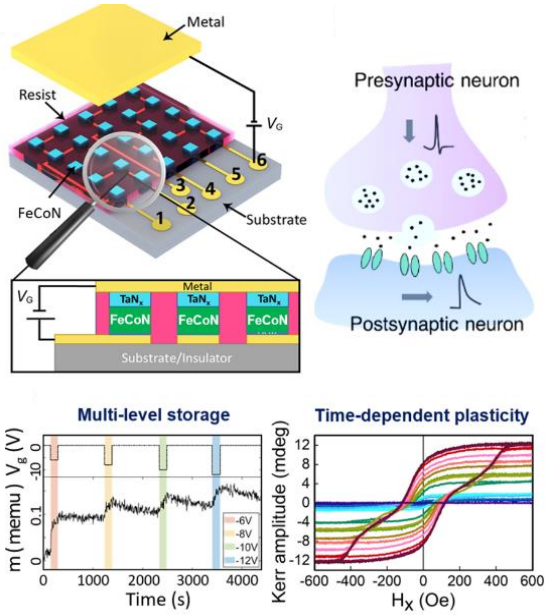
PhD position funded by AEI agency (Spanish Government)

TOPIC: Magneto-ionics for information technologies: secure and energy-efficient memories and advanced computing

A PhD position is available at the '*Group of Smart Nanoengineered Materials, Nanomechanics and Nanomagnetism -Gnm3'* (https://jsort-icrea.uab.cat/) of the Universitat Autònoma de Barcelona (UAB).

The position is in the framework of the project "**Enabling magneto-ionics for information technologies: secure and energy-efficient data storage and advanced computing**". This is a very multidisciplinary project which will be developed in close collaboration with the Catalan Institute of Nanoscience and Nanotechnology (ICN2), where we are now establishing a new research group on "Nanomaterials for advanced memory and computing". The project mainly tackles the growth and characterization of innovative magneto-ionic nanomaterials (where magnetic properties are tuned through voltage-driven ion migration) with applicability in (i) energy-efficient and secure memory devices and (ii) advanced brain-inspired computing and anti-counterfeiting technologies.



Duration: **4 years funded** through an FPI Fellowship.
Starting period: **February 2026**.

Main Tasks and Responsibilities of the candidate:

- Growth of the magnetic heterostructures.
- Structural/compositional characterization, including synchrotron techniques.
- Magnetic and magnetoelectric characterization.
- Integration of materials into devices.

Requirements for a stronger application:

- Degree in Physics, Materials Science, Nanoscience, or similar.
- Master + Bachelor degrees (300 ETCS in total) or Bachelor degree (300 ETCS in total).
- Knowledge in nanomaterials and nanoscience.
- Knowledge of experimental techniques (sputtering, XRD, TEM, SEM, magnetometry, etc.).
- **Outstanding CV** and, more importantly, **a high degree of ambition and motivation**, and with **good personal qualities** to work in our Team.
- Good level in English.

About the Gnm3 group

Our research focuses on the design, synthesis, and characterization of advanced materials with unique properties for innovative engineering applications. We develop materials with precisely controlled nanoscale microstructures, enabling enhanced mechanical, magnetic, optical, and anti-corrosion performance. Our investigations span nanoparticles, nanowires, lithographically patterned micro- and nano-objects, mesoporous and nanoporous structures, electrodeposited thin films, bulk metallic glasses, and bulk nanocomposites. More recently, we have been exploring materials in which magnetism can be tuned by electrical voltage, with the aim of developing neuromorphic computing technologies.

Interested applicants should send a **full CV**, a **Letter of Interest** and the **Contact Details of a senior researcher** which could support their **application before 10th November 2025** to Jordi.Sort@uab.cat and Enric.Menendez@uab.cat.