# PostDoc Position on photonic neuromorphic computing

Ghent University – IMEC, Photonics Research Group
Tech Lane Ghent Science Park – Campus A
Technologiepark – Zwijnaarde 126, B-9052 Gent, Belgium

Job context:

We are looking for highly motivated postdoc candidates with a background in photonics and an interest in machine learning, to do research in the field of photonic neuromorphic computing, an exciting new paradigm of photonics information processing.
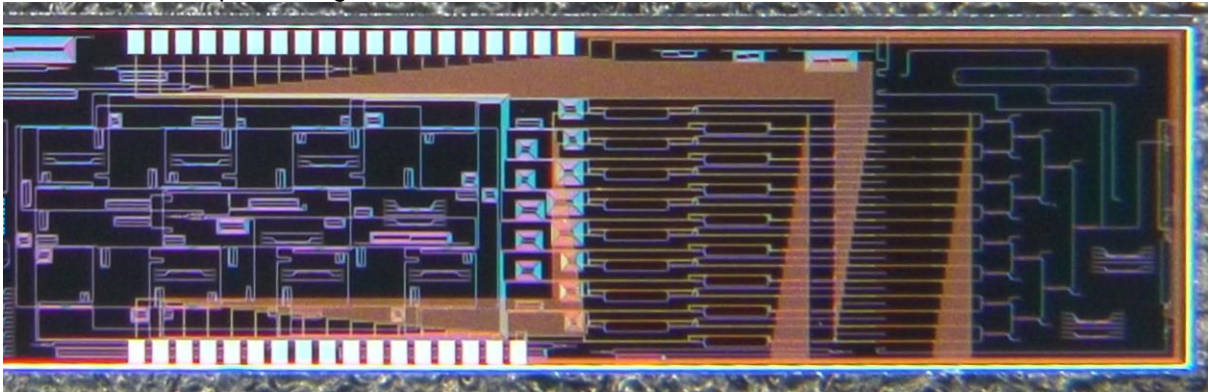
As a group, we have been active in this field for over 10 years, both at the simulation level and at the experimental level. E.g., we were the first to fabricate silicon photonics chips based on reservoir computing (a variant of recurrent neural networks) [Vandoorne et al., Nature Communications 5 3541, 2014]. We also used neuromorphic chips to show the experimental realisation of nonlinear dispersion compensation in a directly-modulated telecom link [S. Sackesyn et al., Optics Express, 29, 20, 30991, 2021]. Recently, we used neuromorphic principles to speed up the classification of different particles in flow cytometry [M. Gouda et al., JSTQE, 29, 2, 7600608, 2023].

Profile:

We are looking for motivated members to strengthen our team and to bring this research forward. Based on your skills and interest, we can match you with a current or new research line in our group.

Our offer:

We offer you the opportunity to perform cutting-edge, blue-sky research, in a challenging, motivating environment, working within a multidisciplinary team consisting of both photonics people and computer scientists. A willingness to tackle challenges coming from these multidisciplinary collaborations is a must.

Application:

Please submit your expression of interest with resume and motivation letter by no later August 1 2023 by sending your CV and motivation letter to Peter.Bienstman@UGent.be
For more information, please contact Peter.Bienstman@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. Dries Van Thourhout and has been active in photonics device research for many years. The other professors in the group are Roel Baets, Peter Bienstman, Wim Bogaerts, Stephane Clemmen, Alberto Curto, Bart Kuyken, Nicolas Le Thomas, Yanlu Li, Geert Morthier, Gunther Roelkens and Kasper Van Gasse. The main research directions are silicon nanophotonics, heterogeneous integration, optical communication, neuromorphic computing, photonic (bio)sensors and photonic integrated circuits for biomedical applications in the near-infrared and mid-infrared wavelength range.

The Photonics Research Group has been coordinating the network of excellence ePIXnet and is involved in a number of EU-projects, including the H2020 projects ActPhast4R, AQUARIUS, CALADAN, FUN-Comp, Hydroptics, InSiDe, INSPIRE, MedPhab Pilot Line, MIRPHAB Pilot Line, PIX4Life Pilot Line, MORPHIC, NEBULA, Neoteric, TopHit and PhotonHub. The group also host two EOS Research projects, INTERREG projects and several ITNs (MICROCOMB, OMT, WON, Phonsi). Furthermore, the group is partner of the Center for Nano- and Biophotonics of Ghent University and leads ePIXfab, the European Silicon Photonics Alliance.

The group has been awarded five ERC Independent Researcher Starting Grants, one ERC Consolidator Grant and two ERC Advanced Investigator Grants.

GHENT UNIVERSITY