Institute of Microelectronics of Barcelona IMB-CNM CSIC

Call for Expressions of Interest

PhD Program in Microelectronics

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 belongs to CSIC since its foundation in 1985 and is distinguished as a María de Maeztu Unit of Excellence.

IMB-CNM aims to contribute to the advancement of knowledge and to the economic and social development of society, as well as to the training of researchers and engineers and to the advice to public and private entities.

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.

The IMB-CNM is located on the Autonomous University of Barcelona (UAB) Campus and contains the largest clean room facilities in Spain with full capability to process its own CMOS technologies and laboratories.

We are inviting **expressions of interest** from candidates wishing to join one of our research groups.

We are seeking talented individuals ready to contribute to pioneering work in:

- Tackling Health challenges with advanced micro and nano electronic devices
- Micro and nano electronic solutions for experimental physics and civil security
- Micro and nano electronic devices for the energy transition
- Making feasible and sustainable the future evolution of information processing through cutting edge micro and nanotechnologies

Who we are looking for:

- ✓ Candidates with a strong academic background in Physics, Engineering, Nanotechnology or STEM related fields
- ✓ High motivation for research and innovation
- ✓ International profile and interest in collaborative, interdisciplinary work

What we offer:

- ✓ A dynamic international research environment located in Barcelona (UAB Campus)
- ✓ Access to Spain's largest clean room facilities for micro/nano fabrication
- ✓ Supervision by experienced researchers in multidisciplinary teams
- ✓ Opportunities to join national and European research projects

Carrer dels Til·lers s.n., Campus UAB | 08193, Cerdanyola del Vallès
https://www.imb-cnm.csic.es | talent@imb-cnm.csic.es
+34 93 594 7700

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Minimum requirements (must be met by the end of August 2025):

- Holding a master's degree or have completed at least 300 ECTS credits under the Spanish university system, or equivalent from an accredited foreign university
- Not holding a PhD degree

***** Applications that do not meet these minimum requirements will be automatically excluded from the selection process.

Interested in joining us?

To participate in the admission process, it is mandatory to (Read Carefully!!!!!!):

- ✓ **Complete this form**
- ✓ **Send the following documents** to **Talent@imb-cnm.csic.es**, with the **subject: "PhD in Microelectronics – Expression of Interest"**
  - ➢ **CV**
  - ➢ **Academic transcripts**
    Foreign transcripts:
    - Need to be **translated in Spanish or English**
    - Must be **adjusted to the equivalent Spanish grades** (check https://universidades.sede.gob.es/pagina/index/directorio/Equivalencia_notas_medias/language/en to do so)
  - ➢ **Motivation letter**
    Your Research Interests & Fit with the IMB-CNM are key:
    - **Identify which thesis topics (see ANNEX1 on last page)** interest you most (2 topics maximum)
    - Explain **why** these topics align with your academic background and career goals
    - Explain **how** obtaining a PhD at IMB-CNM Barcelona will **advance your career**
  - ➢ **Contact details of two referees** (in English)

*****Only applications that include all mandatory documents and follow the required format will be considered for evaluation. Incomplete applications or documents not meeting the required format will not be followed up.

Deadline: June 20th, 2025

Shortlisted candidates will be contacted by July 30th, 2025 to be informed of next crucial steps.

Check our website for more information about the IMB-CNM and our research activities

https://www.imb-cnm.csic.es/en

Take the next step in your research career with us!

*By applying, you accept our data protection policy.

**IMB-CNM (CSIC) adheres to the European Charter and Code of Conduct for Researchers, ensuring full alignment with their principles and requirements, including equal opportunity, transparency, merit and ability, caring for an open, fair, and excellence-based hiring processes.

IMB-CNM holds the HR Excellence in Research award, which acknowledges CSIC's commitment to continuous improvement in HR strategies for researchers.

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ANNEX1 - Proposed Research Topics for the PhD Program at IMB-CNM, CSIC

Micro and Nano systems for Energy and Mobility 4 proposed PhD Thesis	
Title	Advanced design, manufacturing and physics of failure studies Supervisors of UWBG Power Devices
Sup.	A. Pérez-Tomás, X. Perpiñà, X. Jordà, J. Rebollo, M. Vellvehi, J. Montserrat
Title	Advanced micro-nano technologies for Energy Harvesting, Cooling and Thermal Management
Sup.	L. Abad and M. Salleras
Title	Sustainable Nanogenerators for Self-Powered Transient and Green Electronics
Sup.	M. Duque, G. Murillo, X. Muñoz Berbel
Title	Micro-nano-electronic devices enabling light and biochemical energy harvesting for the synthesis of high added value chemicals
Sup.	X. Muñoz-Berbel, B. Sepúlveda, J. Esteve, J. Sacristán, F. Serra
Micro and Nano systems for Physics Frontiers and Civil Security 4 proposed PhD Thesis	
Title	Investigation of Wide Bandgap Semiconductor Devices For Radiation Detection Applications
Sup.	G. Pellegrini, I. Lopez
Title	Detection at the quantum limit with advanced micro/nanodevices
Sup.	G. Rius
Title	Advancing Key Detector Technologies for Next-Generation Experiments: Aligning with the European Strategy for Particle Physics
Sup.	P. Fernandez and N. Moffat
Title	Design and Detection of Critical Security IPs in SoCs
Sup.	P. Serra and S. Hidalgo
Technology and Advanced Processes for Micro/nanosystems 2 proposed PhD Thesis	
Title	Exploring variability impact on single-electron transistors and quantum devices.
Sup.	J. Llobet and E. Amat
Title	Thin films for electro-optical sensing of volatile organic compounds
Sup.	Stella Vallejos Vargas
Micro and Nano systems for Health and Environment 8 proposed PhD Thesis	
Title	Wireless magneto-opto-acoustic micro/nano-electronic devices for non-invasive cell stimulation in superficial and deep tissues
Sup.	Gonzalo Murillo, Borja Sepúlveda, Mar Álvarez
Title	Smart chemical (multi)sensor platforms for environmental and agri-food monitoring
Sup.	C. Jimenez, J. Maria Margarit, S. Vallejos, M. Gutierrez, C. Fernández, T. Baldi, X. Muñoz, P. Serra
Title	Cognitive Analytical Microsystems with Neuromorphic Edge AI for Industrial, Environmental and Health Care
Sup.	JM Margarit Taulé
Title	Intracellular chips for health
Sup.	José A. Plaza
Title	Wafer-Scale Multiparametric Biosensing: Selective Functionalization of Graphene Solution-Gated FETs for High-Throughput Multisensing
Sup.	E. Prats Alfonso, S. Brosel-Oliu
Title	Flexible electronics based on 2D materials for high density neural interfaces
Sup.	X. Illa, A. Guimerà
Title	Novel dosimeter for advanced radiotherapy modalities
Sup.	C. Guardiola, C. Fleta, S. Heinrich (Institut Curie (France))
Title	Advanced Sensing Membranes for Precise Cell Culture
Sup.	J. Yeste, X. Illa, JMª Margarit

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