

Talk's title: **“Photonics: From strategic research to successful European industrial applications”**

Abstract: In this presentation we will highlight how the Brussels Photonics Team B-PHOT of the Vrije Universiteit Brussel has turned fundamental and applied photonics research topics into industrial successes in collaboration with regional and European companies. We will illustrate our journey from research to industrial applications, with a variety of innovation examples ranging from micro-optics for datacom, free-form optics for LED-based projectors, over micro-structured fibers for smart sensing, to polymer photonics lab-on-chips for health and food safety. We will explain how we have implemented and leveraged our tech transfer model to the European level by setting up a pan-European photonics innovation access platform for companies, especially adapted to the needs of Small and Medium Sized Enterprises. To conclude we will touch upon other aspects of photonics innovation, such as STEM outreach, that need our attention at this stage if we want to further optimize and sustain the innovation ecosystem that we have created.



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Prof. Hugo Thienpont (20-08-1961) is a full professor at the Faculty of Engineering of the Vrije Universiteit Brussel (VUB). He chairs the Applied Physics and Photonics Department and is director of its photonics research group B-PHOT (Brussels Photonics Team), which he built over the years and which today counts more than 60 scientists, engineers, and administrative and technical staff. He graduated as an Electrotechnical Engineer with majors in Applied Physics in 1984 and received his PhD in Applied Sciences in 1990, both at the VUB. Over the years Hugo and his team have made research efforts in a large variety of fundamental, applied and industrial research topics, most of them situated in the domain of micro-photonics and micro-optics. With the results of this work he authored around 230 Web of Science cited journal papers and more than 440 Web of Knowledge cited publications in international conference proceedings. He edited more than 15 conference proceedings and authored 7 chapters in books. He was invited or

key-note speaker at more than 50 international conferences and is (co)-inventor of 17 patents.

His research work was internationally recognized with several awards. In 1999 he received the International Commission for Optics Prize ICO'99 and the Ernst Abbe medal from Carl Zeiss for "his noteworthy contributions in the field of photonics and parallel micro-optics". In 2003 he was awarded the title of "IEEE LEOS distinguished lecturer" for serving as international lecturer from 2001-2003 on the theme "Optical Interconnects to Silicon Chips". In 2005 he received the SPIE President's Award 2005 for meritorious services to the Society and for his leadership in photonics in Europe. In 2006 he was nominated SPIE Fellow for his research contributions to the field of micro-optics and micro-photonics. In 2007 he received the award "Prof. R. Van Geen" for his scientific achievements during his research career at VUB and was nominated as EOS Fellow. In October 2007 he received the International Micro-Optics Award MOC '07 from the Japanese Optical Society. In 2008 he obtained the prestigious status of Methusalem top-scientist from the Flemish government for his research track record in photonics. In 2011 he received the University Medal "Alma Mater Bene Merentibus" of the Warsaw University of Technology". In 2012 he was elected member of the Royal Flemish Academy for Sciences and the Arts.

Hugo Thienpont is also recognized for his contributions to Photonics in Education. In 1993 he initiated and introduced the pioneering Photonics Curriculum for Engineers at the VUB. In 2004 he introduces, together with his colleagues from the Vrije Universiteit Brussel and the Universiteit Gent, the interuniversity engineering curriculum "Master in Photonics" which received the EC Erasmus Mundus quality label.

Hugo Thienpont also built up a track record as initiator, promoter or coordinator of many strategic research and networking projects, which are financially supported by regional, national and international bodies such as the Fund for Scientific Research Vlaanderen (FWO), the Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT), the Belgian Federal Science Policy Office, and by the European Commission. The largest network he initiated is the 6,4 Meuro EC funded Network of Excellence on Micro-optics "NEMO". In this network Hugo Thienpont coordinated the networking, integration and research efforts of 30 top-research groups from 13 European countries. In 2008 he became vice-coordinator of the European Network of Excellence on Biophotonics "Photonics for Life".

Besides academic-oriented research projects Hugo Thienpont has successfully managed more than 20 large-scale micro-photonics-related industrial projects with companies such as Barco, Agfa-Gevaert, Tyco, Punch Graphix, BEST, and Umicore. In 2005 his research team received the nomination 'VUB Focal Point for Industrial Validation' and renews this title and accompanying funding in 2010. In 2010 he starts coordinating ACTMOST, a European funded project to support photonics innovation in European SMEs.

Hugo Thienpont is also appreciated by his peers for his service to the photonics community. Indeed Hugo has been member of many technical and scientific program committees of photonics-related conferences organized by international societies like SPIE, IEEE, OSA, EOS and ICO. One of his major achievements is the conception and initiation of SPIE's flagship symposium in Europe "Photonics Europe". Hugo has been general chair of this pan-European conference, which was held in Strasbourg from 2004 until 2008 and from 2010 in Brussels, and draws more than 2500 attendees. He has served as associate editor of 'Optical Engineering' and 'Opto-Electronics Review' and was guest editor of several special issues on "Optics in Computing" and on "Optical Interconnects" for Applied Optics and the IEEE Journal of Sel. Top. on Quant. Electr. Since 2008 he is member of the editorial board of the on-line journal SPIE Reviews. He served on the board of directors of SPIE and is a member of the Board of Stakeholders of the Technology Platform Photonics21, a high-level advisory board for optics and photonics in EC FP 7.

Since 2012 Prof. Thienpont is Vice-Rector for innovation and valorization of the Vrije Universiteit Brussel.