



PhotonHub™



PHOTONICS<sup>21</sup>

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

## DISCOVER HOW YOU CAN

- ✓ **Reduce energy costs**  
through smart lighting systems
- ✓ **Optimise harvest yields**  
through monitoring soil and plant health
- ✓ **Assure food safety**  
through smart imaging and storage monitoring

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  
AGRICULTURE & FOOD

## FROM FARM

## TO FORK



## EXAMPLES OF COMPANIES SUPPORTED WITH PHOTONICS INNOVATION PROJECTS

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### FOOD QUALITY AND SAFETY ASSURANCE WITH LIGHT TECHNOLOGY MONITORING



Optical food sorting machines target the removal of unwanted products from a product flow, benefitting food safety and quality by detecting foreign objects, bruised products and harmful elements. Vrije Universiteit Brussel (VUB) and Warsaw University of Technology (WUT) performed a spectroscopic study optimizing the illumination and detection parameters for nut sorting. VUB subsequently worked on an improved illumination lens design.

### SOIL MONITORING BENEFITTING FROM PHOTONICS TECHNOLOGIES

Fertilizer is essential for an abundant harvest, indicating the importance of a simple and innovative soil nutrients analyser. Joanneum Research investigated the mastering and upscaling of a lab-on-a-foil system for soil fertility monitoring.



### SAFEGUARDING WINE QUALITY THANKS TO OPTICAL SENSORS



Wine ageing enhances the flavour of the wine, as the oakwood barrel continuously releases aromatic compounds such as lignin, tannins and cellulose. Due to the release process, the barrel quality decreases over time, impacting the wine flavour. To safeguard the presence of the aromatic compounds in an oak barrel, Vrije Universiteit Brussel (VUB) and The Foundation for Research and Technology - Hellas (FORTH) combined optical spectroscopy and fibre sensors for the monitoring of oak barrels used in wine ageing.

*Scan the QR code overleaf to watch a short video on this project.*

# HOW PHOTONICS CAN **SUPPORT YOU**

Photonics helps to supply safe, nutritious and affordable food for all and establish a sustainable value chain from farm to fork. By using ever more precise sensors and measuring devices, farmers, technology providers, food processors and consumers will be able to monitor and certify the safety, quality, content and even the origin of food – anytime and anywhere.

Photonics technologies can monitor soil health and hydrology, predict protein levels in grain harvests, determine when to pick fruit, map water quality to check the health of fish stocks, and more.

**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.



VUB



Fraunhofer



Leibniz IPHT



LZH



FORTH



Politecnico di Milano



Łukasiewicz IMiF

### **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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