The silicon photonics crossroad: CORNERSTONE market research uncovers scale-up challenges as global momentum builds

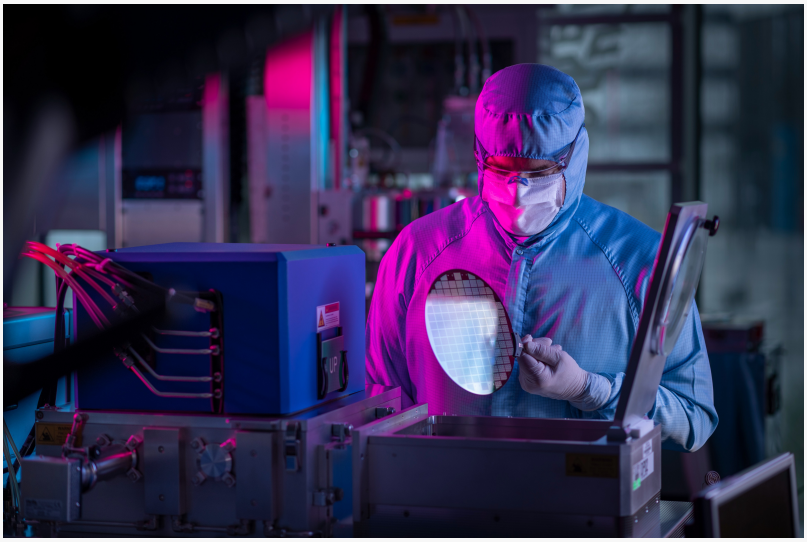
Study spanning Europe and US reveals access to infrastructure and prototyping capabilities stifling silicon photonics' growth, despite surging investment

SOUTHAMPTON, UNITED KINGDOM, June 17, 2026 /EINPresswire.com/ -- Challenges with prototyping and access to scale-up infrastructure risk stalling the growth of the silicon photonics (SiPh) sector in key global markets if not urgently addressed, new market research published by the CORNERSTONE Photonics Innovation Centre, today reveals. The market research, conducted via OnePoll and featuring insights from 500 decision-makers based in the UK, US, the Netherlands, Germany, and Spain who are currently developing/deploying SiPh chips or in the planning stages of doing so, identifies multiple barriers currently hindering the sector's development. In parallel, it highlighted clear job and revenue opportunities that will be created if these hurdles can be overcome, demonstrating clear benefits that will be realised if action is taken

Silicon photonics - which integrates light-based components onto silicon chips - is projected to generate revenues of at least $46.5 billion by 2035, and is increasingly being recognised as a critical part of national tech strategies.

For companies looking to develop silicon photonics chips, being able to prototype quickly and cost-effectively is instrumental on the path to commercialisation. Yet lengthy turnaround times

at many large foundries, alongside geopolitical factors such as tariffs, are slowing innovation on a global scale:



- 59% stated their country lacks the infrastructure needed to progress from research to commercialisation, despite 67% viewing scale-up infrastructure as key to bolstering sovereign tech capabilities
- Two-thirds of respondents (66%) report that manufacturing access is the primary roadblock to commercialisation
- 27% experienced lengthy foundry turnaround times

Due to these barriers, businesses are forced to cancel or delay their prototyping plans. 31% of respondents globally report delayed product roadmaps, causing notable financial losses of $2.7M on average for the same period.

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>
> *Callum Littlejohns, Deputy Director, CORNERSTONE*

If these hurdles can be overcome, the opportunities are huge. Globally, almost half (48%) of survey respondents state that they could begin generating commercial revenue 7–12 months earlier if prototyping cycles were accelerated by 25%.

The findings come at a pivotal time for the silicon photonics sector. Governments around the world are increasingly looking to develop sovereign chip capabilities and recognising the strategic importance of silicon photonics to mitigate AI power consumption and support quantum strategies. Already this month, the EU announced proposals for an EU Chips Act 2.0 to build Europe's resilience and technological sovereignty in semiconductors. With an average of 54% of respondents across the Netherlands, Germany, and Spain believing the current EU Chips Joint Undertaking does not go far enough to support silicon photonics companies, the revisions are likely to be welcomed by the SiPh sector across the continent.

Quantum and AI hardware key drivers for future SiPh chip development

In the UK, SiPh - and the technologies it enables - are also increasingly featured on the government agenda. Last week the UK launched its AI Hardware Plan, which specifically

highlighted silicon photonics, and in March pledged £2 billion to strengthen its quantum capabilities, as it looks to establish leadership in the space.

CORNERSTONE's market research underscores how the UK government's investment in AI hardware and quantum clearly aligns with the commercialisation opportunities in silicon photonics. 64% of UK respondents stated their organisation is currently developing silicon photonics chips for quantum technologies, and 56% for AI hardware, highlighting the enormous potential of the technology to support sovereign tech strategies.

However, for the UK to fully capitalise on the SiPh opportunity, investment in a domestic pilot line to bridge the gap between lab-scale prototypes and full-scale commercial production is critical. As CORNERSTONE previously highlighted, over three quarters (76%) of UK respondents believe that national scale-up infrastructure would accelerate company growth and alleviate the impact of tariffs impacting almost a third (32%).

Providing domestic scale-up infrastructure may also help retain specialists in a market where 42% of UK businesses face skills shortages. Currently, 24% of UK respondents reported losing staff overseas in the last 24 months, while 55% said they personally plan to move or have already moved abroad.

"The silicon photonics industry in the UK and abroad is on the cusp of landmark growth, yet our findings clearly show that there are barriers to scale-up which must be urgently addressed to support the sector's development," commented Callum Littlejohns, Deputy Director, CORNERSTONE.

"At CORNESTONE, we aim to remove barriers to innovation, offering an open-source model to make silicon photonics accessible, and providing a rapid and flexible route to silicon photonics prototyping. But without critical scale-up infrastructure companies will hit a major roadblock to commercialisation. As highlighted both in our market research and in the Council for Science and Technology's letter to the Prime Minister in February, a pilot line is needed to support companies to scale-up and fully capitalise on the UK's world-renowned R&D."

Note to editors:

This online survey of 500 decision-makers who are currently developing/deploying Silicon photonic chips or in the planning stages of doing so in the UK, US, the Netherlands, Germany, and Spain (100 per market) was commissioned by CORNERSTONE and conducted by market research company OnePoll, in accordance with the Market Research Society's code of conduct. The market research was conducted between 19th to 31st March 2026, and all participants were double opted in to take part in the market research.

Thorough checks were conducted during both the survey design phase and while the survey was active to ensure the quality of the collected data. These checks included, but were not limited to,

the following: monitoring response patterns (such as identifying speeders, contradictory answers, and straight-lining), checking for duplicate IP addresses, ensuring respondents are in the correct country, and implementing survey quality controls like trap questions.

More information about the survey methodology and data verification processes can be provided upon request.

About CORNERSTONE

CORNERSTONE is an award-winning open-source, licence-free silicon photonics prototyping foundry, hosted at the University of Southampton in collaboration with the University of Glasgow and the UK's Science and Technology Facilities Council, and funded by UKRI. The open-source model lowers the barriers to innovation in SiPh giving researchers and innovators the freedom to design, fabricate, and test new ideas. Since 2017, CORNERSTONE has fabricated over 900 unique SiPh designs for over 130 organisations in 26 countries.

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