Institute of Microelectronics of Barcelona IMB-CNM (CSIC)
C/- dels Til·lers, S.N., Campus UAB | 08193, Cerdanyola del Vallès
https://www.imb-cnm.csic.es | rrhh@imb-cnm.csic.es
+34 93 594 7700

PhD position — Lab-on-CMOS microsystems for ultrasensitive electrochemical quantification of biomarkers

A contract to pursue PhD title in the framework of the SmaRDT project (Development of Rapid Diagnostic Tests based on a Smart Lab-on-CMOS platform) is offered. The student will follow a training plan to acquire advanced skills in the design and fabrication of micro and nano systems. This includes access to the IMB 1500 m2 clean room which is the largest facility for silicon chip fabrication in Spain. The thesis project main objective is the development of new methodologies and technologies that allow the implementation of ultrasensitive antigen tests for a better management of future pandemics or to diagnose diseases based on very low concentration biomarkers. The focus will be on the digital quantification of biomarkers such as proteins, DNA or RNA using microfluidics, nanomaterials, and arrays of electrochemical transducers fabricated with microelectronic technology.

Requirements/Background and skills

We seek highly motivated candidates with a MSc degree in Physics, Chemistry, Engineering, Material Science, Biochemistry or similar.

Good communication skills in English are a valuable asset.

Previous experience on the topics of this contract will be positively considered but are not essential.

Description of Group

The selected candidate will join the Chemical Transducers Group at the Barcelona Institute for Microelectronics (https://www.imb-cnm.csic.es/en/research/research-groups/chemical-transducers-group-gtq). The group is large (~30 people), multicultural, and multidisciplinary (backgrounds in Chemistry, Physics, Electronics Engineering and Biology)

The student will receive support and collaboration from the supervisors and the group technical staff in order to cope with the multidisciplinary tasks of the thesis project. He/she will also be stimulated to take initiative, to propose creative solutions and to self-organize the research work tasks.

IMB-CNM laboratories includes cutting-edge equipment for micro and nanofabrication and characterization of devices. (https://www.imb-cnm.csic.es/en/micro-and-nanofabrication-clean-room/clean-room-virtual-tour).

Summary of conditions

Four year predoctoral contract within the PIF2024 program (former FPI program).

Starting January – March 2025

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How to apply

All applications must be sent to a.baldi@csic.es and cesar.fernandez@csic.es. Applications must include: CV and a motivation letter. Reference letters will be appreciated.

Deadline for applications 15th November, 2024

- 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/