

## **Surface modification of substrates with Self-assembled-Monolayers (SAMs) to study graphene interface**

### **Description**

The Biomedical Applications Group takes advantage of the technological capacities available at the Clean Room of the IMB-CNM to provide novel solutions to different biomedical applications. One of our research lines is based on the use of micro- and nanosystems for in vivo and in vitro studies focused in understanding the brain using graphene as a sensing material. We are investigating the adhesion of graphene on different substrates as well as the role of the interface between the graphene and the substrate and its impact in the transistors performance.

In particular, different SAMs will be selected to be deposit on silicon oxide substrates and then graphene will be transferred on these surfaces. Graphene-based gSGFETs (Solution Gated Field Effect Transistors) will be fabricated and electrically characterized to determine the impact of these functionalizations on transistors electrical performance.

### **Education**

- BSc in Chemistry, Nanotechnology or equivalent

### **Knowledge & skills**

- Chemical basis will be considered
- Nanotechnology basis will be considered
- High motivation and capacity to learn in a multidisciplinary environment.

### **Tasks**

This research program is part of the Graphene Flagship initiative. Within this research program, the successful candidate will be involved in different activities, including:

- Chemical modification of the surfaces
- Optical characterization of the surfaces
- Characterization of devices by means of current voltage curves (I/V).
- Evaluation of the behaviour of the transistors at different pH

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