

POSTDOC POSITION ON 'CMOS IMAGER SCALING BELOW WAVELENGTH LIMIT'

Ghent University – IMEC, Photonics Research Group
iGent-tower (4th floor)
Technologiepark-Zwijnaarde 126
B-9052 Gent, Belgium

CONTEXT:

The three leading companies in CMOS camera technologies have now reached 0.8 μm pixel resolution and only the most optimistic roadmap promises 0.7 μm pixel size in 3 to 4 years. State-of-the-art pixel technologies have always used pixels larger than the wavelength of the light. The design of pixels smaller than the wavelength requires a fundamentally different approach. In the framework of the recently granted Strategic Basic Research (SBO) project entitled GigaPixel, research groups at IMEC, UGent and KU Leuven will take up this challenge by targeting a 16X resolution scaling and a 3X sensitivity scaling for future camera's on top of CMOS.

The imec-UGent Photonics Research Group will be involved in the characterization of novel nanophotonic structures aimed at improving the performance of CMOS cameras.

JOB DESCRIPTION:

As a postdoctoral researcher, you will work in the framework of the GigaPixel project during at least two years. This project has a strong economic and societal objective with industrial partners involved.

You will be responsible for the optical characterizations of nanophotonic structures in strong collaboration with the partners at IMEC. To implement these characterizations, you will in particular upgrade an advanced high-NA optical microscope in order to operate in a confocal regime.

PROFILE:

- You have a Ph.D. degree in photonics, applied physics or electrical engineering.
- You have hands-on experience with optical measurements and experience in optical imaging.
- Experience in optical simulations is a plus.

APPLICATION:

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

MORE INFORMATION:

- Prof. Nicolas Le Thomas (Nicolas.LeThomas@UGent.be)
- Prof. Roel Baets (Roel.Baets@UGent.be)

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, S. Clemmen, 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 participating in numerous EU-funded projects. Five of its PIs have been awarded ERC grants. Furthermore, the group is partner of the Center for Nano- and Biophotonics of Ghent University.

The Strategic Basic Research (SBO) programme that is managed by the Research Foundation – Flanders (FWO) focuses on innovative research which, if scientifically successful, will create prospects for economic or societal applications (e.g., a new generation of products, processes and/or services). The SBO programme breaks down into two finality parts: an economic programme part for projects with primarily an economic finality and a societal programme part for projects with primarily a societal finality.