



Photronics21 Press Release

## Experts urge EU to increase investment in photonics or risk falling behind China

New research reveals that investments from government and regional clusters worth billions of euros have enabled China to become the world's biggest photonics powerhouse – prompting calls from EU photonics experts for increased funding to close the gap in critical technologies.

- Study published today reveals how industrial development plans and unique regional clusters have helped China increase its global market share from 10% in 2005 to more than 30% in 2022 – dwarfing Europe and the US.
- Local clusters are set to raise €5 billion to invest in China's photonics industry in the next few years.
- China is currently in the third phase of the National Integrated Circuit Industry Investment Fund, the largest-ever semiconductor investment programme equivalent to nearly €39 billion.
- Photronics21 President Dr. Lutz Aschke says, "The future of Europe's innovation and industry rests on our ability to match China's strategic advancements."

A new study published today by Europe's premier photonics technology platform, [Photronics21](#), shows the tremendous growth of China's photonics industry, with a global market share increasing from 10% to more than 30% over the past two decades – dwarfing both the US and Europe each with 15% respective shares.

The research, called *Political Steering Processes in China in Core Segments of the Photonics Industry*, which was conducted by international management consultancy EAC reveals how China's political system steers and funds the industry.

Photonics – the science and technology of generating and harnessing light – is a linchpin that supports and enhances critical technologies like quantum, 5G, AI, IoT, biotechnology, aerospace, intelligent manufacturing, and life sciences and is crucial for applications in displays, lasers, lighting, ICT, and photovoltaics.

The new study shows despite China's GDP growth gearing down from a rapid ~7% to a steadier ~4% over the next few years, photonics production in China is still expected to reach €315 billion in 2025.

This global dominance has prompted calls by European experts to increase funding for optics and photonics technologies. Photronics21 President Dr. Lutz Aschke said: "Policymakers must take heed of China's market and technological leadership. China is penetrating sectors traditionally dominated by Europe, such as laser manufacturing, sensing, optical components and systems. Basic research and enabler processes need to be strengthened and matched by investments in future markets such as Artificial Intelligence (AI). We have to take timely measures.

"While Europe currently holds the second position in the global photonics industry, there is a pressing risk of falling behind. Without significant investment, Europe faces the threat of losing ground in this crucial technology sector, which could undermine its economic competitiveness and technological independence.

"To maintain and defend this position, it is essential for national and European policymakers to prioritise this strategic sector. We need to implement a European strategy on critical materials and components for key industries and technologies to secure a resilient photonics supply chain in Europe. Specifically, research and development activities, as well as the production of photonic components in Europe that are critical to the industry supply chain, should be strengthened.



“The future of our innovation and industry rests on our ability to match China’s strategic advancements and secure our place in the global market. We must urgently increase funding for Europe’s photonics industry to keep pace and close the gap with China.”

### €5 billion-in China’s Regional Clusters

The EAC report shows that China’s unique photonic industry clusters have allowed the central government to take a back seat, enabling regional strategies and market demands to drive the photonics boom.

According to the study, China’s financial backbone consists of local governments, investment institutions, and enterprises. These entities are set to exceed national contributions with around €5 billion for photonics innovations over the next few years. The research shows that public funds account for only 20%-30% of this regional revenue. In contrast, the remaining 70%-80% is composed of funds from investment institutions and enterprises.

These clusters are based in eight different cities in major industrial areas across China, each with its own focus and strategy. In **Suzhou**, a 10 billion RMB ( approx. €1.3 billion) photonics industry fund aims to establish the Suzhou Taihu Photonics Center, enhancing scientific innovation. **Wuxi** plans the Taihu Optics Valley with significant investments, including a 3 billion RMB (approx €390 million) fund for silicon photonics and a 2 billion RMB (approx €260 million) industrial park. **Wuhan**, known as China’s Optical Valley, boasts a 10 billion RMB (approx €1.3 billion) venture capital fund. **Beijing** plans a €30 million optoelectronics fund, while **Xi’an’s** 750 million RMB (approx €97 million) fund supports its photonics industry. **Chengdu** offers incentives like 10 million RMB (approx €1.3 billion) grants for optoelectronics investments. **Shanghai** identifies photonics as a future-leading industry, and the **Guangdong-HK-Macao Greater Bay Area** has received the equivalent of €1 billion in photonics investments since 2021.

### Billions in Industrial Development Plans

The research shows a significant part of China’s success lies in a series of proactive industrial development plans, including Made in China 2025, the 14th Five-Year Plan and Beyond, and the National Science and Technology Plan. While the US passed its “CHIPS and Science Act” in August 2022, a landmark piece of legislation aimed at bolstering the United States’ semiconductor manufacturing capabilities and fostering technological innovation, China has had something much bigger in the shape of its ‘National Integrated Circuit Industry Investment Fund’ (ICF) or the ‘Big Fund’. According to EAC, 2024 marked the start of Phase III of the ICF, which has a budget of €39 billion. Integrated photonics is one of the technologies funded in the third phase of the ICF.

Daniela Bartscher-Herold, Partner at EAC Munich and co-author of the EAC-study, said, “Our latest market research reveals that China’s strategic investments leveraged through its regional cluster funds alongside its national funds specifically for integrated photonics have helped the region advance as a critical technology leader. Rather than be left irreversibly behind, it would be advisable for Europe to significantly increase its funding to close this gap in critical technologies. Without substantial investment, the EU risks losing its competitive edge and relinquishing its leadership in this key industry.”