

RIBER

Niels Bohr Institute
University of
Copenhagen



300mm BTO PILOT LINE for high speed optical modulators



POEM is a pilot line developed by RIBER and the Novo Nordisk Foundation Quantum Computing Program / Niels Bohr Institute (NQCP/NBI) with the ambition to develop high speed, low loss optical switches — ideal for scaling optical quantum computing — overcoming the interconnect bottleneck, and addressing the elementary bricks for other emerging sensing of computing applications.

POEM, via RIBER's ROSIE tool (RIBER Oxide Silicon Epitaxy) — enhanced by NQCP/NBI device expertise — focuses on the deposition of an epitaxial thin film of BaTiO_3 on 300 mm silicon.

DATACOM & TELECOM

Low consumption, 100G+ optical transceivers for AI and data centers

COMPUTING

Optical analog computing for ultrafast, energy-efficient AI operations

SENSING

Lidar and photonic detection devices

QUANTUM COMPUTING

Low-loss, high-speed optical processors

EXPERTISE

Accessible platform supported by a **team of specialists**

- ➔ Epitaxy process: advanced know-how in the growth and optimization of BTO on Silicon
- ➔ Device engineering : expertise in designing, processing, testing

POEM part of the silicon photonic ecosystem



CAPABILITIES

- ROSIE Tool: 300mm Silicon compatible.
FOUP to FOUP dedicated to the growth of BTO on Silicon
- Dedicated structural and device characterizations tools

BENEFITS

- ROSIE's processes are aligned with international SEMI standards
- Evaluation-ready wafers : capability to supply epiwafers for testing and validation

Informations & contacts

About RIBER



Founded in 1964, RIBER is the global market leader for MBE - molecular beam epitaxy - equipment.

It designs and produces equipment for the semiconductor industry and provides scientific and technical support for its clients (hardware and software), maintaining their equipment and optimizing their performance and output levels.

Accelerating the performance of electronics, RIBER's equipment performs an essential role in the development of advanced semiconductors that are used in numerous applications, from information technologies to photonics (lasers, sensors, etc.), 5G telecommunications networks and - 3 - research, including quantum computing.

RIBER is a BPI France-approved innovative company and is listed on the Euronext Growth Paris market (ISIN: FR0000075954).

About NQCP



The Novo Nordisk Foundation Quantum Computing Programme (NQCP) is a research initiative launched by the Novo Nordisk Foundation, in collaboration with the Niels Bohr Institute at the University of Copenhagen.

The program aims to develop a fault-tolerant quantum computing (FTQC) hardware and quantum algorithms that solve complex life-science problems. NQCP takes an interdisciplinary approach, exploring multiple qubit technologies to identify the most promising platform. It leverages a global network of academic and industrial partners.

The program also includes the creation of the Quantum Foundry Copenhagen, a facility dedicated to new manufacturing processes for high-precision quantum components, essential for the future generation of quantum computing processors.

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