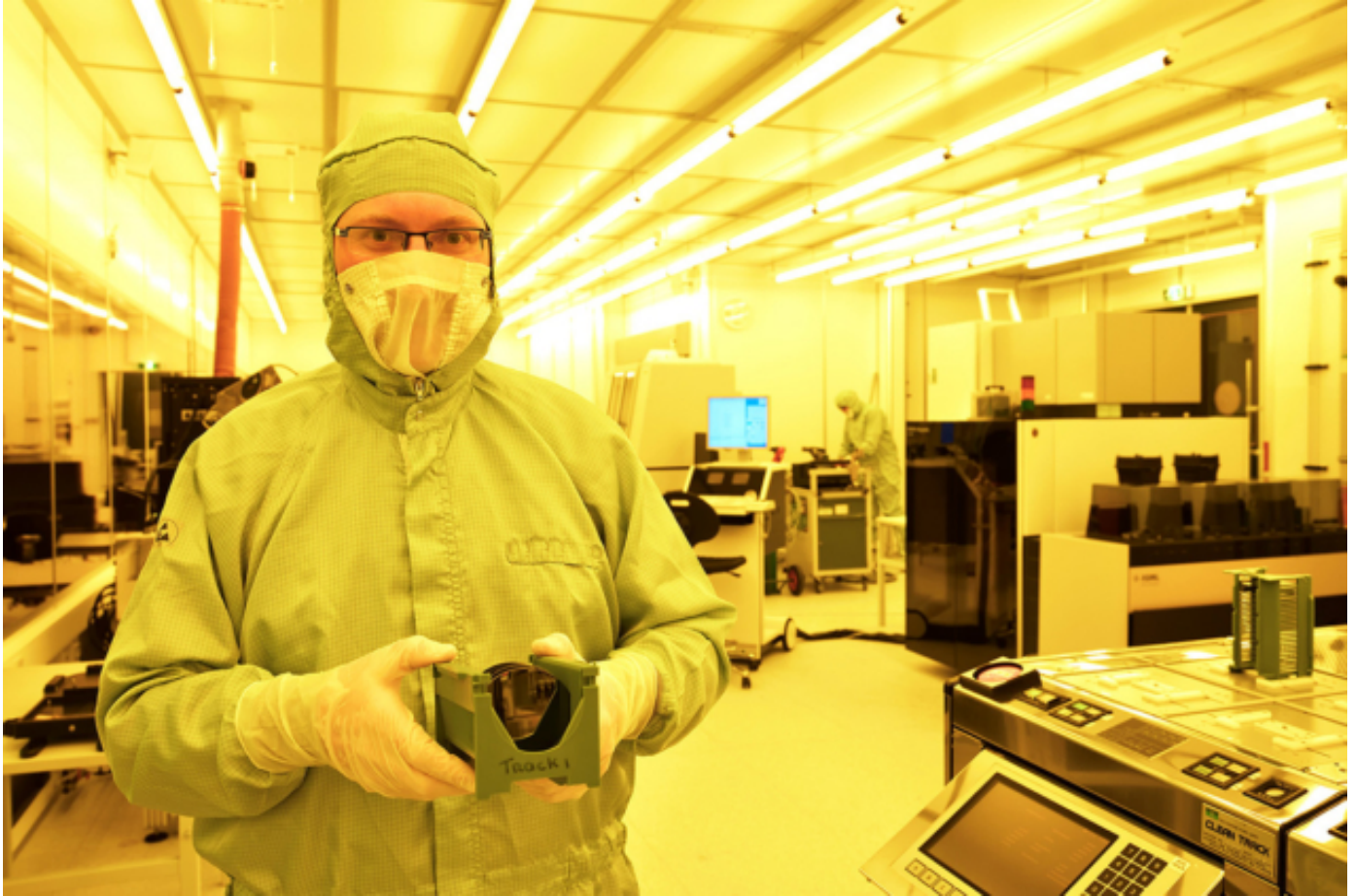


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POLICY AND FUNDING | NEWS

## Netherlands invests €1.1bn in the photonic-chip industry

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**Lighting the way** Photonic chips could have a range of applications from high-speed communications to quantum computing. (Courtesy: Bart van Overbeeke/Smart Photonics)

The Dutch photonic chip industry **has been boosted** with €1.1bn of public and private investment. The cash, which includes €470m from the Dutch government's National Growth Fund, will be used by **PhotonDelta** over six years to create hundreds of photonic start-up companies and scale up photonic-chip production to encourage development of new photonic applications.

Photonic chips – also known as photonic integrated circuits (PICs) – are the photonic equivalent of electronic integrated circuits and use small structures called waveguides to transport photons over the chip. These chips can have similar or better functionality than their optical equivalents, and can therefore be used to create smaller, faster and more energy-efficient devices.

PICs can also process and transmit data much faster and more effectively than their electronic counterparts. The production process is also carried out using automatic wafer-scale technology, which cuts costs by allowing them to be mass produced. Photonics chips could have a range of applications from high-speed communications to quantum computing.



PhotonDelta, which consists of 26 companies, 11 technology partners and 12 R&D partners, specializes in two major PIC production platforms – indium phosphide and silicon nitride – and is already collaborating with the Belgium institute Imec to build a pilot line for

silicon photonics.

These three platforms create PICs with different functionalities. Indium phosphide has an active layer and can be used to create lasers, amplifiers and detectors for example for high-speed communication. Silicon nitride can build low-loss waveguides for applications such as biosensing or quantum computing. Silicon photonics are mostly passive devices and benefit from being CMOS compatible and using the same production facilities as standard integrated circuits.

With the new funding, PhotonDelta hopes by 2030 to include over 200 companies and give the Netherlands a wafer-production capacity of more than 100,000 per year. PhotonDelta director [Ewit Roos](#) says that the Netherlands has acquired a globally distinctive position in integrated photonics and that it is now time for a series of follow-up steps. “In this way, we can stay ahead of the competition and strengthen Europe’s intended strategic autonomy in photonics,” he says.

**Martijn Boerkamp** is a science journalist based in the Netherlands

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