

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 20 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

Job Title: Research Assistant in Artificial Intelligence development for quantum transport physics

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 nontrivial quantum transport information in complex (disordered) van der Waals heterostructures. The project will demand contributing to the establishment of such a platform and interface with in-house computational artillery of TCN (www.lsquant.org) and to demonstrate predictive power of the methodology on dynamics and entanglement effects of quantum particles.

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Main Tasks and responsibilities:

- 1) Contribute to solve technical tasks within the frame of the AI_4LSQUANT project of TCN
- 2) Help in the implementation of the codes toward the study of quantum dynamics and entanglement of two-particles propagating in van der Waals heterostructures
- 3) Support the implementation of developed tools on the in-house LSQUANT code (www.lsquant.org) and computing architecture of TCN/ICN2

Requirements:

- **Education:** Bachelor in physics
- **Knowledge:** quantum mechanics, programming machine learning techniques
- **Professional Experience:** demonstrated capability to program in PYTHON/C languages.
- **Personal Competences:** Demonstrated competitive ability in using machine learning techniques and participate in open competition (such as Hackathon in quantum computing etc)

Summary of conditions:

- Full time work (37,5h/week)

- Contract Length: Temporary
- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: September 2023

How to apply:

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/504/research-assistant-in-artificial-intelligence-development-for-quantum-transport-physics-theoretical-and-computational-nanoscience-group> and include the following:

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

Deadline for applications: February 18, 2023

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.