

PHOSFOS relies on 9 partners from 4 EU countries. Every partner contributes to the project with its unique expertise.

Vrije Universiteit Brussel	VUB	
Interuniversitair Micro-Electronica Centrum VZW	IMEC	
Universiteit Gent	UG	
Politechnika Wroclawska	WRUT	
Uniwersitet Marie Curie Sklodowskiej	UMCS	
Aston University	UK	
Fiber Optic Sensors and Systems BVBA	FOS	
Cyprus University of Technology	CUT	
Astasense Limited	AS	



Project & contact details

Project details

Start date 01/04/2008
End date 31/03/2011
Duration 36 months
Project Reference 224058
Project cost 2.475.569 EURO
Project Funding 1.899.965 EURO
Programme Acronym FP7-ICT
Programme type Seventh Framework Programme
Subprogramme Area Photonic components and subsystems Contract
Type Collaborative project (generic)

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Photonic Skins For Optical Sensing

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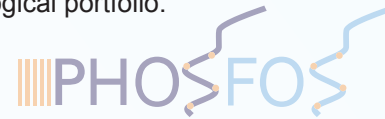


Optical fibre technology delivers user friendly and affordable monitoring systems for civil engineering and healthcare

The integrity and the health of large structures such as dams, buildings and bridges and of aircraft wings or helicopter blades have a high impact on the safety of all citizens. It is therefore of broad interest to deploy effective, easy to use and affordable monitoring systems, which can warn at a very early stage of any possible failure, anomaly or danger. At the same time, the ageing of the population urgently requires improved healthcare. Providing means for the long term monitoring of respiration and cardiac activity, for enhanced rehabilitation following trauma or surgical interventions, as well as for the detection of pressure points under bed-ridden patients, are amongst the most important demands.

Solutions for the aforementioned requirements in civil engineering and healthcare are provided by advanced optical fibre sensor technology combined with the latest developments in flexible electronic and opto-electronic circuits. The recently launched PHOSFOS project (Photonic Skins For Optical Sensing) funded by the European Commission is developing new flexible and stretchable skin-like polymer sheets that are sensitive to various degrees of touch, pressure and deformation. The functionality is provided by optical sensing systems that rely on specialty glass and polymer optical fibres interfaced with the necessary optical sources and detectors, all integrated into the flexible sheets. Whereas the measurement itself requires delicate optical fibres, the output of the sheets will have a simple electrical connection. These sheets can be adapted to meet the specific needs of the application field, both for structural monitoring and for health monitoring.

Partners from all over Europe have teamed up to design, fabricate and test the system. The project is coordinated by the Vrije Universiteit Brussel (Belgium) and gathers important contributions from other Belgian institutes (IMEC and Ghent University); the UK (Aston University); Poland (Wroclaw University of Technology and Marie Curie-Sklodowska University), and Cyprus (Cyprus University of Technology). Two Small-Medium Enterprises, FOS&S (Belgium) and Astasense Ltd. (UK) will incorporate the developments in their technological portfolio.



Joining the Industrial User Club - IUC

PHOSFOS targets the development of flexible and stretchable sensing sheets that can measure deformation, strain and pressure. These polymer sheets include the optical sensors themselves as well as the driving electronics and opto-electronics. To do so it relies on the latest developments in optical fibre sensors, advanced polymers and flexible electronics. The application fields are numerous and cover for example structural health monitoring, impact or presence detection, healthcare, etc.

PHOSFOS builds on 5 cornerstone technologies:

- silica micro-structured fibres;
- polymer micro-structured fibres;
- fibre Bragg gratings in silica and polymer micro-structured fibres;
- advanced polymer materials;
- flexible electronics and opto-electronics and advanced packaging.

PHOSFOS invites industry, companies and research institutes that are interested in the integrated technology or in one of its cornerstone technologies to join its Industrial User Club.

As a PHOSFOS IUC member you will receive an invitation to the IUC meetings. During these meetings you will be first to learn about the research and development breakthroughs and achievements. You will have the opportunity to interact with the PHOSFOS consortium and with other companies. You will have the opportunity to express your needs in terms of the specifications that you require for your sensor applications or for the individual cornerstone technologies used in PHOSFOS.

PHOSFOS IUC membership is free and grants:

- possible access to technologies developed in PHOSFOS;
- novel networking opportunities;
- information for business development.

PHOSFOS is looking forward to learning about your requirements and to discussing possible developments with you. PHOSFOS will also be happy to link to your company's website. Please fill out the attached reply card or send an e-mail to the coordinator at fberghma@vub.ac.be. We will get in touch with you soon.

