

Quantum Engineer

European Center for Quantum Sciences - USIAS

1. Context of the project

Environment :

The “European Center for Quantum Sciences – CESQ” of the University of Strasbourg and CNRS is a transnational quantum research and educational hub. CESQ builds upon the exceptional tradition of interdisciplinary research in Strasbourg, focusing on quantum physics and its interfaces with chemistry, materials science, photonics and computing, towards new applications in basic science and for the emerging quantum industry. The Institute for Advanced Study of the University of Strasbourg (USIAS) supports original, potentially path-breaking research by means of fellowships, seminars, conferences and visiting grants. USIAS provides the opportunity to excellent researchers to explore new ideas and approaches, to deepen or change the direction of their research, to broaden their horizon and apply their knowledge in new areas. The Institute is the place of intellectual innovation, in which researchers from different disciplines and backgrounds interact with each other and with the wider community of the University of Strasbourg.

Description of the project:

This position is part of the 2025 USIAS award project *Quantum Information Processor Using Neutral Atoms*. The project focuses on developing error correction strategies adapted to neutral-atom quantum processors, emphasizing benchmarking methods for error-corrected operations and the design of hardware-level implementations of error-correcting codes.

The research engineer will contribute to defining the abstraction of the error-corrected logical qubit and support the development of aQCess, the quantum computing platform at CESQ (University of Strasbourg). The role involves close collaboration with coordination and scientific teams across an international consortium to advance a large-scale research infrastructure and establish a sustainable quantum computing platform in eastern France.

2. Position identification

Status : Fixed-term contract

Category : A

Corps : Research Engineer

Position : Research Engineer

Job-type : Quantum engineer / scientist and specialist in experimental atomic physics

BAP : BAP C

Composante, Direction, Service : Université de Strasbourg, Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S), Centre Européen de Sciences Quantiques (CESQ)

Contact(s) for more information (identité, qualité, adresse mail, téléphone) :

Dr. Stanimir Kondov (kondov@unistra.fr)

We encourage interested candidates to contact Dr. Kondov regarding the position and the long-term prospects of the project.

3. Mission

He/she will contribute to the planning and implementation of error correction on the *aQCess* platform at the European Center for Quantum Sciences of the University of Strasbourg.

4. Activities

❖ Main activities

- Design and benchmark error correction approaches
- Plan and execute the technical installation of a error correction hardware
- Daily operation and maintenance of the equipment
- Assist with the technical management of the lab infrastructure

❖ Associated activities

- Participate in team efforts bringing up the aQCess machine
- Negotiate with suppliers and service providers

5. Competences

❖ Professional environment skills :

- PhD in experimental physics and ideally a post-doc experience (or equivalent experience in industry)
- Experience working with laser cooling and trapping, lasers, electronics, computer control, vacuum systems
- Basic understanding of quantum computing primitives and concepts from error correction
- Computer programming experience and control of complex instruments
- A good knowledge of English and French would be an asset (written and oral)

❖ Operational skills :

- Technical projects management skills
- Ability to critically evaluate and implement technical solutions to difficult problems
- Team working

❖ Behavioral skills :

- Good sense of organisation
- Time management skills
- Know how to be autonomous
- Show initiative
- Know how to report on the work

6. Working Context

❖ **Description of the department :**

- Name of the department: European Center for Quantum Science
- Number of staff: 40
- Number of staff to supervise: 1-2
- Place of work: Campus Cronenbourg, Université de Strasbourg

❖ **Hierarchical relationship :**

- Principal Investigator of the project and the director of the CESQ

❖ **Functional Relationship :**

- Director CESQ
- Principal Investigator
- Coordinator of the aQCess platform
- Technician(s)
- Administrative and financial assistants at CESQ
- Responsible of health and security of the CESQ
- Partners and collaborators

❖ **Special working conditions (cf attached annex):**

- Fixed-term contract 12 months renewable

**To apply, please send CV and motivation letter before 23 September 2025 to the
attention of :
Dr. Stanimir Kondov, kondov@unistra.fr**