Superconducting Quantum Circuit Fablication Facility (Qufab)

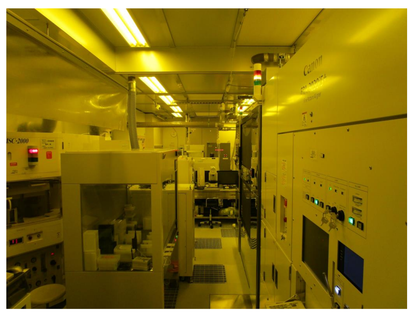
Superconducting Quantum Device and Circuit Prototyping Line

- 4-inch circuit prototyping line for superconducting quantum computer
- Superconducting Qubits, Qubits control circuit, 3D implementation
- R&D to commercial circuit prototyping

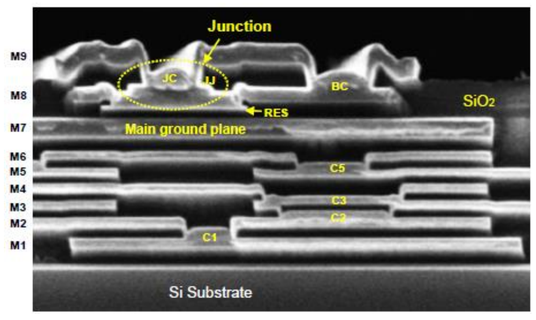
CR and Process Equipment for Prototype Line

- Clean room: 720m^2, Class: Mainly 1000
- 4-inch prototype line
- Main process and measurement equipment: 20 units
- Superconducting thin films: Nb, Al, Pd, Mo, TiN.
- Al JJ using oblique deposition
- i-line stepper, EB lithography, lithography down to 20 nm
- F, Cl etching system. Suitable for etching various materials.
- 3D superconducting mounting equipment

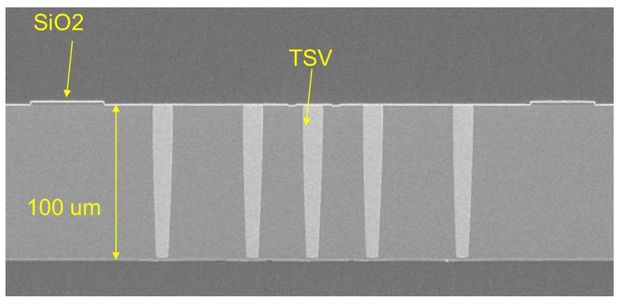


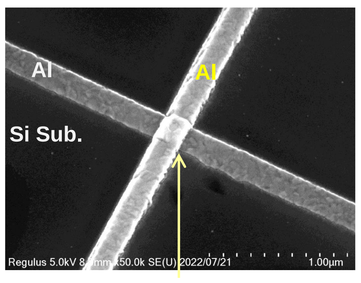
Prototype Lineup



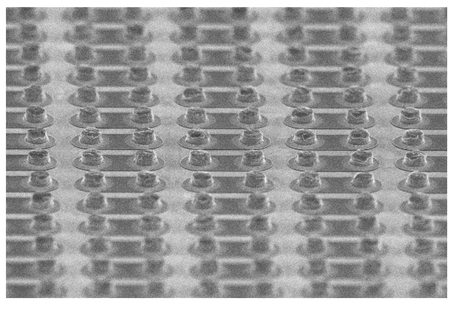
9-layer Superconducting multilayer wiring



Superconducting TSV



Josephson junction fabricated by oblique evaporation method

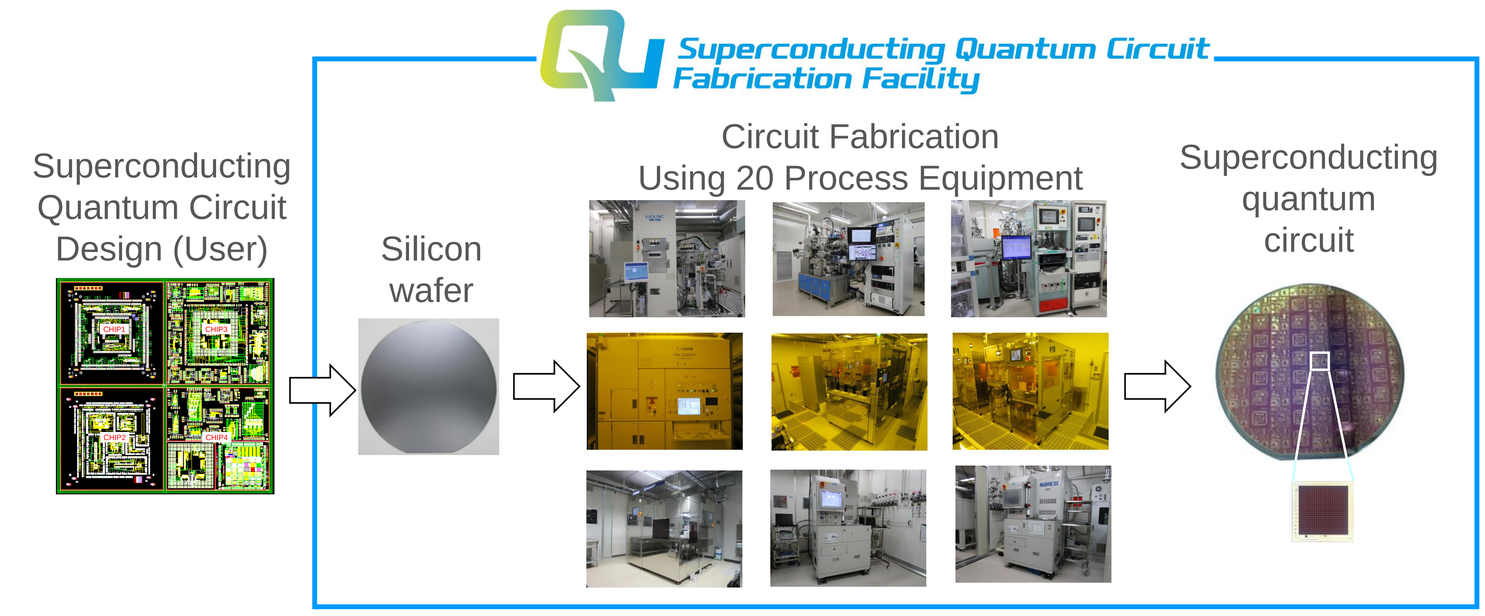


Superconducting bump connection

- 11-layer superconducting multilayer wiring for superconducting digital circuits
- Superconducting qubits by oblique deposition
- Superconducting 3D mounting

Facility Usage

- 2024/4～
- English Support
- Users come to Qufab to fabricate devices and circuits using Qufab's process and measurement equipment.
- 2024/10～
- R&D and commercial Foundry for superconducting Qubits and Circuits
- In September 2024, the usage method will be announced on the Qufab website.



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