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: PhD Student

Research area or group: Advanced Electronic Materials and Devices

Description of Group/Project:
The Advanced Electronic Materials and Devices (AEMD) group focuses on the material sciences and technology aspects of novel electronic materials, with a strong emphasis on graphene as well as other 2D materials (MoS2). The group also works towards the development of technological applications based on these materials such as electronics, bioelectronics and biosensing, neural interfaces, etc.
The activities cut across different scientific aspects, from the fundamentals (the physics of devices and semiconductors) to materials (growth of graphene and MoS2 materials by CVD and MOCVD, surface functionalisation, advanced characterisation), through to devices (fabrication technology, nanofabrication) and applications (neural implants and biomedical technologies, biosensors, flexible electronics).

Main Tasks and responsibilities:

The researcher's main role will be the development of energy autonomous neural interfaces. The researcher will be in charge of the microfabrication of energy harvesting devices based on triboelectricity (TENGs) and their characterization under different working conditions. Specifically, the researcher will focus on (1) development of clean room protocols for TENG fabrication, (2) morphological and electrical characterization of devices, (3) TENG coupling with neural interfaces study.

The research activity of the candidate will be framed within the project ERC-CoG TRIBOMED (G.A. 101125401) that aims to design and produce novel energy harvesting devices for the development of self-driven neural interfaces.

Funded by the European Union

European Research Council

Requirements:

- **Education:** Msc in Energy, Electrochemistry, Materials Science, Nanotechnology, or equivalent degrees.
- **Knowledge and Professional Experience:**
  Experience in energy harvesting and electronic engineering
  Experience with micro/nanofabrication
  Experience with characterization tools (Raman, CQMB, AFM, etc.)

Experience in programming (LabView, Python, C++, Matlab)

- **Personal Competences:** Teamwork skills, Fluent English (both spoken and written)

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length: Temporary (2 years)
- 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/618/phd-student-advanced-electronic-materials-and-devices 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.