

Pixel Photonics receives €1 million SPRIND funding for multi-mode single photon detection

Paving the way for groundbreaking photonic applications in industry and research

Münster, February 5, 2025 - The deep-tech startup Pixel Photonics receives a grant of 1 million euros from the German Federal Agency for Breakthrough Innovation (SPRIND) to further develop its waveguide-integrated superconducting nanowire single photon detectors (WI-SNSPDs) for multi-mode detection. This development represents a technological breakthrough in ultra-precise photon detection and enables new applications in fields such as microscopy, diagnostics and laser communication.

Light is the central information carrier in numerous high-tech applications - from microscopy and telecommunications to quantum computing. Highly sensitive detectors are essential for reliably detecting even the lowest signal strengths, with SNSPD currently being the detectors of choice. Pixel Photonics has already set milestones in scalability and sensitivity with the integration of SNSPDs with photonic waveguides.

However, existing highly efficient detector solutions, especially in the near-infrared spectral range, are often limited to light in a single optical mode, making interfacing with many applications challenging, especially in life sciences, microscopy, diagnostics and LiDAR, which typically work with multimodal light. This is where Pixel Photonics comes in: With the help of the SPRIND grant of 1 million euros, the deep-tech startup will now push ahead with a multi-mode adaptation of its detection technology.

“The SPRIND funding perfectly complements our journey alongside visionary VCs like Quantonation and HTGF, providing a crucial boost to the development of our technology beyond quantum applications. This support enables us to accelerate progress and bring our innovations to market faster. Our multi-mode capable single-photon detectors will seamlessly integrate into established optical systems, making the adoption of SNSPD technology effortless for industry players. By offering a versatile detection platform, this innovation expands possibilities across a broad range of applications while unlocking new opportunities in medtech and diagnostics. Ultimately, this advancement has the potential to open entirely new markets for Pixel Photonics, with strong multi-million-euro revenue potential,” says Nicolai Walter, CEO of Pixel Photonics.

The Federal Agency for Breakthrough Innovation promotes disruptive technologies with the potential to create new markets and strengthen Germany's technological sovereignty. For deep-tech start-ups like Pixel Photonics, this means an opportunity to drive long-term developments, master technological risks and become internationally competitive. The development of multi-mode-capable single photon detectors will open

up new technological possibilities for Pixel Photonics and push existing boundaries in photon detection.

About Pixel Photonics

Pixel Photonics GmbH is a leading German nanophotonics start-up founded in 2021 as a spin-off from the University of Münster by Nicolai Walter, Dr. Wladick Hartmann, Dr. Fabian Beutel, Dr. Martin Wolff and Christoph Seidenstücker with the goal of commercializing highly scalable single-photon detectors. The applications of Pixel Photonics' technology range from optical quantum computing, quantum key distribution and microscopy to metrology and sensor technology. The company consists of an international team of 39 employees pursuing a unique technological approach to single photon detection that combines scalability with high detection efficiency at very high speed. In addition to EXIST funding, the company has received venture capital funding from Quantonation and HTGF as well as several research grants from the German Federal Ministry of Education and Research (BMBF), the European Innovation Council (EIC) and the European Space Agency (ESA). Further information about Pixel Photonics can be found at www.pixelphotonics.com.

About SPRIND

The Federal Agency for Breakthrough Innovation SPRIND was founded in 2019 and is based in Leipzig. The sole shareholder is the Federal Republic of Germany, represented by the Federal Ministry of Education and Research (BMBF) and the Federal Ministry for Economic Affairs and Climate Action (BMWK). SPRIND closes a gap in the German innovation landscape: It finds new, groundbreaking technologies for the major challenges of our time and at the same time ensures that the added value of the resulting companies and industries remains in Germany and Europe. SPRIND is financed by funds from the federal budget. It is headed by Rafael Laguna de la Vera and Berit Dannenberg. Further information about SPRIND can be found here: <https://www.sprind.org/en>

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