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: Integration of Laser-Induced Graphene (LIG) with Silicon-Based Device Technologies

Research Group: Nanofabrication and Nanomechanical Systems Group (NANONEMS)

Project Description:

- Laser-induced graphene (LIG) is a 3D form of graphene that has gained significant attention due to its straightforward fabrication process and its graphitic, porous structure. These properties make LIG particularly attractive for a variety of applications, including microfluidics, sensors, and energy storage devices such as batteries.
- This thesis will focus on integrating LIG with silicon-based device technologies, on evaluating its properties and exploring its potential in advanced micro- and nano-systems.

Work Plan:

The thesis will have a strong experimental focus, with hands-on work in the cleanroom and specialized laboratories of the IMB-CNM. The focus of the work will relate to:

- The controlled laser growth and structural/electrical characterization of LIG on Si-compatible substrates,
- The integration of LIG with Si-based device technologies from the cleanroom, and
- The evaluation of the performance of such devices.
- The specific work plan will be discussed with the candidate.

Candidate desired studies:

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

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.

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