Postdoctoral Position in Quantum Nanoelectronics (Germanium Heterostructures)

NEEL Institute, CNRS Grenoble, France

We are excited to announce an opening for a **postdoctoral fellow** as part of two cutting-edge European projects:

- The **EIC Pathfinder project ELEQUANT** (elequant.eu)
- The **ERC project UltraWave** (cordis.europa.eu/project/id/101201077)

Together, these initiatives aim to establish a new material platform for quantum nanoelectronics based on germanium heterostructures, unlocking unprecedented levels of performance. With their recently demonstrated exceptional quantum coherence, germanium devices offer the long-sought possibility of realizing a single-charge detector for propagating electron wavepackets — a breakthrough with far-reaching implications for both fundamental physics and quantum technologies.

Role and Responsibilities

The postdoc will lead the **nanofabrication of advanced quantum devices**, adapting existing GaAs-based protocols to the germanium platform. Responsibilities include:

- Developing and optimizing cleanroom processes
- Overseeing nanofabrication activities within the projects
- Training and mentoring PhD students in fabrication techniques

Opportunities

In addition, the successful candidate can actively contribute to ongoing research efforts, such as:

- Developing a **single-electron detector** for flying electrons
- Probing **quantum entanglement** using ultrashort charge wavepackets
- Exploring the frontiers of **THz quantum nanoelectronics**

This position offers a unique opportunity to work at the **interface of fundamental science and quantum technology**, while building collaborations across Europe and beyond.

Salary: 2500-3500 € gross salary depending on experience
Starting date: flexible

For further information, please contact:
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