

Institute of Microelectronics of Barcelona IMB-CNM CSIC

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.

Project Type: TFM

Project Title: (nano)electronic devices based on graphene

Research Group: Nanofabrication and Nanomechanical Systems Group (NANONEMS)

Project Description:

- ❖ Graphene, the first of the 2D materials to be isolated, has had an enormous impact on material science and on the development of advanced electronic devices. However, critical challenges remain in achieving consistent large-scale growth and effective integration into functional systems. Understanding and addressing these limitations is essential for future technological progress.
- ❖ This thesis will aim the development of specific methods for improving graphene-related fabrication technologies.

Work Plan:

- Design of the micro/nano fabrication processes for the growth, integration and/or device implementation of graphene.
- Characterization of materials, fabrication processes and devices.
- Assembly of a transfer station for graphene flakes.
- The specific plan will be discussed with the candidate and will be adapted to the facility availability.

Candidate desired studies:

- ✓ MSc in Semiconductor Engineering and Microelectronic Design
- ✓ MSc in Nanoscience and Nanotechnology
- ✓ MSc in Telecommunications Engineering

Application Process:

Before applying, please **check with your TFG/TFM program supervisor**, as he/she may already be coordinating with us to assign the project.

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If there is no such coordination, complete this [form](#) and send your CV and a motivation letter to Talent@imb-cnm.csic.es, with the subject: “TFG/TFM at IMB-CNM”

Your CV will be forwarded to the Researcher leading the project who will contact you directly if interested.

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.