

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: Postdoctoral Researcher**

### **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 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. The main role of the candidate will be the design, fabrication, and characterization of multiplexed arrays of graphene transistors for monitoring brain activity.

The research activity of the candidate will be funded by the European Union, through 'Graphene Transistors for High-Density Brain-Computer Interfaces' Project with reference number 101136541



Funded by the  
European Union

#### **Requirements:**

- **Education:** PhD in Biomedical Engineering, Materials Science, Nanotechnology, Engineering, Chemistry, Physics, or equivalent degrees.
- **Knowledge and Professional Experience:**
  - Science and technology of neural interfaces and implantable devices
  - Thin-film technology and device microfabrication, flexible electronics
  - 2D materials and technology
  - Electrochemistry
  - Experience in microscopic and spectroscopic characterization techniques (Raman, PL, AFM, SEM, TEM and XPS)
  - Neuroscience, electrophysiology

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

#### **Summary of conditions:**

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

Estimated Incorporation date: March 2024

#### **How to apply:**

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/597/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.

#### **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.