

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 behavior of matter at the nanoscale. ICN2 has been awarded with the Severo Ochoa Center of Excellence distinction for two consecutive periods (2014-2018 and 2018-2022). 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: Postdoctoral Researcher**

**Research area or group: Physics and Engineering of Nanodevices**

**Description of Group/Project:**

The Physics and Engineering of Nanodevices (PEN) group (Catalan Institute of Nanoscience and Nanotechnology, ICN2) is seeking to appoint a creative and motivated postdoctoral researcher to participate in an ongoing project on spin orbit torques using van der Waals heterostructures. The appointed candidate will be responsible for the design and detailed characterization of devices comprising 2D ferromagnets, topological insulator compounds and/or transition metal dichalcogenides. S/he will carry out process development, documentation of processes and implement the required steps to fabricate the devices using exfoliation methods and deterministic transfer in inert environment. S/he will collaborate with other PEN members focused on related devices using molecular beam epitaxy techniques.

**Main Tasks and responsibilities:**

- 2D material manipulation. Exfoliation and deterministic transfer.
- Performing characterization of the heterostructures, including Raman Spectroscopy, XRD, XPS and ARPES (with the assistance of the responsible Laboratory Engineers).
- Device fabrication
- SOT characterization by means of ST-FMR and second harmonic measurements
- MBE growth with the assistance of the PEN group MBE Specialist

**Requeriments:**

• **Education**

A PhD degree in Physics, Material Science, Nanotechnology or related discipline is required at the time of joining ICN2

• **Knowledge, professional experience and competences**

A strong background on solid-state physics and experience in 2D materials manipulation, spintronics and electrical characterization will be highly valued. MBE or CVD growth knowledge will be valued

Applicants must show motivation, excellent disposition towards challenging research problems and a good level of the English language

**Summary of conditions:**

- Full time work (37,5h/week)
- Contract Length: Temporary (up to 3 years)
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: April 2022

**How to apply:**

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/364/postdoctoral-researcher-physics-and-engineering-of-nanodevices> 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 evaluated as they are received

**Equal opportunities:**

ICN2 is an equal opportunity employer committed to diversity and inclusion of people with disabilities.