied physics or electrical engineering (or equivalent experience).
- You have experience in photonic IC design and fabrication, preferably including active devices (lasers, modulators)

About the Photonics Research Group (PRG)

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 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.

Application

Use the online form: <http://photonics.intec.ugent.be/contact/vacancies/Application.htm>

More information

- Prof. Dries Van Thourhout (dries.vanthourhout@ugent.be, see also <http://photonics.intec.ugent.be/contact/people.asp?ID=50>)