Institute of Microelectronics of Barcelona IMB-CNM (CSIC)
C/- dels Til·lers, S.N., Campus UAB | 08193, Cerdanyola del Vallès
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WE ARE LOOKING FOR TFG/TFM STUDENTS TO DEVELOP

SUSTAINABLE AND DIGITAL BATTERY-SENSORS

Requirements

We are looking for enthusiastic candidates, ready to enjoy multidisciplinary research TO PERFORM THEIR **TFG OR TFM EXPERIMENTAL** WORK!

We will be happy to host students from Science Degree of **Chemistry, Nanotechnology, Biomedical Engineering and Electronic Engineering**.

Description of Group/Project

Self-powered Engineered Devices research group is a group from the IMB-CNM (CSIC) located at the UAB Campus. In the last years, the team has developed **single use power sources that act as self-powered sensors**, paving the way towards simpler, battery-less but digital diagnostic approaches that aim for a final deployment in Low Income Countries where cost and sustainability are key drivers. Our expertise comprises biochemical energy generation, rapid prototyping of devices and printed electronics. The group is particularly interested in developing solutions from idea to real device.

We welcome students that aim at helping us to develop **a novel single use digital test for molecular diagnostics** that will be applied to detect infectious diseases. The test is based on electrochemical detection of nucleic acid amplification with an innovative self-powered approach.

The project covers basic understanding and testing of nucleic acid amplification assays with electrochemical characterization techniques, fabrication of paper-based devices in our rapid prototyping laboratory and test of the power generated with real samples such blood, sweat or saliva.

We aim to significantly push our development towards a fully operative solution to be potentially applied to detect different RNA/DNA biomarkers in the field of **infectious disease and cancer prevention.**

Specific objectives

This is a multidisciplinary project. Depending on your background you will:

- Design and develop paper-based battery-sensors
- Conduct electrochemical characterization of the prototypes
- Carry out nucleic acid amplification with commercial techniques
- Integrate the system and characterize the assay with real samples
- Design and develop of the electronic system for signal processing

How to apply

All applications must be sent to **susana.liebana@imb-cnm.csic.es**

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