

The mission of the Catalan Institute of Nanoscience and Nanotechnology (ICN2) is to achieve the highest level of scientific and technological excellence in Nanoscience and Nanotechnology. Its research lines focus on the newly-discovered physical and chemical properties that arise from the behaviour of matter at the nanoscale. ICN2 has been awarded with the Severo Ochoa Center of Excellence distinction for three consecutive periods (2014-2018 and 2018-2022 and 2023-2026). ICN2 comprises 19 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

**Job Title: Research Engineer - Tools developer for LSQUANT platform**

**Research area or group:** Theoretical and Computational Nanoscience Group

**Description of Group/Project:**

The TCN group is launching an activity on marrying Artificial Intelligence with its activities and numerical tools to access charge transport information in complex (disordered) van der Waals heterostructures. The project will contribute to the establishment of such a platform and interface with in-house computational artillery of TCN ([www.lsquant.org](http://www.lsquant.org)) and to demonstrate predictive power of the methodology on neurmorphic computing applications.

**Main Tasks and responsibilities:**

- Develop APIs for various codebases within the group.
- Mantain Docker images to ensure they are up-to-date with the group's ongoing code development.
- Address and resolve security issues between the front end and back end.
- Create a user database for the Bespokematerial project.
- Develop a tool that allows users to select a custom backend provider (AWS, Azure, or Google) for running experiments.
- Create a marketplace where users can share resources with each other.
- Add Gradio interface nodes specific to Siesta and LS-Quant.
- Create tools to handle large files trnasfers in the backend.

**Requirements:**

- **Education:** Bachelor in physics or electrical/ mechanical engineering
- **Knowledge:**  
General programming knowledge proefficiency in Python or Java script familiarity with the following tools will be highly appreciated: Monfgo DB , React an dreact workflow, Google API's, Pytorch
- **Professional Experience:** Programing in PYTHON/C languages
- **Personal Competences:** Demonstrated competitive ability in using DFT simulations, and machine learning techniques and DFT.  
Demonstrated strong coding skills and a passion for UX/UI design.

**Summary of conditions:**

- Full time work (37,5h/week)
- Contract Length: Temporary (6 months)
- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: as soon as possible

**How to apply:**

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/664/research-engineer-tools-developer-for-lsquant-platform-theoretical-and-computational-nanoscience> and include the following:

1. A cover letter.
2. A full CV including contact details.
3. 2 Reference letters or referee contacts.

Applications will be continuously reviewed.

**Equal opportunities:**

ICN2 is an equal opportunity employer committed to diversity and inclusion of people with disabilities. ICN2 is following the procedure for contract of people with disabilities according with article 59 of the Royal Decree 1/2015, of 30 of October.