



**PhotonHub™**



**PHOTONICS<sup>21</sup>**

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

## DISCOVER HOW YOU CAN

- ✓ **Achieve smart, durable lighting**  
by using LED and laser systems  
for vehicles, roads, and runways
- ✓ **Improve safety with sensors**  
by monitoring vehicles, planes,  
railways, and drivers' attention
- ✓ **Enhance autonomous mobility**  
through 3D awareness with  
photonics sensors and LiDAR

Explore all possibilities  
on [photonhub.eu](https://photonhub.eu)

Avail of a  
**free initial  
assessment  
by top experts**

for European  
SMEs

Delve into how your  
business could minimise  
the risk and expense  
of deep technology  
innovation through  
“test-before-invest”  
support from PhotonHub.



**PHOTONICS IN  
MOBILITY**

## INNOVATION FROM RUNWAYS TO RAILWAYS

LiDAR technology for providing fast 3D situational awareness

Segmented LED and laser headlights are safe, and smart with no glare

Safe roadway lighting with less energy consumption and light pollution

Airframe monitoring with optical fibre network

Low-maintenance LEDs as lighting for airport runways

Railway monitoring and train tracking over 50 km with a single fibre sensing unit

## EXAMPLES OF COMPANIES SUPPORTED WITH PHOTONICS INNOVATION PROJECTS

FIND MORE ON PHOTONHUB.EU

### DEVELOPING ADVANCED LENS SYSTEMS FOR AUTONOMOUS VEHICLES



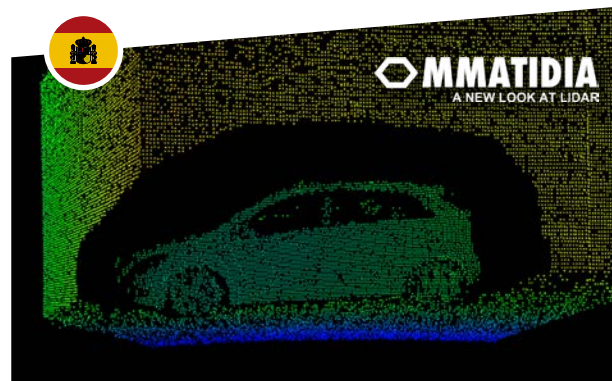
THE IMAGINGSOURCE  
TECHNOLOGY BASED ON STANDARDS



The Imaging Source specialises in the design and manufacture of lens arrays using free-form optics for various applications in the field of autonomous vehicles. Their goal is to develop a passive lens system that can be mounted on high-resolution sensors and cameras, with a 6-lens multifocal optical component with different image planes. To achieve this, they have partnered with the Vrije Universiteit Brussel (VUB) in Belgium to help design and manufacture this innovative optical system.

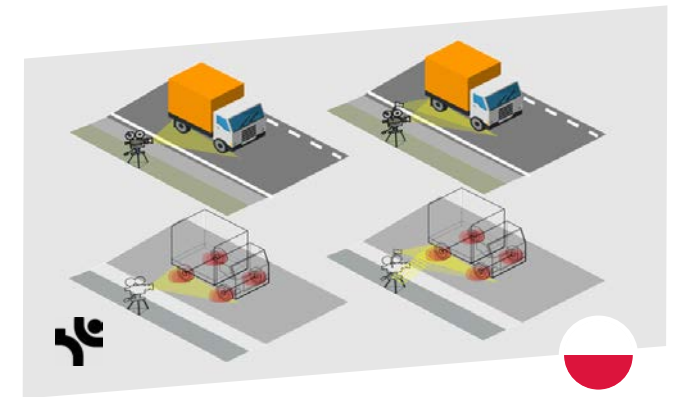
### INNOVATIVE LOW-COST LIDAR SYSTEMS FOR AUTONOMOUS VEHICLES

Ommatidia LiDAR aims to demonstrate the feasibility of low-cost, high-volume production of PIC-based photonic LiDAR systems for fully autonomous vehicles. Their bio-inspired sensor, similar to the compound eye of insects, images the environment in 3D with high resolution and range. Using continuous broad-beamed illumination, it achieves megapixel resolution and long-range capabilities (>300m). Partnering with Technical Research Centre of Finland (VTT) and Tyndall - UCC in Ireland, Ommatidia aims to bring this scalable, reliable, and low-cost technology to the automotive industry.



OMMATIDIA  
A NEW LOOK AT LIDAR

### REVOLUTIONISING ROAD SAFETY AND MAINTENANCE WITH INNOVATIVE SENSOR TECHNOLOGY



Heller Consult sp. z.o.o. enhances road safety and infrastructure maintenance through dynamic vehicle weighing (Weigh-In-Motion). In collaboration with Warsaw University of Technology (WUT) in Poland, they have developed a unique sensor system. This technology measures pavement deflection under vehicle load and recalculates axle and gross vehicle weights. The system promises more accurate and efficient road maintenance and safety management.



# HOW PHOTONICS CAN **SUPPORT YOU**

Photonics is increasingly used in the manufacturing and operation of mobility systems and infrastructure, making roads, railways and airspace safer, more efficient and more sustainable. Applications include structural health monitoring with fibre optical sensors, intelligent lighting with LED and laser systems, and 3D laser scanning for autonomous

unmanned aerial vehicles (UAVs). Photonics is improving energy efficiency, supporting safer rail networks and replacing large aircraft with small UAVs equipped with lightweight sensors and imaging systems.

**Start your photonics innovation journey with our support.**



## **DEMO & EXPERIENCE CENTRES**



In addition to providing innovation support, PhotonHub partners across Europe provide both onsite and online training for industry. This extensive training offering is presented as a single online catalogue of the European Photonics Innovation Academy.

### **ONSITE TRAINING OPPORTUNITIES AT DEMO AND EXPERIENCE CENTERS**

Discover and become fully immersed in photonics through in-person training delivered at the Demo & Experience centers listed below. The schedule of upcoming training can be found at [photonhub.eu](https://photonhub.eu) or by scanning the QR code.

 Joanneum Research

 HiLASE

 Fraunhofer

 Leibniz IPHT

 Politecnico di Milano

### **FREE ONLINE INTRODUCTORY TRAINING OPPORTUNITIES**

Half-day online sessions are delivered throughout the year.

View our complete training schedule and register your interest at [photonhub.eu](https://photonhub.eu) or by scanning the QR code.



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