PHOTONICS & FAB LABS

PHABLABS 4.0 adds the power of photonics to Fab Labs

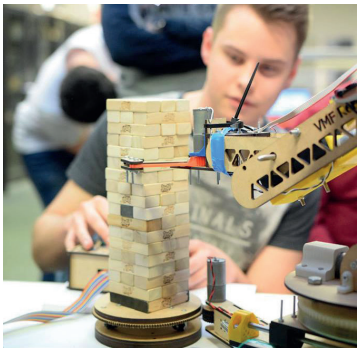
"VUB B-PHOT develops a European STEM platform together with 27 European partners where youngsters and entrepreneurs can create mind-blowing projects using photonics," Prof. Ir. Hugo Thienpont, project coördinator and director B-PHOT Brussels Photonics.

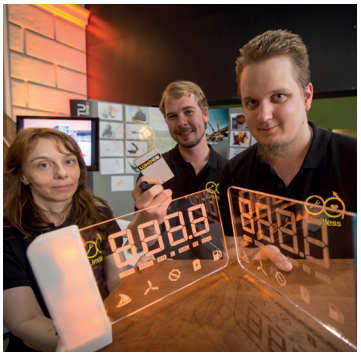
PHABLABS 4.0 aims to make photonics, the science and technology of light, more accessible to youngsters from as early as ten years old up to young professionals, through the dynamic eco-system of European FabLabs. Together with 27 partners, tens of attractive and tailored Workshops and Challenging Projects will be developed to enable youngsters to make their creative concepts real. During the startup phase, up to 3000 youngsters will have the chance to experiment with the PHABLABS 4.0 modules. Within the 3 first years of the project, PHABLABS 4.0 is expected to inspire 18 000 youngsters for photonics, for STEM education and for exciting engineering jobs of the future.

The existing network of about 500 FabLabs offers the ideal co-creative platform where young minds and entrepreneurs can effectively experiment with science, with the newest technology and with components such as laser equipment, LED, lenses and optical fiber up to programmable electronic chips. Integrating photonics and its many applications in FabLabs, allows young people to put seemingly unattainable ideas into practice in a way that is fun and inspiring. PHABLABS 4.0. can spark ideas, pave the road to innovative concepts and might subsequently be a starting point for a bright future as a technician, engineer or researcher.

Photonics can provide game-changing solutions to future societal challenges in a wide scale of domains such as energy, aerospace, mobility, food safety, bio-photonics, healthcare, ICT and manufacturing for industry 4.0.

For now, photonics' huge potential is still a great unknown to many people, even though it is all around us and commonly used in everyday life: any screen, smartphone, TV or large screens, 3D applications, smart driving cars or even healthy veggies involve light technology.





PHABLABS 4.0 puts young talent in the spotlight

The ambitious roadmap of PHABLABS 4.0 encompasses the development of a suite of 33 Photonics Workshops, 11 Photonics Challenger projects and Photonics Toolkits customized for 3 specific user groups: young minds (10-14 y), students (15-18 y) and young professionals or technicians (+18 years).

- **Photonics Workshops** cover in total 11 different topics that help to understand the wide variety of applications in photonics. Through the tailored modules for each target group, participants will work towards innovative concepts.

- **Photonics Challenger Projects** start from a well-defined challenge that needs research and creativity to design. Participants will elaborate and test new ideas with a link to other Key Enabling Technologies (KET). A final Photonics Challenger Project Contest raises the bar to develop game-changing projects.

- **Photonics Toolkits for Workshops or Challenger Projects** are low-cost boxes that provide the FabLabs with a core set of photonics components such as optical fibers, optical design software and 3D printer with transparent material.

Each module will stimulate hands-on design, fabrication, experiments, and the building of innovative systems with photonics components. Next to personal development, teamwork and co-creation, the PHABLABS 4.0 modules nurture the 21st Century skills of the participants.

Phases of PHABLABS 4.0

After the creation and design of modules in the first development phase (till June 2017), all partners will test the Workshops and Challenger Projects. From July 2017 onward, different user groups such as schools or also mother/daughter duos will be invited by local FabLabs to participate in test panels to integrate their feedback in further development.

"There is a huge opportunity to spark young people for science by engaging them in real-life experiments. Getting acquainted with new technologies to create concrete projects, can speed up the learning curve fundamentally. The challenge is to excite them in an inspiring way so they see themselves they can develop their talents and can have a meaningful impact as hi-tech engineer," **according to Hugo Thienpont, coordinator of the project and director of VUB** *B-PHOT Brussels Photonics. "PHABLABS 4.0 builds bridges between science, research and co-creative FabLabs to support the next revolution in digitization in Europe."*

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About PHABLABS 4.0

PHABLABS 4.0 aims to inspire young minds, future generations of technicians, engineers and entrepreneurs to use photonics in innovative developments. A wide range of Workshops and Challenger Projects bring photonics within reach of youngsters from the age of 10 to young entrepreneurs through the existing FabLabs. For this European project, a Photonics Public Private Partnership supported by Photonics21 and Horizon2020, 13 partners join forces with 14 pilot FabLabs. Most of the Photonics partners are members of ECOP (European Centres for Outreach in Photonics). This is a long-standing partnership of European research and innovation centres passionate about the underlying areas of Photonics in particular and STEM (Science Technology Engineering Mathematics) in general.
You can find the links to the partners and pilot fablabs via the links below.
The Vrije Universiteit Brussel (VUB) takes up the role as coordinator of PHABLABS 4.0, represented by B-PHOT Brussels Photonics Team. VUB B-PHOT is an international center of excellence in optics and photonics that is internationally recognized for its basic, strategic, applied and industrial research in these fields. The non-profit organization Eyest will be taking care of the 'Photonics Toolkits' for the project. Since 2011 Eyest distributes Photonics Explorer, an educational kit with photonics experiments to teachers from secondary schools across Europe.

FabLab Factory, founded by Stijn De Mil, takes up the role as coordinator for the FabLabs. FabLab Factory is a company that offers services and equipment for schools, organizations and companies that want to start a makerspace.

We invite you to visit following pages from more details about:

- PHABLABS 4.0 www.phablabs.eu
- the Photonics partners
- the Pilot Fab Labs
- the Photonics Workshop video 'Cuddly bear'