



New Horizons

Securing Europe's technological sovereignty through Photonics

Photonics – a key digital technology for global mega markets and challenges

-  **Live longer, feel better** – Photonics in life sciences and healthcare
-  **Feed the world** – Photonics for safe, nutritious and affordable food
-  **Keep our traffic flowing** – Photonics for autonomous & connected mobility
-  **Zero emission, less waste** – Photonics for sustainability and a clean environment
-  **Empowering Industry 4.0** – Photonics in manufacturing and production
-  **A new quality of urban life** – Photonics for smart homes and liveable cities
-  **Building our digital society** – Photonics for a secure and resilient IT infrastructure
-  **Linking big ideas** – Photonics as a driver of the digital knowledge society


PHOTONICS²¹

European Photonics – a fast growing SME-based industry

- The Global photonics sector is growing twice as fast as global GDP.
- European photonics production increased from €76 billion (2015) to €103 billion (2019) corresponding to a CAGR of 7% and a 3x multiple of European GDP growth.
- European photonics is a SME-based industry with about 5,000 companies and 390,000 direct jobs.
- European photonics has a high innovation spending rate (Capex and R+I) with 15% on average and up to 25% (e.g., MedTech).
- European photonics segments have leading positions in the world: e.g., Photonics in Industry 4.0, medical technology, environmental monitoring and optical instrumentation.

World-leading economies heavily invest in Photonics

- Public funding for photonics in South Asia (China, South Korea and Japan) has doubled from 2014 to 2020 to €4.2 billion.
- USA has been investing in next-generation photonics manufacturing facilities fostering innovation in digital industries since 2015.

- Japan declared in its Cross-ministerial Strategic Innovation Promotion Program (SIP) in 2019: "Photonics and quantum technologies are positioned as core technologies that offer advantages in creating new value under the 5th Science and Technology Basic Plan..."

Photonics Partnership in Horizon Europe – our goals

Photonics is an essential building block for the digital transformation and for a green and healthy future in Europe. The new Photonics Partnership aims to speed up photonic innovations for a more digital, greener Europe, securing Europe's technological sovereignty, raising the competitiveness of Europe's economy and ensuring long-term job and prosperity creation.

Unleashing the full innovation potential of Photonics

Foster a focused, continuous and synergetic development of key photonics technologies, components and systems in Europe.

- SME-based photonics industry requires a well-coordinated photonics strategy to effectively push the digitalization of European industry and address global challenges.

- Core photonics technologies leverage many different industries: Only a jointly developed community roadmap can unleash the broad spill-over effects.
- Lean, simple and transparent partnership governance is key for a successful implementation.

Collaboration with value chain partners to speed up time to market

Push for the rapid diffusion into the various sectors that critically depend on innovative photonics solutions by early collaboration along value chains.

- Fully exploit the potential of photonics for a digital, green and healthy future in Europe by providing critical components, systems and processes for next generation applications.
- Securing technological sovereignty for Europe by maintaining leadership in core photonics technologies and in the application of photonics through common strategic research and investment commitment.
- Raise the international competitiveness of Europe's economy and ensure long-term job and prosperity creation in Europe.