

# Voucher Spotlight

## Fabrication of quantum amplifiers for quantum computation

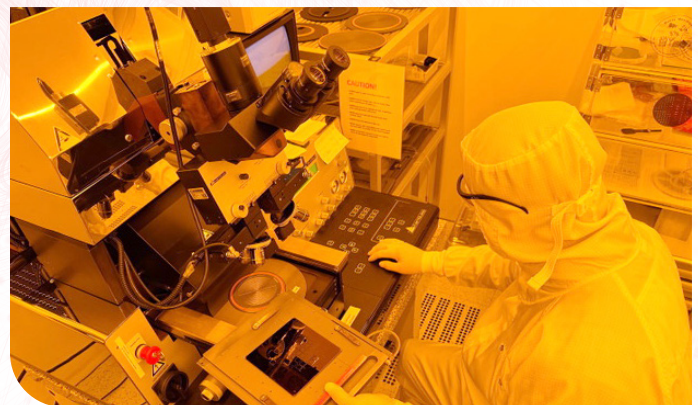
Thanks to the Quantum Voucher, YQuantum is developing a new type of quantum amplifier, a key component for reading out extremely weak microwave signals in quantum processors operating at millikelvin temperatures. These amplifiers are designed to operate close to the fundamental quantum noise limit, enabling high-fidelity measurement of qubit states while preserving the fragile quantum information encoded in the system.

Through this project, YQuantum has gained access to the PICO cleanroom at Park Innovaare, operated by PSI, one of Switzerland's most advanced facilities for superconducting device fabrication. Working together with Dr. Vitaliy Guzenko, a leading expert in nanofabrication, the team uses specialized equipment such as sputter deposition tools, to transform their specialized designs into a tangible product.

Access to this advanced infrastructure enables YQuantum to prototype and test next-generation quantum hardware and fills a critical gap in the supply chain.



Sputter tool. Image: YQuantum



Optical mask aligner. Image: YQuantum



The award and use of vouchers is aimed at the broad and effective use of existing infrastructures, platforms and services for quantum science and innovation in Switzerland.

[quantum.scnat.ch/Voucher2024](https://quantum.scnat.ch/Voucher2024)

