



PhotonHub™



PHOTONICS<sup>21</sup>

PHOTONICS PUBLIC PRIVATE PARTNERSHIP

## DISCOVER HOW YOU CAN

- ✓ **Decrease data carbon footprint** through photonic integrated circuits (PICs)
- ✓ **Monitor enviromental & climate change** through optical sensing
- ✓ **Boost wind & solar energy** productivity through LiDAR mapping & optical concentrators

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

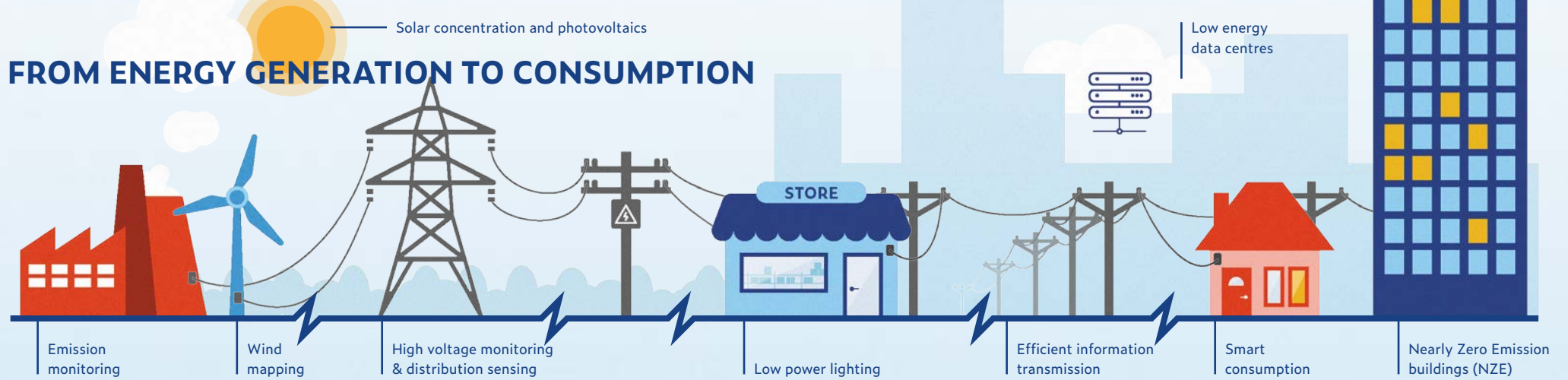
Avail of a  
**free initial  
assessment  
by top experts**

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  
CLIMATE & ENERGY

# FROM ENERGY GENERATION TO CONSUMPTION



## EXAMPLES OF COMPANIES SUPPORTED WITH PHOTONICS INNOVATION PROJECTS

FIND MORE ON PHOTONHUB.EU

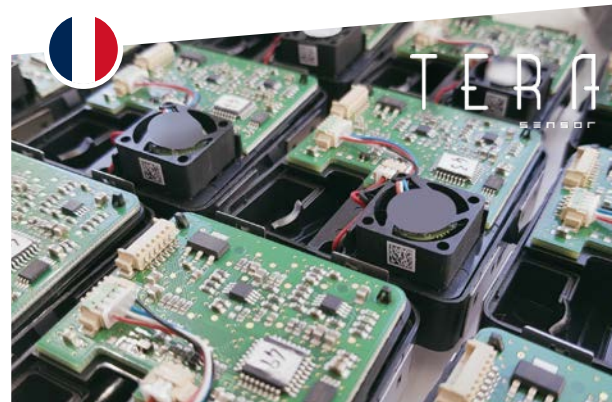
### WIDE-AREA MONITORING OF POWER GRIDS THROUGH PHOTONIC INTEGRATED CIRCUIT (PIC)-BASED SYSTEMS



The move towards distributed renewable energy sources presents challenges to the existing power network monitoring, protection and control functions. Synaptec develops sensors which enable wide-area power grid monitoring with unmatched reaction times and multiplexing capabilities. The company was in need of external expertise to prototype and package a miniaturised interrogation and multiplexing system for its voltage and current sensors. A collaboration with Tyndall-UCC and TNO was instrumental in developing a solution to minimise operation time and improve discrimination of power system protection schemes.

### DEVELOPING PROOF-OF-CONCEPT COMPONENTS USING ELECTRON BEAM LITHOGRAPHY (EBL) TECHNOLOGY

Real-time measurement of air quality is a growing market. TERA Sensor designs, develops and markets its own patented sensors. In order to classify particulate matter, the company needed to develop a new compact and high efficiency multi-spectral sensor with a polarizing filter. CNRS and UEF collaborated with the company on an innovation project aimed at developing a new planar diffractive optical element to improve both the compactness of their sensing device and the selectivity in particle detection.



### IMPROVING THE ACCURACY OF SENSING SYSTEMS THROUGH OPTICAL SPECTROSCOPY



Water utilities, agencies and regulators need to be able to monitor water quality and control pollution levels. AQUACORP has developed a smart-water AI platform targeting fresh water and waste-water monitoring which is completely automated and non-contact, allowing for remote, continuous and real-time monitoring of water using multi-spectral and RGB cameras. VUB worked with the company on a feasibility study involving a spectroscopic study of the water parameters, enabling the improvement of the AI platform, the extension of the sensing capabilities, and the optimisation of the camera outlook by selecting the optimal camera filters and lenses.

# HOW PHOTONICS CAN **SUPPORT YOU**

Photonics helps to reduce resources and energy at every stage of their value chain, from generation to consumption. By using optical concentrators, LEDs/OLEDs, PICs, distributed fibre optical sensing and laser-enabled manufacturing, producers and consumers can decrease conversion losses and operating costs. Photonic technologies can also be used

for performance monitoring (both in residential and industrial scenarios) as well as for environmental protection and circular processing, helping to better understand and act upon climate change.

**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.



PhotonHub has received funding from the European Union's Horizon Europe programme under the Grant Agreement n\* 101189537, in Public Private Partnership with Photonics21.