

Postdoctoral Open Position

ELECTRODES FUNCTIONALISATION WITH SYNTHESISED ELECTROACTIVE MOLECULES AND CHARACTERISATION OF THEIR ELECTROCATALYTIC PROPERTIES

Marta Mas-Torrent Núria Crivillers (ICMAB, CSIC)

Position offered

We offer a two-year position for a postdoctoral researcher in the framework of “Electrodes functionalisation with synthesised electroactive molecules and characterisation of their electrocatalytic properties.”

This sub-project is part of a coordinated project, entitled “Electrocatalysts based on Redox Active Self Assembled Monolayers (ERASAM)”, which will be developed between two groups, located at ICMAB-CSIC and the University of Barcelona (UB). The experimental work done at ICMAB will be always carried out in close collaboration with the theoretical group at UB.

The work will mainly consist on the synthesis of redox-active molecules that can act as redox mediators and the preparation of Self-Assembled Monolayers (SAMs) on electrode surfaces based on these compounds. The electrocatalytic performance of the prepared SAMs will be investigated. We will consider two electrochemical processes of socioeconomic, environmental, and technological importance: the oxygen reduction reaction (ORR) and the oxygen evolution reaction (OER).

Main Tasks and Responsibilities

The main tasks that the candidate will carry out are:

- Synthesis and characterization of electro-active compounds as redox mediators.
- Electrodes modification with the synthesized materials and their physico-chemical surface characterization.
- Evaluation of the performance of the functionalized electrodes in electrocatalysis.

Requirements

- PhD degree (in Chemistry or Materials Science)
- Good level of English.
- The ideal candidate should have a strong background in organic synthesis and material sciences.
- Knowledge in electrochemistry techniques will be highly valued.

Conditions

- Full time contract.
- Gross annual salary of in the range of a post-doc fellow from Spanish Ministry of Science and Innovation.
- Duration: 2 years.
- Starting date: from December 2022.

How to apply

The selection process will be continuous until a good candidate is found. Interested persons should send an email to Marta Mas-Torrent (mmas@icmab.es) and Núria Crivillers (ncrivillers@icmab.es) attaching:

- CV
- Letter of motivation
- If possible, contact details of a reference person.

ICMAB is an equal opportunity employer committed to diversity and inclusion of people with disabilities.

About the e-MolMat group

The “Molecular Materials for Electronic Devices” (e-MolMat) group is focused on the design and synthesis of new functional molecular materials for their application in electronic devices. This is an interdisciplinary group where researchers from different disciplines (i.e., chemistry, materials science, physics, engineering) are working together. Our work ranges from fundamental studies in order to better understand materials properties to a more applied perspective aiming at developing proof-of-principle devices. Particularly, our areas of interest include synthesis of functional molecules (electroactive molecules, organic radicals), surface self-assembly, crystal engineering, molecular switches, organic field-effect transistors (OFETs), charge transport and (bio)-sensors. <https://molecularelectronics.icmab.es>

About ICMAB

ICMAB is one of the world’s leading institutes in Materials Science research, located at Campus UAB, very close to Barcelona. One of the main ICMAB’s strategic objectives and missions is to make an impact in the field of new materials for applications in energy, electronics and health.

ICMAB provides facilities, state-of-the-art equipment and most importantly, excellent scientists and professionals, to assure you a rewarding environment. In the last years, we have grown up to build up a team devoted to project managing, technology transfer, innovation, communication, maintenance, technical services and administration, to team up with the researchers for the advancement of science.

The diversity of our people and the interdisciplinary research fields related to Materials Science ensures an enriching and inspiring working environment. If you are an enthusiastic and highly motivated person and would like to work in a multidisciplinary and multicultural environment, join us!