

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 two consecutive periods (2014-2018 and 2018-2022). ICN2 comprises 18 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

Job Title: Senior Postdoc

Department: 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 research activity of the candidate will be framed mainly as a part of the GraphCat project, which focuses on scaling a graphene electrocorticography array for brain mapping surgery.

This multidisciplinary project includes:

- Technology scale-up: development of microfabrication processes compatible with the dimensions and future use of implants in humans. Aspects such as the control of the yield and homogeneity of the technology will be particularly addressed.
- Technology assessment and assembly of the final prototype: evaluation of the functionality of the new technology in in vitro conditions, assessment of safety and biocompatibility, validation of the sterilization procedures, and the assembly of the final prototype and integration with existing medical electronic equipment.
- Regulatory validation and clinical trial preparation: prepare the necessary documentation to obtain the approval of the regulatory bodies and perform functional tests on animals models relevant for the clinical trial

Requirements:

- **Education**
PhD in Electronics, Physics, Engineering, or equivalent.
- **Knowledge and Experience**
Experience in electronic systems
Experience in experience designing PCBs and fabricating flexible devices for medical instrumentation.
Experience in the industrialization and certification of medical devices
Experience in Brain mapping and brain-computer interfaces
Fluent English both spoken and written.
- **Competences**
Teamwork skills

Summary of conditions:

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

This contract is co-financed by the Fondo Europeo de Desarrollo Regional (FEDER) destinado al Programa Operativo de Catalunya 2014-2020, with the support of the Secretaria d'Universitats i Recerca del Departament d'Empresa i Coneixement de la Generalitat de Catalunya para comunidades tecnológicas emergentes para valorizar y transferir los resultados de la investigación. Project: "Comunitat Emergent de Grafè de Catalunya (GraphCAT)" Ref: 001-P-001702.

Estimated Incorporation date: August 2020.

How to apply:

All applications must be made via the ICN2 website and include the following:

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

Deadline for applications: 4th August 2020

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.