Institute of Microelectronics of Barcelona IMB-CNM (CSIC)
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WE ARE LOOKING FOR A TFG/TFM STUDENTS TO DEVELOP

SUSTAINABLE AND INTELLIGENT PAPER-BASED SENSORS

Requirements

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

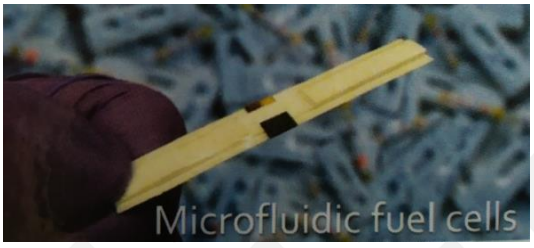
We will be happy to host students from a Science Degree of Chemistry, Nanotechnology and Biochemistry) and also from Biomedical Engineering Studies.

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 immunodetection** that can be applied to detect infectious diseases. The test is based on electrochemical detection of labelled antibodies with an innovative self-powered approach.

The project covers basic understanding and testing of antibody-protein 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.



The concept has been patented and preliminary but promising results have been obtained. We aim to significantly push our development towards a fully operative solution to be potentially applied to detect different biomarkers in the field of companion diagnostics.

Specific objectives

- Development of paper-based microfluidic structures
- Immunoassay development for the selected biomarker
- Prototype design and fabrication
- System integration and characterization of the assay with real samples

How to apply

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