



To Photonics21Secretariat
via eMail: secretariat@photonics21.org

Dear Photonics21 Secretariat

We herewith submit the nomination of the following Photonics21 Board of Stakeholders candidate
Ghent University / Dries Van Thourhout

**- Letter of Nomination -
Photonics21 Board of Stakeholders
Election 2023**

Photonics21 Board of Stakeholders - Letter of Nomination

1. Full legal name of the affiliation nominated as BoS Member (candidate's organisation):

Ghent University

2. Full contact details of the affiliation (street, postal code, country) nominated as BoS Member and invoice address *(In accordance with the Terms of Reference §5, which the Affiliation acknowledges having received, an Annual Service fee will be invoiced every year during the first quarter to the BoS Member. By signing the present letter, the BoS candidate agrees to pay this Membership Fee. The Fee will be considered an asset of the Photonics 21 AISBL in accordance with its statutes (article 12b).)*

Ghent University
Sint-Pietersnieuwstraat 25
9000 Gent
Belgium

3. Name of the suggested BoS Representative (the personal candidate)

Dries Van Thourhout

4. Information about the BoS candidate and the BoS representative

a) Description of the activities and information about the expected contribution and value added the nominated BoS member (candidate's organisation) will bring to the BoS¹

Ghent University is a public university with over 50.000 students. It is ranked top 100 in most international rankings. Ghent University has a long history in photonics research, with at least 3 major research groups very regularly participating in industrially oriented collaborative research projects at EU scale.

The **Photonics Research Group** founded by prof. R. Baets and now chaired by D. Van Thourhout is a team of 12 professors and almost 85 graduate and postgraduate researchers focussing on integrated photonics, and more in particularly silicon photonics, covering the whole range from design and technology development to system implementation and application-oriented research. 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. The application space is broad and includes telecommunication and datacommunication, computing, sensing and medicine. The group has well-equipped clean rooms and measurement labs (coordinated by prof. G. Roelkens). The research results of the group have led to a vibrant ecosystem of spinoff companies on- or near-campus. The group has been awarded six ERC Independent Researcher Starting Grants, one ERC Consolidator Grant and two ERC Advanced

¹ The candidate is aware and accepts that according to the Photonics21 Terms of Reference (§ 5 (10) a membership fee - as determined by the General Assembly of the Association - needs to be paid to the Photonics21 association.

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Investigator Grants. The Photonics Research Group is involved in a large number of EU-projects, including the H2020 and Horizon Europe projects ActPhast4R, AQUARIUS, CALADAN, FUN-Comp, Hydroptics, InSiDe, INSPIRE, MORPHIC, NEBULA, Neoteric, TopHit and PhotonHub, Phormic, and VISSION. The group was or is also strongly involved in the photonics pilot lines MedPhab, MIRPHAB, PIX4Life and the recently started QuPilot.

The **IDLab design group** focuses on the research and development of electronic and optoelectronic integrated circuits for photonic applications, covering both high-speed communication and sensing applications. The group is internationally recognized as a leader in this area, as evidenced by its current involvement in 18 Horizon 2020 projects, 16 Horizon Europe projects, one ESA project and several significant direct collaborations with leading industry partners. The group is currently 34 people strong, managed by a staff of four professors, Prof. Johan Bauwelinck, Prof. Xin Yin, Prof. Guy Torfs and Prof. Peter Ossieur, who is also managing the imec high-speed transceiver and coherent transceiver programs.

The **CMST** team with Prof. G. Van Steenberge and J. Missine focus on novel packaging approaches for advanced electro-photonic chips. Also this team is involved in numerous EU-projects and bilateral contracts with industry.

In summary, the Ghent University teams and its representatives are acquainted with the full value chain from chip level over electronic control to packaging and applications, and have a very strong connection with industry. This broad knowledge will strongly benefit Photonics21 in defining industries future need and setting relevant research goals for the coming year.

Importantly, Ghent University also hosts **ePIXfab**, a not-for-profit open alliance of academic and industrial organizations with a mission to promote silicon photonics science, technology and applications in Europe and the world. The current chair is prof. W. Bogaerts, member of the group. ePIXfab acts as a catalyst for European academia and industry to strengthen the worldwide silicon photonics ecosystem, representing the silicon photonics community as a whole. Its main activities include workforce development for industry and academia, providing non-commercial consultancy, liaising with overseas organizations, and roadmapping the silicon photonics technological trends and evolutions, all of which are very well aligned with Photonics21's mission.

Finally, Ghent University organises a Master in Photonics, yearly attracting 20-30 students in total and thereby helping to improve the inflow of new talents in the Photonics Industry and promoting Photonics21 objectives.

- b) Description of the activities and information about expected contribution and value added the BoS Representative (candidate / person) will bring to the BoS.

Dries Van Thourhout received a master in Physics Engineering and the Ph.D. degree from Ghent University in 1995 and 2000 respectively. From Oct. 2000 to Sep. 2002, he was with Lucent Technologies, Bell Laboratories, New Jersey, USA, working on the design, processing and characterization of InP/In-GaAsP monolithically integrated devices. In Oct. 2002 he joined the Photonics Research Group at Ghent University, becoming a full professor in 2008.

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In Oct. 2022, he became chair of the group. His research focuses on the design, fabrication and characterization of integrated photonic devices. Main topics involve Silicon nanophotonic devices and the integration of novel materials (III-V, graphene, ferro-electrics, quantum dots, ...) on these waveguides to expand their functionality. He is working on applications for telecom, datacom, optical interconnect and quantum optics. He has submitted 18 patents, has authored and coauthored over 270 journal papers (see below) and has presented invited papers at all major conferences in the domain. He is member of the IEEE Photonics Society, SPIE and OSA (fellow). He has coordinated several European Projects (FP6 PICMOS, FP7 WADIMOS, FP7 SMARTFIBER), contributed in many more and received both an ERC Starting Grant (ULPPIC) and ERC Advanced Grant (NARIOS). He received the prestigious "Laureaat van de Vlaamse Academie Van België" prize in 2012 and was a Clarivate highly cited researcher. The spin-off companies Caliopa (later acquired by Huawei) and Sentea were founded by former students from his group (and based on work from his team). D. Van Thourhout is very regularly collaborating with industrial partners, mostly in collaborative EU-projects but also within bilateral projects.

Finally, D. Van Thourhout is strongly involved in photonics education. He is a former chair of the Ghent University Master of Photonics educational programme board and is currently teaching 4 courses related to photonics. In addition he has presented invited presentations, tutorials and short courses at all major conferences in the field and thereby greatly contributed towards educating the broader field about the prospects and challenges of integrated photonics and silicon photonics.

Dries Van Thourhout already actively supported Photonics21 in the past, through regular participation in the working groups 1 (Digital) and 7 (Core Photonics). In the coming years, Dries Van Thourhout and his team also contributed to several Photonics21 white papers in the recent past, including the white paper on Integrated Photonics (with EPoSS) and the position paper on Quantum PICs.

Through his candidacy for the Board of Stakeholders, Dries Van Thourhout aims to further strengthen his support for Photonics21 and its mission to strengthen the Photonics Industry in the European Union, through active participation in the relevant general and working group meetings. Through his recent involvement in several project related to quantum photonics, he also expects to play a role in working group 5 (security) (Besides the WG1 and WG7). In addition, from his experience in education (e.g. as former chair of UGent Photonics Master Programme) he will provide input on attracting additional talent for the field, both at graduate and post-graduate level, and industry. Through his association with IMEC and its PIC teams he can also provide input on different roadmapping efforts and provide insight in novel industrial manufacturing methods for upscaling relevant technologies.