

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 in Neural Interfaces Technologies

**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 (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 MoS<sub>2</sub> 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 research activity of the candidate will be mainly part of the MINIGRAPH and GrapheneCore3 projects (funded by the European Commission), which aim at developing a new generation of brain implants with closed-loop neuromodulation capabilities enabled by high-density arrays of graphene microelectrodes.

The postdoc candidate will be involved in activities related to the design, fabrication, and assessment of several components of neural interface technologies, with a focus on the design, fabrication, and characterization of neural probes based on thin-film graphene technology.

The candidate will be working in a very multidisciplinary project that covers topics such as materials science of graphene and other 2D materials, thin film technologies for neural interfaces, as well as in-vivo device validation of the neural technologies capable of recording and stimulation brain tissue.

The candidate will work as part of an international team and she/he is expected to actively participate and lead part of this collaboration.

**Requirements:**

- **Education:**  
PhD in Biomedical Engineering, Materials Science, Nanotechnology, Engineering, Chemistry, Physics, or equivalent degrees.
- **Professional Experience:**  
Science and technology of neural interfaces and implantable devices

Thin-film technology and device fabrication; solid experience in a cleanroom and working with microfabrication processes

Electrochemistry

Neuroscience, electrophysiology

Experience in microscopic and spectroscopic characterization techniques (Raman, PL, AFM, SEM, TEM and XPS)

Advanced knowledge in the design of data acquisition and data analysis software (Python, Labview, Labwin)

Fluent English both spoken and written

- **Skills:**  
Resourceful, independent; leadership and teamwork skills

### 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/424/postdoctoral-researcher-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. Shortlisted candidates will be invited for interview.

### 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.