

# QOSiLICIOUS

## Quantum-Optic Silicon as a Commodity

Newsletter

nº 2

12/2025

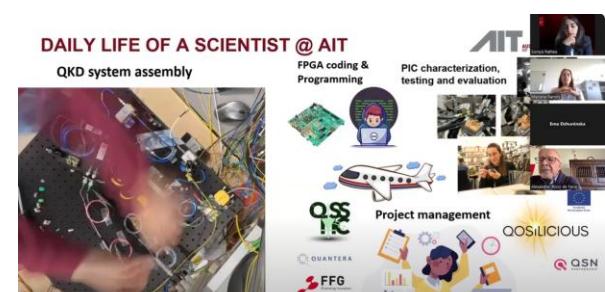
### Showcasing Optics at the Glasgow Science Festival

QOSiLICIOUS Post-doctoral Research Associate Charlie Smith was involved in outreach activity at the Glasgow Science Festival, an annual STEM exhibition taking place across multiple venues in Glasgow. Charlie showcased an optical setup to teach school children and members of the public about the properties of light, providing the basic understanding of polarisation and interference necessary to understand quantum technologies such as QKD. The outreach activity is designed to inspire younger generations and also to highlight the key societal challenges that can be addressed by quantum technologies.



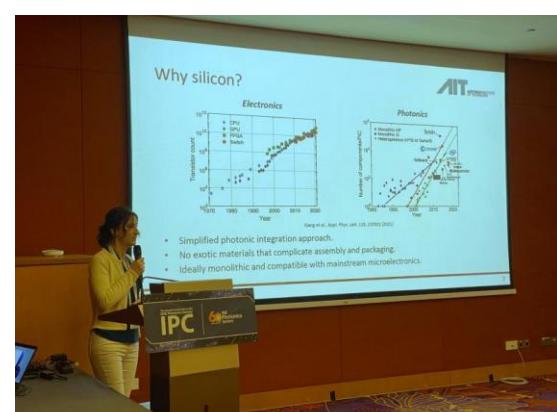
### Photons by Photons: Integrated Quantum Photonics featured by Quantum Society Austria

In the framework of the Quantum Talk Series hosted by the Quantum Society Austria, QOSiLICIOUS project coordinator Mariana Ramos gave an inspiring talk about the daily life as scientist and the challenges that are faced towards the realization of integrated quantum photonics. As one of the projects that aim at a wider impact towards commodity applications, QOSiLICIOUS contributed towards attracting young professionals to pursue careers in science, to eventually shape the next generation of top researchers.



### Vivid Interaction with the Community at IPC Conference

In November 2025, project manager Valeria Saggio had the pleasure to present the concept behind QOSiLICIOUS to the wider photonics and quantum communication communities. The contribution through an invited talk at the IEEE Photonics Conference in Singapore enabled us to highlight the peculiarities of our all-silicon approach for QKD technology and to actively engage with the audience. We recognize the great interest of the community in elaborating on new application domains opened up by a disruptive simplification of applied QKD technology.



# Extending the Trust Continuum till the Edge of ICT Networks

QOSiLICIOUS

## Solar-Blind QKD at High Noon

Can faint quantum signals survive the solar irradiance during peak daylight?

Yes, they can! Researchers from AIT have demonstrated the survivability of quantum key exchange over a terrestrial free-space link during daylight – despite the use of large-core fibers. To do so, the QOSiLICIOUS team has transferred the quantum channel to a spectral E-band region, in which an atmospheric absorption window clears out most of the solar irradiance. Since this spectral slice is still within the extended multi-band wavelength range of modern telecom systems, the complexity of the QKD system increases just marginally while solar-blind key exchange can be performed.



## Our Recent Publications

- F. Honz, W. Boxleitner, M. Hentschel, P. Walther, H. Hübel, and B. Schrenk, "Solar-Blind Free-Space QKD Using Large-Core Fibers for Alignment-Tolerant Link Operation," *J. Lightwave Technology*, vol. 43, no. 15, pp. 7155-7162, May 2025.
- V. Saggio, F. Honz, H. Hübel, and B. Schrenk, "An All-silicon Approach to Large-scale Quantum Key Distribution," in Proc. IEEE Phot. Conf. (IPC), Singapore, Nov. 2025, paper MC1.3

## Meet the QOSiLICIOUS Team

We are delighted to present further results at an upcoming conference. Take the opportunity to meet us at

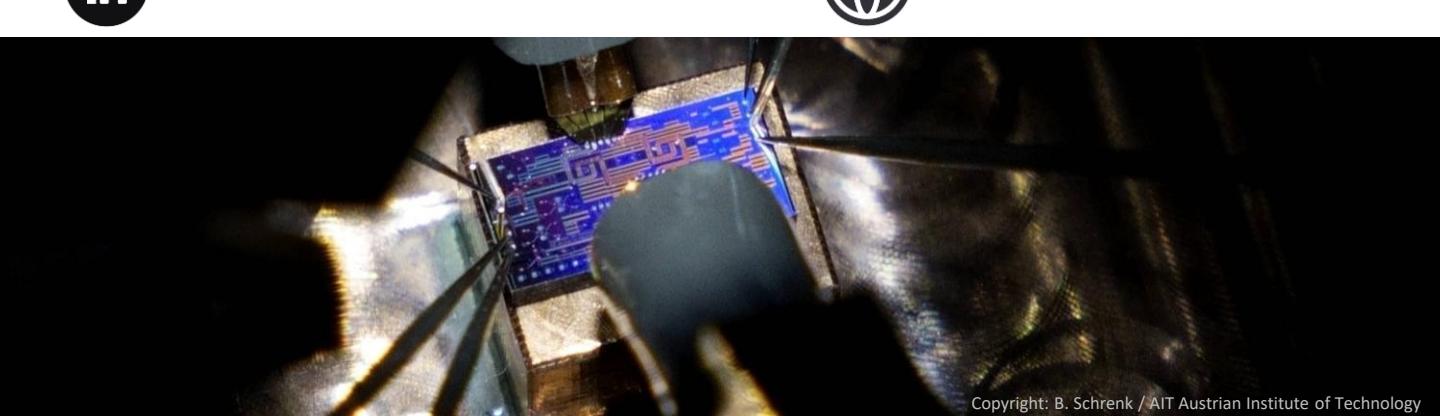
- *Optical Fiber Communication Conference (OFC), Los Angeles, 15<sup>th</sup> – 19<sup>th</sup> March 2026*



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