

Experimental AMO Physicist - Ion-Trap Quantum Computing

Location: Weiterstadt, Germany / hybrid

Department: R&D

Employment: Full-time

Role / field: Physics

Who we are

At neQxt, we build full-stack ion-trap quantum computers, striving for excellent performance and scalability. With decades of expertise in ion-trap technology, neQxt was spun out of Mainz University, and it is headquartered in Germany's Frankfurt Metropolitan area. Our team of leading talent from Europe and beyond covers the entire value chain, from the basic hardware to end-user software level. Join our passionate team of ambitious scientists, engineers, technicians and quantum enthusiasts, building top-tier fault-tolerant quantum computers together!

Job description

You will work on the development of our scalable trapped ion quantum computers. Your exact role and contribution will be defined based on your prior experience, skills and interests, as well as our project needs.

This role is ideal for someone who has worked with ion/atom based qubits experiments .

Responsibilities

A good candidate will have experience with most responsibilities and objectives, depending on the candidate some will be the focus of their role at neQxt, not all.

- Experiment ownership and build-up:
 - Set up, commission and operate trapped-ion AMO experiments, including UHV system, ion loading, RF/DC trap operation, optical access and laboratory infrastructure
 - Own daily experimental readiness: laser locks, beam alignment, imaging, vacuum status, electronics, timing, control stack and safety routines
 - Translate scientific and product objectives into robust experimental procedures, calibration routines and measurable performance targets
- Ion control, calibration and performance:
 - Implement and optimise laser cooling, optical pumping, state preparation, fluorescence detection and electron-shelving/readout schemes
 - Calibrate coherent qubit operations, motional modes, micromotion compensation, heating rates, Rabi/Ramsey sequences and SPAM/gate performance
 - Analyse error sources and decoherence mechanisms, maintain error budgets and drive systematic improvements in fidelity, stability and uptime
- Integration and scaling readiness:
 - Coordinate interfaces with optics, electronics, software, theory, QCVV and trap-design teams to integrate subsystems into a reliable quantum-computing setup
 - Contribute to scalable ion-trap concepts such as segmented traps, shuttling/QCCD workflows, modular architectures and automation of tune-up and maintenance

- Document experimental procedures, data, risks and lessons learned to enable reproducible operation and transfer across setups

Requirements

- Experimental PhD or Postdoc in trapped ion or neutral atom quantum information

Nice to have

- Direct experience with trapped-ion quantum-computing experiments, ideally including setup build-up, commissioning or technical ownership
- Experience in an industrial, startup or mission-driven research environment with structured milestones and cross-functional delivery

Who you are

- Structured problem solving: you are able to isolate root causes under uncertainty and to converge to practical solutions
- Cross-functional communicator: you are able to translate AMO-physics requirements into actionable tasks for engineering and software teams
- Resilience and hands-on pragmatism: you are comfortable troubleshooting complex hardware under milestone pressure
- Continuous learning and teaching: you are able to share knowledge, to build operating routines and to raise the capability of the team

What we offer

We focus on true technological advancement rather than unrealistic roadmaps. With a pragmatic, no-nonsense approach, we move fast and avoid bureaucracy. We value your individuality and offer a flexible environment tailored to your lifestyle.

- Results-oriented environment with flat hierarchies and a passionate team
- Competitive salary with automatic inflation adjustment
- Flexible working hours, hybrid/remote work and full overtime compensation
- Career development in an emerging tech field
- German language courses, if needed
- Company pension scheme
- Choice of a flexible mobility budget or company car
- Default (mandatory) German employment benefits (e.g. health / pension / unemployment insurance, paid sick leave, maternity protection, parental leave, ...)

How to apply

To apply, please submit your CV, a cover letter including your preferred starting date, and any relevant publications, project details or other supporting documents via e-mail to: career@neqxt.org.

Applications will be reviewed on a rolling basis until positions are filled.