

Institute of Microelectronics of Barcelona IMB-CNM (CSIC)

Postdoctoral researcher in Self-Reconfigurable Electronics

We are seeking a **Postdoctoral Researcher** to join the multidisciplinary CONBATT project. The project focuses on the integration of microbatteries and smart materials into integrated circuits to enable a new class of **self-reconfigurable electronic systems for sensing**.

The postdoctoral researcher will work on the integration of **CMOS-compatible microbatteries into the digital blocks of RF systems for sensing**. The work will combine **clean-room microfabrication, electrical characterization, circuit design and simulation**, as well as **system-level validation** of proof-of-concept sensing devices. The project offers a dynamic, team-oriented research environment with full access to IMB-CNM clean-room facilities and advanced electrical and electrochemical characterization laboratories.

The IMB-CNM is the largest institute in Spain dedicated to the research and development of Micro and Nano Technologies and Microsystems and with unique capabilities in silicon technology. It has belonged to CSIC since its foundation in 1985 and is distinguished as a María de Maeztu Unit of Excellence.

The research activities of IMB-CNM are dedicated to Micro/Nano Integrated Systems: miniaturized electronic systems which include sensing and/or actuating capabilities in addition to electronic information processing, power management and external interfaces. IMB-CNM holds the largest clean-room facilities in Spain with full capability to process its own CMOS technologies.

Offer Description

- Develop and characterize CMOS-compatible microbatteries fabricated at IMB-CNM.
- Design, simulate and validate a simple digital modulation block based on Amplitude Shift Keying (ASK) for an RF circuit.
- Coordinate and validate the integration of the microbatteries onto externally fabricated ICs.
- Perform system-level electrical characterization and sensing in collaboration with the internal teams.
- Interdisciplinary coordination with other researchers of the CONBATT project.

Required qualifications

- PhD in **Electronics, Microelectronics, Telecommunications, Physics** or related fields.
- At least **1-year hands-on experience in mixed-signal/digital circuit design** (e.g. digital ASK modulation for RF systems)
- **Hands-on experience in Electronic Design Automation and layout tools** (Cadence, SPICE).
- **Hands-on experience in microfabrication and electrical characterization** of chips (impedance analyzer, semiconductor analyzer, probe station).

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- Ability to work across disciplines (materials science and electronics).
- Highly motivated, proactive, and able to work independently in the laboratory as well as in an interdisciplinary team.
- Fluency in English (spoken and written).

Preferred additional qualifications

- Experience in design and characterization of analog front-end RF systems.
- Experience in CAD tools (mechanical design and PCB design) and Verilog-A.
- Basic understanding of primary batteries and electrochemical characterization.

Work conditions

- Full-time postdoctoral contract (40 hours/week) for **two years**.
- On site work, with possibility of teleworking and flexible schedule.
- Gross annual salary of **49,062.72 €/year** (Doctor FC2 level, according to CSIC salary scales).
- Estimated start date: **September-October 2026**.

The person hired will be working at the Institute of Microelectronics of Barcelona - National Microelectronics Center (IMB-CNM) of CSIC, located at the campus of the UAB (Cerdanyola del Vallès).

We offer

- **Interdisciplinary research environment** that fosters scientific growth and collaboration.
- Opportunity to take **leadership** and responsibility within the project.
- **International environment**: the opportunity to join an international research institution and become a member of a young and growing team.
- **Continuous training** in a high-quality environment.
- **Cutting-edge research infrastructure** and access to the latest fabrication and characterisation technologies.
- **Benefits**: Employed in compliance with Spanish legislation and regulations. Employees receive the benefits of the Spanish Social Security system covering sickness, maternity/paternity leaves and injuries at work.
- **Friendly** working atmosphere.

How to apply

Interested candidates should send an email to the following addresses (carne.martinez@imb-cnm.csic.es and ferran.pujol@imb-cnm.csic.es), including "Postdoctoral Researcher in Self-Reconfigurable Electronics" as the subject of the message, and attach:

- A motivation letter (introducing yourself, your previous experience related to the position, and your future goals).

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- An updated CV.
- Names and contact information of two referees (Letters of recommendation are not requested at this time. Kindly note that we may reach out to references at any stage of the recruitment process. We recommend notifying your references upon submitting your application).
- Any other documents the applicant wishes to submit for review.

Sending CVs to the above address implies consent to the Legal Advice | IMB CNM (csic.es).

Deadline for applications: 30/06/2026 (or when a suitable candidate is found)

The hiring process will take place via the CSIC employment platform.

This offer can be found on: <https://www.imb-cnm.csic.es/en/about-center/careers/open-positions>.

More information on IMB-CNM: <https://www.imb-cnm.csic.es/en/>