

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:** PhD Student -Advanced Electronic Materials and Devices Group

**Research area or group:** Advanced Electronic Materials and Devices Group

**Description of Group/Project:**

Advanced Electronic Materials and Devices 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 (MoS<sub>2</sub>). 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 2D materials by CVD, surface functionalisation, advanced characterisation), through to devices (fabrication technology, nanofabrication) and applications (biosensors, neural implants and biomedical technologies, energy storage and conversion).

**Main Tasks and responsibilities:**

The researcher main role will be in the development of multifunctional devices with electrical and chemical recording and stimulating capabilities. The researcher will receive expert training in graphene electronics technology for neural interfacing, thin-film technology and nanofabrication, growth and characterization techniques and neural data analysis.

The PhD researcher will specialize in multiple facets of neural interfaces development and validation. Specifically, the researcher will focus on:

- design and development of 2D materials based technology
- technology integration towards multifunctional probes
- validation of the technologies using in vitro and in vivo methodologies.

**Requirements:**

• **Education**

- Master in Materials Science, Nanotechnology, Engineering, Chemistry, Physics, or equivalent degrees

• **Knowledge and Experience**

- Experience in electronics and electrochemistry
- Experience with micro/nanofabrication and characterization tools (AFM, TEM, SEM, etc.)
- Experience with neural interfaces

- Experience in programming (LabView, Python, C++, Matlab)
- Fluent English both spoken and written

- **Competences**

- Teamwork skills

**Summary of conditions:**

- Full time work (37,5h/week)
- Contract Length: Temporary (4 years)
- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: depending on the FPI grant

**How to apply:**

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/331/predoctoral-researcher-advanced-electronic-materials-and-devices-group> and include the following:

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

The candidates pre-selected for this call will need to apply for competitive fellowships (FPI) in order to secure the funding required to formalise the contract. The ICN2 will provide full support to these candidates for the preparation of their fellowship applications.

For more information about the competitive fellowship visit:

<http://www.aei.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=4c6c68d98570c710VgnVCM1000001d04140aRCRD&vgnnextchannel=305938bc8423c710VgnVCM1000001d04140aRCRD>

Deadline for applications: November 11<sup>th</sup> 2021

**Equal opportunities:**

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