



# PhotonHub Europe<sup>®</sup>

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## PHOTONICS INNOVATION HUB FOR EUROPE



PHOTONICS<sup>21</sup>

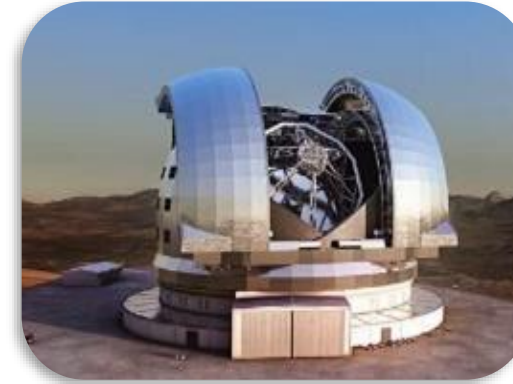
PHOTONICS PUBLIC PRIVATE PARTNERSHIP



**Manufacturing**



**Agro-food**



**Safety Security Space Defence**



**Health**

**Photonics can be a key enabler  
for all these high-tech SMEs  
in a variety of industry sectors**



**Energy**



**Digital Infrastructure**



**Mobility**



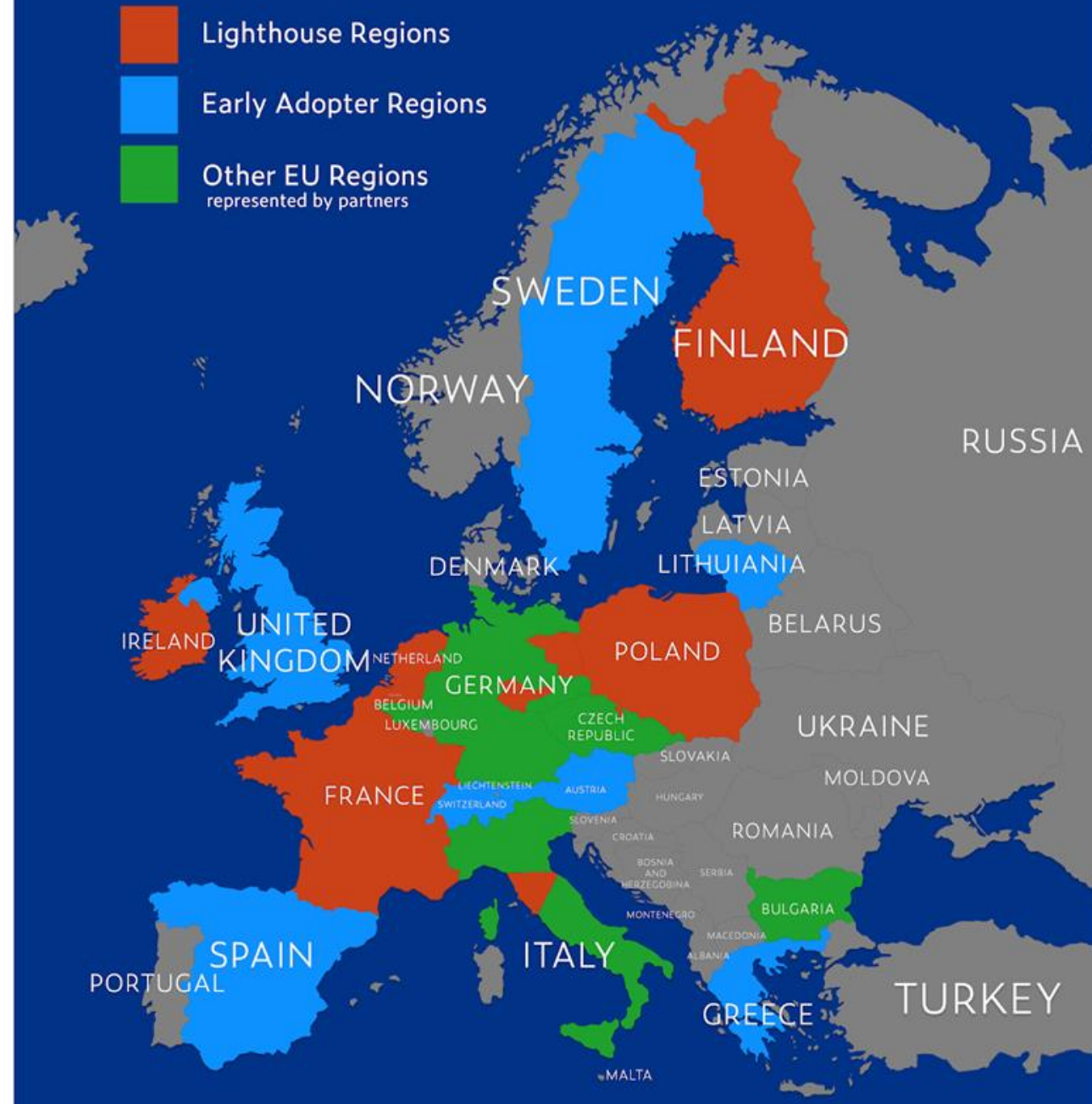


**PhotonHub  
Europe®**

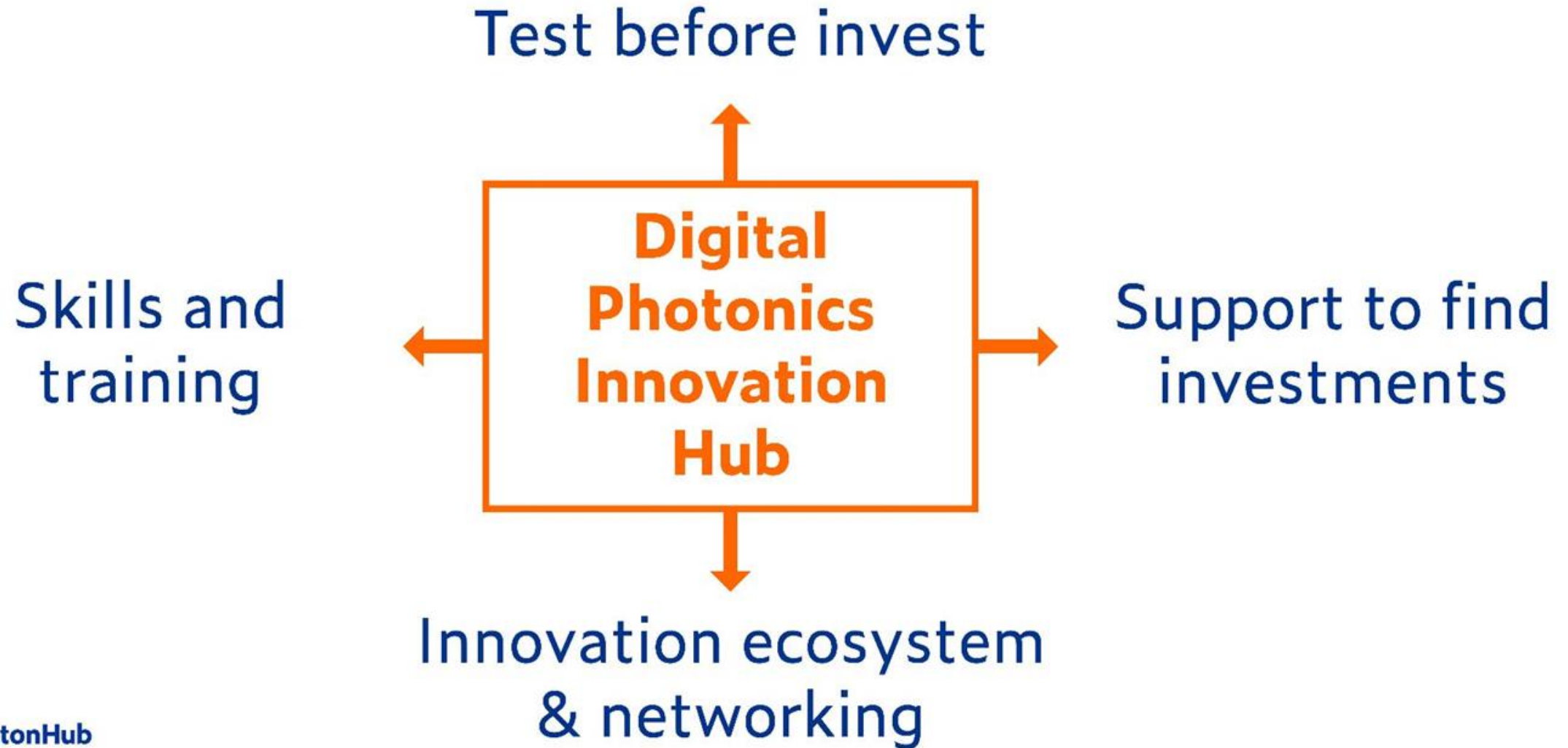
**500+ EXPERTS**

**15 MEMBER STATES**

**36 Technology Support Partners**  
**20 Local Photonics Hub Partners**  
**+6 Business Support Partners**



# Single One-Stop-Shop



# PhotonHub Europe Key Principles

- Support European SMEs with photonics innovation **driven by their business needs**
- Local support where possible, **local innovation projects funded by local means**
- Cross-border support where needed, **cross-border projects funded by PhotonHub**
- Access to pilot-line facilities for first-time users funded through **cascading funds**
- Team up and co-fund as much as possible with existing programs: **EEN brokerage events, Innovation Days, Trainings, Venture Capital Forums**



# PhotonHub supporting photonics innovation



# Orienteering as a one-stop-shop



What is the best next step to boost your business with photonics innovation ?



Orienteering



PhotonHub  
Europe®

Training and  
Re-skilling



“Test-Before-Invest” Innovation Support  
for **Prototyping** to **Upscaling** to  
**Manufacturing**

**Step 1 : Technology Scouting**

TRL3-4  
Feasibility  
studies +  
Prototyping

TRL5-6  
Upscaling

TRL7-8  
Manufacturing

Investment  
support



# European Photonics Innovation Academy: Skills and Training



Training  
and Reskilling



PhotonHub  
Europe®

📌 INTRODUCTORY AND SPECIALISED ONLINE COURSE FOR PHOTONICS INNOVATION

📌 PHOTONHUB DEMO CENTRES

📌 PHOTONHUB EXPERIENCE CENTRES

📌 PHOTONHUB COURSES AT EXTERNAL EVENTS

📌 EUROPEAN PHOTONICS INNOVATION ACADEMY CATALOGUE

Training catalog

<https://www.photonhub.eu/our-services/#Training>





# European Photonics Innovation Academy: Skills and Training



Training  
and Reskilling



PhotonHub  
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## Demo Centres

**1 DAY** on-site training programme  
32 demo centres each focusing on a  
selected photonics application domain

**Photonics in Sensing**  
**Photonics in Food Safety**  
**Photonics in Datacom**  
**Photonics in Manufacturing**  
**Photonic Integrated Circuits**  
**Optical Coating Technologies**

and more

## Experience Centres

**3 DAY** on-site training programme  
9 photonics technology centers  
with a focus on hands-on experience

**Freeform Optics**  
**Photonics Packaging**  
**Photonic Integrated Circuits**  
**Optical Fibre Manufacturing**  
**Laser Based Manufacturing**

and more

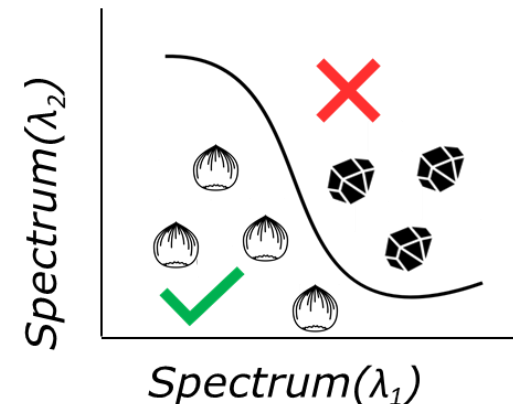
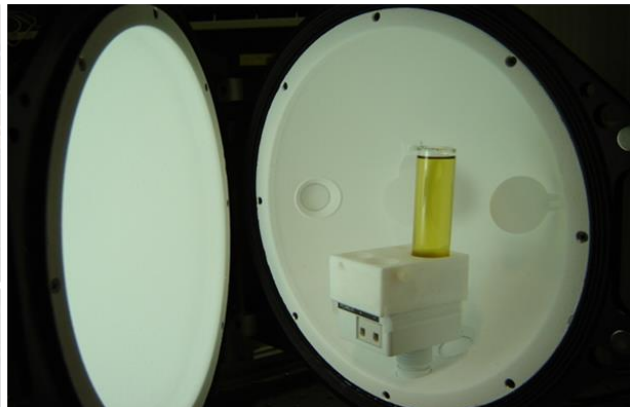
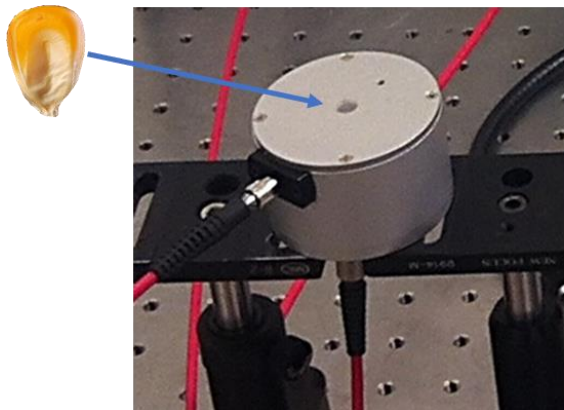
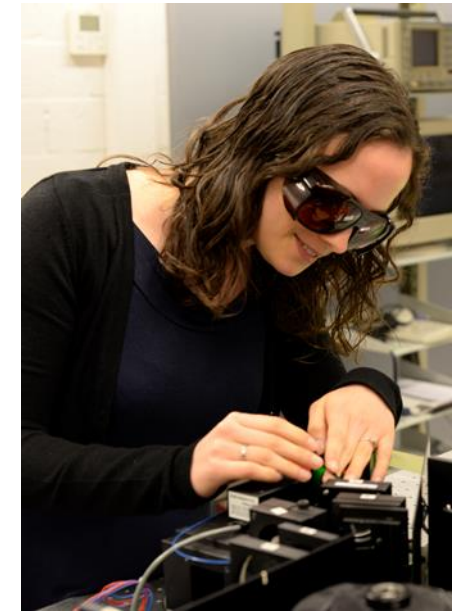
**Training catalog**

<https://www.photonhub.eu/our-services/#Training>

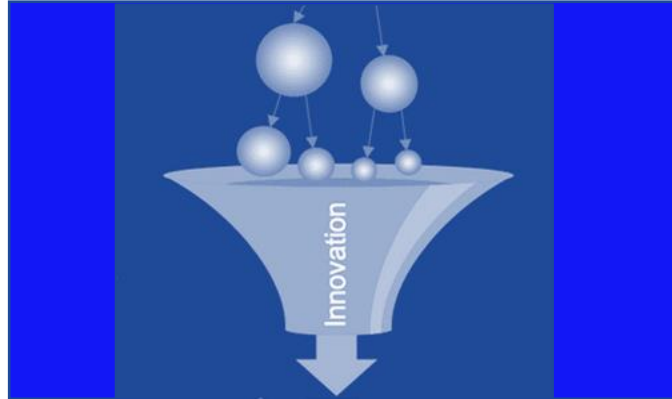


# Demo Centre Photonics and Food

Time	Demo Activity
09:00 – 10:30	Course Introduction & Tutorial
11:00 – 12:30	Demo 1: UV-VIS-NIR Absorption spectroscopy on solid and liquid food products (hands-on)
14:00 – 15:30	Demo 2: Fluorescence spectroscopy (hands-on) and scatter measurements on solid food products (illustration demo)
15:30 – 17:00	Demo 3: The use of machine learning techniques in food spectroscopy (hands-on)
17:00 – 17:30	Follow-Up Questions & Close



# Innovation Support: Prototyping-Upscaling-Manufacturing



Scouting of Potential Innovation Projects  
Assessment of Business Plans



Accelerating Prototyping through  
Innovation Projects with Companies TRL3-4



Accelerating Upscaling involving  
EU Pilot-Line Facilities TRL5-6



Accelerating Manufacturing in Europe  
Through Brokerage Supports TRL7-8



TECH  
SUPPORT

Deep  
Innovation  
Support TRL 3-8



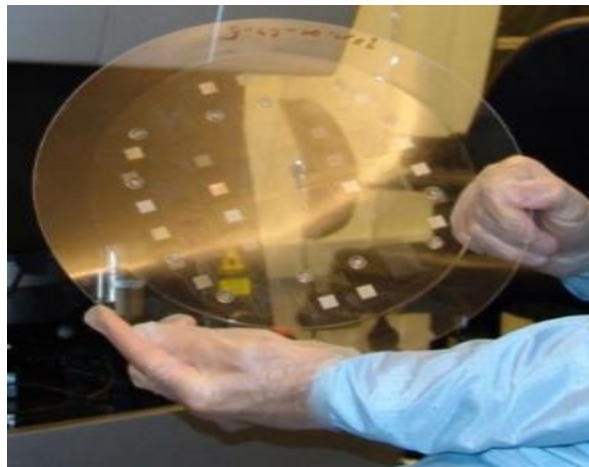
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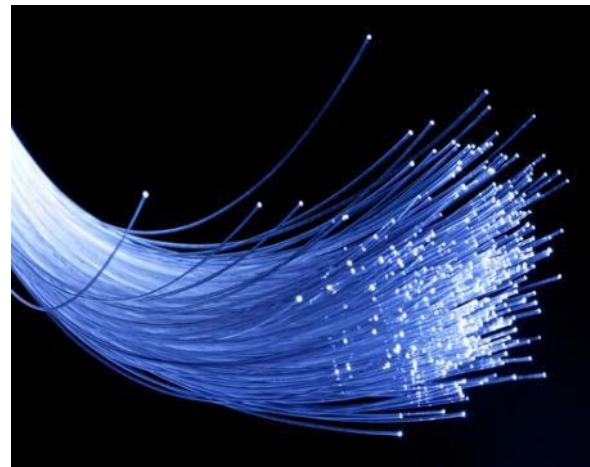
# Prototyping Innovation Support Offered by 8 Platforms



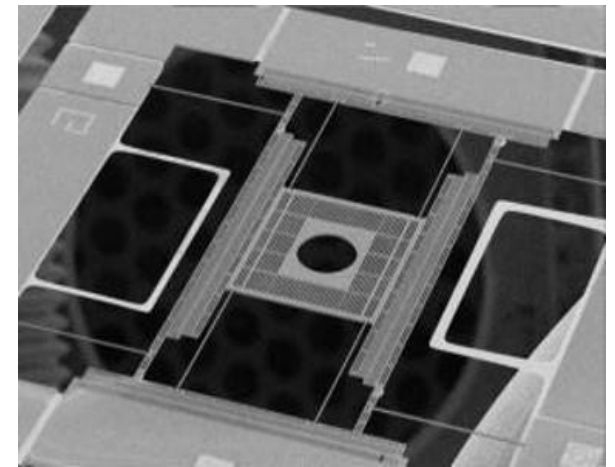
free-space optics



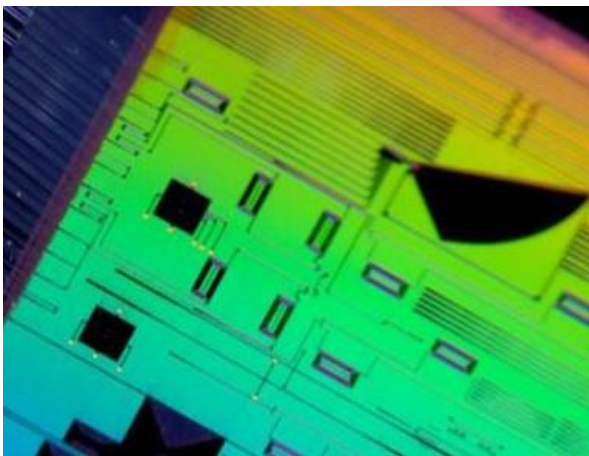
polymer-based optics



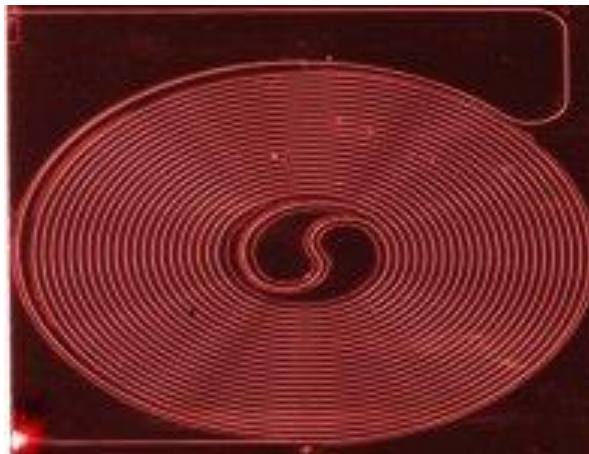
specialty fibers



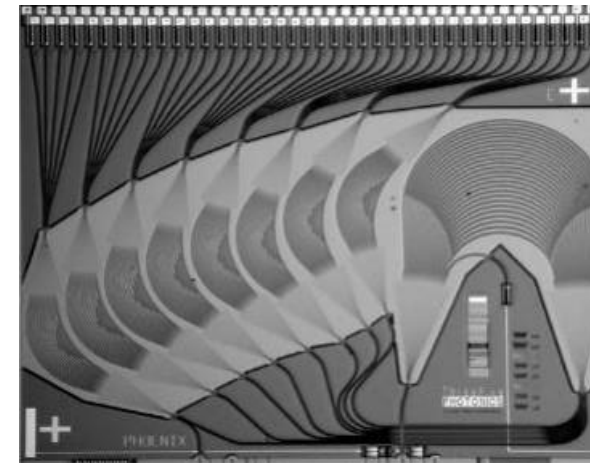
MOEMS



Si-PICs



SiN PICs



InP-PICs



Laser-based  
manufacturing

Avail of a  
**free initial  
assessment  
by top experts**  
for European  
SMEs

Strongly  
**SUBSIDISED  
PROJECTS**

\* max. € 100k subsidised

**TRL 3-4: PROTOTYPE LEVEL**

Total innovation project budget	Subsidised for SME	Cash contribution of SME
€ 50.000	▷ € 45.000	⊕ € 5.000
€ 70.000	▷ € 60.000	⊕ € 10.000
€ 90.000	▷ € 75.000	⊕ € 15.000
€ 110.000	▷ € 90.000	⊕ € 20.000
€ 125.000	▷ € 100.000*	⊕ € 25.000

For Large Scale Companies:

50% subsidised (max. total budget: €200.000 of which €100.000 subsidised)

**TRL 5-6: UPSCALING LEVEL**

- 50% subsidised for early adopters & first user SMEs (only for EU-based!)
- Maximum budget of €500.000 of which €250.000 subsidised



PHOTONICS PUBLIC PRIVATE PARTNERSHIP

**CUSTOMISED  
BENEFITS TO  
YOUR COMPANY**

**ONE-STOP-SHOP**

Full supply chain of cutting-edge photonics platforms

**TOP EXPERTS**

We select the partners that can best serve your company needs

**SEAMLESS SUPPORT**

All the way from concept to manufacturing (TLR3-8) through multiple follow-on projects

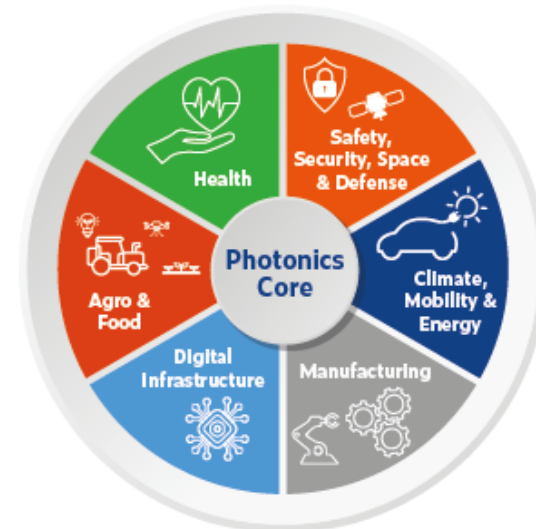
**CONCRETE RESULT**

TRL advancement of 1 to 2 TRL levels

**FASTER TO MARKET**

Duration of project: 6-9 months

**Photonics**  
Driving innovation across  
all industry domains



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



**PhotonHub  
Europe**



**GET  
STARTED!**  
**PHOTONHUB.EU**



# Photonics for safe, nutritious and affordable food

Examples of activities:

Healthy nutrition:

- spectroscopy systems for food quality control
- photonics camera system for monitoring soil health and food quality
- optical detection system for checking contamination in liquids

Smart farming:

- led & laser based sorting systems
- photonic sensor system for ripeness detection

Vertical farming

- led & light systems

Packaging:

- laser system to engrave information on food packaging and corks

**Our mission:**  
quality food from  
farm to fork

**Field  
Monitoring**



**Soil  
Monitoring**



**Machine  
Operation**



**Water  
Management**





# Non-destructive product identification and evaluation



Foreign object detection



Ripeness classification of strawberries

Detection of mycotoxins



Acrylamide precursors

Authentication of



Olive oils



Honey



Beers

Monitoring of drinking water quality





# Ripeness detection and harvest prediction



Movie courtesy of Octinion



Class 1



Class 2



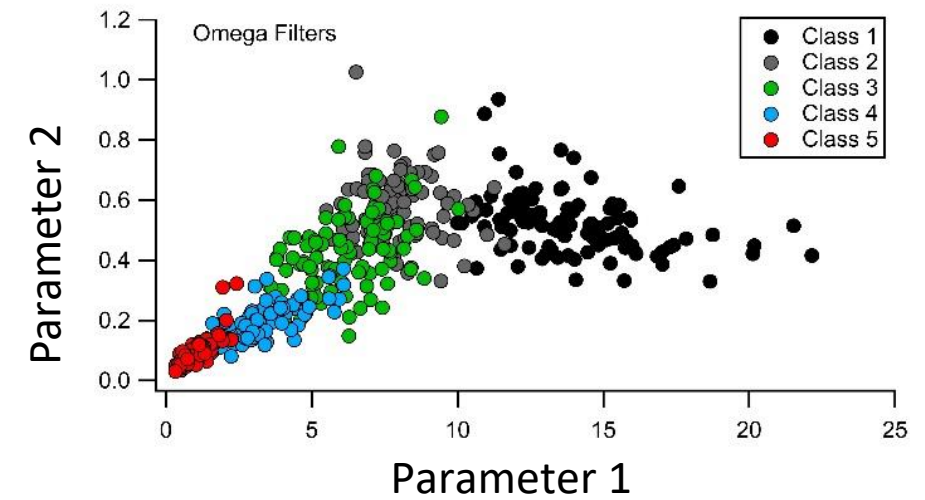
Class 3



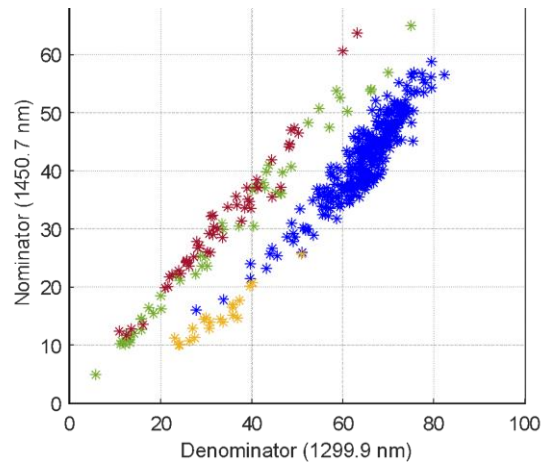
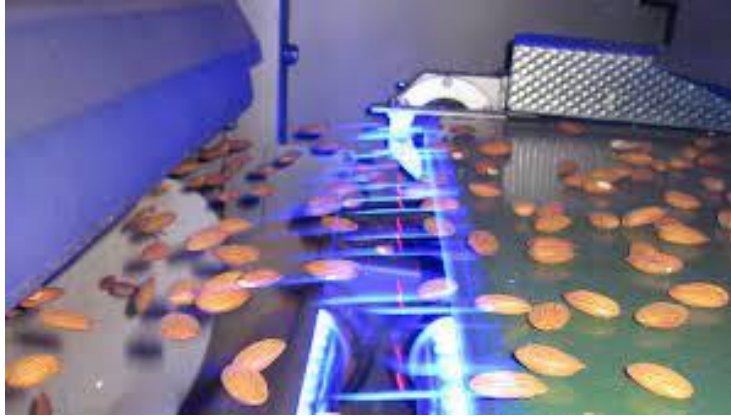
Class 4



Class 5



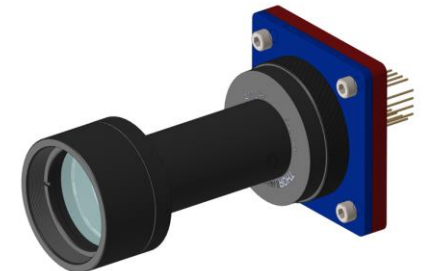
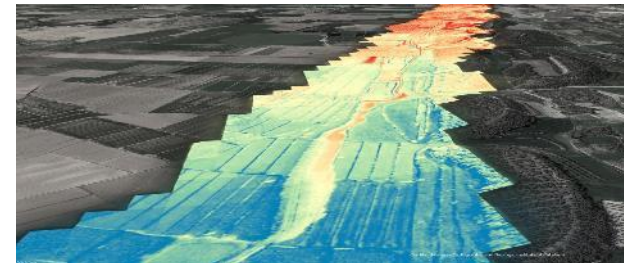
# Optical design and spectroscopy



RGB and NIR  
camera unit

radiometer

SWIR and thermal  
camera unit





# Videos – Company testimonials

- <https://www.photonhub.eu/testimonial/>
- [Examples agro-food:](#)
  - <https://www.photonhub.eu/testimonial/wines-of-crete/>
  - <https://www.photonhub.eu/testimonial/innovating-with-photonics-technology-ionos-greece/>

# How to start?



**PhotonHub  
Europe®**

[ABOUT US](#) [OUR SERVICES](#) [OUR PARTNERS](#) [NEWS & EVENTS](#) [CONTACT US](#)

**Innovate with the  
technology of light!**

[REGISTER YOUR INTEREST](#)



**Our Services to support your innovation**

# How to start?

**Please indicate the support activities of PhotonHub that are of interest for you (tick all that apply): \***

- Photonics Technology Innovation support for early-stage feasibility testing & prototyping
- Photonics Technology Innovation support for industrial upscaling of first prototypes through small-series pilot production
- Photonics Technology Innovation support for connecting with suitable mass manufacturing partners
- Photonics Training or Upskilling support in key application or specialist technology domains
- Investor Matchmaking support to find suitable venture capital or corporate investment funding in the domain of photonics and photonics-enabled businesses
- Business Coaching support to boost your market-readiness in deploying photonics technologies
- General Orienteering support in connecting with key people and organisations in the European photonics ecosystem
- None of the above

**Can you provide a brief description of the support activity that you would like to discuss with PhotonHub? \***



# How to start?



## HOW TO START?

### 1 SELECT THE SERVICES OF INTEREST AND REGISTER ONLINE



Prototyping  
Upscaling  
Manufacturing  
Training & Reskilling  
Business & IP Coaching  
Investment Coaching

PHOTONHUB.EU



Scan to register!

## 2

### TECHNOLOGY ORIENTEERING



We will contact you to discuss your photonics innovation ambition and determine the right technology approach & partners for you. This discussion will take place under NDA.

## 3

### INITIAL EXPERT ASSESSMENT



In-depth face to face meeting with the appointed experts covering both technical and business aspects followed by a report including the recommended next steps. (Typically, 2 weeks to complete this step)

## 4

### PROJECT PROPOSAL



PhotonHub appoints a project leader to work with you in preparing and submitting your customised innovation project proposal covering tasks, milestones, deliverables, budget, and IP ownership. (Typically, 1-2 months to complete this step)

## 5

### PROJECT EVALUATION



The PhotonHub Evaluation Team reviews and scores your proposal in accordance with the evaluation criteria\*. You will be invited to participate online to address any questions and will receive a formal evaluation report within one week. Possible outcomes are: granted; approved pending resubmission with modifications; or cancelled. (Evaluation meetings every 2 months) \* available at [photonhub.eu](http://photonhub.eu)

## 6

### CONTRACT SIGNING AND KICK-OFF



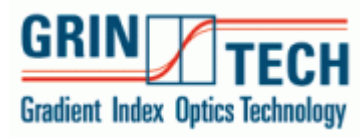
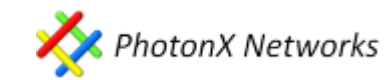
Once granted, an innovation project agreement is signed by your company and all of the partners involved. The project kicks off and you are on your way!



*“Initial Expert Assessment:  
Typically, 2 weeks to complete this step.”*

*“Project Proposal:  
Typically, 1-2 months to complete this step.”*

# Supported companies



# Photonics innovation support by PhotonHub Europe



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[lsmeeste@b-phot.org](mailto:lsmeeste@b-phot.org)

