As a flagship research center in nanoscience and nanotechnology, our mission is to open and explore new frontiers of knowledge at the nanoscale, and bring value to society in the form of new understanding, capabilities and innovation, while inspiring and providing broad training to the next generations of researchers. Our values are Commitment, Collaboration and Transformation.

Our 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 20 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

**Job title:** Neuroengineering Postdoctoral Researcher

**Research area or group:** Nanomedicine Group

**Description of Group/Project:** The Nanomedicine Lab aims to generate and disseminate fundamental knowledge in the field of nanomedicine by bringing together nanotechnology, bioengineering, pharmacology and their translation to advanced, clinically-relevant therapeutics and diagnostics.
Our mission is to pioneer the cutting-edge and emerging discipline of nanomedicine by bringing advanced materials and nanoscale platforms to the clinic.

The main lines of research in Nanomedicine Lab include:

- Nanomaterials as transport systems for therapeutic and diagnostic applications against cancer and neurodegenerative disease
- Translation of advanced materials to the clinic
- Discovery of novel liposome and vesicle systems to be used as components of therapeutics in oncology and neurology
- Neurotechnology based on flexible, thin-film technologies for therapeutic applications in oncology and neurology

The Nanomedicine Lab has been awarded one of the prestigious ERC Synergy Grants to co-develop the SKIN2DTRONICS project, which aims to develop ultra-conformable, soft and thin (skin-like) electronic devices using two-dimensional materials and revolutionize brain cancer monitoring and detection of tumor recurrence. This is a collaborative effort with colleagues from Università di Pisa, Instituto de Ciencia de Materiales de Madrid-CSIC, and École Polytechnique Fédérale de Lausanne.

The Nanomedicine Lab has strong collaborative links and projects with the Center for Nanotechnology in Medicine at the Faculty of Biology, Medicine and Health of The University of Manchester in the United Kingdom.

**Key Responsibilities, Accountabilities or Duties, include:**
The candidate will work in the development and assessment of neurotechnology aimed for invasive brain-computer interfaces. In particular, the work will include in vitro assessment of the performance of electrophysiology neural probes for recording and stimulation (electrochemical characterization of impedance, charge injection limit, etc.) and the preparation and execution of in vivo electrophysiology

experiments (animal models) in collaboration with experimental neuroscientists. A central task and responsibility of the candidate will be to lead and execute the analysis of electrophysiological data (signal quality, biomarker detection, etc.) obtained from preclinical studies and investigations using different disease models. The post does not require the candidate to hold a license for preclinical model experimentation.

**General Responsibilities, Accountabilities or Duties, include:**

• Maintain expertise in scientific developments relevant to the objectives of the Nanomedicine Lab and the project and provide relevant expert advice in the area of neuroengineering
• Expected to have an active participation in Nanomedicine Lab scientific activities (lab meetings, seminars, project meetings, etc.)
• Actively read the scientific literature relating to (and around) the project
• Provide clear and timely written work, producing reports and publishing in high quality publications. This may include presentations at national or international level and outreach activities
• Train students, researchers, collaborators and new personnel
• Coordinate and execute studies with other researchers among the Nanomedicine Lab members
• Collate and store accurate records using paper and computer-based systems and the preparation of data for inclusion in lab books, presentations and publications. Maintain a hardcopy or electronic lab book

**Requirements:**

- **Education:** PhD in Biomedical, Neuroengineering, Electronic or Electrical Engineering, Physics, Bioinformatics or related engineering fields

- **Essential Knowledge:**
  • Advanced Python / MATLAB programming skills.
  • Electrophysiology data analysis
  • Science and technology of neural interfaces and implantable devices
  • Electrochemistry

- **Non-essential Knowledge:**
  • Experience with using preclinical (in vivo) disease models
  • Micro and nanofabrication of electronic devices and circuits

- **Personal Competences:**
  • Teamwork skills
  • Fluent English (both spoken and written)
  • Demonstration of proficiency in academic research publishing and communication

**Summary of conditions:**

- Full time work (37,5h/week)
- Contract Length: 1 year, with possibility to extend the contract

- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.

- Life Insurance.
- Work-Life Balance and Flexibility with flexible work schedules
- 28 holidays per year
- Flexible compensation plan: tax advantages contracting some products (health insurance, childcare, training, among others.)
- Training activities: languages, mentoring programme, wellbeing programme.
- International environment

Estimated Incorporation date: May 2026

**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: N/A

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European Research Council

**Equal opportunities:**
At ICN2 we foster an inclusive and safe work environment, free from any form of discrimination—whether based on gender, sexual orientation, gender identity, age, origin, culture, religion, disability, or any other personal or social condition. We are committed to ensuring equal treatment and opportunities in all our processes, especially in recruitment, which is based solely on talent, experience, and ability. We implement proactive policies for inclusion and harassment prevention that reinforce our commitment to respect and fairness. If you share these values and are looking to grow in an open and diverse environment, ICN2 is ready to welcome you.