

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: Nanobioelectronics and Biosensors Group

Description of Group/Project: The Nanobioelectronics and Biosensors Nanobioelectronics and Biosensors Group at ICN2 is focused on the discovery and technological development of cutting-edge nanotechnology towards diagnostics, food and safety and environmental applications. The group exploits phenomena that occur at the nanoscale in order to generate simple and novel biosensing platforms. They hold a wide expertise in cells, pathogens, DNA, proteins and small molecules detection using both optical and electrochemical approaches.

The main objective of Merkoçi group is to design nanotech devices that can be used even by non professional people for fast diagnostic at home or doctor's office, control of food quality, safety and security applications where either an emergency exists or an alternative method toward the sophisticated and expensive laboratory instrumentation is being required.

Main Tasks and responsibilities:

The researcher will work in the framework of the european project "Supple Graphene Bio-Platform for point-of-care early detection and monitoring of Alzheimer's Disease (2D-BioPAD)".

The candidate will spearhead the development of innovative electrochemical sensing devices leveraging graphene technology. In this role, she/he will be responsible for employing techniques such as laser scribing for precise graphene patterning, as well as inkjet and screen printing methods, . Additionally, will lead efforts working with aptamer based sensors, specifically in the development of DNA-based sensors using aptamers in graphene electrodes, optimizing fabrication parameters, and creating proof-of-concept sensing devices tailored for protein detection.

Requirements:

- **Education:**
Master's Degree: A Master's degree in Material Sciences, Chemistry, Physics, Biotechnology, or a related field. Proficiency in wet lab techniques is essential.
- **Knowledge:**
High proficiency in English is mandatory.
- **Professional Experience:**
Previous experience in designing and applying electrochemical biosensors is highly desirable. Knowledge of electrochemical techniques and bioreceptors, along with their application in biosensors, is a significant advantage.
- **Personal Competences:**
Time Management: Ability to work effectively within deadlines.

Creativity and Proactivity: Demonstrated capacity for creativity and proactivity in generating research ideas and conducting activities.

Communication Skills: Excellent verbal and written communication skills are essential.

Collaboration: Ability to collaborate effectively within a research group, including coordination with international teams.

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length: until end of project at 30/09/2027
- 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/605/phd-student> 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: 8 March 2024

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.